RELIGION & PSYCHOLOGICAL WELL-BEING

Mapping the relationship between Christian religiosity & personality factors

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DECLARATION

I declare that this thesis, submitted for a Doctor of Philosophy at the University of Edinburgh, is my own work, and that the work has not been submitted for any other degree or professional qualification except as specified.

N. S. Tiliopoulos

ACKNOWLEDGEMENTS

To my parents, Kikí and Sávva, and to my brothers, Aristotle and Miháli

ABSTRACT

Religion is a central feature of human behaviour and thought that carries some unique properties that are of relevance to psychological inquiry, and has effects on the psychosocial world of the individual that are distinct, highly significant, and in certain areas considerably consistent.

A number of overlapping approaches have been put forward in an attempt to describe and define religion. I argued that a definition should be testable, differentiating, wide enough, not ethnocentric, and unbiased, while at the same time meaningful within the context for which it was developed. For this thesis, religion was seen as the belief structures of the major formal systems of faith and the way these structures are used by the believers at both the personal and the collective level. The capacity of the individual to utilise these structures was termed *religiosity* or *religiousness*.

The foundations of the psychology of religion were reviewed along with the main challenges the field has faced through the years leading to its present status. A literature review revealed that most psychological studies on religion seem to have serious methodological limitations, such as inappropriate sample types, little or no control over certain religious, psychological, or sociodemographic variables, simplistic at times implementation of statistical techniques, and almost a total neglect of qualitative methodologies. These limitations could have artificially reduced the strength of the association between religion and the psychological variables, and inflated the levels of bias in the findings.

The presented investigation assessed the relationship between aspects of Christian faith and three major psychological constructs, viz. personality, identity, and attachment. More specifically, the variables of primary focus were: (1) religious orientation, and (2) schizotypal personality traits as defined by the DSM-IV. Secondary variables that were treated as mediators were: (3) general personality traits, (4) aspects of identity, and (5) adult attachment styles. Additionally, variables included were: Religious practices relating to (6) church attendance and (7) prayer, (8) Christian denominations, (9) age, (10) gender, (11) social desirability, and (12) sociodemographic characteristics. The relationship between mainly the primary and secondary variables, with the central focus being on religiosity versus the rest, was considered from both a theoretical and an empirical perspective. The result helped formulate the predictions to be tested, and design of an integrated model to account for those relationships.

In the first quantitative questionnaire study, 161 adult Christians, all British residents, took part. A non-probability purposive sampling was used. Participants were recruited from the undergraduate programs of the University of Edinburgh, the psychology department volunteer panel, and through individuals who served as intermediate contacts. Alongside descriptive questions, seven standardised psychometric questionnaires were used measuring religiosity (I/E-R and RLI), personality (EPQ-R-S), schizotypal traits (SPQ), identity (AIQ-IIIx), attachment (ECR), and desirable responding (BIDR-6).

Religiosity had a unique and complex effect on schizotypy that was as strong as that of mainstream psychological variables. The direction of this effect seemed to be determined by the interplay between the religious and the psychological profiles of the individual. The psychological one was of a relatively maladjusted individual, while the religious one was of an ordinary believer. The religious profile appeared to decrease the intensity of schizotypal traits; the psychological one did the opposite. This result suggested that religiosity on its own and in its "natural" state seems to enhance the well-being of the individual. It is only through its interplay with certain kinds and degrees of other psychological elements that psychopathology is born.

The second study used qualitative interviews to focus on the identification of conceptual themes through the participants' religious discourse that directly related to the findings of the first study and the general thesis aims. This study utilised semi-structured, open-ended, telephone interviews with a sample of eight participants who had taken part in the first study, and selected through a process of theoretical sampling. Fifteen main interview-items were developed that addressed issues of religious life, upbringing, meaning, and practices. Interview transcripts were analysed through thematic analysis.

The findings suggested that the main elements of a mental health-enhancing religion revolve around issues of a personal relationship with God, the degree in which religion is embedded in and provides meaning to one's life, the levels and nature of existential questioning, and the distinction between religious choice and inevitability.

Religion is a complex, multidimensional concept; psychologists need to be more informed about its interactions with the individual's psychosocial world. For that to be possible, focussed and sophisticated psychological research methodologies need to be developed that would produce coherent, interpretive, and reliable models.

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CHAPTER I

PROLEGOMENON

"As for the books [of the Great library of Alexandria]
you mention, here is my reply:
If their contents be in accordance with the Book of Allah,
we may do without them,
for in that case the Book of Allah more than suffices.
If, on the other hand, they contain matter
not in accordance with the Book of Allah,
there can be no need to preserve them.
Proceed, then, and destroy them."

(Ibn al-Kifti's "History of Wise Men"
cited in Canfora, 1989, p. 105)

CHAPTER AIMS & ORGANISATION

This has been a long journey. The beginning of the end was somewhere here, with the author torturing an already tired computer keyboard, being tortured back by the knowledge of an army of research papers and academic books, marching through his limited mind. He wrote in search of the truth, sometimes subjective as a poem and others objective as a number, but always true to himself. And as he became I in the passages that follow, in the end I was privileged to have an impression of the truth I sought. But all that was a long way from these words. This has been a long journey. And it began very academically here.

In this chapter a general introduction to the thesis is presented. First the thesis's aims and objectives are stated, followed by the reasons that attracted the author to this area and an outline of the specific psychological components used. Finally the structure of the thesis is laid out and briefly described alongside the author's predisposition.

THESIS AIMS & OBJECTIVES

The general aim of this PhD thesis was to investigate the relationship between faith and psychological well-being. The circumstances under which institutional religious faith can have a positive or negative association with mental health were explored. More specifically, the relationship between degrees and kinds of Christian religious orientation and schizotypal personality traits (psychosis-proneness) was assessed, while taking into account the effects of general personality traits, as well as social, and developmental psychological elements, primarily identity aspects and attachment styles.

The thesis had four specific objectives: (a) the testing of existing methodologies, through the application of more rigorous controls over the studied variables; (b) the replication and extension of previous findings in the area; (c) the identification, through the use of primarily advanced statistical techniques and secondarily qualitative methodologies, of conceptual and empirical areas that may require additional attention; and (d) the determination of plausible structural models that can provide an adequate, coherent, and concise explanation of the relationships among the study variables.

BENEFITS OF THE THESIS FINDINGS

Five groups may directly benefit from knowledge gained by this thesis: (a) *psychologists of religion* may use it to reassess and enrich current methodologies and findings in the

area; (b) *psychologists* in general may be helped to realise that religion is a fundamental, yet rather complex, aspect of the psychosocial world of the individual that deserves the attention of mainstream psychological research and thought; (c) *mental health practitioners* may use it to reexamine the aetiology of mental disorders, and to redefine diagnoses and existing treatments; (d) *religious individuals* with mental health problems may gain increasing trust in the health services and some direct self-insight; and finally (e) *pastoral counsellors* may become more beneficial and central to religious individuals, by providing an alternative or additional service where appropriate.

THE BACKGROUND OF THE THESIS

For the best part of my life I have had a personal interest in religious matters. Having been born in a country where national and religious identities are twin sisters, where, being Greek, one is expected through the constitution to be a Christian Orthodox, where the Church is more powerful than and untouchable by any "earthly" governing body, and where everyday reality is coloured by an almost innate belief in the supernatural and the paranormal, religion was a "scent" on every person's being. So when the opportunity arose through this PhD thesis, religion was one of the obvious research choices.

In the fall of 1999, I entered the field, secure in the belief I was entering an unchartered area of psychological investigation, only to discover to my surprise that psychology had been "flirting" with religion for more than a century. As I found out, and as I will further elaborate in chapter III, there is a long and winding story behind the psychology-religion affair.

From its cradle days of existence, modern Western psychology was interested in religion, and began to explore and assess its significance to the individual's psychosocial world. The relationship between psychology and religion, however, appears to have been

for most of its part problematic, and at times hostile (Emmons & Paloutzian, 2003; Gorsuch, 1988). Scholars argued that psychology was dangerously challenging the individual's religious beliefs with a negative and harmful attitude that could potentially lead to disastrous consequences (Batson, Schoenrade, & Ventis, 1993). In fact, psychologists were warned to keep away from religious affairs (e.g. Jourard, 1968; Kirkpatrick, 1999; Van Til, 1935/1972). Despite a ferocious at times criticism, the psychology of religion survived through the years and evolved to its present status, gradually becoming a promising area of psychology.

Acquiring knowledge of the above affair, however, instead of making my work easier, made me question the meaning, function, and purpose of the inquiry upon which I was about to embark. The following were my three main considerations: (a) why should I, as a psychologist, be interested in religion, a topic that seems to be of greater relevance to philosophy, sociology, or anthropology? (b) what may be the contribution of such study to the psychological knowledge? and finally (c) what can psychology offer to religion? At the ultimate conceptual level this thesis attempts implicitly to address these issues.

In putting my intended investigation in religion into a psychological framework, I needed to identify an area of psychology where religious matters could be pre-eminent. I was spoiled for choice. In fact, as discussed in chapters III and IV, research had found links between religion, as expressed mainly through Christianity, and most major psychological areas that have filled volumes of literature and could fill as many more.

My choice of mental health – a favourite topic of research in the psychology of religion (Fontana, 2003; Grzymala-Moszczynska & Beit-Hallahmi, 1996; Foskett, Marriott, & Wilson-Rudd, 2004; Koenig, 1998) – was again initially due to personal interest. I find deviance a very stimulating topic of investigation – and a look at what tends to make news headlines suggests that I am not alone in this preference – primarily because it

scares and saddens me. I find the deviance of the mind even more frightening and thus even more interesting, because although its categorisation requires a sociocultural system, its manifestation is within the self.

From the variety of mental health issues, this thesis focusses on one of the most dramatic forms of mental disorder, namely psychoses in general, because of the cataclysmic effect they can have on the individual's perception of reality and therefore most if not all of the individual's actions, thoughts, and coping strategies. As my personal interest in the relationship between religion and mental health was taking shape, it acquired global status when terror in the name of God flew out of the sky one September morning in 2001.

Having settled on the two main components of this investigation, their specific aspects, as well as the rest of the variables of this thesis fell into place mainly through evidence from empirical research, as discussed in chapter IV. In brief, Christian religious orientation was used as an "honest" empirical measurement of the degree of the individual's motivations toward religious beliefs, practices, and behaviour. In regard to mental health, this investigation focussed on schizotypal personality traits because (a) of the apparent similarity of some of their underlying factors (such as magical ideation or unusual perceptual experiences) to certain religious orientation components (Diduca & Joseph, 1997; Maltby et al., 2000; Wilson, 1998); and (b) of their major importance in the development of serious mental illnesses, such as general psychoses and schizophrenia related disorders (Claridge et al., 1996; Millon, 1996). General personality traits were selected because of the vast body of research linking them with both psychotic personalities (Claridge & Davis, 2003) and religion orientation (Emmons, 1998, 2003). Aspects of identity were used because of the relationship between religious orientation and the sense of membership or belonging, and the potential relevance of this relationship to mental health (Dobratz, 2001; Sernett, 1978). Finally, attachment styles were chosen because of their relevance to the religious development of the individual

(Granqvist & Hagekull, 2000; Kirkpatrick, 1998).

The decision, however, on the focus of this thesis and the specific variables to use, still does not answer a very important question: Why trouble oneself running this investigation? What are the unresolved issues that require another study in this area? A simple answer to this is that to my knowledge no one has attempted to combine the selected psychological and religious components into a single unified model. More dramatically, the thesis's edifice is a large, yet inconclusive, body of empirical and theoretical literature in the psychology of religion. For example, religion has been shown to promote psychological well-being by (a) reducing existential anxiety, (b) providing a sense of control over life, (c) supplying a focussed identity, and (d) giving moral guidance. However, many are the studies that argue for the contrary by showing that religion may also upon occasion (a) nurture dependency, (b) increase prejudice, (c) promote high levels of anxiety and fear, and (d) generate unrealistic expectations about life (for a general discussion of all the above issues see Argyle, 2000; Beit-Hallahmi, & Argyle, 1997, ch. 10; Brown, 1988; Dittes, 1969; Gorsuch, 1988; Loewenthal, 2000).

Though the above sets of effects are not mutually exclusive, theory and research so far appear to be somewhat contradictory and inconclusive. There are several explanations for this, including ill-defined concepts, inconsistency and incomparability of measurements, inappropriate choices of samples, and lack of control for confounding variables and covariates (for a discussion see Gartner, Larson, & Allen, 1991; Pargament, 2002; Sloan, Bagiella, & Powell, 1999).

Although all the above problems may simply be characteristics of the evolving study of religion and mental health, they strongly suggest that there is still a need for additional research.

THE THESIS STRUCTURE

In chapter II, I present an operational definition of religion for use in this thesis, by showing, through a critical description of some of the main social sciences approaches to religion, why generating a widely acceptable definition of the concept has been difficult. Chapter III discusses a number of psychological theories of religion, and it addresses, though a historical review of the psychology of religion, the main problems the psychological study of religion has faced through the years, as well as the various ways these problems have been interpreted and to an extent resolved. Overall, these problems seem to relate mainly to (a) the attitudes of a large number of psychologists, who because of their convictions may not view religion as an important area of study; and (b) to the lack of agreement over fundamental theoretical and methodological issues. In chapter IV, I discuss the reasons why religion, as an aspect of human behaviour and thought, is well-worth psychological investigation, through the presentation of empirical evidence that describes certain aspects of the relationship between religion and the various psychological components presented earlier. In brief, it is shown that religion, and specifically Christianity, is relevant to psychology (a) because it carries some unique properties that are of major importance to psychological inquiry; and (b) because empirical evidence suggests that its effects on the psychosocial world of the individual are distinct, considerably consistent in certain areas, and highly significant. Finally, in this chapter specific predictions and research questions are presented and justified. Chapter V contains the methodology of the first empirical study of this thesis, which is based on quantitative questionnaires, while chapter VI presents and discusses the results of this study. In chapter VII, the methodology and rationale of the second study of this thesis, which is based on qualitative interviews, is presented. The interviews served to gather further information about the participants' representation of religion, religious life, and their thoughts on the acquisition and development of their religious practices and commitment. The analysis and discussion of the findings are presented in chapter VIII. Finally, chapter IX contains the thesis's general discussion and conclusions.

AUTHOR'S PREDISPOSITION

During the philosophy classes I took while at school back in Greece, I was repeatedly reminded that in Classical Greece, any academic discourse was expected to possess the following three characteristics: arguments based on formal logic (λόγος), an ethical approach (ήθος), and a passion in the ideas (πάθος). Nowadays, we go to great lengths to ensure our academic ideas are logical and ethical. However, we tend to steer away from passionate discourse, perhaps fearing that our passions may lead to subjective, and thus "nonscientific", judgement. In fact, in ancient Greece the word πάθος was indeed used to refer to both passion and subjectivity indiscriminately.

Claiming that this research (and perhaps all research) is not to an extent subjective would be naive. I have already declared my biases through the initial reasons that led me choose this area for my thesis. I would like therefore to clarify right from the start that although I do not consider myself a religious individual, I am sympathetic towards religion. I do believe that religion, and by that I refer to the organised and recognised institutions of faith (see chapter II), is a system of good, a fine collection of the purest of moral codes, evolved and still evolving to benefit at multiple levels individuals and societies alike. It is the human animal that frightens me. I believe it is the human interpretation of the divine, at either or both the personal and the collective/institutional level, that allows, promotes, or causes religious harm. Should this be the case, then any religious problem moves from the divine, sacred, and otherworldly domain to the earthly, human sphere and thus it becomes manageable and largely solvable. Therefore, the deepest motive for writing this theses was to utilise the capacity of my scientific, "objective" self in the hope of developing or simply proposing a possible segment of that solution.

Having revealed my predispositions, I do not imply in any sense that the value of this thesis is either jeopardised or degraded. Quite the contrary. Besides the ancient Greeks,

I quote William James (1896/1979) on this who said:

> Science would be less far advanced than she is if the passionate desires
> of individuals to get their own faiths confirmed had been kept out of the
> picture [...]. If you want an absolute duffer in an investigation you must
> [...] take a man who has no interest whatever in its results. He is the
> warranted incapable, the positive fool. The most useful investigator [...]
> is always he whose eager interest in one side of the question is balanced
> by an equally keen nervousness lest he become deceived (p. 21).

CHAPTER SYNOPSIS

The main purpose of this thesis was to assess the relationship between aspects of
Christian faith and schizotypal personalities (psychosis-proneness) by taking into
account mainly three major psychological constructs, viz. general personality, identity,
and attachment. Besides the author's personal interest in the area, theoretical and
empirical evidence suggests that further research is needed in order for conceptual and
practical models to be developed that will allow mainstream psychological elements to
be incorporated in more pluralistic and holistic ways. Besides this general introduction
chapter, the thesis is arranged into two theoretical chapters (chapters II and III), a
research literature review chapter (chapter IV), four chapters that present the two
empirical studies carried out – a questionnaire and an interview study – (chapters V to
VIII), and a general discussion chapter (chapter IX).

CHAPTER II

DEFINING RELIGION

"Reality is merely an illusion, albeit a very persistent one"
(attributed to Albert Einstein)

CHAPTER AIMS & ORGANISATION

The aim of this chapter is to construct a definition of religion to be used in this thesis, and to discuss critically the main issues that make such an endeavour a frustratingly difficult task. Initially the etymology of the word is considered. This is followed by a discussion of the main approaches adopted since the 19th century in the social sciences towards a definition of the term. The author's ideas of what elements an adequate definition should possess are explained, followed by the author's definition of religion and its justification. Finally the concept of spirituality is briefly discussed.

THE RIDDLE OF RELIGION

Religion has been one of the main driving forces behind the affairs of individuals, nations, and cultures, at least since the dawn of written history. It has given humanity many of its highest moments; it has amazed us with magnificent architecture and transcendental music and arts; it has inspired us to think beyond the here and now, to develop powerful moral codes and to philosophise about the self and the purpose of life; it has gifted us with people like Mahatma Gandhi, Martin Luther King, and Mother Teresa, people whose religious philosophies have produced unique goodness and have influenced great social changes. Religion has also plagued us with our darkest times. In the name of God we have speechlessly witnessed the crusades, Holy wars, the Inquisition, the Ku Klux Klan, ethnic cleansing and genocides, mass suicides, and terrorism.

Before one begins to discuss and study religion and religious matters, one needs to define what it is that is being discussed or studied. So what is religion?

The notion of religion, having puzzled philosophers and social scientists for decades, is still resisting a widely accepted, clear-cut, essentialistic definition (Beit-Hallahmi & Argyle, 1997; Guthrie, 1996; Loewenthal, 2000). However, religion seems to be one of those concepts, like intelligence or mental health, that although scholars find great difficulty in defining it, most of us would have an intuitive sense of what it is when we see it. Still, what is so difficult about the concept of religion that makes it such a nebulous concept, leading social scientists like Edward Evans-Pritchard (1965, p.121) to declare it undefinable?

THE ORIGIN OF THE WORD

The problem begins already with the etymology of the word. There does not seem to be a consensus regarding the origins of the word *religion*. Cicero (c. 106 - 43 BC) (trans. 1933) suggested that the word derives from the verb *relegere* meaning "to treat carefully" or within the context of religion "to handle carefully spiritual matters". For Lactantius (c. 240-320) (trans. 1871) the word comes from *religare*, which means "to bind" and as an extension "to bind oneself with the Divine". To make things even more complicated, St. Augustine (c. 345 - 430) (trans. 1948) derives religion from *religere* meaning "to recover", i.e. "to recover the Divine in oneself". According to David Fontana (2003) the term *religio*, which can be a derivative of all three of the above verbs, appears to have been used in cultic traditions of the early Roman times to refer to the responsibility, or perhaps the ethical duty, the individual had in doing certain things. Those things were related to family values, oaths, spiritual ceremonies and the like. In that sense, religion was used as an adjective rather than a noun to mean something holy, sacred, or even taboo.

At this point it is worth briefly mentioning the etymology of the Greek word for religion (θρησκεία). The word, though not necessarily its meaning or use, has remained unchanged throughout the centuries, and it can be found in the same form in ancient Greek manuscripts to current Greek literature. According to Isihios, one of the major Greek lexicographers of the 5ᵗʰ century AC, the word possibly originates from either the verb θρήσκω, which means "to understand", or the verb θράσκειν (to remind oneself), or even the verb ενθρείν meaning "to safeguard", while he also suspected a connection with the noun θράνος (throne) (Μπαμπινιώτης, 2002). The above etymology, although it shares some parallels with aspects of the Latin-based word, especially those proposed by St. Augustine, it still has its own unique origins. Let us keep this in mind for when I discuss the different approaches to defining religion later.

Going back to the Latin-based term, and sometime during the early Middle Ages, its meaning became more exclusive and shifted to signify a personal relation to a deity, a bond with the Divine (thus closely resembling Lactantius' early etymology of the term). This shift may have been caused by the widespread and established presence in the West of Christianity and Islam, their catalytic influences on state matters, and their exclusive, monopoly-like, privileges with access to and generation of knowledge. In the Renaissance and later during the Enlightenment, the term became more complex and began conveying the idea of a systematic entity, a doctrine (Smith, 1978). Consequently, *religio* became a noun with certain values and properties of its own right. From then on, people not only could be labelled as religious and nonreligious, but also they could identify themselves as members of certain organised "faith" systems (e.g. the Christian religion) thus differentiating one group's religion or *religiones* from another's (Asad, 1993).

The concept of religion as a distinctive entity developed during the 18th and 19th centuries, when it was used to characterise objective abstract systems of ideas as real things in themselves (Smith, 1978). This process of reification and abstractification of religion has led to the term religion evolving to refer to a complex variety of religious phenomena, without necessarily having any unity. Its usage can now refer to personal piety or to an overt theological and historical system of, for example, beliefs or practices, which has an extension in time and is connected to a particular community. On the one hand, it can still be used as a singular systematic notion, for example the religion of the Greeks, while on the other hand, it can have a plural meaning, signifying the sum of all objective and abstract "religious" systems, separating them from other aspects of life like arts or science.

APPROACHES TO DEFINING RELIGION

REDUCTIVE VS. NONREDUCTIVE APPROACHES

This brief history of the term may suggest that the problem of defining religion is not as difficult as it seems. The notion of religion has evolved to mean whatever it does at present. However, this is not as simple as it may sound. The above "evolution" is largely based on the Western tradition, and as such it may be only applicable to Western (i.e. monotheistic) religions (cf. the etymology of the Greek word).

It should be apparent then, the *nonreductive approach* claims, that inevitably, the idea of religion not only appears to be culturally bound, but as Clifford Geertz (1973, pp. 23, 90) posits, is also largely defined and shaped by historical and discursive processes. Although symbolic systems that could be classified as religions appear to be present in every society, the ways people seem to understand and express these systems are related to the ways they view life and their purpose and function in it. Therefore, to agree on a definition of religion, a consensus has to be achieved on the above matters as well, and that consensus is not possible since these matters appear to be at times dramatically different between cultures and eras. Similarly, Evans-Pritchard (1956) argues that our understanding of religion is biased and distorted, and attempting to apply the notion of religion to social systems outside a Western context is inappropriate, if not meaningless, since in many of those societies the concept of religion as an abstract objective system appears to be absent. Subsequently, should we wish to understand religion we should see it in its own terms.

For example, Evans-Pritchard in his book "Nuer Religion" (1956) claims that the Nuer people are not aware they are living religiously, and to a Westerner it would appear that they indeed do not possess a religion – at least as we in the West understand it. They seem not to have a formal dogma, organised rituals and worships, nor even a theistic-

kind of mythology. However, Evans-Pritchard argues further that the Nuer people do possess all these things in their richness, but they are so tightly fused with their culture that they are practically invisible to the Western eye. Since the Nuer "religion" appears not to distinguish between a natural and a supernatural world, the notion seems to be greatly incompatible with the way we view it in the West.

Several thinkers object to the localistic approach to religion as being constructed on epiphenomenal cultural characteristics that tend to distract from the universal essence of religion. Émile Durkheim (1915/1976) and Sigmund Freud (1913/1955) are two of those theorists who claim that even though belief and practices may vary, at times dramatically, between and within societies, their underlying integrative functions are present in all social groups. As such, they can be "universalistically" explained through scientific investigation, since according to scientific laws the same cause results in the same behaviour (Freud is a central figure in the psychology of religion and his ideas are discussed extensively in chapter III). What these scholars acknowledge is that religion cannot be rational in a scientific sense, and therefore one needs to look beyond the actual belief to explain it. This is, however, a *reductive approach*, in the sense that it attempts to explain religion away and reduce it to something nonreligious, namely to a single or very few psychosocial functions.

I do not favour the reductive approach to religion. Although I do not dispute its theoretical soundness and value, I do question its empirical usefulness. The attribution of religion to some sort of archaic symbolic psychosocial functions seems too vague, and the generalisations it claims too speculative to allow for the development of testable and operational constructs. At the same time I do not entirely subscribe to the hermeneutic, nonreductive approach either. By explaining religion through a culturally-specific meaning and the way groups or individuals construct this meaning in order to make unique sense of their world, this approach tends to be too time and place limited that it once again seems to lack a great degree of broad empirical power.

I would not suggest that a general definition of religion is impossible, but rather that when defining the notion, one needs to consider to a great extent the interaction between the global and the local, and in doing so, one has to be aware of the potential restrictions and limitations of the generated definition. Since most modern psychological ideas have been generated under Western systems of thought, it would make sense, when attempting to investigate religion psychologically, to use it in its Western construct. That said, one has to be aware that our definitions may consequently perhaps only be applicable to Western societies, and thus it may be safer to restrict research based on such premises to the West.

SUBSTANTIVE VS. FUNCTIONAL APPROACHES

Another way in which scholars have attempted to explain religion is by focussing on two distinct aspects, namely its substance or its function (Berger, 1974). This approach forms a new independent dimension of what religion is and thus it can be viewed in parallel with reductive-nonreductive explanatory models.

Substantive approaches attempt to define religion through its content. According to these approaches religions possess sets of fundamental, essential features that structure their philosophical makeup. This assertion allows certain belief-systems to count as religions and others not. Those that do, might, for example, involve beliefs in God or gods, or beliefs in spirits or the supernatural, i.e. elements and forces that science cannot explain.

Religion is viewed as a system of utmost importance, because it leads to a better understanding of the world. The main aim of religion is seen as providing meaning by constructing a (true) model of reality. According to the substantive (also known as the *intellectual*) approach, religion possesses two central elements. The first is *faith*. This requires a belief in a transcendent reality; a reality that is beyond the sphere of ordinary

life; a belief in "something that gives meaning to all that passes, and yet eludes apprehension" (Whitehead, 1926b, p. 191). The second substance of religion is the *sacred* or the *holy*. Two of the main proponents of this dimension are Rudolf Otto (1917/1936) and Mircea Eliade (1959). They advocate that religious people separate the world into the sacred and the profane, and religion is concerned with the former. While with the sacred (the superlative of "precious") they refer to superior, greatly respected large concerns and the collective, they characterise the profane with features like the inferior, everyday life, and the individual. The sacred, according to the substantive approach, is the only reality, the ultimate reality, and it forms an intuitive part of human thought and activity. This being so, religion is needed to create encounters with the holy through *numinous*, i.e. spiritual experiences. In other words, the substantive approach sees faith in the holy as the fundamental component of religion, through which humans make sense of their reality (e.g. James, 1902/2002).

The *functionalist* camp attempts to define religion by focussing on what religion does. According to the functionalists, a belief system can only count as a religion if it performs particular and unique operations in the psychosocial world. Socially religion functions as a bonding at best or restraining at worst mechanism. Through certain taboos and practices, such as rituals and rites of passage, it provides the necessary ingredients for the formation of identity, stability, roles and social control, and moral order. Within the realm of psychology, religious operations function positively or negatively on the emotional and intellectual state of the individual, through means of comfort, consolation, coping strategies, life meaning-giving, or moral codes, but also through guilt, distress, or pervasive mental illness (Schmidt, 1988). Therefore, for the functionalists (also known as *symbolists*), religion operates directly on human needs and it has a necessary, though for most not essential, role in human survival. Both Durkheim's and Freud's approaches mentioned above can be classified as functional.

Although both substantive and functional approaches offer an insight into the meaning

of religion, by focussing on certain aspects of religion, they can be criticised for actually missing the point altogether. Both tend to neglect each other's valuable contributions; religion cannot only have functions and not substance and vice versa. The sets of features they use to define religion tend to be vague and general thus allowing for a variety of belief systems (e.g. communism) or social institutions (e.g. the scouts) to be classified as religions. Therefore, a general criticism of these approaches could be that they appear to fail to identify the distinct components that make religion a unique entity (for a more detailed critique see Stark, 2001).

NOMOTHETIC VS. POLYTHETIC APPROACHES

The nomothetic-polythetic polarity categorises the final pair of approaches towards a definition of religion. The former attempts to define religion either on the basis of one or a few essential features, or within a narrow and limiting framework. I will not linger on this formulation since every approach I have discussed thus far can be classified as nomothetic and thus the same descriptions and considerations apply here. Instead I would like to focus on the polythetic classification of religion.

For the last thirty-five years or so, scholars at least within psychology appear to have abandoned the idea of trying to formulate an essentialistic definition of religion, probably because they seem to acknowledge that this enterprise can be a rather difficult, frustrating, and to an extent futile process with ambiguous results of little or no empirical use. Instead, they shifted their focus to identifying sets of prototypical features or super-ordinate dimensions that a belief-system should possess to a greater or lesser extent in order to be classified as a religious one.

This approach stems conceptually from Ludwig Wittgenstein's ideas of *family resemblance* (1953). The most famous illustration of these ideas is Wittgenstein's discussion on what defines a "game" (1953, aphorisms 65-71). He claims that since not

all games share exactly the same features, a single definition of the concept of a game would be inappropriate and misleading. However, he observes that there exist degrees of resemblances that allow for all of those activities to be classified as games. These resemblances, which are neither necessary nor sufficient conditions for class inclusion, are founded on a prototypical concept of a game, and the degree to which they are present in any activity makes such activity a more or less distinct exemplar of the family of games.

Using Wittgenstein's ideas as the basis of a classification system, psychologists and social scientists have attempted to identify such family resemblances in the case of religion. The more of those features a system has, and the more prominent their position is in that system, the more the system resembles a religion. So far, several models have been proposed, involving two (Schmidt, 1988), three (Fontana, 2003), four (Loewenthal, 1995), five (Brown, 1973), seven (Smart, 1989), and even twelve (Nielsen et al., 1993), entitlement features.

Kate Loewenthal (1995) for example, proposes that the common features of religion involve a belief in a spiritual reality, a tendency towards a harmony of life, spiritual moral directives, and a system of social organisation and communication. Ninian Smart in his book "The World's Religions" (1989) offers a finer partition of the dimensions of religion by adding the domain of rituals and sacramental practices, the presence of myths and sacred narratives, and the material dimension of sacred landmarks and human creations of worship. Others like Niels Nielsen and his colleagues (1993) add belief in afterlife, and the desire to proselytize in the list of features. David Fontana (2003), observes that polythetic models appear to have three super-ordinate dimensions in common, viz. spiritual beliefs, spiritual rituals, and spiritual ethos – he is using the term "spiritual" to refer to a nonmaterial dimension of being that can be reached through mystical experiences and the afterlife. Finally, Roger Schmidt (1988) claims that religion can be characterised by just two highest dimensions, viz. the conceptual, and the

performative / social one.

The polythetic approach has some major advantages over the others discussed here. By avoiding the potential trap of dictating what religion is or is not, and concentrating on what religion should be, it is flexible and adaptable. It does not treat religion as a categorical concept, but instead it places it into a multidimensional space where it is allowed to manifest itself in degrees of hue. In doing so, it considers a multitude of characteristics, potentially important if not unique to religion, as opposed to limiting its focus on a subset of, at times, misleading micro-aspects.

That said, the approach can be criticised for being over-flexible, and thus blurring the boundaries of religious and nonreligious systems. The nature as well as the amount of features, a system should possess in order to begin to be considered as a religion, tend to be to an extent arbitrarily defined. Therefore, it could be argued that although this approach tends to have a more pluralistic nature, it may not help us understand what religion is any more that any of the other approaches discussed in this chapter.

Having reviewed the various approaches, Kenneth Pargament (2002) expresses frustration on the realisation that any attempt to define religion appears to do nothing more than reduce it to a set of expressions of basic processes, without for example normatively taking into account elements of supernatural revelation. As a result, he claims that the distinctiveness of the phenomenon of religion evaporates. Although he is convinced, in a "religious" way, that religion is unique, he is compelled to acknowledge that "the jury is still out" with regard to the best approach.

PRINCIPLES OF AN ADEQUATE DEFINITION

So far, I have not yet presented a single definition of religion. This is not because they are few or scarce. On the contrary. By 1912 James Leuba in his book "A Psychological Study of Religion" was able to cite forty-eight definitions; in reviewing the literature I have come across at least another 150. My intention at this point was to discuss the various approaches through which definitions were generated, in order to illustrate the complexity of the issue. Henceforth, I will present a few definitions within the context of stating the main characteristics such definitions should, in my view, possess in order to be considered adequate and workable, beyond any of the approaches I have discussed. These characteristics are as follows:

1) Primarily an adequate definition of religion needs to be empirically testable through scientific investigation. For example, Durkheim's functional definition of religion as a "unified system of beliefs and practices relative to sacred things, that is to say, things set apart and forbidden" (1915/1976, p. 47) appears too abstract to be of much practical use.

2) An adequate definition of religion should be capable of discriminating between the religious and the nonreligious. The philosopher Albert Whitehead defines religion as "what the individual does with his solitariness" (1926a, p. 47), while Daniel Batson and his colleagues claim that religion is "whatever we as individuals do to come to grips personally with the questions that confront us because we are aware that we and others like us are alive and that we will die" (1993, p.8). According to these definitions, religion is primarily seen as a personal matter, present in different forms in all human beings. Thus in that sense, and perhaps to the dismay of at least some of the atheists, all humans are religious.

3) Following the previous point, an adequate definition of religion should be neither too inclusive nor too exclusive. Edward Tylor's substantive definition states that religion is

a "belief in spiritual beings" (1871/1958, p. 424). This is a rather minimalistic and exclusive approach to religion. It counts as religions only traditions that involve beliefs in a deity (the *theistic* or *polytheistic* traditions), and excludes any *nontheistic* belief systems such as some of the traditional forms of Buddhism.

4) Finally, an adequate definition of religion should not be ethnocentric or biased. Stewart Guthrie (1996) claims that most anthropological definitions of religion are ethnocentric since they tend to be based on the Abrahamic tradition and thus they tend to define as religion systems of faith that involve beliefs in a god. At the same time, Karl Marx's view of religion as "the sigh of the oppressed creature, the heart of the heartless world, and the soul of soulless conditions. It is the opium of the people" (1975, pp. 43-44) appears to possess an obvious disapproving bias, by neglecting or rejecting any positive, mature, and conscious aspects of religion.

A DEFINITION OF RELIGION FOR THIS THESIS

It should be apparent by now that constructing a totally adequate, all-purpose, well-rounded definition of religion may not be possible. This realisation alone may have been enough to frustrate many scholars and lead them to abandon any attempts to define religion, declaring it an idea with so many meanings that it has none; declaring it undefinable.

Religion is indeed an abstract, complex, and latent concept (according to universalists), or construct (according to postmodernists) that encompasses a plethora of phenomena, functions, meanings, structures, and features. Then again, so are many other abstract concepts, like freedom or God, and most psychosocial latent constructs, like mental health, poverty, or intelligence. On this basis I do not view religion as being any different.

Although an all-encompassing definition of religion may not be possible, at the same time it may not be necessary. After all a total model of the world, in which such an idea could meaningfully fit does not as yet exist, and it may never do so. I would argue that it does not matter what religion really *is* – if there can ever be an ecumenical truth about it. What should matter is how we perceive it and how we justify our perception of it when attempting to apply it to various settings. It seems to me that it is more fruitful to think of what religion is or can be only within a given framework of thought or action. Therefore, I propose a shift of focus from what it is to be defined to what a definition of such idea attempts to accomplish. At this level of treatment, religion can indeed be meaningfully defined. In fact, many of the definitions I mention in this chapter can be adequate and workable when viewed within the theoretical context or research paradigm they were created and employed.

RELIGION

Following this critical review of the various problems of definition, I would like to present my own adequate and workable definition of religion. Within the context of this thesis, religion is used to refer to the belief structures of the major, formal, and living "faith organisations" (as classified in Webster's "Encyclopedia of World Religions" [Doniger, 1999], and recorded in the Central Intelligence Agency "World Factbook", 2002) – such as Buddhism, Christianity, Hinduism, Judaism, Islam, Sikhism, and so forth – and their subdivisions (such as Rastafarianism, Sunni, Vaishna, etc.), and the manifestation, reception, interpretation, and use of those structures by individuals and groups.

This definition is adequate because (a) it is testable since the belief structures of the above traditions can in principle be accessed through their scriptures and teachings, and explained by their scholars, while their use can to an extent be empirically observed and measured; (b) it differentiates between people who adhere to these faiths and those who do not; (c) it strikes a fair balance between inclusiveness and exclusiveness since,

although it excludes cults and *new religious movements* (e.g. Satanism, Paganism, Scientology, and so forth), any dead belief structures (e.g. the ancient Greek Dodecatheon), and minor faiths or the faith systems of indigenous people, official statistics suggests that approximately 72% (4.5 billion) of the world population can be grouped under these main faith traditions (Central Intelligence Agency, 2002); (d) it avoids being ethnocentric since it incorporates both western and eastern forms of faith; and (e) it does not appear to be biased since it does not attribute any degree of approval or disapproval to those faiths. Finally, it could be said that the definition loosely follows the polythetic approach, with unstated resemblance features implicitly embedded in it.

RELIGIOSITY

Deriving from the above definition of religion, the notion of *religiosity* or *religiousness* or *religious orientation* is used in this thesis to refer to the religious capacity of individuals or groups, i.e. to the ways people view, understand, receive, communicate, implement, and practise religion.

SPIRITUALITY

At this point, although the centre of focus of this thesis is on religion, a short mention needs to be made on the issue of spirituality. Even though spirituality has been and at times is still being used as meaning the same thing as religiosity, the general tendency is to differentiate it from the latter (Fontana, 2003; Saroglou, 2003; Zinnbauer et al., 1997). It is beyond the scope of this thesis to discuss the various approaches to spirituality, a task that would have probably required another chapter as long as this. It would suffice to say that spirituality tends to be seen as a broader and far more abstract concept than religiosity that refers to the "degree of involvement or state of awareness or devotion to a higher being or life philosophy" (Walker, 1991, p. 208), and it can be present in religious and nonreligious individuals alike. As David Elkins (1999)

graphically writes, spirituality "is the ability to see the sacred in the ordinary, to feel the poignancy of life, to know the passion of existence and to give ourselves over to that which is greater than ourselves" (p. 45). Spirituality can involve a variety of beliefs in metaphysical and supernatural phenomena, such as life after death, mystical or parapsychological experiences, possessions, and so forth, or it can simply be a way of life (Lukoff et al., 1998).

Although spirituality and religiosity overlap considerably, they do appear to occupy their own unique niches. As Robert Emmons (2003) puts it "religion is a (more or less) organized search for the spiritual" (p. 5, parentheses in the original). Indeed, there seems to be an understanding among psychologists that spirituality is an independent and wider concept than religion that can at times have rather distinct effects on psychology. Elkins (1999) for example, suggests that spirituality promotes good physical and mental health, whereas other studies argue that people who are involved in spiritual activities (such as mysticism, cults, and the like) are more likely than religious ones to be delusional (Peters et al., 1999) or even psychotic (Bullough, 1993; Greenberg et al., 1992), yet others failed to find any association between psychological well-being and spirituality, but not religiosity (Crawford, 2003). Finally, several researchers suggest that both beliefs may equally affect a number of important psychological problems (Lukoff et al., 1998; Seybold & Hill, 2001), and in fact, the DSM-IV does give equal weight to religious and spiritual problems (American Psychiatric Association, 1994).

Since the purpose of this thesis is to address specific issues in the psychology of religion, and since spirituality is a far greater and more complex topic that is not exclusively studied by psychologists in this field, I will not ruminate about it further and I will refer to it only in the context of specific research findings.

CHAPTER SYNOPSIS

Religion, because of its complex and abstract nature and origin, is a rather elusive term to qualify. A number of overlapping approaches have been put forward in an attempt to describe and define religion. The nonreductive approach claims that religion is irreducible and it needs to be explained on its own terms within the specific cultural and time frames it develops and functions. The reductive approach advocates that religion possesses universal elements that can be quantified, qualified, and subsequently measured through scientific enquiry. In a parallel fashion, substantive approaches attempt to explain religion through its meaning, while the functionalist approach focuses on the function of religion for the believer. The above approaches could also be classified as nomothetic since they tend to limit religion into a narrow framework. Finally, the polythetic approach, which appears to be currently favoured, attempts to identify sets of characteristics that a system should possess to a greater or lesser extent in order to resemble a religion.

Despite the approach one follows, I argue that a definition, in order to be adequate and workable, should be testable, differentiating, wide enough, not ethnocentric, and unbiased, while at the same time it should be meaningful, perhaps only or at least, within the context in which it was developed. For the purpose of this thesis, I view religion as the belief structures of the major formal systems of faith and the way these structures are used by the believers at both the personal and the collective level. The capacity of the individual to utilise these structures is termed religiosity or religiousness or religious orientation. Finally, spirituality is viewed as being largely independent from religion, and as such it is of no central interest to this thesis.

CHAPTER III

THE PSYCHOLOGY OF RELIGION: A HISTORICAL REVIEW

"Mine is a long and a sad tale!" said the Mouse,
turning to Alice, and sighing.
"It IS a long tail, certainly," said Alice,
looking down with wonder at the Mouse's tail
"but why do you call it sad?"
(Alice's adventures in Wonderland; Carroll, 1865/1995, p.19)

CHAPTER AIMS & ORGANISATION

The aims of this chapter are to present a historical review of the psychology of religion, and to discuss the theoretical foundations of the field, by critically focussing on the approaches of key figures in the area. Additionally, through this peripatetic journey the reasons why the relationship between psychology and religion appears to have been an uneasy and often unhappy one are discussed while placed in a historical context.

Based on the events described in this chapter, the history of the field is conceptually broken down into four periods: the birth of psychology as a modern science (1879-1901), the establishment of the psychology of religion as a unique field within psychology (1902-1927), the dormant period of the field (1930-1949), and the revival

of the field to current developments (1950-present).

While several psychological theories of religion are presented, the discussion focusses on those of James, Freud, and Allport, since they are perceived by scholars in the field as the most important and influential ones, shaping the field's course, scope, and present state.

As this chapter addresses the theoretical development of the psychology of religion by placing it into a historical perspective, empirical evidence and research findings are not discussed. These are extensively presented in the next chapter.

ΕΝ ΑΡΧΗΝ ΕΙΝ Ο ΛΟΓΟΣ (trans. *In the beginning was the Mind*)

THE EARLY DAYS OF THE AFFAIR

From its cradle days, modern, scientific psychology had its eyes on religion. This was far from a serendipitous act of curiosity. As Hendrika Vande Kemp (1986) comments, psychology's forefathers of the 19th century grew out from traditional psychology, which had its roots in *pneumatology* (i.e. the study of the spirits), just like natural theology and the renaissance studies of demons and angels (*demonology* or *angelography*). Those early pioneers appear to have felt the need, if not the obligation, to show at least to their predecessors that the "new psychology" – a term by which scientific psychology was initially referred to (Hall, 1901) – had on the one hand something fresh and valuable to offer, and on the other that it had not forsaken its principles and abandoned its heritage (Pickren, 2000). In other words, by retaining the traditional moral codes and qualities, "new psychologists" wanted to demonstrate that through modern scientific investigation – which was capable of bringing "the touch of reality in the life of the soul" (Dewey, 1884, p. 288) – they could do the same job even better. Therefore, by focussing on

religious and spiritual matters, not only did they allow for a continuation of the field's tradition, but also for direct comparisons between the outcomes of the "old" and the "new", and thus a demonstration of the advantages of the latter over the former approach. As Stanley Hall (1901) put it, the "new psychology" offers a "microscope for the soul", while showing that "the brain is the mouthpiece of God" (p. 731).

Although it is a German intellectual, Wilhelm Maximilian Wundt (1832-1920) (a son of a Christian minister himself) who is considered the father of the "new", scientific psychology, by far the greatest levels of religion-related activity at that early period can be almost exclusively traced to the United States (it should be noted that in Britain Francis Galton, 1872, had made some isolated attempts to study the efficacy of prayer; however, these were framed outside the field of psychology). One of those American pioneers was Granville Stanley Hall (1844 - 1924).

Hall, who was trained as a religious minister, was the first PhD in scientific psychology, and the first president of the "American Psychological Association"; in 1888 he also founded and chaired the first school in religious psychology at Clark University (Worcester, MA) (Connolly, 1999). Hall was not primarily interested in religion as an abstract system – for him the function of religion was to adjust the human realm – but rather his focus was on applied matters related to religious conversion and specifically the religious and moral education of children. He believed that "even in education and religion, the strongholds of conservatism, there are new and better ideals and efforts, and these are less exceptional and are growing in power and influence and are represented by more and better men" (1904/1968, p. 199).

Although Hall did not address the general scope of the field of the psychology of religion, two of his students did: The first truly psychological research article on religion was published by James Leuba, in 1896 in the "American Journal of Psychology" – the first journal of modern psychology, founded by Hall in 1887 – while the first book on

the subject was Edwin Starbuck's "Psychology of Religion" in 1899.

Both Leuba and Starbuck were primarily interested in religious conversion. While the latter was a religious psychologist who believed that psychology could offer valuable and positive knowledge to religious individuals and educators, the former was sceptical of the whole affair and held that whatever religion can offer to the individual, psychology can offer more. Of the two, it was primarily Starbuck's attitude and research that were influenced by another great personality in modern psychology: William James.

WILLIAM JAMES (1842 – 1910)

James, the son of a theologian and the brother of novelist Henry James, studied medicine at the Harvard School of Medicine, but never practised it as he was attracted to psychology and subsequently philosophy. He was appointed professor of psychology at Harvard University in 1889, and from 1897 also held the chair of philosophy at the same university until his retirement in 1907. He is considered by many the father of modern psychology, since he was the first to set up a course on physiological psychology in 1876, three years before Wundt's psychological laboratory in Leipzig (unfortunately for James, he misses official primacy because unlike Wundt, his work was not conducted in a psychology department). Perhaps James is not the official father of psychology, but through his magnum opus "The Principles of Psychology" of 1890 (1981) (a two-volume piece of work spanning 1400 pages and twelve years in the making), he definitely deserves, in my opinion, the title of the godfather of the field. In psychological circles the phrase "if you want a new idea look in the past" when referred to James is paraphrased to "if you still want to believe that your ideas are new, do not read James" – the reader should keep this last phrase in mind, as its validity is demonstrated repeatedly in the following chapters.

James wrote extensively about psychology and philosophy, but he only wrote explicitly

about religion in four publications. The most influential work in the whole history of the psychology of religion is arguably his book "Varieties of Religious Experience" (1902/2002). The book was based on a series of twenty lectures he gave at the University of Edinburgh in 1901 and 1902, collectively known as the "Gifford Lectures on Natural Religion".

In this book, James presents his views on religion – and more specifically religious experience – as a part of human nature, by drawing on various philosophical theories and empirical evidence based on expert accounts and life histories. He defines religion in Lecture 2 as "the feelings, acts, and experiences of individual men in their solitude, so far as they apprehend themselves to stand in relation to whatever they may consider the divine" (p. 29-30). He then moves on to distinguish between *institutional* and *personal religion*. He argues that the former, which he associates with religious practices directly related to religious organisations, plays an important role in the cultural development of a society – today this form of religion is in part a subject of study for sociology (Berger, 1973; Ellison & Sherkat, 1995; McGuire, 1994; Northcott, 1999). He then turns his focus on the personal "branch", which he finds more relevant to psychology and a more fundamental aspect of religion, since he claims all institutional religions were born from the personal religions of their founders.

He suggests (in Lecture 1) that in order to understand the deep impact of religion on the individual, psychologists should study exemplars of extreme cases of personal religion, the ones he calls the *religious geniuses*, since the religion of the ordinary believer has been given to them by others and thus they tend to practise it through imitation or habit. According to James, religious geniuses, because of their excessive "emotional sensitivity", commonly exhibit characteristics, e.g. hearing voices, seeing visions, classified as psychopathological (I return to this issue in the next chapter). However, it is these same characteristics that provide such persons with their authority and religious influence. James suggests that psychologists need to study these pathological aspects of

religion and attempt to understand them. However, he warns scientists not to fall into the trap of reducing religious experiences and expressions to mental abnormality (an approach he calls *medical materialism*), since as he says, the knowledge of the origins or conditions of religious phenomena provides insufficient basis for judging their value.

He subdivides personal religion into *healthy-mindedness* and the *sick soul*, and he suggests that both are fundamental and authentic aspects of religion. Healthy-mindedness (Lectures 4 and 5) is a natural, innate state, which can at times manifest itself in a variety of willful forms – the ideas of Liberal Christians for example can be viewed as exemplars of such a state. Healthy-minded individuals – one of whom is, according to James, Walt Whitman – have a crystal-clear "goodness of life" and their soul is like a "sky-blue tint". The sick souls (Lectures 6 and 7), on the other hand, appear to be preoccupied by the presence of evil in everything, and therefore they tend to have a profound pessimism, be "melancholic" and fail to find or appreciate the pleasures of life – he uses Goethe as an example. Whenever a sick soul falls into a deep turmoil (Lecture 8) – a state of pathological depression – it can be healed through a process of deliverance and, according to James, become *twice-born*. This state he calls "the completest form of religion" and he cites Buddhism and Christianity as examples.

He continues his presentation by focussing on *conversion* (Lectures 9 and 10), which he views as the transition one experiences when peripheral religious ideas become central. This transition is usually triggered by explosive emotions and it is a characteristic of the process that leads to the "completest religion". The best fruits of conversion can be observed in a *saintly individual* (Lectures 11 to 15), i.e. a person for whom "spiritual emotions are the habitual centre of the personal energy" (p. 212). These individuals possess ultimate levels of "inner tranquillity" and harmony, an unrestrained feeling of universal love, and a sense of the presence of a higher power. He so much admires these individuals (he calls them "immediate successes") and their contribution to the welfare of the world that he closes Lecture 15 by saying "let us all be saints, then, if we can,

whether or not we succeed visibly and temporarily" (p. 292).

In Lectures 16 and 17 he claims that religious people experience religion through various degrees of "mystical states of consciousness". These states cannot be described with words (*ineffable*), possess elements of insightful knowledge (*noetic*), usually last for a short period (*transient*), and are not controllable by the individual who experiences them (*passive*). Through mystical religious experiences – differentiating these from drug-induced ones – an individual is connected with the "Absolute" and feels the presence of the divine. James acknowledges that these experiences are very subjective, and by nature unquantifiable and uncontrollable. However, it is their existence that makes us consider the possibility of a supernatural world.

The relationship between philosophical theology and personal religion is the focus of Lecture 18. He views philosophy as a secondary product of religious experience. Philosophical theology has either no practical value to a religious person or it is incapable of proving anything. He instead proposes the development of a critical science of religion that can empirically investigate the best in religion. This science should be able to "command as general a public adhesion as is commanded by a physical science" (p. 352).

In the following Lecture James describes some additional characteristics of personal religion, two of which are most central. The first is prayer, which he defines as "every kind of inward communion or conversation with the power recognized as divine" (p. 358). He views prayer as a fundamental component of religion, through which spiritual energy is transferred from the divine to the natural world. The second important characteristic of personal religion is its close relationship with the subconscious (which he calls the "fountain-head of much that feeds our religion" [p. 374]), which could explain the variety of revelations of mystical experiences, and the differences in religious experiences between individuals, since the subliminal field and its accessibility

are unique to each individual.

In the last Lecture, James summarises his thesis. He portrays religious experiences as being "amongst the most important biological functions of mankind" (p. 391), since they are the only experiences capable of connecting us with a greater reality that is not accessible through any of our normal cognitive relations with the world. In addition, he gives directions to future researchers by, for example, suggesting that the personality of the religious individual may play a central role in their religious orientation and experience. Finally – without perhaps ever realising how prophetic his words were – he presents the problems with such research. Mainly, he suggests that psychologists should attempt to evaluate religion in an objective "scientific" manner. However, by following that approach, they should be aware that they may wrongly fail to see meaning and purpose in religion. Since, as he says " knowledge about a thing is not the thing itself." (p. 378), the science of religion may not be the same as the living religion that encompasses both objective and subjective or unobservable elements. Finally, he warns psychologists, most of whom he sees as being biased against religion, not to allow their personal predispositions to affect their scientific enquiries.

CRITIQUE ON JAMES

James, as the first psychologist to attempt to understand, justify, and classify religion in its entirety through scientific logic and empirical evidence, while at the same time promote a critical science of religion, by removing dogmatic beliefs that are incompatible with science, should be regarded as the father of the psychology of religion. He paved the way with provocative at times ideas that seemed far beyond his time, and which are as contemporary and fresh now as they were then. In fact, it would not be far from true to claim that ever since most of the psychological research and theory on religion seem to have been based on his views, by (a) systematically describing the varieties of religious phenomena, such as practices and ideations; (b) developing theories to explain the meaning and origin of religion; and (c) as in this

thesis, investigating religion's personal and social correlates.

James's ideas can, however, be criticised on at least three different levels. First, by ignoring the beliefs of ordinary people, who form the majority of religious believers, he does not allow for his ideas to be generalised to religion as a whole. It is worth briefly mentioning James Pratt at this point. Pratt, who was a student of James, distanced himself from his mentor and studied exactly those aspects above that James had either ignored or dismissed. By placing religion in a social context he found that the religious experiences of the ordinary believer were as rich and at least of equal value as those of the extreme cases (Pratt, 1908). Indeed, as this thesis unfolds, it should become clear that James's ideas can equally be applied to the ordinary believer.

Even James's selection of religious geniuses, since it was based on personal, nonscientific criteria – a move that can be partially explained by his philosophical biases regarding a *pragmatic approach* to truth – does not provide any concrete evidence that the selected instances could be a representative sample, and thus not only renders any quantitative analysis on them pointless, but also casts a doubt of whether his claims are applicable even within the geniuses' population.

Second, linking with the previous chapter on the definition of religion, James appears to follow a reductive substantive approach to religion. Given that, the same critique applies to his approach. It places religion outside a cultural or historical context (although James does attempt to an extent to avoid it, but only as far as his descriptions of the religious geniuses are concerned). It also neglects religious functional elements, which can be normatively found in its institutional character. In fact, James explicitly disregarded the social and cultural aspects of religion as a whole, as bearing no relevance to psychological enquiry. As I will discuss later in my presentation of Gordon Allport's theory, personal religion appears to both affect and at the same time be shaped by the sociocultural environment in which the individual dwells.

Finally, the inclusion of psychopathology as a prerequisite of higher levels of religiousness, although being one of the seeds that led to this thesis, seems paradoxical. Although I discuss this issue in the next chapter, where I present the empirical evidence between psychopathy and religiousness, allow me to make some general comments here.

First the idea seems to go against the aims of religion, which are arguably the promotion and enhancement of happiness, stability, and normalcy in the believer. Second, recent studies suggest, in a highly consistent fashion, that mainstream religious leaders tend to be more healthy-minded than the average population (Francis, 1992b; Francis & Rodger, 1994; Francis & Thomas, 1996; Musson, 1998; Pargament et al., 2001; Robbins et al., 2001) – a finding that is diametrically opposite to James's observations. That said, psychopathic (charismatic) leaders have been found to be common among sects, and especially cults and new religious movements (Argyle, 2000; O'Connor et al., 1995). However, this disposition of theirs, rather than being a positive influence, tends to have catastrophic consequences for the followers and themselves (e.g. mass suicides).

Despite the inevitable shortcomings, James's book appears to have had a great impact on the psychological community, and it was not long after its publication that the "American Journal of Religious Psychology & Education" (also known as the "Journal of Religious Psychology") was established in 1904 by none other than Stanley Hall, and major academic activity took place, as scholars like Theodore Flournoy, Edward Ames, and George Coe offered their minds to the cause. On the research front, the focus was almost exclusively experimental and on rather broadly defined religious aspects (Wulff, 1997, chap.5), most of which, like meditation and yoga, nowadays would have probably been indexed under spirituality. That seemed to be the era of a "happy" relation between religion and psychology. It would be abruptly ended though, partly because of the words of one of the "loudest voices" of that time: Sigismund Schlomo Freud (Vitz, 1993).

SIGMUND FREUD (1856-1939)

In 1909, Hall invited several distinguished scientists to give short lectures at Clark University. One of them was James; another was Freud. Sigmund Freud was born at Freiberg in Moravia to Jewish parents, but the family soon after his birth moved to Vienna, where Freud lived for most of his life except his last two years, which he spent in London to avoid persecution from the Nazis. He studied medicine at the University of Vienna, and later specialised in neuropathology and subsequently in psychopathology – strictly speaking therefore, Freud was a psychiatrist and not a psychologist.

According to Ernest Jones (1957), an acquaintance of Freud and his biographer, Freud was an atheist. However, he was attracted to religion because he found similarities in religious thinking and the psychopathology of his patients. Since for Freud God did not exist, any claims that religious ideas stemmed from God had to be false. He therefore discarded religion as nothing more that superstition and irrational thinking. This being so though, begged a very important question: Why do the majority of people tend to be religious? Freud of course, being who he was, claimed he had the answer in his psychoanalytic ideas. And so he went to prove it.

Freud devoted three of his books entirely in analysing and developing his ideas about religion. Two of these books are discussed here, since they are the ones in which he presents his two theories of religion, while the third book ("Moses & Monotheism", 1939/1964), in which he attempts to trace the origins of Judaism through the psychoanalytic perspective, is not considered in this thesis.

His first "attack" however, was in an article he wrote in 1907 (1959) with the title "Obsessive Actions & Religious Practices" (original title: "Zwangshandlungen & Religionübungen") which was published in German in the first issue of the journal "Zeitschrift für Religionspsychologie". In this article, Freud presents his initial thoughts

about the association between religion and neurosis. He observes that the obsessive behaviour of his neurotic patients resembles religious practices. They are both persistent and ritualistic, and if they are not followed to perfection they can generate considerable levels of guilt and distress to the individual. For Freud both types of behaviour are the results of the repression of basic instincts, and as such both should be classified as psychopathological.

His full-blown assault, however, begins with the publication of the book "Totem & Taboo" (1913/1955), where he presents his *phylogenetic theory* of the origins of religion. This theory, which seems to have been greatly influenced by Darwin's theory and the work of contemporary anthropologists, especially Tylor, portrays religion as a primitive superstition that through collective imprinting was passed on to future generations. He observes that tribal belief systems all have in common the ideas of the totem, which is a sacred animal that the tribe identifies with, and the taboo, which refers to a person or thing that is forbidden. He claims that tribal belief systems are somewhat more primitive, less evolved stages of religion, while Christianity, Judaism etc., are the most evolved forms. He focusses on tribal religions because by being closer to the origins of religion they can provide clearer clues about what caused the phenomenon. Freud interprets the anthropological evidence as suggesting that religion began as an act of the *Oedipus Complex*, i.e. the envy of the father and the desire of the mother. In prehistoric protohuman societies that according to Freud resembled the then known social structures of apes, hordes were led by an alpha-male (the father), who had a harem of females (the mothers). The sons through their desires for the mothers killed the father, and "cannibal savages as they were, it goes without saying that they devoured [him]" (p. 142). However, soon they were filled with guilt and remorse, which led them to make the father their totem, and by begging for his forgiveness and asking for his strength they attributed to him supernatural powers, while at the same time by worshipping him through ceremonies they slowly through generations made him into a god. The mother became a taboo so that the same act of killing would not be repeated and thus the social

structure would be maintained. In modern religions all these motives have been repressed into the unconscious and are now represented through rather symbolic forms of practice and worship (e.g. the taboo is now expressed through the Biblical commandments). Freud summarises his theory by saying:

> Totemic religion arose from the filial sense of guilt, in an attempt to allay that feeling and to appease the father by deferred obedience to him. All later religions are seen to be attempts at solving the same problem. They vary according to the stage of civilization at which they arise and according to the methods which they adopt; but all have the same end in view and are reactions to the same great events with which civilization began and which, since it occurred, has not allowed mankind a moment's rest. (p.145)

Although his book caused an outrage to almost everybody outside the psychoanalytic circles and was perceived as an insult by Christian critics (Pals, 1996), Freud did not stop there. His assault on religion continues in his later work "The Future of an Illusion" (1927/1961). In this short fifty-one-page book, Freud presents his *ontogenetic theory* of religion, by trying to understand why individuals in today's world turn to religion. The script is at times playfully presented as a dialogue between the author and an imaginary proreligious critic. It begins in positive tones – which make one wonder whether Freud has actually taken on board the negative criticism his previous book had received – by claiming that the development of civilization and the establishment of religion provide for the individual a sense of security and safety against the unpredictability of the forces of the natural world. However, this is where the positive attitude of the book ends. Freud calls religion an illusion since it is based on irrational beliefs and wishful, yet erroneous, thinking. At the same time religious truths are meaningless concepts that should not be taken seriously, since they cannot be assessed through scientific inquiry. He acknowledges that once upon a time religion may have been necessary to guide and organise the primitive societies, just like certain rules are necessary for the proper

upbringing of children. However, the human race has evolved and matured and by doing so it has mastered and developed reason and the intellect, which are far superior qualities to blind faith and superstition. Modern humans should use reason to guide them and support them through life. In doing so they will find that religion is no longer either necessary or influential. And just like a grown individual who insists on behaving like a child is perceived as having some sort of a mental problem, the persistence of religion in the modern world should be viewed as pathological, "the universal obsessional neurosis of humanity" (p.43).

CRITIQUE ON FREUD

Despite Freud's negative stance towards religion, his ideas are of great value to the field – interestingly Freud did not expect to be of major influence when he says "what I have written is quite harmless in one respect. No believer will let himself be led astray from his faith by these or any similar arguments" (1927/1961 p. 40). Freud was the first to direct the attention of psychologists and religious thinkers towards the role inner forces of personality play to religion. Although James touched on this in his discussion about the relationship between religious experiences and the subliminal, he was generally interested in the ways these experiences manifest their effects on the individual. Freud however, was mainly concerned with this unconscious relationship, and the ways the psyche creates and shapes religion and in return is shaped by it.

Surprisingly perhaps, some scholars have managed to interpret Freud's ideas and present them as providing a positive contribution to the believer (e.g. Black, 2000; Jones, 1991; Reuben, 1996; see also Capps, 2001). Roy Lee (1948), for example, was an Anglican minister who did not view Freud's theories as hostile to religion. On the contrary, he believed that by using these ideas, religious leaders and believers would be able to distinguish between healthy and unhealthy forms of faith, "thus providing religion with sound knowledge on which to shape its ideals, its judgements, and its interpretation of man's place in the universe" (p. 15).

Given the provocative and challenging nature of his ideas, unsurprisingly Freud's work has been extensively criticised (e.g. Bobgan & Bobgan, 1990; Gay, 1987; Kerr, 1993; Küng, 1990; Oehlschlegel, 1943; Robinson, 1993; Trilling, 1955; Wittels, 1924). He has been called "the prophet of psychoheresy", "a Godless Jew" and much worse. Sympathies aside, there are still a number of logical critical points that can be made about his ideas.

The first and perhaps most obvious one is that Freud was biased. Although as I wrote right from the onset of this thesis, a degree of subjectivity in scientific thought is acceptable and desirable, when it occupies such a prominent role in the discourse, as it does in Freud's writings, it becomes problematic. Indeed, even though Freud wants to present himself as an exemplar of a modern scientist, his ideas are so absolute that in nature they regress back to the dogmatic systems of thought he is so vigorously attacking. For Freud religion would appear to be pathological full-stop. There is no room for conditional clauses; religion is that and that only. I am afraid this is not a scientific argument but rather a political statement. If this were the case, religion would cause discomfort, pain, and psychological suffering to the believer as a norm. If religion were equal to neurosis, the world not only would be mainly populated by maladaptive individuals, but also their condition would be clearly identifiable and distinguishable from healthy states of being. However, this does not seem to be the case.

One can sympathise with Freud's position though, by looking at his life. Although he was an atheist, he could not escape his Jewish background, since for Judaism, as with many other religions, social and religious identities appear to be tautological. So Freud, because of this background, was discriminated against and at times intimidated throughout his life, to a degree that eventually he was forced to flee his country – while his books were publicly burned – to avoid persecution from the Nazis (Jones, 1957). For Freud therefore, religion must have been a burden, a system of suffering he could not escape from (for a more detailed argument see Rizzuto, 1998).

Another criticism of Freud's ideas, which is directly related to the first point I made, is that his methods were not strictly speaking scientific. His theory in "Totem & Taboo" is largely based on assumptions that cannot be tested or verified. There is no evidence (as yet) that suggests that the events he describes actually took place in any society at any given point in time. Even specific claims, like for example that naturally the sons would eat their dead father, appear totally unsubstantiated.

The next point relates to his argument from analogy. In "Obsessive Actions & Religious Practices" and "The Future of an Illusion", Freud claims that religious practices resemble the neurotic behaviour of his patients, therefore since the latter is pathological the former should be pathological by analogy. At the same time he asserts that since neurotic behaviour is caused (according to the psychoanalytic theory at least, see also Freud, 1896/1962) by repressed basic instincts, so must also be religious behaviour. Two are the issues here. First, arguments from analogy are not conclusive by nature (see Hume, 1779/1990). Only an accumulation of empirical evidence can lead to the acceptance of the argument's conclusions. However, as I pointed out earlier, religious individuals do not appear to be normatively distressed because of their faith. At the same time, the resemblance between religious and neurotic repetitive acts appears to be rather superficial. For example, the repetitive and ritualistic practice of prayer in the Christian Orthodox tradition, namely the movement of the right hand to form the symbol of the cross thrice with four reference points arranged in the following sequence: forehead, abdomen, chest (left side), chest (right side), is a normal practice for the believer and not a pathological state. There is no compulsion involved, and indeed the believer can choose when or even whether he or she wishes to perform the practice. At the same time, the act is meaningful (at least within certain cultures) and not senseless or foolish, and it carries a highly symbolic meaning. All these elements appear to be absent in neurotic behaviour.

As for Freud's argument that the same causes are responsible for these two kinds of

behaviour, it appears to me to be a deductive fallacy. The cause (viz. the suppression of basic instincts) is the antecedent (p) of the argument, where the result (viz. the pathological behaviour) is the consequent (q). Simplified, Freud's argument therefore takes the form:

If p then q	(If basic instincts are suppressed, they result to pathological behaviour)
q	(Religious acts are forms of pathological behaviour)
Therefore p	(Therefore they are caused by instinct suppression)

This form of reasoning is a logical fallacy called *affirming the consequent* (see Hughes, 1996, pp. 189-190). I believe that critics have neglected this fallacy, because they have been focussing on refuting the initial premises of Freud's argument, viz. that pathological behaviour is a result of instinct suppression. If the premises were found wrong, there would be no need to look at the rest of the argument.

The final point of criticism I would like to make, addresses the generality of Freud's phylogenetic theory to religion. Freud in "Totem & Taboo" talks about the father who was killed and subsequently was made into God. That could be applicable to Monotheistic religions. But how about religions that have more than one god or involve the worship of female gods, like Hinduism? Or those that have no gods, like some traditional branches of Buddhism? Freud's theory cannot explain their origins any way one would want to stretch his imagination. Freud did not speak of multiple fathers, or the murder of the mother, and of course one is at a loss when no parents (no gods) are involved. However, Freud claims that his theory explains the universal origins of religion and its evolution through human history – not through "some" human's history. Therefore, one is compelled to accept either that only monotheistic systems are true religions (which brings us back to the issue of the definition of the concept), or that Freud's theory is false.

Freud's ideas seem to have caused such a stir in the psychological and broader circles that all research on religion virtually ceased for almost two decades (Beit-Hallahmi, 1974; Koenig & Larson, 2001). After Freud, any attempts to rescue the affair were doomed to failure. One of those brave scholars was another one of Hall's 1909 guest lecturers, the Swiss psychiatrist Carl Gustav Jung (1875 - 1961).

Jung (a son of a parson) was the star pupil of Freud's. He parted with his master though, as he strongly disagreed with the idea that sexuality was the origin of everything, especially God (see more about their disagreement in Palmer, 1997). Jung, unlike Freud, studied eastern religious traditions and attempted to provide an explanation that would account for both eastern and western systems of faith. For Jung, there is a deeper unconscious he calls the *collective unconscious,* which is shared by all humans and is passed on through tradition or heritage (1933/1961; 1938). The structural elements of this unconscious he calls *archetypes*, which are concepts or images expressed in various ways through different cultures. The concept of the divine is one of those archetypes (the archetype of *wholeness*), and as such it is an inherited part of every human being. Psychic balance and self-realization (*individuation*) can only be achieved, according to Jung, if one accepts and integrates these archetypes – as they are understood and expressed in their culture – in their consciousness. Religion is a fundamental aspect of the psyche that guides humans through this process of realization (the *hero's quest*) towards psychological wholeness, either by directly connecting them with the collective unconscious (e.g. through visions) or through symbolic representations of it (e.g. rituals). Therefore, for Jung religion is an expression of unconscious feelings and states essential for a healthy humanity.

Unfortunately, Jung's ideas did not have a strong impact then and could not undo the harm that had already been caused by Freud. And anyway, the divorce process between

psychology and religion had already begun. Hall's journal was one of the first casualties, which stopped being published in 1914[1]. Meadow & Kahoe (1984) claim that in the period between 1930 and 1950 only a single book was published in the US in this area in 1945 by pastoral psychologist Paul Johnson compared to more than twenty books published between 1900 and 1930. To be fair though to Freud, although his work may have been a catalyst in the split between psychology and religion, there were deeper reasons to be accounted responsible for that.

One of them is that psychologists appear to have traditionally been some of the least likely scientists to be religious. A survey by Leuba (1934) shows that in 1914 only 13% of leading American psychologists believed in a "prayer-listening God", compared with 34% of physical scientists, and that percentage fell to 9% in the former case for beliefs in the afterlife, whereas in the case of physical scientists it increased to 40%. In a recent American survey among psychotherapists (Bergin & Jensen, 1990), 31% of clinical psychologists reported themselves as nonreligious, compared to an average of 9% of the general public. In fact, ironically, even the father of the psychology of religion does not appear to be religious himself. In his personal communications (1926), James acknowledges his belief in a supernatural being he calls God, but at the same time he categorically states that he never had a religious experience, that he considers prayer a "foolish and artificial" act (which totally contradicts what he says in the Varieties), and that he views the Bible to be "so human a book that I don't see how belief in its divine authorship can survive the reading of it" (p. 215).

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Here it is interesting to mention that as Hall's journal was closing down, in Nuremberg, Germany, the *International Association for the Psychology of Religion* was being founded (Belzen, 2002). The name of this association is misleading though, since none of its members were psychologists and none had been trained in scientific research. In fact, everyone in the association was either a theologian or a minister of Christian faith. Coincidence or does Freud once again have something to do with it?

It is not clear why all this is so. It may be that people who are attracted to psychology already tend to be less religious – a view entertained by some (e.g. Eagle & Marcos, 1980) – or that psychological knowledge has a catalytic effect on the individuals' religious beliefs – a position that has also been put forward (Batson et al., 1993, chap. 1). Whatever the reason, it seems a paradoxical irony that the people who study the "soul" do not actually believe in it.

However, should this be the case, one can see how a lack of religious commitment may lead to a lack of interest in religious research. If one does not perceive religion as relevant to one's own life, it may easily be assumed that it is not relevant to others' lives either, and thus not a subject worthy of study. Indeed, it seems that psychologists were (and at large still are) considering religion as marginal, if not irrelevant, to psychological investigation, and tended to distance themselves from approaching scientifically any form of religious phenomena (Wulff, 1998). At those early times of modernisation, materialistic industrialisation, and radical social and political ideologies, it appears that religion was seen – as reflected in Freud's work – as a dying system of no significance to the individual. If religion were a meaningless false assessment of reality, consequently its study would become meaningless. This attitude appears to have coincided with or even contributed to the rise of Behaviourism, and its dominance in psychology for most of the first half of the twentieth century (Wulff, 2001).

The second reason relates to the issue of the identity of psychology as a true science. Until the mid nineteenth century, as mentioned in the beginning of this chapter, Western psychology was part of philosophy and seemed to be closely related to monotheistic theologies in the sense that it saw humans as the centre of the universe (Gross, 1995, chap. 11). However, contemporary thought, laid on the foundations of the enlightenment, empiricism, and the Cartesian system, advocated that scientific knowledge is the only valid knowledge since it deals with objectively verifiable facts (Graham, 1986). In that Zeitgeist, modern or scientific Western psychology arose in the

late nineteenth century. Although initially psychology concentrated its inquiry on its traditional subject areas, the tide turned and psychologists did everything to dissociate themselves from their philosophical past, and prove themselves to be true scientists (Gorsuch, 1988). In their striving, they adopted an empirical, positivistic approach in their inquiry, they used experimental methods and statistical techniques as their main, and for a while exclusive, research tools, and consequently they tried to regulate their focus of investigation. It appears that it was not long until religious matters, because of their philosophical connotation, were dismissed as areas of study. In addition, any residual interest would have gradually been extinguished, as psychologists were realising that the psychological theories offered to them by James, Freud, Jung, and others to help with their inquiries in the first place, were frustratingly non-testable with empirical means. Eventually, psychology shifted from a study of the "soul" or the mind, to a study of behaviour.

The final reason responsible for the decline of interest in religious research seems to relate to external pressures and the way psychological thought was perceived by religious individuals and institutions. Western religious leaders, especially Roman Catholics, did not welcome the idea of modern psychology investigating religious matters (Sexton, 1986; Van Til, 1935/1972). They saw psychology as an intruder in their affairs – even psychologists like Allport (1950) acknowledged that this was indeed the case. However, because of the relation between traditional psychology and religion, this intrusion seemed to be largely tolerated, and was viewed as being good-willed and "harmless". For example, the French theologian Georges Berguer (1923) viewed psychology as offering valuable tools that could help the believer reinvent and deepen their faith. When Freud's ideas became public, they appear to have been perceived, especially by Christian leaders, as representative of those of the whole psychological community (despite Freud's being a psychiatrist), bringing an end to their tolerance. As Truman Esau (1998) remarks, psychology (an "idolatrous adulation") was put on the church's blacklist and it was declared an enemy of faith. The psychology of religion was

now termed "the psychology of atheism" (Vitz, 1985). It was seen as being capable of causing irreparable harm to the believer. This hostile image made it hard for psychologists to recruit religious subjects and publish their findings. Consequently, the last few interested in this area of research, were, to an extent, forced to turn to more welcoming pastures.

This course of events should come as no surprise as it is a typical consequence of the polarity between classical science and religion (I remind the reader that I am focussing on Western, European thought) (Ferngren, 2002; cf. Jones, 1994). The gradual development of scientific thought from, say, Copernicus through the enlightenment to the modern times, constantly challenged the cosmological truths of religion, either by pointing out their implausibility or falsehood, or by offering alternative, at times simpler, more natural explanations. By using the intellect that Freud was shouting about, humans could now make sense of their world without the need of a spiritual domain.

New ideas, however, that challenge the established frame of thought, are "never" accepted with open arms. Even within the religious domain, new ideas have been traditionally received as heretic and schismatic (e.g. Lutheranism or Calvinism), leading at times to dramatic social unrest – the same of course can be said to a degree for science; for example the paradigm-shift of the seventies that led to the division between qualitativists and quantitativists. Moreover, when these ideas stem from an external system (as is the case with science vs. religion), not only do they tend to be seen as dangerous, but also as illegitimate.

I do not believe that all this resistance is caused by an inherited narrow-mindedness of the human species. I can, however, identify three main possible reasons for such an attitude. First, a well-established, broadly-accepted system tends to provide stability and safety, even at the artificial level of habit or custom. I do not consider, however, these properties sufficient to generate such levels of resistance or hostility to anything new.

After all, the ordinary believer or the naive scientist appear to be more easily swayed than an established theologian or an academic professor.

The second reason could be that the proponents of the old system may truly believe that it is the right system to adopt. For example, the Christian doctrine is based on principal moral codes that arguably enhance the well-being of the believer and regulate a social order of harmonious coexistence. Should this be the case, I can see why one would be at least reluctant to accept anything else.

The final reason of friction could relate to the notion of power. As religion was losing the argument with science on many fronts (see for example the famous 1860 Huxley-Wilberforce debate over the theory of evolution – Brooke, 1991 – also of interest is Andrew White's 1896 [1993] book on the "warfare" between science and Christianity), it was losing its influence over the people or the state, or in other words, it was losing its long-established power (and potentially its wealth and influence). Religious leaders were therefore left with two viable options: either endorse the scientific ideas (as appears to be the course followed by mainstream Protestantism – Argyle, 2000) by declaring them compatible with religion, or to fight them ferociously and dismiss them as dangerous and false (as was initially the case with Catholicism and is still the case with some fundamental Christian sects – Harris, 2002; Noll, 2002; Numbers, 2002). Either approach allows for the potential of the "old" system to maintain or re-establish its power.

I have sidetracked somewhat from my initial argument, so I would like to return to it now. Science therefore tended to challenge the religious order of things. As psychology moved more and more into the scientific domain, it had to adopt a scientific philosophy towards life. It seems inevitable to me that this move would gradually increase the tension between the discipline and religion, thus eventually leading to the consequences I describe above. That said, I would suggest that this course of events was a necessary

one. Psychology would have had at one point or the other to renounce its past in order to allow itself to be reborn to a new identity and establish itself as a true scientific enterprise.

INTERIM SYNOPSIS

The psychology of religion began its life as a promising area of psychological inquiry as it blended the traditional scope of psychology with modern scientific methodology. Early thinkers, like Hall and James, presented the theoretical and the empirical foundations of this new science and motivated researchers to enter the field. As interest increased so did the pluralism in thought. Freud's theories delivered a catalytic blow to the area and contributed to its decline.

Undoubtedly, during the first half of the twentieth century, the relationship between psychology and religion has had a rough ride. This appears to have been caused mainly by the attitudes of the psychologists, who (a) because of their convictions did not view religion as an important area of study; (b) in their attempt to establish scientific status, dissociated themselves with anything that resembled philosophy; and (c) through their views, had created a negative image of psychology in religious circles. Although these reasons are presented here in the era when they first became most noticeable, it has to be said that to a certain extent and in certain sets they may still be valid today.

THE "NEW" PSYCHOLOGY OF RELIGION

THE LATER YEARS OF THE AFFAIR

Between 1930 and 1950 research in religion was virtually extinct. However, a change was about to take place. In the fifties, after almost eighty years of life, modern psychology had come of age (Gross, 1995). The burden of proving itself appears to have been lifted from the shoulders of the new recruits, and psychology now generally tended to be seen as a true science. Although Behaviourism still held strong, its influence was rapidly declining as psychologists began reacting to its dehumanising and mechanistic portrayal of the individual (Graham, 1986; Leahey, 1987). Political and social phenomena, like the Holocaust, the Cold War, and the American civil rights movement, as well as scientific advances, ranging from linguistics to electronics, became food for thought for the young psychologists, and it was not long until new paradigms, like cognitive, humanistic, and social psychology, emerged (Connolly, 1999). Free from the ghosts of the past and with new horizons to explore, many psychologists shifted from the saturated, anachronistic study of behaviour back to the study of the mind (Wulff, 2001). Consequently, religion became once again an interesting topic. If I were to identify a single individual that promoted this shift of interest back to religious matters, it would probably have to answer to the name of Gordon Allport.

GORDON WILLARD ALLPORT (1897-1967)

Allport – considered by many the founder of humanistic psychology (Nicholson, 1997) – was born in Indiana (US) and studied philosophy and economics at Harvard. However, it was his encounter with Freud that motivated him to obtain a PhD in psychology (Allport, 1966). Besides his personal interest in religion – he considered himself a deeply religious person and he was an active member of the Episcopal Church – his academic interest was in part fuelled by the man whom he succeeded in the chair of

psychology at Harvard University, none other than William James. Allport was greatly influenced by his predecessor's ideas about religion. Although his main interest was in personality, religious issues appear in a number of his publications, as he viewed religious sentiment as a core component of personality. Evidence of his psychological interest in religion is found in the themes of his annual sermons at Harvard Appleton Chapel (given between 1932 and 1966), which included topics in the psychological roots of religion, the psychology of prayer, religious doubt, and so forth (Vande Kemp, 2000). It was, however, the publication of his book "The Individual & his Religion" in 1950 – which was based on his 1947 Lowell Lectures at Boston University, and the 1949 Merrick Lectures at Ohio Wesleyan University – that signified the beginning of a new era in psychological religious research.

Allport's interest lies in understanding the way religion integrates with personality and how this integration affects the psyche of the individual. In his words:

> I am seeking to trace the full course of religious development in the normally mature and productive personality. I am dealing with the psychology, not with the psychopathology of religion [...] Many personalities attain a religious view of life without suffering arrested development and without self-deception. (1950, p. viii)

Like James he too believes that the personal or subjective aspects of religion are the most important to the individual, since as he says, although religion may indeed be a function of social stability, he doubts anyone is religious for such reason. He accepts in principle James's definition of (personal) religion and he uses it as the basis to build up his ideas about religious development, which he calls the *religious quest*. Unlike James who viewed religious development as essentially a random process that may or may not occur in the life of the individual, Allport sees it as a process that is in part biologically determined, and as such always happens to every person. By exhibiting this

characteristic, religion is a fundamental "department of personality" with a pervasive structure capable of giving to the individual "meaning and peace in the face of the tragedy and confusion of life" (p.159).

For Allport, there are five major forces, which collectively he calls the *religious sentiment*, that shape the religion and its development in each person. The first is *organic (viscerogenic) desires*, by which he means the need for safety, sex, rest, nourishment, etc. For example, he sees prayer as an expression of desire. He also suggests that when desire is at its most intense stage, which is usually the case during times of crisis, people tend to become (more) religious or express themselves in more religious ways.

The second force is *temperament*. This is what was traditionally understood that personality was (for example a person could have a melancholic, sanguine, outgoing, etc., temperament). The notion of this factor also incorporates the characteristics James had assigned to his two basic types of religious individuals. The kind of temperament one possesses as well as the way it prevails in them, biases, according to Allport, their religious preferences, i.e. what kind of religion they are more likely to adhere to and in which way they will practise it.

The next factor involves the *phylogenic desires* of the individual. These are higher order needs, or as he says, spiritual values, like the need for good and right, for beauty, for truth, and so forth. These values gradually develop as the person matures and their direction depends on the sociocultural environment and the educational levels of the individual, and at the same time on the development of their personality and sense of the self. Allport claims that "all religion [is] motivated by the individual's desire to conserve [these values]" (p.17), with God being "the final value required to explain and to conserve all other values of selfhood" (pp.16-17).

Pursuit of meaning is the next force that shapes religion. Humans have the innate need to make sense of their world. Religion, says Allport, satisfies this need by providing explanations that have "logical simplicity and serene majesty" (p. 19). However, because humans possess different levels of intellect and reasoning, they tend to either absorb part of that system of thought, or interpret it in ways that make sense to them.

The final force is *conformity to culture*. Religion and culture are two highly interwoven systems. No culture exists without a form of religious system, with its own myths and rituals, and any change in the latter will cause an alteration of the former. Members of any given culture need to conform to its religious practices, not only so that they can maintain their status in that system but also for the culture to be sustained. Nevertheless culture, and thus religion, evolve, because this conformity is not absolute, an exact replica of the previous generation's practices, but is rather adjusted so it can provide significance to the life of each individual.

From the above it becomes apparent that although religious sentiment consists of these five specific components, according to Allport, the development and interplay of these forces vary between individuals, and as a result religious sentiment varies too. Therefore, the religious quest of each individual is unique. However, since this sentiment is partly biologically-bound, with the use of psychological knowledge, we are able to suggest general phases it will pass through during the different stages of life. For example, an infant, that does not possess a concept of the self (according to Allport), is not expected to have developed any spiritual values, which are more likely to become salient during early adulthood, especially if the individual is exposed to a higher education environment. As an extension, religious quest passes through different phases as it matures within the life of the individual. So, for example, a child is more likely to fear punishment from God, and see Him as a projection of their father (which appears to echo Freud's words), rather than the ultimate source of good and moral values.

This childlike religion, which Allport calls *immature* (and later *extrinsic*), serves as the means to self-serving goals towards self-comfort, self-interest, and self-justification, and it is characterised by narrow-mindedness, and superstition. As religious sentiment develops it is involved with different stages of reasoning and doubt that lead to a *mature* (*intrinsic*) orientation of the religious quest. At that state, the quest is critically conceived and articulated, and it becomes the end in itself, a direct approach to God. It is no longer the servant to one's needs, but rather the master of them, pulling them towards the future and using them to search for meaning and self-actualisation beyond mere self-interest. Mature religion therefore is the ultimate motive, and the more mature a person becomes the more their life and behaviour will be guided by their religion.

There is a twist in the above story though. Since, according to Allport, the religious quest of each individual is unique, not everybody ends up with a mature religion, either because they do not wish to (as the immature form serves their needs well enough) or because they are not capable of doing so (because their religious sentiment does not reach the necessary stage of development). Some people remain childlike and so does their religion. Allport, however, is not judgmental, as he says that "how the individual justifies his faith is a variable matter, and the certitude he achieves is his alone" (p. 159). He concludes his book with the remark that what one needs to remember is that religion is an individual's "ultimate attempt to enlarge and to complete his own personality by finding the supreme context in which he rightly belongs" (p. 159).

CRITIQUE ON ALLPORT

Allport's theory has had a unique contribution to the psychology of religion. He was the first to propose that religion originates from the interplay between feeling and reason. One constantly strives to make sense of the crises in one's life, and in doing so one shapes one's religion. Also unlike James's general yet static approach, and Freud's or Jung's abstract interpretations, Allport's theory was the first to have very specific components that are well integrated with modern psychological discourse and practice.

This makes his ideas easily operationalised and empirically testable. And that was exactly what the psychology of religion needed up to that point to be able to begin producing "proper" scientific research en masse (Argyle, 1958). As I will discuss in the next chapter, psychologists did capitalise on this opportunity resulting in a great proportion of psychological research on religion (including this thesis) being based on questionnaire measurements that derived from Allport's ideas.

Allport, however, in my view was a romantic. He did not see anything bad in religion. Even the immature forms of religion served their valuable purpose of providing the individual with the essential motives he or she needs to live their life the best way it makes sense to them. Not long after he had published these ideas, Allport was faced with a set of evidence he could not comprehend. Allport was puzzled by findings that suggested that very religious people tended to exhibit rather negative social attitudes, namely regarding prejudice and discrimination (e.g. Adorno et al., 1950; Allport, 1955). In the next chapter, I will discuss how he went about operationalising his theory, primarily in an attempt to study this relationship.

Furthermore, according to Allport's theory, all humans are religious. No person exists without religion, as no person exists without personality. Atheists, agnostics and Humanists are nothing more that "reactive doubters", with deeply religious concerns. As he says they are "reacting against the intellectual slavery of an idea" and their "negativism often pertains to specific content rather than to basic values" (p. 117). This argument makes perfect sense within the premises of his theory, but when it is addressed through studies it becomes problematic. As I will show in the next chapter, researchers have used measurements from this theory indiscriminately on their subjects, while others (including me) have pointed out that this is a fallacious practice that produces non-comparable results; yet others suggested amending the scales to broaden their applicability.

THE PSYCHOLOGY OF RELIGION IS REBORN

Since the publication of Allport's book, research in religion has been following a steady yet accelerating growth (Belzen, 1997; Dein & Loewenthal, 1998; Paloutzian, 1996; Spilka & McIntosh, 1996). I am not certain whether Allport through his ideas was an instant catalyst to that renewed interest – although evidence suggests that he was definitely at least a considerable influence – or whether he was simply the first to express that interest publicly. Whichever the case, his book marks the rebirth of the psychology of religion. As a result, in 1959 the "Review of Religious Research" journal was established, and in 1961 the "Journal for the Scientific Study of Religion" was born (Gorsuch, 1988). Slowly, psychologists (and at the same time other social scientists) started putting religion back into their discourse.

Rollo May (1957), for example, suggests that religion functions at two different levels on the individual. At one level it fosters weakness and dependency through blind obedience to a supernatural power, while at another level, by promoting self-realisation, it is a source of strength. Abraham Maslow (1964) incorporates religion into his humanistic theory of personality through the satisfaction of hierarchical needs. At the top of Maslow's hierarchy lie the self-actualised individuals, the *peakers*, who among other things tend to have peak religious experiences, which they use to enhance their personal growth (his ideas heavily draw from James's concept of religious geniuses).

This renewed relationship between psychology and religion was not free of problems. The shift of interest back to religious issues brought with it new criticism, this time around theoretical and methodological problems. The fact that the individual's religious beliefs have a personal, subjective, largely unobservable, "otherworldly" character (Batson et al., 1993), seems to suggest that they are intrinsically incompatible with empirical research. Indeed, theologians, notably Karl Barth (1961), claimed that since God is totally "other", neither God nor religious behaviour can ever be valid objects of

empirical observation.

In order to resolve this problem, psychologists proposed that either we have to accept that religion can be reduced to empirical observations, or that, at least an aspect of religion (viz. religious experience) is not testable, and thus we should ignore it and focus on religious behaviour instead (Idinopoulos & Wilson, 1998; review by King, 1991; King & Hunt, 1990; Warren, 1993). This problem plagued psychologists interested in the study of religion mainly in the years between 1950 and 1970, and seems to have created serious theoretical friction between the two camps.

The former school of thought was laughed at by the empiricists who argued that what they were doing was not science and since they were claiming to measure elements that were unobservable, and thus empirically unmeasurable, their findings were neither scientifically interesting nor valid. On the other hand, the empirical approach was challenged by the phenomenologists, in part through the argument that by only measuring the observable character of religion and ignoring important and complex religious aspects, they were not measuring religion at all, and once again their findings were viewed as meaningless (for more on this debate see Hanford, 1975; Reich, 1993a; 1993b; Warren, 1993). This unsettled anomaly seems to have dissuaded psychologists from entering the field, and for a long time kept research in religion outside the mainstream psychological circles.

In the mid seventies, and after more than twenty years of bitter dispute, the problem seems to have been finally resolved. This was possible because of a radical paradigm shift that had occurred in science. Through new scientific discoveries, especially in physics, in the atmosphere of the postmodern philosophies of Foucault, Bourdieu and the rest, and the ideas of Kuhn and Popper, science redefined itself and its view of the world (Clayton, 1997). Psychologists, like other scientists, realised that although unobservable entities are not empirically verifiable, their impact on society or the

individual is. Therefore, by measuring their expressions or their symptoms, psychologists, with a certain degree of error, could infer to the existence and the properties of those entities, and generate theories about them (Hood et al., 1996). As Karl Popper comments "theories are our own inventions; they are not forced upon us" (1965, p.117).

These new ideas were an epiphany for the psychological world, and not only boosted research in religion, but also helped other areas, like social psychology, reinvent themselves (see also Carrette, 2001; O'Connor, 2001). Psychology of religion was now becoming a stable, promising, and significant field. Consequently, in the mid seventies the American Psychological Association formed *Division 36* in order to promote psychological research in religion and spirituality. During this period two new international journals were established, viz. the "Journal of Psychology & Theology" in 1973, and the "Journal of Psychology & Christianity" in 1982. Finally, in 1994 the fourth edition of the Diagnostic & Statistical Manual of Mental Health Disorders (DSM-IV) (American Psychiatric Association, 1994) included for the first time a code (v62.89) addressing religious and spiritual problems, while in Britain the Royal College of Psychiatrists (2002) set up in 1999 the "Spirituality & Psychiatry Group" to explore such issues and their relevance to clinical practice.

The nineties saw a real explosion of published material in the psychology of religion, and an average publication rate of fifty-five articles in international psychology journals per year (Dein & Loewenthal, 1998). In 1991 the "International Journal for the Psychology of Religion" was established in order to promote psychological studies of religious processes and phenomena in all religious traditions, and it has received articles not only from psychologists, but also from theologians, religious leaders, and even neuroscientists. Finally, in 1998, three of the leading British psychologists in religious research (Simon Dein, Kate Loewenthal, and Christopher Lewis) founded the journal of "Mental Health, Religion, & Culture" in order to provide a "point of reference for the

growing number of professionals and academics working in the expanding field of mental health and religion" (Mental Health, Religion, & Culture, n.d.).

CONTEMPORARY PSYCHOLOGICAL THEORIES OF RELIGION

Before I conclude this chapter, which is dangerously becoming an everlasting story, a thesis in its own right, I would like briefly to present two of the latest psychological theories in the area.

The first was developed by Michael Persinger, a Canadian psychologist (1987). With the use of brain-scans, Persinger realised that religious experiences, both visual and auditory, tend to activate the same areas in the temporal lobes of the brain. By experimentally reversing the process, he found out that the activation of these areas, through external electric stimulations, tended to produce subjective experiences of a profound religious character. He went on to identify the natural ways through which such activation can occur. Indeed, he did find that lack of oxygen, yogic breathing, fasting, and various stresses, like anxiety and intense emotional states, were more likely to activate these regions of the brain and thus produce religious experiences. He concludes that religious experiences can be explained as unconscious responses to conscious processes stimulated by neurophysiological factors.

The second theory was proposed in 1995 by John Schumaker, an Australian clinical psychologist. According to Schumaker, religion is a consequence of the evolution of human high cognitive abilities. He claims that at one point in our evolution "we became capable of recognising, and being negatively affected by, disorder" (p. 35). In order to cope with such capacity, the brain developed the ability to process selectively and store information into more acceptable and meaningful data. Thus, for the first time a species evolved capable of regulating its own reality. At the individual level this ability of *reality distortion* is manifested through psychopathology. At the collective level, however, it is expressed through religion. Religion therefore is an evolved system of

reality-distorting ideas and practices that serves as the ultimate regulator of normality.

The outlines of new paradigms, ideas, and findings are coming out in the field in a steady flow. During the last two years, my ScienceDirect™ database-alert has been revealing an average of twenty or so international publications per month in the psychology of religion. After a century of turmoil, denial, rejection, and luminous ideas, the psychology of religion has emerged strong and richer, and is now establishing its prominent and promising place among the mainstream areas of psychology. If it succeeds in playing its constructive role well, it may provide a unique and valuable contribution to psychological science by leading it, as Lewis Andrews (1995) puts it, "to apply eternal wisdom to the problems of emotional distress and create a culture that considers universal and transcendent truths as a must for the refinement of genuine personal growth and independence" (p. 79).

CHAPTER SYNOPSIS

In this chapter, I have presented, alongside a rather simplified historical review, the theoretical foundations of the psychology of religion, the main challenges the field has faced through the years, and the ways they seem to have been resolved, leading to its present status.

When modern psychology was born, religion appeared to be a legitimate area of inquiry. Between 1879 and 1902, psychologists, especially in the US, like Hall, Starbuck, and Leuba initiated the interest in religion. In 1902, James set the foundations of the field, and the influx of new ideas began. Freud's theories, with their provocative and antireligious sentiment, marked the end of the first historical period of the field sometime in 1930, leading to a dormant phase which lasted approximately for twenty years. Scientific and sociocultural developments led to the rebirth of the field marked

by the publication of Allport's theory in 1950. As interest in the area grew once again, new issues arose around the legitimacy of the scientific study of religion. They were finally resolved partly with the aid of postmodern thought. The psychology of religion continues to grow and expand, with a now-burgeoning literature, slowly becoming a promising area in psychological enquiry.

CHAPTER IV

PSYCHOLOGICAL CORRELATES
OF RELIGION

"In God we trust, all others must give data"
(anon.)

CHAPTER AIMS & ORGANISATION

So far I have almost exclusively discussed theoretical approaches to the psychological study of religion. It is one thing, however, to establish a viable basis for a relationship between psychology and religion, and entirely another to justify the need for research into that relationship. Hereinafter, by presenting some of the fundamental psychological aspects of religion and surveying the research literature, I am exploring the psychological importance of religion. Specifically, the chapter focusses on the four psychological areas upon which this thesis attempts to address the importance of religion. These areas are: (a) general personality, primarily through Eysenck's traits theory; (b) mental health, in particular schizotypal personalities, which form the main psychological correlates of religion in this thesis; (c) aspects of identity; and (d) Bowlby's attachment theory of human bonding. For each of them, initially an overview of the concepts they involve is presented, followed by their relationship with each other and particularly with religious orientation – expressed through Allport's theory – as it

has been measured and identified through empirical research findings. Furthermore, based on these findings, I establish the predictions of the thesis (presented in boxes throughout the text), which were tested by the questionnaire study, and in part shaped the focus of the interview study discussed in the following chapters. At the end of the chapter, three possible unified models are presented that combine religiosity, variables from all the four areas above, plus additional sociodemographic measurements.

Before I home in on all this though, I discuss two things. First, I briefly introduce the reader to the reasons why religion should be seen as an important psychological variable, in the hope that these reasons will become apparent as the chapter develops. Second, I discuss the two empirical approaches to religiosity – both of which were based on Allport's theory – used in the questionnaire study of this thesis, and served as the conceptual basis of the interview study protocol.

RELIGION AS AN IMPORTANT PSYCHOLOGICAL VARIABLE

Religion, besides its obvious historical association with humanity, appears to have at least three distinct psychological features: *uniqueness*, *complexity*, and *diversity* (Batson et al., 1993). As these authors suggest, religion is unique, because it involves beliefs and experiences that can dramatically affect the individual's views of themselves and of the purpose and meaning of their life. In other words, religion is perhaps the only human concern that addresses and potentially transforms the core spiritual and existential components of one's life. Religion is also a complex psychological variable. It seems to involve and utilise an intricate web of emotions, beliefs, values, activities, and psychosocial constructs. However, it goes beyond this; by fusing all those psychological components it can provide the individual with a sense of meaning, integrity, and identity. Finally, religion is diverse. At the institutional level, religious traditions exhibit such a variety of features that at times identifying any commonality between them seems

impossible. In the same sense, personal beliefs also seem to differ between people often, as Allport advocates, immensely.

These armchair theoretical issues do suggest that religion plays a sui generis, composite, and diverse role in the psychosocial world of the individual. At the empirical level, however, for religion to be considered an important variable, it would have not only to demonstrate the above characteristics unambiguously, but also to exhibit a distinct, consistent, and noticeable psychological effect. Although there is no doubt in my mind that this is so, by discussing in this chapter the research topics that are of interest to this thesis and the main findings that have emerged from them, I let the reader decide for themselves.

DIMENSIONALITY & ORIENTATIONS TO RELIGION

ALLPORT'S EMPIRICAL APPROACH

Religious orientation has been a focal point in the psychology of religion for almost forty years. Although Peter Hill and Ralph Hood (1999) present no less than 129 measurements of religiosity, by far the most frequently used one is arguably Allport's *Religious Orientation Scale* (Allport & Ross, 1967), most commonly known as *Internal/External Scale* (I/E). The scale is conceptually based on Allport's theory of religion, which was discussed in the previous chapter. As such, it attempts to measure the two components of Allport's religious piety, viz. the *intrinsic* and the *extrinsic* one, through a self-report questionnaire measurement (detailed descriptions of the scale and its psychometric properties are given in the next chapter).

CRITIQUE ON ALLPORT'S APPROACH

Despite its common use, the scale has been repeatedly criticised for not being much of a clear, flawless measurement (Hunsberger, 1995; Kirkpatrick, 1989; Kirkpatrick & Hood, 1990, 1991). Researchers have disagreed on empirical grounds with the way Allport operationalised and measured his variables. The idea of religious orientation being a unidimensional concept with extrinsic-intrinsic as its polar points, as it was initially conceptualised, had been abandoned already by Allport, initially in favour of a two-dimensional model. However, more recently large-N studies suggest that Allport's model behaves better as a three-dimensional one with extrinsic orientation consisting of two separate factors, subsequently termed *social extrinsic* and *personal extrinsic* orientations (Genia, 1993; Gorsuch & McPherson, 1989; Kirkpatrick, 1989). Although this was good news for some researchers (e.g. Masters, 1991), others saw it as evidence against the validity of Allport's model. For instance, Kirkpatrick and Hood (1990) argued that the appearance of a new factor, which was not predicted by the initial model, suggests "a psychometric deficiency of the scale, not [...] a substantive research finding" (p. 448).

I do not entirely subscribe to this last view. It is true that Allport's model did not predict a third orientation, but at the same time it did not exclude the possibility of the existence of such orientation. Where the model appears weak is not in the way it was conceptualised, but rather in the way it was initially and until the eighties empirically tested, i.e. through simple correlational studies. Indeed, with the use of more sophisticated statistical techniques (such as Factor Analysis), researchers have subsequently managed to show that the three-dimensional model possesses sound psychometric properties (e.g. Maltby, 1999a; Maltby & Lewis, 1996). However, I would agree with Kirkpatrick and Hood that in order to capture the richness of the dimensions of religious orientation, psychological research should attempt, by steering away from correlational or simplified regression-based methodologies, to develop more theoretically and psychometrically sophisticated models – I am revisiting these issues

later in this chapter.

Another criticism stems from Allport's theoretical supposition that all humans are religious in one form or another. Allport himself was the first to realise through his studies that there were individuals whom he was unable to classify as having either an intrinsic or an extrinsic orientation towards religion – he termed these people *indiscriminately nonreligious* (Allport & Ross, 1967). This led him to caution future researchers by pointing out that one cannot be religiously orientated unless one sees oneself as being religious in the first place (see also Donahue, 1985). This warning was recently reiterated by David Wulff (1997) when he said in a simple statement that "these scales can be used meaningfully only with religious subjects" (p. 236). Surprisingly, many if not most studies are still using Allport's scales indiscriminately on religious and nonreligious participants. Their underlying assumption is that religious orientation runs on a continuum from nonreligious to highly religious individuals (e.g. Kirkpatrick & Hood, 1990) – a point that relates back to the discussion on how one defines religion and its products.

Accepting for the moment that indeed religious orientation covers religious and nonreligious people alike, then a major problem arises since the questionnaire measurements these studies tend to utilise were not developed for use on nonreligious individuals. In fact, there are items in those measurements that appear to be totally inappropriate for nonreligious people, e.g. "I go to church mostly to spend time with my friends" [item 11] or "I pray mainly to gain relief and protection" [item 6]. Moreover the scales were not only developed to be applicable to religious people, but be applicable specifically to Christians. Indiscriminate use of these scales runs the risk of them being used on adherents of other religious faiths, which not only seems meaningless, but could also be insulting in some cases. Consequently, all this continuous misuse of Allport's scales may have led to grossly distorted or misleading results in the psychology of religion.

Despite the criticism, Allport's approach has to be acknowledged for its usefulness in helping psychologists understand the association of religion with some other aspects of behaviour and thought. As Allport and Ross (1967) state: " to know that a person is in some sense 'religious' is not as important as to know the role religion plays in the economy of his life" (p. 442).

> In this thesis, an attempt was made to investigate to what extent Allport's dimensions could be recovered from the data.[2]

BATSON'S EMPIRICAL APPROACH

Daniel Batson is an American psychologist, currently at the University of Kansas in Lawrence, with a PhD in theology and psychology, who is considered by many the leader of the experimental method in the psychology of religion. In an attempt to validate Allport's scales conceptually, Batson realised that those scales had neglected fundamental aspects of Allport's theory (Batson, 1976). Allport constantly referred to the individual's religious development as a *quest* (cf. Jung's *hero's quest* discussed in the previous chapter). It is this readiness to doubt and self criticism that leads to the mature form of religiousness. As Allport himself puts it: "the mature religious sentiment is ordinarily fashioned in the workshop of doubt" (p. 83). However, Batson noticed that nowhere in Allport's scales was this idea of doubt communicated. With that in mind, he proposed a new empirical arrangement of Allport's theoretical constructs.

Initially, he preserved extrinsic orientation, although he renamed it *external* or *means* to stretch its use by the believer towards self-serving goals. However, subsequent empirical evidence made him realise that his external dimension was not measuring

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[2]

In this chapter, the predictions, hypotheses, or exploratory goals of the questionnaire study of this thesis will be presented in this format.

extrinsic religiousness, but rather an aspect of intrinsic religion, that of the social influences on the development of a mature religion. He then broke down the intrinsic orientation into two unrelated components: one he called *internal* or *ends* orientation (similar to the intrinsic one), which refers to "the degree to which an individual's religion is a result of internal needs for certainty, strength, and direction" (Batson et al., 1993, p. 169), and another one he termed the *quest* dimension to address those theoretical issues above that Allport had failed to incorporate in his measurement. Batson defines the quest orientation as "the degree to which an individual's religion involves an open-ended, responsive dialogue with existential questions raised by the contradictions and tragedies of life" (Batson et al., 1993, p. 169). He claims that individuals who are high on the quest dimension, possess the ultimate, most mature form of religion, a form that can lead to "universal compassion" (Batson et al., 2001). Batson's *Religious Life Inventory* (RLI) (Batson & Schoenrade, 1991a, 1991b) is arguably the second most commonly used measurement of religious orientation.

Kenneth Pargament (1997) looked at Allport's and Batson's constructs and realised that the means and ends components seemed independent from the primary dimensions of religious orientations (Table 4.1). According to his categorisation the two approaches above address different, yet overlapping elements of orientation. So for example, Batson's external religion taps mainly into the intrinsic-means and partly the extrinsic-ends categories, and that is why it tends to relate more to the intrinsic rather than the extrinsic orientation.

Table 4.1. Religious orientations as means and ends of significance (Pargament, 1997, p. 63).

	Religious orientation		
	Intrinsic	*Extrinsic*	*Quest*
Means	Highly embedded in life	Peripheral	Active struggle
	Guide for living	Lightly held	Open to question
	Convincing	Passively accepted	Flexible
		Compartmentalized	Complex
		Sporadic	Differentiated
Ends	Spiritual	Safety	Meaning
	Unification	Comfort	Truth
	Compassion	Status	Self-development
	Unselfish	Sociability	Compassion
		Self-justification	
		Self-gain at others' expense	

CRITIQUE ON BATSON'S APPROACH

As perhaps it was expected, Batson's approach was criticised, mainly by the advocates of Allport's scales. Consequently, the focus of the criticism has been on the quest dimension. Michael Donahue (1985) argued that although doubt was indeed an element of Allport's religious sentiment, it was conceived as part of a transitional phase of religious development. Doubt will gradually fade and eventually it will lead to the mature form of religiosity, i.e. the intrinsic orientation, or for that matter the internal one. Therefore, the quest dimension should be seen as a stage of religious sentiment (not as religious maturity), through which an individual needs to pass in order to acquire a mature orientation. There is some empirical evidence supporting this claim showing that in Christian samples the intrinsic orientation tends to increase with age, while quest tends to decrease (Hood & Morris, 1985; Watson et al., 1988). However, Batson et al. (1993) in defence of their scale present studies that have actually shown that mean scores in the quest orientation tend to be similar between young and old Christian adults (late teens to 60 year olds), or in certain instances be even higher in the latter group.

At the same time if Donahue's thesis is correct, one expects quest and intrinsic to have a relatively high inverse correlation. However, although the inverse nature of this

association is shown in almost every published study that compares the two scales, the magnitude of this relationship has been very low to nonexistent (for an overview of results see Batson et al., 1993), and possibly curvilinear in nature (Burris, 1994).

In fact, quest tends not to have an important (linear at least) relationship with any of the rest of the religious orientation scales discussed here. Although this is good news to Batson's ears, as he takes it to suggest that quest is an independent component of religiosity, for others it is evidence that the quest scale does not measure anything exclusively religious, but a general tendency to questioning, or "sophomoric doubt", or even agnosticism (Burris et al., 1996; Donahue, 1985). Naturally, Batson and his followers addressed this criticism in a series of studies (Batson & Schoenrade, 1991a; Batson & Ventis, 1985; Maltby & Day, 1998), through which they showed that although they could not exclude the possibility of the above claim, their evidence suggests that there is a significant difference in the quest behaviour between not only religious and nonreligious people, but also in Christians between charismatic and mainstream denominations – with the former in both instances having higher scores on the scale.

Although, or perhaps because, the issue is far from being resolved, and as Wulff writes "clarifying and assessing the quest orientation is surely one of the psychology of religion's most urgent tasks" (1997, p. 243), it is common among researchers who are not "politically" affiliated to any of the two opposing camps to use both approaches when studying correlates of religious orientation.

It was predicted in this thesis that Batson's and Allport's measurements would show an obvious relationship. Specifically, intrinsic orientation would relate to both internal and external, extrinsic would only show a low association with external, while the quest orientation would be largely independent from all the rest, showing a negative low association with intrinsic. The presence of nonlinear relationships among the scales was also explored.

PSYCHOLOGICAL CORRELATES OF RELIGION

RELIGION & GENERAL PERSONALITY

<u>PERSONALITY: AN OVERVIEW</u>

Personality psychology has its focus on individual differences and attempts to understand the person "as deeply, completely, and precisely as possible" (Shoba & Mischel, 1996, p. 425). The concept of personality is one of those elusive terms, like religion, that can have a plethora of meanings depending on the context it is used. For ease of communication I will adopt Lawrence Pervin's (1993) operational definition, according to which "personality represents those characteristics of the person that account for consistent patterns of behavior" (p. 3).

Naturally what follows a pluralism in personality definitions is a pluralism in personality theories. Indeed, since the ancient Greek times a variety of approaches to personality have been put forward. Within the context of this thesis, I will dwell only in the realms of the *traits* approach, since according to Gerald Matthews and Ian Deary (1998) – who basically articulate what one notices through a literature review in the field – it is the approach that represents the current state of personality research. Primarily this is so, because unlike other approaches to personality, like the psychodynamic approach, or the humanistic approach, this one appears to have the highest empirical value, as it allows for the development of psychometric measurements that can readily assess its premises through empirical research.

Traits can be seen as the basic units of personality, the fundamental dispositions a person possesses that increase the likelihood of the manifestation of certain kinds of behaviour, for example being outgoing, impulsive, sociable and so forth. Once again within the traits approach, several theories have been proposed, notably those of Allport, Cattell, Costa and McCrae, Cloninger, Eysenck, and Zuckerman (for an overview see

Claridge & Davis, 2003, ch. 3; Matthews & Deary, 1998, ch. 1). In this thesis, I am focussing on Eysenck's theory, because my literature review indicates that it is one of the most commonly used ones in the psychology of religion.

EYSENCK'S TRAITS THEORY OF PERSONALITY

Hans Eysenck was born in Germany in 1916, but lived all of his adult life in Britain (he died in 1997). He held a PhD in psychology from the University of London, where he taught until his retirement. Eysenck developed part of his personality theory (Eysenck, 1964; 1967; 1970) while working with psychiatric patients at the Institute of Psychiatry in Maudsley Hospital, London. According to this theory, personality is the sum of potential or actual behavioural patterns (acts or dispositions) underpinned by a biological foundation – primarily based on neurophysiological functioning – and subsequently shaped by the environment. As such, personality develops through the interplay between cognition, character, temperament, and constitution or physiology.

These dispositions of personality, Eysenck claims, have a hierarchical arrangement based on levels of generality and stability. At the lowest, most specific, and least stable level he places *specific responses* to internal or external stimuli that can vary between and within each individual according to several factors such as the given situation, one's state of mind, the intensity and nature of the stimulus, and so forth. Specific responses can group into recurrent acts that form the next level of personality, occupied by what he calls *habitual responses*. As one moves to a higher level, acts and dispositions become more salient, more stable patterns start forming, and related collections of habitual responses give rise to personality *traits* (e.g. suggestibility, creativity and so forth). At the highest, most stable and most general level of Eysenck's personality hierarchy lie the *super-traits* or *types* or *dimensions*, which are broader dimensions of personality, composed by a specific combination of traits. It needs to be made clear that these dimensions of personality are assumed to be largely independent from each other and present in various degrees in each individual.

Initially Eysenck had identified two personality dimensions he called *neuroticism* and *extraversion*. Neuroticism indicates levels of emotional stability. It places people on a continuum from fairly calm, even-tempered, and stable to fairly emotionally unstable, moody, and anxious. Eysenck (1967) placed the biological basis of the neuroticism dimension on the responsiveness of the sympathetic nervous system. He claimed that individuals that score high on this dimension have a "sympathetic hyperactivity" that at extreme cases leads to a vicious circle, a positive feedback of nervous activity, through which a stimulus activates a sympathetic response, which in a highly neurotic person increases their susceptibility to further stimulation, which in turn activates the system even further and so forth. In other words, a neurotic person tends to respond to his or her own disposition toward panic or stress, rather than the cause that stimulates this disposition.

The extraversion personality dimension encompasses aspects of sociability, reliability, and liveliness. People are placed on this dimension on a continuum from quiet, calm and passive (introverts) to active, outgoing and impulsive (extraverts). Eysenck (1967) hypothesised that the biological basis of this dimension lie in the brain's capacity to inhibit (i.e. calm down) or excite (i.e. alert or wake up) itself as a response to a stimulus. In introverts, for example, this capacity tends to be of a low-inhibition, low-excitement nature, and as a result, when faced, say, with an embarrassing situation, introverts will not overreact but at the same time they will tend to remember it for much longer, and consequently learn to behave in a reserved, careful manner. The situation is reversed for extraverts. Recently there has been some evidence from EEG (electroencephalogram) studies that supports Eysenck's extraversion hypothesis (Knyazev et al., 2003).

Eysenck realised through his work in the psychiatric wards that a third dimension was necessary to explain the personality characteristics some of the patients he encountered exhibited (Eysenck & Eysenck, 1976). He termed this new dimension *psychoticism* to refer to an individual's disposition toward psychiatric anomalies. So a person high on

psychoticism tends to be insensitive, aggressive, and have odd manners, while on the other end of the spectrum one finds people who are soft-minded, prosocial, and empathic. Eysenck himself did not attempt to identify the biological bases of psychoticism, as he probably realised it would have been as a momentous a task as the identification of the origins of psychopathy – he cited however (Eysenck & Eysenck, 1976; 1991) a series of studies by third parties who offered a variety of explanations.

PERSONALITY & RELIGION

Although it may not come as obvious at first, the psychology of religion is well embedded within the psychology of personality. In 1969, James Dittes wrote a chapter in "The Handbook of Social Psychology" titled "Psychology of Religion", which to date is still highly respected. In it, Dittes presented the state of the psychology of religion at that time, expanding on both theoretical and mainly empirical approaches. In his discussion on religion and personality he states that "particular personality and motivational variables are implied by any theory or problem in the understanding of religion" (p. 636). If one were to pause and think for a while about at least the main theories of the psychology of religion, one would inevitably come to the same conclusion.

James talks about personality as having a prominent role in the person's religious experiences. For example, he says that his religious geniuses possessed what he calls a "heterogeneous personality", i.e. they exhibited rather diverse and intense personality characteristics, while the twice-born had also to experience a personality change for their new direction of religiosity to take effect. Freud's theory (or shall I say "theories") of religion also develops entirely within his personality theory, while for Allport, as discussed earlier in this and in the previous chapter, religiousness is a fundamental component of one's personality makeup.

Having clarified that religion and personality are expected to be related, the next perhaps

more intriguing question is of course in what way they are related. For Freud the answer is obvious: Religion is a universal neurosis, therefore it is bound to relate to neurotic personalities. However, in 1975 Hans Eysenck factor-analysed responses from a quota London-based sample of 368 adult participants on a number of questions covering social, economic, and political attitudes. His results indicated the presence of three higher-order oblique, yet highly independent factors. He termed these factors: general conservatism vs. radical ideology, socioeconomic conservatism vs. socialism, and tough-mindedness vs. tender-mindedness. The main items on the third factor included all his questions on religious attitudes, most questions related to permissiveness, and many questions addressing racism and reactionary individualism. According to Eysenck's model of social attitudes, individuals who are tender-minded (e.g. altruistic, non-prejudiced, compassionate and so forth) tend to be highly concerned with religious and ethical ideas. These ideas not only guide and shape their social attitudes, but also tend to act as barriers against the expression of sexual and aggressive impulses, which characterise tough-minded individuals. Another, yet compatible to the above, way this association has been interpreted is through the idea that tender-minded individuals may be more religious because of their tendency to be easily (socially) conditioned (Eysenck, 1998; Eysenck & Eysenck, 1985; Francis, 1992a).

It is worth mentioning here that in 1908 (1968), James had already suggested that a tender-minded individual would consider himself to be religious so long as he is "what is called a man of feeling", while a tough-minded individual would tend to be "irreligious" if he "prides himself on being hard-headed" (all quotes from p. 216). As tough-mindedness or for that matter tender-mindedness are the main building blocks of Eysenck's psychoticism dimension, it does not take a big mental leap to conclude that religiousness appears to be related to psychoticism. So what is what?

A large body of research has attempted to answer this question, and a representative sample of this kind of studies is shown in Table 4.2 (for a detailed overview see Francis, 1992c; Francis & Jackson, 2003; Saroglou & Jaspard, 2000). These studies suggest that both psychoticism and neuroticism may relate to religion. Similar results were obtained

with the use of the NEO Personality Inventory[3] (Kosek, 1999; Piedmont, 1999; Saroglou, 2002; Saroglou & Jaspard, 2000; Saroglou & Jaspard, 2003; Taylor, Douglas, & MacDonald, 1999; also of interest is Saroglou & Fiasse, 2003), or with the use of Eysenck's dimensions with Jewish (Katz & Francis, 1995) and Moslem (Wilde & Joseph, 1997) samples.

In addition, the work of the British psychologist Reverend Leslie Francis with clergy from various Christian denominations, reveals that they tend to have both lower psychoticism and neuroticism levels than the general public (Francis, 2002; Francis & Kay, 1995; Robbins, Francis, & Rutledge, 1997; Robbins et al., 2001). For Francis (1992a), however, the answer to the question I asked above is simple: "Psychoticism [and not neuroticism] is a dimension of personality fundamental to religiosity" (p. 645). Not everybody though seems to agree with him (see Berman, 1993; Ochs, 1995; Pfeifer, 1993). One of the latest examples comes from Michael Dunne and his colleagues (1997) who ran an eight-year follow-up longitudinal study in Australia with 6463 (at *T1*) and 4993 (at *T2*) Christian twins and found that although psychoticism was indeed an important dimension of religiosity, it was neuroticism that influenced the stability of religious practices over time.

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[3]

This is another commonly used inventory (developed by Costa and McCrae, 1992) based on the traits approach to personality.

Table 4.2. Summary of research on the relationship between religiosity and personality*

Study	Sample	Measurement of religiosity	Measurement of personality	Summary of results**
Francis & Wilcox, 1994	230 teenaged girls	freq. of prayer, freq. of church attendance	EPQ revised & short (EPQ-R-S)	P vs. prayer (-.17) P vs. church (-.26)
Hills et al., 2004	400 university students	internal/external/quest freq. of prayer, freq. of church attendance	Eysenck's Personality Profiler	N vs. Ex (.22) N vs. Q (.26) P vs. In (-.23) P vs. Ex (-.17) P vs. Q (-.21) P vs. Prayer (-.24) P vs church (-.24)
Joseph et al., 2002	180 community sample	internal/external/quest	EPQ	N vs. Q (.25) P vs. In (-.17) P vs. Ex (-.25) P vs. Q (.19)
Lewis & Maltby, 1995	164 adults	Francis Scale of Attitude Towards Christianity (FSAC)	EPQ revised	P vs. FSAC (-.34)
Maltby, 1999b	1,040 adults	intrinsic/extrinsic, freq. of prayer, freq. of church attendance	EPQ-R-S	P vs. In (-.26) P vs. prayer (-.23) N vs. Ex (.13)
Maltby, 1999c	331 university students	intrinsic/extrinsic	EPQ-R-S	P vs. In (avg. -.26)
Maltby, 1995	92 university female students	freq. of prayer, freq. of church attendance	EPQ-R-S	P vs. Prayer (-.33) P vs church (-.37)
Maltby & Day, in press	420 community sample	intrinsic/extrinsic	EPQ-R-S	P (-.66) negatively loaded on the same factor as In (.56); N (.80) loaded together with Ex-personal (.54) and Ex-social (.52)
Maltby et al., 1995	324 community sample	intrinsic/extrinsic, FSAC	EPQ-R-S	P (-.66) negatively loaded on the same factor as FSAC (.90) and In (.88)
Robinson, 1990	194 university students	intrinsic/extrinsic	EPQ-R-S	P vs. Ex (.25) N vs. Ex (.12)
Smith, 1996	191 pupils	freq. of prayer, freq. of church attendance	junior EPQ	P vs. Prayer (-.19) P vs church (-.20)
White et al., 1995	183 adults	FSAC	EPQ	P (-.73) negatively loaded on the same factor as FSAC (.73)

Notes:
* Only studies that used Eysenck's dimensions are presented. Only measurements or results relevant to this discussion are shown.
** Results are in values of Pearson's product moment correlation coefficients (*r*); only coefficients above |.10| are shown; E = Extraversion, Ex = Extrinsic / External, In = Intrinsic / Internal, N = Neuroticism, P = Psychoticism, Q = Quest.

> With all this evidence in mind it was predicted that neuroticism would tend to have a positive and psychoticism a negative, low to moderate, relationship with certain aspects of religiosity; psychoticism would be inversely related to frequency of prayer and church attendance.

RELIGION & SCHIZOTYPY

AN OVERVIEW OF THE CLASSIFICATION OF DISORDERS

The main reference for diagnostic criteria of mental disorders is the *Diagnostic & Statistical Manual* (DSM-IV) (American Psychiatric Association, 1994), currently in its fourth edition[4]. In this manual, disorders are classified into five high-order axes. To allow for a broad and detailed classification of a condition, a person is rated on information in all five axes (*multiaxial classification*).

Axis I contains all symptom based mental disorders (religious and spiritual problems are coded here); personality disorders and mental retardation are classified on Axis II. This distinction was deemed necessary to allow for any long-term disorders to be taken into account alongside the presence of any current conditions. Axis III contains general medical conditions, which again can be used to inform the pathogenesis and the treatment of mental disorders. In Axis IV psychosocial and environmental problems are listed. These include negative life events, various stressors, educational problems, lack of social support or personal resources, and so forth. Finally, on Axis V the person's global adaptive functioning is coded. Areas included here are occupational functioning, social relationships, leisure activities, and so forth.

Another manual that is also widely used is the *International Classification of Diseases*

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[4]

The latest incarnation of DSM appeared in 2000 and it is called DSM-IV-TR, in which only the writing style was revised while the content remained identical to the fourth edition.

& Related Health Problems (ICD), published by the Word Health Organisation (1992) and currently in its tenth revision. It was designed as a manual to facilitate systematic collection of mortality and morbidity data and to allow for geographical and temporal comparisons. Because the ICD was designed for comparisons at the population level, it tends not to provide the detailed information needed for a clinical assessment at the level of the individual. This manual has a similar structure to the DSM, for example it is also multiaxial, covers essentially the same number and type of mental disorders, although it may group them in different ways and refer to some of them with different names – for example the *obsessive-compulsive* personality disorder of the DSM is termed *anankastic* in the ICD. It also puts a greater focus on physical illnesses.

Generally, the two manuals differ very little in respect to their diagnostic criteria. For example, Ekselius and her colleagues (2001) assessed the prevalence of personality disorders in a random sample of 557 adults from the general population in Sweden, by using the classification criteria of both DSM-IV and ICD-10. They found that the two manuals had a very high degree of concordance (average Cohen's Kappa = .97), both putting the prevalence of personality disorders at 11%. These results suggest that the two manuals are highly compatible, and the decision on whether to use one or the other mainly rests on whether the interest is in micro-assessment (i.e. at the individual or small-scale level) or in macro-assessment (i.e. at the population level). Since the mental health measurement used in this thesis, as well as almost all other related measurements in the reviewed literature, are primarily based on the DSM classification, the ICD is not considered in any greater detail than above.

PERSONALITY DISORDERS OF THE DSM-IV

According to the DSM-IV, personality disorders (PDs) are a heterogenous group of disorders characterised by patterns of behaviour and inner experiences manifested through at least a number of cognitive, affective, impulsive, or interpersonal functioning areas, in ways that deviate from the expectations of the person's cultural system. PDs

are long-standing, relatively invariant and pervasive through a person's life, and usually lead to significant stress and impairment of functioning. Their onset is usually during adolescence or early adulthood. Finally, they tend to have a distinctive pathogenesis that is not a result of Axis I mental disorders, medical conditions, or substance abuse.

The DSM-IV specifies ten personality disorders on Axis II grouped into three clusters. Cluster A is called the *odd/eccentric* cluster (or the *mad* cluster), because it is comprised of PDs (viz. paranoid, schizoid, and schizotypal) with symptoms that are similar to those of the schizophrenia spectrum disorders on Axis I, albeit less severe. Cluster B is the *dramatic/erratic* one (or the *bad* cluster) and it involves the borderline, histrionic, antisocial, and narcissistic personality disorders, while finally, Cluster C, the *anxious/fearful* (or *sad* cluster), comprises the avoidant, dependent, and obsessive-compulsive personality disorders. There is also a code for PDs not otherwise specified to accommodate the discovery of new types of PDs such as passive-aggressive, or depressive personality disorders.

It needs to be said that PDs are frequently comorbid with disorders on Axis I. When this is the case, PDs tend to shape the intensity, direction, manifestation, and treatment of Axis I mental disorders (Blackburn & Coid, 1998; Millon, 1996). Taking an example from Davison and Neale (1997, p. 335), when a person is diagnosed with an anxiety disorder (Axis I) and a histrionic personality disorder (Axis II) he or she will tend to make their anxiety rather visible, while if he or she is diagnosed with an avoidant personality disorder on Axis II they will tend to hide their anxiety and withdraw to themselves. As Theodore Millon (1996) puts it in his definitive manual of the DSM-IV personality disorders: "clinicians should be oriented to the 'context of personality' when they deal with [...] all forms of psychiatric disorders" (p. vii). Millon's theorising that PDs form a broad yet fundamental index of psychopathology was one of the main reasons I chose to focus on the area of PDs when I was attempting to identify the mental health correlate of religiosity for this thesis.

In addition, clinical evidence also suggests a great degree of comorbidity between PDs (Claridge & Davis, 2003; Krueger, McGue, & Iacono, 2001). For example, Millon (1996, pp. 629-630) showed that schizotypal personalities most frequently covary with a "constellation of traits" such as avoidant, paranoid, and schizoid personalities. Morey (as cited in Davison & Neale, 1997, p. 337) presented the estimated figures of the above overlap, which place 59% of the people with schizotypal personalities also meeting the criteria for avoidant personalities, 59% for paranoid personalities, and 44% for schizoid personality disorders, while in another study by Widiger, Frances and Trull (as cited in Davison & Neale, 1997, p. 336) 55% of their sample of patients with borderline personality disorder were also classified as having a schizotypal personality disorder.

These issues, which incidentally also apply to the disorders on Axis I, suggest a deficiency of the DSM system to provide an accurate differential classification of the disorders. Consequently, this lack of sensitivity may have serious effects on the appropriateness or effectiveness of diagnoses and treatments. Clinicians, psychologists and psychotherapists are well aware of this problem (Farmer, 2000; First et al., 2002; Nathan & Langenbucher, 1999; Widiger & Clark, 2000; Zerssen, 2002), and various solutions have been proposed in the hope that they can be addressed or at least considered in the next edition of the DSM – one of the most favourable ones being the move towards a dimensional classification system, which is discussed shortly.

SCHIZOTYPAL PERSONALITY DISORDER (SPD) & SCHIZOTYPY

SPD (also known as *psychosis-proneness*) is a personality disorder of Cluster A (code 301.22 in the DSM-IV) characterised by prominent and persistent patterns of eccentric thought, behaviour, and perception (Millon, 1996). When such patterns are clearly present in a "normal" individual, but are not prominent enough to manifest into pathological states, they tend to characterise the so called benign forms of SPD, which are grouped under the terms *schizotypal personality traits* or (healthy) *schizotypy* (Claridge & Davis, 2003). Therefore, the description of SPD that follows, although it

refers to pathological conditions, directly applies to schizotypy (Joseph & Peters, 1995; Rossi & Daneluzzo, 2001; Verdoux & Os, 2002). The only difference is that in the latter case symptoms are less intense, non-persistent, and non-dysfunctional. That said, a person with a schizotypal personality is highly vulnerable to developing SPD, especially if the relevant symptomatology becomes salient and problematic (Claridge, 1997).

The history of schizotypy is well documented by Millon (1996, pp. 614-623) and Claridge (1997, ch. 1) from both of whom I draw the brief presentation that follows. The term *schizotypal* (in the form of *schizotype*) was introduced in the early 1950s by Sandor Rado to indicate a specific phenotypic organisation of personality that has an underlying genetic predisposition toward schizophrenia – in fact, the term schizotype is an abbreviation for *schizophrenic genotype*. Rado saw schizotypal personalities as developmental processes that can have up to four stages among which the person potentially can move back and forth. In the *compensatory* stage, schizotypy gives no distress to the individual, allows for full normal functioning, and it can last for life (this is the benign form of the trait). If, however, emotional overloads break down the behavioural control of the person, the personality becomes unstable, and the person enters the *decompensated* stage (a covert schizophrenia stage), where he or she starts manifesting overreactive behaviour. In the *disintegrated* stage that may follow, the person enters a condition of an overt schizophrenic psychosis, in which serious disturbances in thought as well as behaviour are prominent. If this stage worsens, the person enters the *deterioration* phase in which a full-blown personality disorder occurs.

In the 1960s clinical psychologist Paul Meehl elaborated on Rado's thesis, by suggesting that a genetically determined defect, he termed *schizotaxia* (Meehl, 1962), is a necessary but not adequate explanation of Rado's four stages of schizotypy. A catalytic role is played, according to Meehl, by the social history of the schizotypal person, and the progress of the four stages is largely determined by the person's exposure to a dysfunctional environment, starting from his or her familial regime. He added that since

the difference between schizotaxia, schizotypy, and schizophrenia is only their class inclusion – with schizotaxia being the most and schizophrenia the least inclusive – only people with a schizotaxic genetic makeup are in danger of developing any of the other two disorders.

Meehl's thesis was subsequently largely confirmed through adoption studies of children with schizophrenic or schizotypal biological parents, which led Seymour Kety and his colleagues to coin the term *schizotypal personality disorder* in 1973. From then on the race began to establish the diagnostic criteria of the disorder, which were finally formulated in 1979 by Sitzer, Endicott, and Gibbon, and as a result SPD appeared for the first time as an official personality disorder in the third edition of DSM in 1980. In 1987 DSM-III-R (revised) some of these diagnostic criteria were modified based on new clinical evidence, and this revised version of the disorder was passed on unchanged to DSM-IV.

It is worth mentioning that the ICD does not classify SPD as a personality disorder (although it does so for both paranoid and schizoid disorders). Instead, it treats it as a special case of the broader schizophrenia spectrum disorders, under the term *Schizotypal Disorder* (code F21). However, the definition of the disorder as well as the diagnostic criteria it uses are almost identical to those used by the DSM, which are presented below.

DSM-IV defines SPD as follows:

> A pervasive pattern of social and interpersonal deficits marked by acute
> discomfort with, and reduced capacity for, close relationships as well as
> by cognitive or perceptual distortions and eccentricities of behavior,
> beginning by early adulthood and present in a variety of contexts. (p. 645)

For a person to be diagnosed with SPD he has to possess at least five of the following DSM criteria:

1. *Ideas of reference*. This refers to the interpretation of everyday events as signs of special and unusual meaning to the bearer. For example, one may believe that there is a hidden message for them in the news.

2. *Odd (aberrant) beliefs or magical ideation*. This criterion includes beliefs in the supernatural, telepathy, clairvoyance, the "sixth sense", superstition, bizarre fantasies, and a general tendency of the person to blur reality and fantasy.

3. *Unusual (aberrant) perceptual experiences*. Visual or auditory illusions, such as seeing oneself change in front of a mirror, seeing visions, having out-of-body experiences, or hearing voices.

4. *Suspiciousness*. General paranoid tendencies (e.g. "people are talking about me all of the time"), and excessive levels of suspiciousness.

5. *Odd or eccentric behaviour*. Having bizarre, aberrant manners, ritualistic behaviour, and eccentric appearance.

6. *Odd thinking and speech*. This refers to speech or thought that is disorganised and vague in expression, and articulated in unusual, sometimes metaphorical, other times stereotypical manner.

These first six criteria are sometimes referred to as *positive* schizotypy, while the following three are also called *negative* schizotypy (Dinn et al., 2002; Moritz et al., in press; Raine & Green, 2002; Rust, 1989; Vollema et al., 2002). The positive symptoms have been further broken down into *psychotic* (symptoms 1, 2, 3, and 4) and

disorganised (symptoms 5 and 6) (Andreasen et al., 1995; Vollema & Hoijtink, 2000).

7. *Constricted or inappropriate affect.* Inability to express emotions, being aloof, with poor nonverbal communication skills.

8. *Lack of close friends or confidants.* Inability to form close relationships.

9. *Social anxiety (asociality).* Not comfortable and excessively apprehensive in social settings, preferring isolation and privacy.

As indicated earlier, SPD has a high comorbidity with other PDs especially with paranoid and schizoid personalities (Millon, 1996). With reference to Axis I, although individuals with SPD may also be diagnosed with anxiety, somatoform, or dissociative disorders, by far the most common co-occurrence, as it should be obvious by now, is with the schizophrenia spectrum disorders (Andreasen, 1995; Cadenhead & Braff, 2002; Claridge & Davis, 2003; Gruzelier, 2003; Millon, 1996; Rust, 1989; Tsuang et al., 2002). It is this fundamental relation that schizotypy has with schizophrenia and general psychoses that attracted me to the former, and sealed the decision to use it in this thesis as a representative and crucial dimension of mental health.

PERSONALITY & PERSONALITY DISORDERS

The multiaxial classification of the DSM places disorders in distinct categories, which have an "on/off" value. So while one may be diagnosed of "having" more than one disorder, they will either "have" them or not. Commonly used personality clinical assessment instruments are based on the notion that personality traits (normal or disordered) are discrete entities.

In the last thirty years, however, psychologists have begun criticising this approach. Besides the problem of comorbidity among PDs and between PDs and Axis I disorders,

an issue that rises from the categorical approach to personality disorders relates to the *reliability* of the constructs (i.e. the levels of random error in the observed variability of a measurement's results). Deary et al. (1998, p. 651) found that the *internal reliability* (i.e. the degree of consistency of related components of a measurement) of certain items of the *Structured Clinical Interview* (SCID-II; Spitzer et al., 1990) (namely schizotypal, dependent, obsessive-compulsive, and schizoid personalities) was low to unacceptable (Cronbach's α-coefficient was at times as low as .29; studies by Blais et al., 1998, and Zimmerman, 1994, produced similar results).

With these objections in mind, several psychologists proposed a dimensional approach to personality assessment, which has its theoretical roots in part in the work of Bleuler (1911/1950), Kretschmer (1925), and Meehl (1962), all of whom hypothesised the existence of an association between aspects of abnormal and normal personalities. Thus this dimensional classification places personality traits in a quantitative continuum (or continua), and by doing so not only bridges the gap between normal and abnormal, but also allows personality traits to relate in various degrees to each other (British Psychological Society, 2000; Ekselius et al., 2001; Haslam, 2003; Hulbert, Jackson, & McGorry, 1996; Johns & Os, 2001). This approach is also flexible since it allows for the generation of a threshold between normality and abnormality that can be adjusted to fit in various sociocultural settings – an issue, I have to admit, with which the latest DSM edition has become sensitive.

Returning to Eysenck and his traits theory, he was swift to clarify that neither neuroticism nor psychoticism should be seen as indicating levels of abnormality (Eysenck & Eysenck, 1991). So for example, an individual scoring high on the psychoticism dimension will not necessarily develop a psychotic disorder. However, a clinically psychotic person will score high on the psychosis dimension (Eysenck & Eysenck report studies that have demonstrated an association between psychoticism and delusional and hallucinatory tendencies). In the same line of thought, a highly neurotic

individual is only more likely to develop a neurosis under extreme conditions of stress. In addition, Eysenck suggested that the extraversion dimension acted as a mediator to the effect of each of the other two dimensions on the individual's mental health. So for example, a person would have higher chances of developing a psychotic disorder, if she or he scored high on psychoticism and low on extraversion (i.e. they were introverted-psychotic types), while a high score on both psychoticism and extraversion would make it more likely for a person to develop a mood disorder but not a psychotic one.

How this relationship develops can be explained through the *diathesis-stress model* (Claridge, 1997; Claridge & Davis, 2003). The model assumes that personality traits serve as predispositions to psychopathology, and only those individuals, whose liability to develop the disorder exceeds a certain threshold, manifest the illness. However, since these traits are assumed to be relatively fixed and stable over time, they are not expected to cross that threshold themselves. Instead their *states* may do so. States indicate the expression and manifestation of traits on the individual at any given point in time (Chaplin, John, & Goldberg, 1988). So for example, anxiety is usually seen as a component of the neuroticism dimension and at the same time an element of anxiety disorders. A person high on trait anxiety is more likely, when exposed to high levels of stress, to become highly anxious (state anxiety). If state anxiety is high enough, the person is more likely to develop phobias, panic disorder and so forth.

However, in order for the model to be accepted or even considered by clinicians, psychologists had to produce empirical evidence in its favour. Indeed, studies upon studies show that not only personality disorders tend to fall into a continuum, but also that all personality traits (normal and disordered) may be plotted under three (neuroticism, psychoticism, and anxiety), four (neuroticism, agreeableness, extraversion, and conscientiousness) or even five high-order personalities (Austin & Deary, 2000; Jang, Livesley & Vernon, 1999; Larstone et al., 2002; O' Boyle & Holzer, 1992; for an overview see Claridge & Davis, 2003, and Matthews & Deary, 1998). In fact, Elizabeth

Austin, alongside several other researchers in the field, speculates that there may even be a general personality factor, called "psychological distress", that governs all personalities and can explain the presence of multiple diagnoses and construct overlap (personal communication, March, 2000).

Focussing on schizotypy, a picture compatible with the above paradigm has emerged. In 1989 Raine and Allbutt administered a battery of questionnaires, including the psychoticism scale of the *Eysenck's Personality Questionnaire* (EPQ) (Eysenck & Eysenck, 1991) and the Claridge and Broks (1984) *Schizotypal Personality Scale* (STA) to 114 undergraduate students and factor-analysed the responses. Their solution identified two principal highly orthogonal factors, explaining 68.8% of the total variance. Surprisingly, schizotypy had the highest loading on the first factor (.91), while psychoticism loaded on the second factor (.83). The two constructs had a positive yet rather low correlation ($r = .15$), suggesting that they are largely unrelated. Joseph, Smith and Diduca (2002), used all of Eysenck's dimensions against the STA in a community sample of 180 participants, and still found a low correlation between psychoticism and schizotypy ($r = .28$), and a rather high one between neuroticism and schizotypy ($r = .58$), while extraversion exhibited a near zero negative relationship ($r = -.07$). Wuthrich and Bates (2001), while focussing on the association between schizotypy (using Raine's, 1991, *Schizotypal Personality Questionnaire*, SPQ) and auditory latent inhibition, still acquired measurements of Eysenck's psychoticism and the NEO Personality Inventory. The results that are of relevance to this thesis suggest that schizotypy correlated with neuroticism ($r = .47$), extraversion ($r = -.36$) and psychoticism ($r = .22$) respectively ($N = 54$). Finally, a similar picture emerged from Deary et al.'s (1998) study with 400 undergraduate participants in Britain. Schizotypy (measured through the questionnaire form of the SCID-II) correlated with EPQ-neuroticism ($r = .47$), EPQ-extraversion ($r = .02$), and EPQ-psychoticism ($r = .11$).

Therefore, in this thesis it was predicted that schizotypy would have a positive and moderate relationship with neuroticism, a very low or negative one with extraversion, and a positive low relationship with psychoticism.

Although these studies have convinced me that the dimensional approach has a lot to offer in our understanding of psychopathology, it is worth mentioning here that the above evidence has not been received by clinicians with the levels of enthusiasm psychologists would have probably expected. Several nosologists fought back and presented their own findings in favour of the categorical model. For example, Williams et al. (1992) performed a *test-retest reliability* analysis on DSM-III-R diagnoses and found that for most of them the value was highly acceptable.

Clinicians also argue against the applicability of a dimensional model in clinical assessment (Davison & Neale, 1997, pp. 65-70). First, they suggest that some disorders, like anxiety or stress-related disorders (like hypertension), seem to manifest themselves as pathological at only certain levels of intensity, i.e. they seem to follow the on/off idea of the categorical model. Second, disorders with a high genetic component, like schizotypy, may indeed be categorical, in the sense that they are not expected to occur to someone who does not carry the "deviant" genotype. Third, clinicians argue that the dimensional approach complicates the application of the existent standardised medical treatments, since their development has been based on the categorical model. For example, currently there is no standardised way of medically treating a person who would be classified on the dimensional model as being, say, .85 neurotic, -.32 psychotic and .54 extraverted (figures are for illustrative purposes). Finally, there is a consideration regarding the methodology psychologists use to test this model. Factor analysis is an umbrella term that covers rather complex statistical techniques that require relatively high levels of statistical competence and a great degree of intuitive decisions. It is therefore rather easy for a "novice psychologist" to construct, run, and consequently interpret the whole design in inappropriate or unrealistic ways.

MENTAL HEALTH & RELIGION

Since the eighties, research on psychopathology has been one of the central topics in the psychology of religion, while for the last ten years psychotic disorders have been receiving special attention. Before I discuss in detail the specific area of research in religion and schizotypy allow me a short presentation of the general findings in the religion-mental health relationship, from which I also draw a number of predictions.

The DSM-IV through its classification of religious and spiritual problems (V62.89) assumes the existence of mental problems that are directly and perhaps exclusively related to religion (and spirituality). These problems may relate to loss or questioning of faith, conversion, or doubt of spiritual values and morals, and they may or may not be related to organised religious institutions (for more see Greenberg, Witzum & Buchbinder, 1992; Gundersen, 2000; Kroll, 1995; Koenig & Larson, 2001; Lukoff, Lu & Turner, 1992, 1995, 1998; Neumann & Leppien, 1997; Scott et al., 2003; Shafranske, 1996; Sims, 1999; Turbott, 1996).

That said, studies across countries, religious and ethnic backgrounds, age, and social status, suggest a positive relationship between religious practices, such as church attendance or prayer, and mental health (for an overview see Batson et al., 1993, ch. 8; Beit-Hallahmi & Argyle, 1997, pp.184-197; Grzymala-Moszczynska & Beit-Hallahmi, 1996, ch. 2; Koenig, 1997; cf. Schumaker, 1992; also for meta-analyses see Hackney & Sanders, 2003; Koenig & Larson, 2001; Larson et al., 1992). These findings have been generally explained by the social or psychological support and effective coping mechanisms religious communities and practices can provide to their members (Ellison, 1998; Koenig, McCullough, & Larson, 2001; Larson, 1995; Nooney & Woodrum, 2002; Pargament et al., 2001; Seybold & Hill, 2001; Siegrist, 1996). Additionally, Ellison (1991), by using a mediated multiple regression model of analysis, suggested the existence of a causal path relationship between the above variables, with religious involvement causing certain types of beliefs, which in turn promote mental health and

well-being. Moreover, some evidence indicates that the relationship could be to an extent curvilinear, with the healthiest people being the highly nonreligious and highly religious ones (see also Allport & Ross, 1967; Ross, 1990; Schumaker, 1998; Wulff, 1997).

Although my intention is not to diminish in any sense the direction of those results, I have identified some problems with these investigations. Most of this kind of studies appear to be suffering from inadequate control for covariates and confounding variables. For example, religious people may tend to present themselves as mentally healthier, but that may well be – as Batson et al. (1993) and Eysenck (1998) have separately demonstrated – a tendency to present themselves in a desirable fashion, i.e. "I truly believe in God, therefore I *have* to show I'm healthy". However, almost none of the above studies controlled for *social desirability* (see also Lewis, 1999, 2000; Watson et al., 1986). Also studies that suggest that churchgoers are healthier than nonchurchgoers, have failed to acknowledge that religious people with poor physical or mental health are indeed less likely to go to church frequently – this has been called the *functional capacity covariate* (Sloan, Bagiella & Power, 1999). Once again, I am not suggesting that these results are wrong; I am only stressing that researchers, in order to avoid such criticism, should be very careful when constructing and conducting their studies, especially on a topic as sensitive as religion.

From the above, it was predicted in the present study that frequency of church attendance and prayer will have an inverse relationship with mental health (schizotypal) symptomatology (the prediction for social desirability was reserved for my discussion on schizotypy that follows).

There is some evidence that suggests the existence of an explicit association between religious affiliation and psychological illnesses. For example, MacDonald and Luckett (1983) mapped the psychiatric profiles of 7050 psychiatric Christian patients in the US,

based on DSM-II diagnostic criteria, and they found that neuroses were two of the most common illnesses present in Catholics and non-mainline Protestants; mainline Protestants tended to have personality disorders, while Christian sects, like Jehovah's Witnesses, did not tend to manifest any of these disorders; however, psychoses tended to be more prevalent. These results although important, should only be seen as indicative, since the diagnostic criteria used are somewhat dated.

> With that in mind, in this thesis, the variation in the intensity of schizotypal symptomatology between different Christian denominations was explored.

In respect to religious orientation, it is generally accepted that mature or moderate religiosity enhances mental health, especially in areas such as anxiety and depression (Donahue, 1985; Maltby, 1997, 1998; Maltby & Day, 2000; Miller et al., 1997; Schumaker, 1993a, 1993b; Wright, Frost & Wisecarver, 1993), whereas strong, maladaptive, immature religiosity can be very harmful and has been frequently associated with neurotic or psychotic disorders (Beit-Hallahmi & Argyle, 1997; Ellis, 1995; Genia & Shaw, 1991; Ventis, 1995).

Batson et al. (1993, chap. 8) reviewed sixty-one studies that had used Allport's religious orientation formulation or Batson's adaptation, and found that extrinsic orientation tended to exhibit a positive association with various aspects of psychopathology in 60% of the cases, the intrinsic one tended to show a reverse pattern 53% of the time, while for the quest orientation the results tended to show somewhat an unclear relationship, with 50% or the studies showing no association (all reported frequencies are modal frequencies).

SCHIZOTYPY & RELIGION

Homing in on schizotypy, it appears to be of a relatively recent, yet rather particular interest to the psychology of religion. It was James in the Varieties who first suggested

the general link by pointing out, as discussed in the previous chapter, that highly religious individuals appeared to him to exhibit psychopathic tendencies. In my view, what James seems to have noticed were actually symptoms from some of the diagnostic criteria of SPD and partly schizophrenia, namely, delusional ideas, magical thinking, illusions and visions, *glossolalia* (speaking in tongues, which can be mapped onto odd speech), and at times eccentric behaviour.

One can certainly see some parallels between these symptoms and many religious practices and experiences. Should this be the case though, it could be hypothesised that religious individuals may tend to possess elements of schizotypal personalities and that these elements may tend to vary with the intensity and orientation of the individual's religiosity. This is potentially a serious issue, because if religiosity is found to be closely related to or even able to predict levels of schizotypy, then, as Diduca and Joseph (1997) speculated, religiosity could also be a correlate or a predictor of schizophrenia, and I would add of course SPD.

Wulff (1997) reasoned along the lines of James, and suggested that schizotypal or schizophrenic people may become religious (or more religious) as religion (because of the presence of the parallel symptoms, such as the ones mentioned above) can provide them with "overwhelming sensory stimulation". Thus according to this hypothesis (let us call it in this thesis the *excitement hypothesis*), a positive relationship between schizotypy and religiosity is expected.

Maltby and Day (2002) on the other hand hypothesised, broadly along the lines of Schumaker's (1995) theory, which was briefly discussed in the previous chapter, that religious practices, experiences, and orientations may be attractive to schizotypal individuals, because the former can give meaning to the latter's behaviour and experiences, thus helping those people reduce delusional fears and irrational sensory stimulation, and consequently safeguarding them from developing a disorder. Therefore,

from this hypothesis (I call it the *prevention hypothesis*) one would predict a negative association between schizotypy and religiosity (see also Jackson, 1997, for a similar discussion between spirituality and schizophrenia).

Moreover, it is also possible, as Day and Peters (1999) speculated, that certain kinds of religious experiences, practices, and orientations may influence the development of schizotypy, thus leading to either a positive or negative relationship between the two variables (the *causal hypothesis*).

Finally, a number of theorists (Joiner, Perez & Walker, 2002; Levin & Chatters, 1998; Pargament, 2002) have suggested that the structural elements of schizotypy and religiosity possess superficial, phenotypic, or epiphenomenal similarities and thus are not related in any deeper sense – the *phenotype hypothesis*. In other words, their relationship is spurious, totally or largely determined by some other factors. Incidentally, this last hypothesis can be integrated with all three of the previous ones. So what does the evidence so far suggest?

At this point some additional background information may be useful. The following findings, although not explicitly or necessarily directly related to the psychology of religion, have been used as the basis and the initial justification for research in the relationship between religion and schizotypy.

First, studies in paranormal beliefs (e.g. extrasensory perception, telepathy, and so forth), beliefs in psychic phenomena and abilities (e.g. belief in the ability to communicate with spirits or in the ability to predict the future), and mystical experiences (e.g. out-of-body experiences, visions, etc.) have shown rather consistently a positive relationship between those beliefs and aspects of schizotypal symptomatology. Overwhelmingly, evidence suggests that people who score high on the above beliefs (the so-called *sheep* in parapsychological terminology) tend to score high on certain schizotypal traits, namely

the cognitive-perceptual ones, i.e. magical ideation, ideas of reference, and unusual experiences (e.g. Chequers, Joseph, & Diduca, 1997; Eckblad & Chapman, 1983; Houran, Irwin, & Lange, 2001; Houran et al., 2002; Jackson, 1997; McCreery & Claridge, 2002; Thalbourne, 1994; Thalbourne & Delin, 1994; Tobacyk & Wilkinson, 1990; Wolfradt et al., 1999).

At the same time, more medically orientated research suggests that Christians who have been diagnosed with a psychotic disorder, such as the schizophrenia spectrum disorders or SPD, tend to be more delusional than nonreligious psychotic individuals (Getz, Fleck, & Strakowski, 2001; Heinrich, 1997; Holm & Järvinen, 1996), and tend to believe that they have been possessed by demons or spirits, especially if they are members of charismatic churches (Pfeifer, 1994; Whitwell & Barker, 1980). However, when Peters and her colleagues (1999) compared delusional symptomatology between psychotic patients (no control over their religious background) and individuals from the "normal" population that fell into the groups of mainstream Christians, nonreligious (atheists), and members of new religious movements (NRM) (Hare Krishnas and neo-pagans), they found that although NRM had on average a similar score to the psychotic patients on the delusional measurements, both Christians and nonreligious scored rather low on those scales, with the latter having the lowest scores.

The first published study directly addressing the relationship between religiosity and schizotypy appeared in 1995 and was conducted by White, Joseph and Neil – that the date is so recent it should come to no surprise, when one considers that the clinical definition of SPD was finalised, as mentioned earlier, in 1987. Given the then existing literature on the association between various aspects of schizotypy and paranormal beliefs, and that of religiosity and delusions, they predicted that religiosity would relate positively to some aspects of schizotypy (such as aberrant beliefs and experiences) and negatively to some others (such as asociality). They administered to a sample of 183 British adults a battery of questionnaires, measuring, among other things, different

aspects of attitudes toward Christianity (*Francis Scale of Attitude toward Christianity* [FSAC], Francis & Stubbs, 1987; a measurement that is closely related to intrinsic orientation; for more on this relationship see also Hills & Francis, 2003), the *Schizotypal Personality Scale* (STA, Claridge & Broks, 1984), the *Magical Ideation Scale* (MgI; Eckblad & Chapman, 1983), general personality traits, and social desirability. After subjecting their data to a Principal Component Analysis with oblimin rotation, they identified four factors accounting for 70.2% of the total variance. However, in these factors, religiosity had a very low loading (.32) on the schizotypy-defined factor, while its primary loading (.73) was on the same factor with psychotic traits of general personality (-.73), which were used as an index of asociality. When looking at the bivariate relationships between the individual components of schizotypal symptomatology and religiosity, they identified a weak positive correlation between religiosity and unusual perceptual experiences but only for the men in their sample ($r = .19$, $n = 78$, $p < .05$). They concluded that their data show strong evidence of a negative association between asociality and religiosity, and provide a weak support for a positive relationship between aberrant experiences and religiosity. They suggested that the use of dimensional measurements of religiosity (FSAC is unidimensional) may be more sensitive to reveal a clearer picture of the underlying relationships. Their results do not seem to provide support for any of the four hypotheses mentioned above.

In 1997, Diduca and Joseph took on board White's et al. suggestion, and working on the same principle they essentially replicated the previous study. They retained the schizotypy and religiosity measurements, but excluded the general personality and the social desirability ones. They also added four six-item scales they had devised to measure respectively religious preoccupation, religious guidance, religious conviction, and religious emotional involvement. These questionnaires and other demographic questions were administered to 201 British subjects (a mixed sample, 45% full-time students, and the rest from the general population). Their correlational analysis suggested a weak to moderate positive association between magical ideation and

religious preoccupation, but once again only for men (controlling for age, $r = .30$, $n = 87$, $p < .005$). All other associations between the religiosity dimensions used and schizotypal symptoms were lower than the above figure and not consistent in direction. They concluded that although they also favour the use of dimensional measures of religiosity, their findings do not provide adequate evidence for a relationship between religiosity and schizotypy.

The major limitation of the above two studies, as I see it, is that their samples were not controlled for the religious dimension – a consideration I also raised earlier in relation to the use of Allport's scales. In other words, the researchers had no prior knowledge about whether their subjects considered themselves religious in the first place. This partly leads us back to the earlier discussion on whether religiosity applies to nonreligious individuals. In addition, for the part of both samples that may have been religious, no information exists about the religion to which they adhered. All religious measurements used in these studies appear to be primarily, if not exclusively, applicable to Christians – for example, the dimensional questions asked in the second study included terms like "Jesus" and the "Bible" in their wording. Therefore, I suggest that their results may be contaminated by so much noise that they are rendered of little to no value.

Samantha Day and Emmanuelle Peters (1999) attempted to rectify this shortcoming by controlling for the religious background of their participants. They investigated the relationship between religiosity and schizotypy among three groups in Britain: members of new religious movements (NRM) ($n = 22$), mainstream Christians ($n = 33$), and nonreligious individuals ($n = 40$). Among other measures, they administered two questionnaires that assessed schizotypy – the STA, and the *Oxford Liverpool Inventory of Feelings & Experience* (O-LIFE; Mason et al., 1995). Their results suggest that although NRM tended to have significantly higher levels of schizotypy than both the other groups, Christians did not score significantly higher than the nonreligious group.

Incidentally, Christians had the highest levels of socially desirable responses, which reached statistical significance only against the scores of the nonreligious group, $t(71)$ = 3.7, $p < .001$. The authors interpreted their findings as suggesting that religiosity appears to relate to schizotypy primarily in non-mainstream religious groups, and they speculated along the lines of James's arguments that this may be because of the intense religious experiences these groups tend to offer to their members. Their findings therefore could be seen as providing a weak support for the excitement hypothesis or even the causal hypothesis.

So far all research in the religion-schizotypy area cited has either not used any religiosity measurement (as in the above study), or has utilized the Francis Scale of Attitude toward Christianity (the first two studies), or finally it used a measure that was specifically devised for that given study (as in the study of Diduca & Joseph). Although there is nothing inherently wrong with these approaches, their tendency to use attitudinal scales to measure religiosity gives them a somewhat weak theoretical basis in respect to the religiosity dimension. At the same time, their approach begs the question about the possibility of their results being artefacts of the measurements used. Finally, I could not directly utilise their findings, since in this thesis I am using more theory-driven measurements, namely those based on Allport's ideas discussed earlier. So I needed to look for studies that had used the same measurements as I did. Fortunately, three of the following four did so.

In 2000, John Maltby and his colleagues were the first in the published literature in the psychology of religion and schizotypy to use a measurement based on Allport's approach to assess religiosity. In an attempt to test empirically the excitement hypothesis, they distributed among other measurements, the STA and an incarnation of Allport's intrinsic, extrinsic personal, extrinsic social religiosity scale to 195 UK university students. The relevant results are shown in Table 4.3. Once again religiosity tended to have a low to moderate positive relationship with schizotypy, which in this research

appeared to be stronger for women, while in the studies by White et al., and Diduca & Joseph, mentioned earlier, this was true for men. In addition, intrinsic religiosity tended to exhibit a positive, albeit low, relationship with schizotypy.

Table 4.3. Partially reproduced results from Maltby et al. (2000) depicting the relationship between religiosity and schizotypy – numbers shown are Pearson's product moment correlation coefficients for Males ($n = 81$) / Females ($n = 114$).

	Intrinsic	Extrinsic Personal	Extrinsic Social
Total schizotypal traits	.18 / .04	.04 / .29*	-.01 / .21*
Magical ideation	.18 / .09	.02 / .16	-.08 / .17
Unusual perceptual experiences	-.07 / .14	-.02 / .31**	-.14 / .15
Suspiciousness	.14 / -.14	.02 / .24**	-.09 / .18

* $p < .05$; ** $p < .01$, both two-tailed

A series of standard multiple linear regression analyses was run separately for men and women, with each of the schizotypal traits acting as dependent variables against the religiosity dimensions and other factors (e.g. age), which largely supported the above associations. Finally, age tended to have a moderate but of unclear directionality association with both religiosity and schizotypy for both men and women. The authors concluded that their results provide partial support for the excitement hypothesis, as most of the relationships are toward the direction one would expect if Wulff was right. However, strictly speaking their reasoning is not in accordance with their analysis, since according to the excitement hypothesis, one would expect schizotypy to predict religiosity, and not vice versa. The way they analysed their data, i.e. by using religiosity as a predictor of schizotypy, at best provides support for the causal hypothesis and not the one they mention.

Joseph and Diduca (2001) decided to investigate the religiosity-schizotypy relationship in teenagers. Their reasoning was that as the onset of a schizotypal personality disorder is expected, according to the DSM-IV, to be sometime in late adolescence, any relation between religiosity and schizotypy should become more evident during this period. Their

participants (241 males, 251 females) were English pupils largely from a Christian background (although the authors admit they had no control over that variable) divided into two age cohorts, 13-15 ($n = 216$), and 17-18 ($n = 276$) year olds (no 16 year olds). They were requested to provide responses to the *Francis Scale of Attitude toward Christianity* and to the *Multidimensional Schizotypal Traits Questionnaire for Adolescents* (MSTQ-A; Rawlings & MacFarlane, 1994). The authors ran separate standard multiple linear regression analyses for males and females between the two age cohorts. For the first time, however, in the religiosity-schizotypy literature, religiosity was used as the dependent variable. The results indicate that schizotypal traits accounted for near zero percent of the religiosity variance in 13-15 year-old males and for 12% in the females of the same age cohort. In the 17-18 year olds though, schizotypy collectively predicted 22% of the religiosity variance in males and 23% in females. In addition, these results tended to point to an inverse relationship between the tested variables, with lower scores on schizotypy predicting higher scores on religiosity. One finding the authors could not explain was the inverse relationship between magical ideation and religiosity. They attributed this to the social desirability effect (the tendency to present oneself in a favourable manner) for which they did not control. Overall the findings of this study indicate the presence of a possible moderate underlying causal relationship between schizotypy and religiosity, which seems to be moderated by gender, and thus partly supporting the prevention hypothesis.

Another attempt to assess the relationship between religious orientation and schizotypy was published in 2002 by Joseph, Smith, and Diduca. Among other measurements, they administered to 180 general public British adults, Batson's *Religious Life Inventory* (as discussed in a previous session of this chapter), Claridge's STA, and a scale of general personality traits. Standard multiple linear regression models, using each of the religiosity dimensions as outcomes and the rest of the variables as predictors, indicated that schizotypy was the highest and the only significant predictor of the quest religious orientation (*standardised beta* = .25). No other meaningful associations were found. This result seems to support partly the excitement hypothesis. Although this was the first time the quest orientation was used in schizotypy research, the authors made no attempt

to explain the finding relating to it.

Finally, in 2002, Maltby and Day published a study in which once again an attempt was made to test both the excitement and the prevention hypotheses. They administered to 308 general British public adults (132 males, 176 females) among other measurements, Claridge's STA, an adaptation of Allport's intrinsic/extrinsic (personal/social) questionnaire, and an 18-item scale they devised, tapping into a single religious experience factor – the items asked participants to indicate how often during religious worship they felt a sense of happiness, warmth, emotional intensity, and so forth. The correlations once again suggested a gender specific relationship. The weaker associations between religious orientation and schizotypal traits were observed among males (Pearson's r ranged from -.10 to .19), while in females the correlations tended to be higher and positive (r ranged from .10 to .30), except for the correlation between intrinsic and paranoid suspiciousness that was -.15. Religious experience on the other hand tended to show rather high positive correlations with schizotypal traits for both men and women (r ranged from .27 to .45) Finally, age showed a moderate but amphidirectional (sometimes positive and sometimes negative) relationship with both religiosity and schizotypy in both sexes. A series of eight standard multiple linear regressions largely confirmed the above picture – incidentally the effect of religious experience on schizotypy became close to zero in almost all the regression models, suggesting that perhaps religious orientation accounted for it. The authors concluded that a "limited" association exists between religiosity and schizotypy, and that their findings appear to support the excitement hypothesis. However, once again the authors used religiosity as the independent variable, contrary to the predictions of the excitement hypothesis that requires it to be the dependent one.

With this last study I conclude my presentation on the research on religiosity and schizotypy. No other studies have been published to my knowledge in this area. The results of the above studies are summarized in Table 4.4.

Table 4.4. Summary of the results in the research on religiosity and schizotypy*

Study	Sample	Measurements of religiosity	Measurements of schizotypy	General findings
White et al., 1995	183 British adults	FSAC	STA, MgI	Religiosity had a low positive association with general schizotypal traits and a high positive association with asociality; the findings held true mainly for men.
Diduca & Joseph, 1997	201 British, mixed sample of university students & general public	FSAC, plus four six-item scales devised by the authors	STA, MgI	religiosity had a low to moderate positive association with magical ideation, mainly in men; all other relationships were very low and amphi-directional.
Day & Peters, 1999	95 British, NRM, Christians, nonreligious	none	STA, O-LIFE	Christians did not have significantly higher scores on schizotypy than nonreligious; NRM had the highest scores.
Maltby et al., 2000	195 British university students	I/E	STA	Religiosity tended to have a positive, albeit low, relationship with schizotypy; in general higher associations were found among women.
Joseph & Diduca, 2001	492 British adolescents	FSAC	MSTQ-A	Generally a negative low association between religiosity and schizotypy, for both sexes.
Joseph et al., 2002	180 British general population, adults	RLI	STA	A positive moderate association between schizotypy and the quest orientation.
Maltby & Day, 2002	308 British general population, adults	I/E, plus a religious experience scale	STA	Religiosity tended to have a low to moderate positive association with schizotypy, mainly among women.

* Abbreviations: **FSAC**: Francis Scale of Attitude toward Christianity; **MgI**: Magical Ideation Scale; **I/E**: Intrinsic/Extrinsic; **MSTQ-A**: Multidimensional Schizotypal Traits Questionnaire for Adolescents; **O-LIFE**: Oxford Liverpool Inventory of Feelings and Experiences; **RLI**: Religious Life Inventory; **STA**: Schizotypal Personality Scale.

Overall, these studies appear to agree on the existence of a low to moderate association between religiosity and schizotypy, possibly moderated by gender and mediated by age and social desirability. However, they seem to disagree, or at least be unclear with almost anything else, including the directionality of the relationship and the nature of the association between specific elements of both religiosity and schizotypy. Thus, going

back to my initial question regarding the four hypotheses put forward to account for the relationship between religiosity and schizotypy, the evidence so far cannot conclusively favour any of them.

Several reasons may contribute to this lack of clarity, some of which I have already mentioned. First, is the issue of sample type. As it can be seen from the summary table, all but one of the studies did not take into account the religious background of their participants. In addition, none of the studies appears to have collected, let alone utilised, any sociodemographic information about their sample, besides age and gender. Sociological research has shown that categories like marital status, education, and employment status, may have an effect both on religiosity and on its relation to mental health (for an overview see Ellison & Sherkat, 1995; Idle & George, 1998; Koenig, McCullough, & Larson, 2001; Northcott, 1999). Lack of such controls may have introduced unnecessary noise to the results.

Second, only three of the studies controlled for the effect of social desirability. As it has been demonstrated almost consistently (see also the studies on religiosity and general mental health, mentioned earlier) social desirability tends to mediate strongly the association between religiosity and variables related to mental health. Thus not controlling for it, seems to add another level of noise in the findings.

Third, as I said again earlier, the tendency to use simple, unidimensional attitudinal measurements of religiosity does not allow for a fine-grain analysis of the importance of the dimensional components of religiosity, and for results to be placed and interpreted within a strong theoretical framework. At the same time, the schizotypal measurements used tend to be somewhat dated or to an extent inappropriate. The MgI, which was developed in 1983, is too old to tap into the modern definition of schizotypy; the STA is based on the DSM-III diagnostic criteria, which are not the currently accepted ones; finally while both the MSTQ-A and the O-LIFE are partly based on the DSM-IV, they

still include symptoms, like *anhedonia*, that are not part of the current DSM classification (Mason, Claridge & Williams, 1997; Rawlings & MacFarlane, 1994).

Fourth, the statistical analyses used in these studies are somewhat elementary and rather restrictive. One study used factor analysis, while all the rest employed the generalised linear model, through either an analysis of variance, or linear regression. One gets the feeling that these analyses were conducted in a rather clumsy or naive fashion. For example, lack of information does not allow us to make a judgement on the appropriateness of the extracted factors, or the factorability of the variables used in the first study, while in the other studies, certain assumptions of the generalised linear model may have been violated (as discussed later), casting doubt on the reliability of the results. Moreover, none of the above studies used any mediated modes to partial out the effects of any other factors from the schizotypy-religiosity relationship (thus testing for the phenotype hypothesis). Finally, the authors could have attempted to replicate their findings with the use of alternative or complementary statistical techniques, such as canonical correlations, multidimensional scaling models, or confirmatory models like structural equation models.

Related to this is the fact that none of the above studies, and thus no study to my knowledge on religiosity and schizotypy, employed any form of qualitative assessment. This, as I discuss in chapter VII, could have enriched the outcomes, by generating parallel or additional information regarding the studied concepts, information that is highly unlikely to have emerged through quantitative approaches. The combination of qualitative and quantitative techniques could have allowed for a cross-validation of research findings, and thus increased confidence in their value and meaning.

Finally, the somewhat arbitrary assignment of the religiosity and schizotypy measurements as either predictors or outcomes may also have affected the magnitude and consequently the interpretation of the results. At this level of consideration this is

purely a methodological issue that refers to the degree of covariation (*collinearity*) between the predictor variables; for example the subscales of schizotypal traits, not surprisingly, may tend to be highly related to each other, and the same may hold true to an extent for the extrinsic social and extrinsic personal religious. Should this be the case, placing any of these groups of variables as predictors, say, in a standard regression model, could have resulted in the effect of some of those variables to have "artificially" disappeared, inversed, or appeared to be of little to no importance to the model.

Most important, at the conceptual level, the assignment of the variables as either predictors or outcomes needs to have a theoretical justification. Both the excitement and prevention hypotheses assume that religiosity is a dependent variable, while the causal hypothesis requires religiosity to act as a predictor of schizotypy. At the same time, the medical model of Rado and Meehl assumes that schizotypy is rooted in biological mechanisms (schizotaxia), and that the (social) environment and life histories only affect the phenotypic manifestations of the trait. Although research in this area is still highly inconclusive, it nevertheless tends to support this theory to a great extent (e.g. Tsuang et al., 2002; Vollema et al., 2002). So by taking into account the medical model of schizotypy can we justify the formulation of the above three hypotheses?

The causal hypothesis can be easily explained if we view religion (or at least certain aspects of it) as an environmental factor that can affect the phenotypic variations of schizotypal traits. For this to hold though firmly, a genetic disposition to these traits needs to be present. However, neither I nor any of the researchers discussed above have the means to assess this genetic disposition, not least because the mechanisms of this disposition are not yet clear. It is also very important to point out that psychometric questionnaire studies are at best capable of measuring phenotypic expressions of latent constructs. Whether any of the individuals in my sample or the samples of the above studies possesses schizotaxia cannot be known to any degree of certainty. At the same time, forced-choice questionnaires, like any of the ones used in these studies and most

if not all of the psychometric ones, require by definition that participants register their responses on a limited number of choices – these are usually based on Likert scales, or Yes/No answers. Unless the participant choses to provide no answers to a scale, he or she will almost always have a score on any given scale. Therefore, a participant responding to a schizotypy questionnaire, will most certainly exhibit a degree of phenotypic schizotypy, despite whether or not she or he possesses the genetic disposition to the trait. All this leads me to suggest that although the causal hypothesis can still be used with this kind of studies, one should be very careful with how one interprets and justifies the findings.

Can the excitement and prevention hypotheses be placed within the medical model of schizotypy? They can, only if it can be shown that religion is an outcome and not a predictor of schizotypy. In order for this to happen, it must be shown that religion is not an influential environmental factor, or for that matter that religion is not an environmental factor in the first place. Thankfully, once again, it could be argued that James provides the answer to this. If we go back to his writings, we shall remind ourselves that religion is what a person does in his solitude, i.e. religion is a personal matter. Yes of course there is a social component of religion, but that, according to James, is not part of the psychological inquiry. Therefore, James's, and consequently Allport's and Batson's, concepts and subsequent measurements of religiosity are based on this notion of a personal, private religion. So it can be argued that this "personal" religiosity cannot function as an environmental factor, and thus it is unlikely to act as a predictor of schizotypy. But can it act as an outcome? Again James discusses how "explosive emotions" can lead to a religious conversion, and how a state of internal turmoil can deliver people to "twice-born" religious states. At the same time, Allport describes how religious sentiment develops from the interplay between internal and external forces. If we view schizotypy as one of those internal forces, it would not be hard to see how it could affect the kind and degree of religious orientation.

A third possibility exists though, one which none of the above hypotheses appears to be considering directly. For both James and Allport (personal) religion is an integrated part of personality. In fact, Allport is clear on this when he says, as discussed in the previous chapter, that religion is a fundamental "department of personality" with a pervasive structure capable of giving to the individual "meaning and peace in the face of the tragedy and confusion of life" (1950, p.159). At the same time, for Allport, religiosity is shaped and developed partly through the effects of temperament and organic desires for safety, nourishment, and so forth. Thus, it could be said that religiosity is partly founded on biological, possibly adaptive mechanisms.

If religiosity is an integrated part of oneself, then in a schizotypal individual, it can arguably be placed side-by-side with his or her schizotypal traits. In this case, how can one claim that any of them causes the other? What is there that can provide us with a temporal antecedence, by placing any of them (the cause) as temporally preceding the other (the outcome)? I cannot see such a relationship; I can see, however, a possible alternative, according to which certain elements or dimensions of schizotypy and religiosity, both affect and at the same time are affected by each other – let us call this the *covariance hypothesis*. Should this be the case, one would expect to see those elements form clearly defined and relatively stable groups, dimensions, or clusters. In fact, the study by White et al (1995) appears to be testing this hypothesis.

Based on the evidence presented above and the discussion that followed, five hypotheses regarding the relationship between religiosity and schizotypy were tested in this thesis:

1. The *excitement hypothesis*: Higher levels of certain schizotypal traits would predict higher levels of certain religious orientations.

2. The *prevention hypothesis*: Higher levels of certain schizotypal traits would predict lower levels of certain religious orientations.

3. The *causal hypothesis*: Certain religious orientations would predict certain schizotypal traits (no direction is stated).

4. The *covariance hypothesis*: Certain religious orientations would form clear and relatively stable groups with certain schizotypal traits (no direction is stated).

5. The *phenotype hypothesis*: If the relationship between religiosity and schizotypy is spurious, then evidence should exist to suggest that other factors (such as age, gender, social desirability, etc.) are largely, if not totally, responsible for it, and thus controlling for those factors should make the relationship disappear.

RELIGION & IDENTITY

THE CONCEPT OF IDENTITY

In my mind, identity is a frustratingly complex psychosocial construct, with so many meanings that at times it feels it has none. Unlike personality, which is an idea exclusively developed within the realm of psychology, and as such it is viewed as one of those psychological "facts" at least by most psychologists, the idea of identity has been occupying the world and writings of other disciplines as well, such as sociology

(e.g. Giddens, 1991), anthropology (e.g. Jacobson-Widding, 1983), and philosophy of the mind (e.g. Lucan, 1996). This pluralism in thought, one could argue, is beneficial since it allows for the idea to be constructed through multi-angular approaches and consequently become more stable and meaningful. That said, since the focus of these disciplines tends to be as diverse as their starting points of reasoning, the end-product is in danger of being a fuzzy, hurly-burly of an idea.

Considerations aside, looking at the theoretical, cross-disciplinary approaches, a level of consensus appears to be present. At an abstract level, I would say that identity tends to be seen as an underlying connexion between psychosocial factors that is present in spite of proximal dissimilarities. This is not much of a useful definition though. Let me attempt a different approach. It appears that broadly speaking, identity tends to be subdivided into two higher order components: *personal identity* and *group identity*.

Within psychology at least, personal identity (or *self-identity*) tends to be used to refer to those properties that distinguish us from each other, that make us unique individuals (e.g. Durkin, 1995). These properties could include such things as personal values, personal goals, ideas, feelings, and of course personality. Group identity, on the other hand, refers to those properties that bind us with certain others, that make us similar to them (e.g. Hogg & Vaughan, 1998). These can be our ethnic background, nationality, social class, and not least our religion. Although one does possess elements of both of the above identities in various hues, in reality the boundaries between them are not as clear-cut as they may appear from the above distinction. These identities fuse with each other, while at the same time they partition into finer distinctions to refer to such concepts as individualistic vs. collective identities, gender identity, cultural identity, social identity and so forth.

PERSONAL IDENTITY

One of the most influential psychological theories of personal identity was proposed by Erik Erikson (1959/1980, 1968). For Erikson, self-identity (or *ego-identity* as he called it) is a fundamental element of the unconscious that attributes a consistent and persistent meaning to the concept of the self. This concept of the self is a product of the interplay between personality models and socialisation. Self-identity guides the "non-pathological" individual in maintaining a continuous selfhood despite the contradictions or tragedies he or she is faced through life. Identity development, according to Erikson, begins in adolescence with *identity diffusion* (also known as the *defused/avoidant identity*). During this stage, the individual tends to be confused regarding his or her social role, and thus he or she tends to avoid commitment, and is more likely to alienate him or herself. The next stage has two paths. One of them leads to the *foreclosed identity*, which is defined by the acceptance of the status quo and the non-critical adoption of the values of the authority. This identity is characterised by low levels of uncertainty, doubt, and anxiety. The other path leads to the identity condition of *moratorium*. During this, usually anxiety-laden period, the individual attempts to adopt different roles while critically assessing their appropriateness and value. If the person is successful in finding his or her role, he or she enters the next and final phase of this route, the *identity achievement* phase, in which he or she achieves personal autonomy, a self-identity chosen by him or her own, a "sense of reality of the self within social reality" (Erikson, 1968, p. 211). It needs to be said that a person may stop at any of the above stages and hold the identity of that stage for a lifetime.

GROUP IDENTITY

More relevant perhaps to this thesis is the *social identity theory* devised by Henri Tajfel and John Turner (Tajfel, 1978, 1982; Tajfel & Turner, 1986). The authors begin their thesis from the psychological process of *categorisation*, which refers to the cognitive arrangement of the physical environment (e.g. objects, events and so forth) into groups on the basis of their shared characteristics. Humans, by systematically organising and

segmenting their environment, simplify it and thus make it more manageable and comprehensible. When categorisation is applied to the social environment, it is termed *social categorisation*. The objects in this case are individuals who are being classified into social groups. *Stereotypes*, for example, are seen as a form of expression of social categorisation – Tajfel and Turner term this *noninstrumental social categorisation* – that only takes into account the shared, usually most prominent, characteristics of the members of a social group and ignores any individual differences, resulting in groups being perceived as possessing great degrees of coherences, uniqueness, and differentiation.

Unlike the categorisation of the physical environment, the individual in the social system is both the observer and the actor. Thus social categorisation serves an additional function, namely that of discriminating between social categories and at the same time evaluating them by minimising the in-group (i.e. the group the observer belongs to) differences and maximising the differences between social groups. According to Tajfel and Turner, these elements of social behaviour as a function of social categorisation cannot be explained simply through means of competitive behaviour or cognitive group classification. Therefore, the authors introduce the concept of *social identity*. This concept is used to refer to the cognition the individual develops from belonging to certain social groups and the evaluative and affective importance he or she attaches to this membership. Social identity thus helps the individual assign, maintain, and understand her or his place in the social environment.

Persons develop their social identity primarily through their drive to preserve or enhance their self-esteem. When an individual cannot acquire or maintain a positive self-concept through a direct comparison between him or herself and others – the authors do refer to this interpersonal differentiation as a form of self-identity – he or she attempts to do so through social between-group comparisons or value-laden attributes, and thus develops and utilises his or her social identity. Following this argument, it can be said that an

individual always strives for a positive social identity. In order to achieve that, he or she needs to view favourably the groups he or she belongs to and to positively discriminate them from other relevant out-groups. If this process fails, one may either attempt to change the basis of the between-group comparisons, or choose a different out-group as a reference, or finally, identify oneself with other more favourable groups.

THE ME & THE I

At this point, I am drawn to refer yet again to the work of William James. As I warned in the previous chapter, knowledge of his ideas makes new ones seem frustratingly old. James in the tenth chapter of the first volume of his "Principles of Psychology" (1890/1981), titled "The Consciousness of Self" talks indeed about the concept of identity. Not surprisingly his thoughts cover to a great extent the content of both of the above theories.

James divides the self into the *Me*, which constitutes the phenomenal, experienced self, and the *I*, which is the self as a knower. In his words "let us see the words ME and I for the empirical person and the judging Thought" (p. 371, capitalisation in the original). The Me possesses three interrelated and hierarchically arranged aspects of the self, which from lower to higher are: the *material Me*, the *social Me*, and the *Spiritual Me*. The material Me deals with aspects of our material existence, such as our possession and our bodies, as well as our sense of vanity, modesty, or pride of wealth; the social Me refers to our felt social relations, like the desire to be noticed, the degrees of our sociability, our sense of love, honour, ambition, social and family pride; the spiritual Me, to which James assigns the highest value, deals with the sense of our subjective inner being, specifically our intellectual, moral, and religious aspirations, and our sense of mental superiority, purity and so forth.

These three aspects of the Me develop and become part of our identity through the processes of *self-seeking* (i.e. our actions towards maintaining and enhancing the

characteristics of ourselves), and *self-estimation*, which refers to the degree of our self-worth achieved through comparisons between the characteristics of ourselves and those of others. He goes on to claim that "in each kind of self, material, social, and spiritual, men distinguish between the immediate and actual, and the remote and potential" (p. 315). James calls the ratio between our actualities and potentialities *self-esteem*, and suggests that it is a fundamental factor upon which a stable, positive self is built.

So James's social Me can be seen as an expression of one's social identity, which like Tajfel and Turner's approach is closely related to self-esteem; James's idea, however, attributes more positive, as well as personal characteristics to one's identity, without the need of an a priori inclusion of elements of conflict and discrimination as they are found in the latter theory.

The notion of personal identity on the other hand is the expression, according to James, of the *I*-self, and conceptually it is almost identical to that of Erikson's in its fundamental assumptions. Like Erikson, James sees personal identity as our perception of personal sameness. He says, it is the experience that "I am the same self that I was yesterday" (p. 332). The rest of James's discussion on personal identity focuses on the philosophical meaning of personal sameness, and as such it will not occupy any more space in this thesis.

IDENTITY & PERSONALITY

For Erikson, as noted earlier, personal identity is partly founded on personality models. In fact, his identity diffusion and identity moratorium stages are also referred to as *noncommitted personalities*, while the foreclosed identity stage has also been called the *foreclosed personality* (Cramer, 1997). Tajfel and Turner agree with Erikson on the presence of the above relation. However, they add that social identity bears no relationship to personality as the former derives from group membership. For James though, any identity, since it comes from the self, is part of personality. In his words

"personality implies the incessant presence of two elements, an objective person [social identity], known by a passing subjective Thought [personal identity] and recognized as continuing in time" (1890/1981, p. 371). Recent theorists are more likely to agree with James. For example, Emmons (1997) posits that the concept of identity is an integrated component of personality that helps people "make sense of who they are in the world, and [...] create life stories that provide their lives with overall unity, meaning, and purpose" (pp. 69-70). Emmons's, and thus James's, ideas have also been supported, almost unequivocally, by empirical findings. So far, evidence suggests that aspects of identity seem to relate mainly to neuroticism, and partly to extraversion and psychoticism (Clancy & Dollinger, 1993; Cramer, 2000; Dollinger & Clancy, 1993, 1995; Marcia, 1980; Muuss, 1996).

Therefore it was predicted in this thesis that there would be a relationship between aspects of identity and primarily neuroticism and secondarily extraversion and psychoticism.

IDENTITY & MENTAL HEALTH

Identity has been linked to mental health through identity disorders (i.e. *dissociative identity disorder* and *gender identity disorder*). These disorders relate to the presence of multiple egos in the self (in the former case), or to gender role socialisation and hormonal imbalances (in the latter case) (Davison & Neale, 1997). However, since neither of them is of any relevance to this thesis, they will not be considered any further. To my knowledge, no direct attempt has been made in the literature to identify the relationship between mentally healthy aspects of identity and schizotypy, and thus no educated predictions can be made regarding this relationship.

In this thesis the nature of the relationship between aspects of identity and schizotypy was explored.

IDENTITY & RELIGION

Religion among other things is a form of group identity. With rituals, myths, and symbols it groups people into distinct, well-defined, and often unique communities that tend to be bound to specific cultures. As Milton Sernett (1978) puts it: "Religion [...] serves as a unifying principle, helping people define a sense of group identity according to the nuances of social behaviour" (p. 217). According to Kate Loewenthal (2000), the individual relies on religious group membership to gain self-esteem and support, and that is especially true for minority groups.

As a group identity, religion unites people together into communities, while at the same time sets apart those communities. When these divisions become polemic, religion, because of the absolutistic character embedded in its doctrines, can potentially reinforce social negative attitudes like dogmatism, racism, prejudice, and discrimination, resulting in intractably violent conflicts. "War is more humane, when God is left out of it" wrote Ronald Bainton (cited in Sernett, 1978, p. 224).

Religion is also a form of personal identity. With its moral codes and cognitive, behavioural, and attitudinal directives, it provides the individual with a framework within which he or she can develop a continuous sense of the self and find his or her purpose in life. According to Emmons (1997) religion as personal identity offers to the individual "unity, purpose, and coherence" (p. 70), as well as a philosophy of life that can act as a stabilizing and integrating power.

Because religion is seen as an identity (e.g. Christian identity, or simply religious identity) hardly any psychological research exists, to my knowledge, that directly investigates the correlates of identity and religiosity. That said, scarce studies do suggest that people who have stronger, more prominent personal identities tend to attend religious services frequently (Becker, & Hofmeister, 2001; Markstrom-Adams, Hofstra, & Dougher, 1994), and possess more mature forms of religious orientation

(Markstrom-Adams & Smith, 1996; Pedersen, Williams, & Kristensen, 2000; Sanders, 1998; Watson et al., 1992; Watson et al., 1998), while according to Crocker (1995) both personal and social identities may act as mediators in the relationship between religiosity and well-being.

Although studies on religiosity and group identity appear to be generally absent, I can nevertheless make an educated prediction about their relationship. For this I would need a little help from Allport and Ross (1967). Let us remind ourselves that an extrinsically orientated person "is using his religious views to provide security, comfort, status, or social support for himself" (p. 441). These characteristics overlap with both James's (comfort and status) and Tajfel and Turner's (security and support) concepts of social identity. It appears therefore that the higher the need for such religious goals, the more likely it is that a person will possess a stronger sense of social identity.

It was predicted therefore in this thesis that personal identity would be positively associated with church attendance, and mainly intrinsic and quest religious orientations, while social identity would exhibit a positive association with extrinsic orientation. In addition, aspects of identity may mediate the relationship between schizotypy and at least some types of religiosity.

RELIGION & ATTACHMENT

AN OVERVIEW OF ATTACHMENT THEORY

Although, not surprisingly, a number of theories of human "bonding" have been proposed (for an overview see Durkin, 1995, ch. 3), the one of relevance to this thesis, due to its almost exclusive use in the psychology of religion, is the one known as the *attachment theory*. Attachment theory has its origins in the theoretical work of British psychiatrist John Bowlby and its experimental manifestation by the American psychologist Mary Salter Ainsworth. Bowlby (1979) defines attachment as the tendency

of human beings to form strong affectional bonds to differentiated and preferred others. Early-life attachment is formed between the infant and the caregiver and its function is to provide the individual with a sense of physical and psychological safety and security. Thus from a psychological point of view, attachment behaves as a modulator of anxiety (Bowlby, 1980), and as anxiety increases so does attachment behaviour. Early attachment experience shapes the person's cognitive-affective concept of the self as either worthy or unworthy, and of the others as reliable or unreliable, and thus it frames future expectations regarding relating to others and interpreting others' behaviour and motives (Ainsworth, 1991).

Attachment styles are self-schemata, which represent the measure of the quality of the attachment bond (Berk, 1994). Ainsworth was one of the earliest researchers to operationalise Bowlby's theory, by examining individual attachment differences (Ainsworth, 1969). She and her colleagues tested infants' responses to separation from and reunion with their caregiver through a series of experiments known as the *strange situation*, and coined the *secure* and the *insecure* attachment styles (Ainsworth, Bell & Stayton, 1971; Ainsworth et al., 1978). Children classified as secure tend to seek contact with their caregiver, and are easily comforted and soothed when upset. The insecure style was further broken down into two types: *detached/avoidant*, and *anxious/resistant*. Children of the former style tend to avoid contact with their caregiver, while the ones of the latter style tend to seek and avoid contact at different times while showing inability to be comforted. Mary Main and Judith Solomon (1990) suggested a third insecure group – which they called *disorganised/disoriented* – to characterise children who respond in confused, contradictory ways towards their caregiver.

ADULT ATTACHMENT

According to the Bowlby-Ainsworth model, the attachment style one develops in early life becomes a prototype upon which one tends to form other affectionate bonds across the life-span and outside the immediate family circles (Bartholomew & Horowitz, 1991;

Kerns & Stevens, 1996; Morrison, Goodlin-Jones & Urquiza, 1997). Early-life attachment is therefore a strong predictor of the type of attachment in later age. Although adulthood attachment can be expressed through a variety of relationships (e.g. friendship, role-models and so forth), it is most often conceptualised in romantic love (Ainsworth, 1991; Bartholomew & Horowitz, 1991; Shaver, Hazan & Bradshaw, 1988; Sperling & Berman, 1994; Sroufe & Fleeson, 1986). Shaver and his colleagues (1988) for example, pointed out that the underlying mechanisms in adult romantic relationships, such as physical contact, caressing, and even baby-talk, are similar to the ones of the child-caregiver attachment.

Cindy Hazan and Phillip Shaver (1987) used Ainsworth's attachment styles and proposed that these same styles not only exist in adulthood, but they also crucially affect one's behaviour in romantic relationships. Kim Bartholomew and Leonard Horowitz (1991) refined Hazan & Shaver's typology, and, by integrating Bowlby's model of the self and the other, proposed a four-style model for adult attachment. People comfortable with intimacy and autonomy (positive model of self and other) were categorised as *secure*; those who are preoccupied with relationships and strive for self-acceptance (negative model of self vs. positive model of other) formed the *preoccupied* type; individuals who tend to avoid close involvement with others (negative model of self and other) were called *fearful*, and finally, those who maintain a sense of independence and invulnerability (positive model of self vs. negative model of other) made up the *dismissing* type. Finally, in a parallel evolution of the concept, Brennan, Shaver and Tobey (1991) suggested that adult attachment can be represented as having a two-dimensional (*anxiety-avoidance*) higher structure (Figure 4.1). These two dimensions characterise attachment behaviour on degrees of need for approval (anxiety dimension) and discomfort with closeness and dependence on others (avoidance dimension).
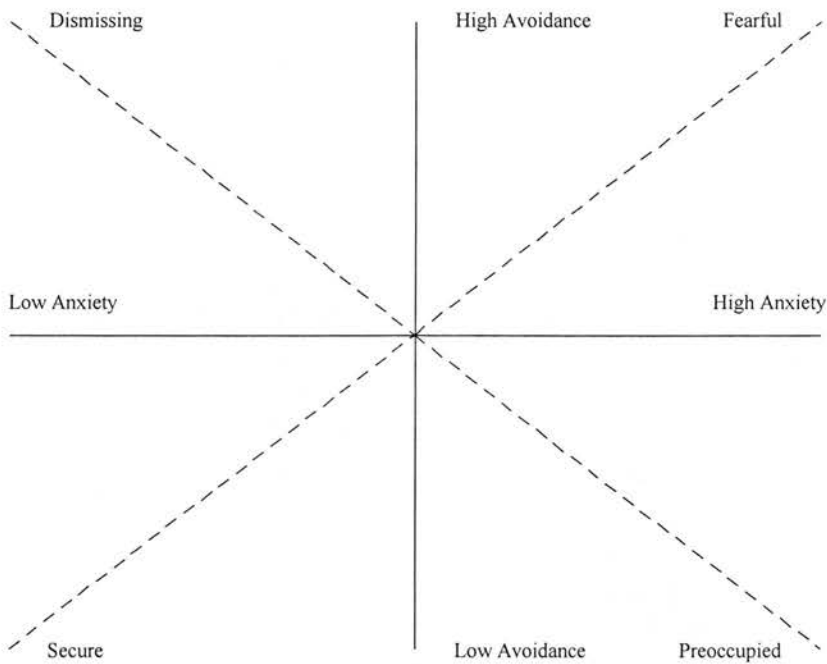
Figure 4.1. The relation between Brennan's et al. (1991) anxiety-avoidance model of individual differences in adult attachment and the four-style model developed by Bartholomew & Horowitz (1991) (adopted from Shaver & Fraley, 1999).

ATTACHMENT & PERSONALITY

Attachment, the theory suggests, because of its inner representation of the self-other bond, plays a vital part in personality development. As Rothbard and Shaver (1994) put it: "Attachment theory offers both distal and proximal explanations of the emergence and stability of personality" (p. 31). Bowlby (1969) himself recommended that in order for an early-life attachment measurement to be of great value it will have to be "predictive of future personality development" (p. 339). Empirical studies do indeed demonstrate rather consistently not only a stable attachment-personality relationship but also a clear direction in this relationship (Bretherton, 1992; Kagan, 1999; Kerns & Stevens, 1996; Larstone et al., 2002; Reti et al., 2002; Rowatt & Kirkpatrick, 2002; Wilkinson & Walford, 2001). Unequivocally, the evidence suggests that individuals with

insecure attachment tend to be higher mainly in neuroticism and in part in psychoticism. Irving Reti and his coauthors (2002) went a step further and suggested that "the role of parenting in later personality disorders may be mediated by associations between parenting and normal personality traits" (p. 55).

> Consequently, it was expected that adult attachment would positively relate to both neuroticism and psychoticism personality traits.

ATTACHMENT & MENTAL HEALTH

The attachment style one develops has been demonstrated to have some profound effects on or general relationships with one's psychological health. Isabel Goodwin (2003) summarised the ways attachment has been found to influence mental health into the following: (a) the breaking of the affectionate bond can cause a psychological imbalance, (b) insecure early-life attachment can make an individual more vulnerable to stress in their later life, and (c) the perception one has of intimate relationships can influence coping strategies and tolerance to adversity.

Mikulincer and Florian (1995), and Feeney (1995) separately found that secure attachment is associated with effective coping skills and development of positive, constructive strategies for dealing with environmental stressors, whereas insecure attachments relate to shame, anger, fear, and negative emotional evaluation. Cooper, Shaver & Collins (1998) investigated psychological symptomatology and problem behaviours in 1989 adolescents and concluded that insecurely attached individuals were badly adjusted in the community and exhibited high levels of risk behaviours. Parental physical punishment has been associated with anxious adult attachment in women, and with avoidant adult attachment in men, whereas guilt induction seems to follow an opposite trend (Magai et al., 1995). Females appear to be particularly vulnerable to dysfunctional empathy and guilt, especially when during early-life attachment, their caregiver suffered from depression (Zahn-Waxler et al., 1991), or they had been sexually

abused by their caregiver (Roche et al., 1999; also relevant Glod & Teicher, 1996).

Of relevance to this thesis is the relation of attachment to personality disorders, and although research in this area has been slow to pick up pace, a few interesting points can be mentioned here. It has been suggested that disorganisation in attachment behaviour, which is an indicator of the person's inability to regulate their interpersonal distance mainly because of their excessive fear of rejection, is linked to borderline personality disorder (Fonagy et al., 1997), dependent personality disorder (Livesley, Schroeder, & Jackson, 1990), and avoidant personality disorder (Sheldon & West, 1990). Furthermore, West and Keller (1994) proposed that the idea of dysfunctional attachment is present in the language of all personality disorders through, for example, "lack of close friends or confidants" in schizotypal and schizoid personality disorders, or the tendency of people with a histrionic personality disorder to consider relationships to be more intimate than they actually are. Finally, let us remind ourselves of Meehl's theorising that the functionality of the familial environment can play a catalytic role in the development of schizotypy (Millon, 1996). Although further research is needed to identify the empirical components of the above relationships, general predictions can still be made.

Therefore, in this thesis it was predicted that elements of adult attachment styles would be related to at least some of the components of schizotypy, and that this relationship would be stronger for the insecure attachment styles.

ATTACHMENT & IDENTITY

As the core element of attachment theory is the development of mental models of the self and of the others, seeing the connection between attachment and identity should not be hard. It has been argued that the stability of the model of the self, especially during the early years of one's life, affects the development of one's personal identity (Haigler, Day & Marshall, 1995; Matos et al., 1999; Meeus et al., 2002; Zimmermann & Becker-Stoll, 2002) – the reader should keep in mind that all these studies used measurements

of early parental attachment and not any of its adult forms. At the same time, Smith, Murphy, and Coats (1999), suggested that group identity is in itself a form of attachment, a group attachment. They claimed that group membership is as fundamental to human survival as the bond to the caregiver, as it serves the same purposes of security, dependence and closeness. Therefore, the model of the self-others becomes in identity terms a model of the self as a group member vs. the group. However, the authors warned that although group identity can be seen as a form of attachment, its dynamics function in a relatively independent, albeit parallel fashion to the latter. The evidence so far is not sufficient to allow for any concrete predictions in the relationship between identity and adult attachment.

> Therefore, in this thesis the nature of the relation of identity to adult attachment was explored.

ATTACHMENT & RELIGION

In 1990, Lee Kirkpatrick and Phillip Shaver noted that modern research in the psychology of religion lacked a sane theoretical foundation, and thus they set out to deliver one. They proposed a theory that incorporated attachment into the functioning of religion. In an attempt to investigate Freud's earlier claims of God as the projection of the father, they were surprised by the striking resemblance between Christian theology and attachment theory. God (or His representation through Jesus) appears to be the ultimate secure attachment figure; one with whom the believer has a personal relationship, interacting with Him through prayer and meditation; one that is always there in times of need and emotional crisis; is always trustworthy and loving, and provides a sense of safety and security to the believer. God, according to Kirkpatrick and Shaver, is the ultimate antidote to fear and anxiety. They suggested that "theistic religion may play an important role in many adults' lives because of its ability to function in the manner of an attachment relationship" (p. 319).

This religion-as-attachment theory was presented in finer detail by Kirkpatrick in 1992 and again in 1999. Although this presentation did not modify the original model, it did however, attempt to justify and explain it in more depth, by clarifying some of its premises and by providing empirical evidence that had by then accumulated, in support of it. First, he defended the analogy of child-caregiver to believer-God, by saying that although Bowlby's theory did not include God in any of the attachment bonds[5], and that he indeed acknowledged that attachment theory cannot be applied successfully to any sort of bonding, Kirkpatrick did believe that the way God is perceived by or presented to the believer can be best understood within the attachment theory framework. He then went on and attempted to justify the concept of God as a father. Again according to Bowlby the primary caregiver to whom the child attaches is the mother, and thus one would expect God to be a female figure. Although a year earlier Bowlby had indeed been criticised for putting too much reliance on observations in nonhuman animal relationships (Quiery, as cited in Goodwin, 2003), Kirkpatrick did not refer to that criticism. Instead he cited a number of studies with contradicting results, suggesting either that, appearances aside, God may be perceived as having motherly characteristics, or that God may be seen as the ultimate male parent. Kirkpatrick settled this debate by simply stating that the image of God is not important, but what is important is that God captures "the very essence of the 'stronger, wiser other' that a parent represents to a child" (1999, p. 805). Finally, he claimed that his theory can be applied equally to polytheistic and nontheistic religions, or in fact, to any spiritual belief systems, since God as an attachment figure can easily be substituted for any supernatural figure, formal or informal, personal or institutional.

For the believer-God bond to fall tightly into attachment theory, its proponents needed

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That said, Bowlby did allude to this relationship, when he wrote that "probably in all normal people [attachment] continues in one form or another throughout life and, although in many ways transformed, underlies many of our attachments to country, sovereign, or church" (1956, p. 588)

to take into account the individual differences in the interpersonal religious attachment. In other words, although God may be presented as a loving, caring, and helping parent, some believers may still view Him as a punishing, fearing, distant, or unreliable entity, or they may not accept Him at all. In order to explain this, Kirkpatrick and Shaver (1990) proposed two hypotheses both deriving from attachment theory.

The first one they termed the *correspondence of mental models* hypothesis. According to this hypothesis, the quality of the early-life attachment bonds leads to the development of internal working models regarding expectations from the other and beliefs of self-worth, and these models serve as frameworks upon which one builds future relationships. So for example, a stable, secure attachment in early-life, leads the child to perceive the caregiver as trustworthy and reliable, and at the same time view him or herself as worth the affection and security the attachment bond provides. Consequently future attachments will be perceived and treated with the same beliefs and expectations. In other words, the attachment style of the believer-God relationship will tend to be similar to that of the believer's early-life child-caregiver attachment, or to the believer's adult romantic attachment, as the latter would fall into the above model as well. In addition, securely attached individuals will tend to be more religious than insecure ones, while the latter will be more likely to report themselves as being agnostic or atheists.

The second hypothesis is the *compensation hypothesis*. This is based on the function of attachment to regulate anxiety homoeostatically and sustain security. The attachment system is a dynamic one that changes and responds to internal states and external conditions. For example, an angry or stressed caregiver may respond differently to the needs of the child than when they are calm or happy. Therefore, the mental models that result from an attachment bond need to monitor continuously the system and adjust accordingly, in order to restore or achieve adequate levels of security. However, it is possible that no matter how much the mental models adjust, they can never reach

security levels in a given attachment system. This can happen when (a) the attachment figure is no longer available, as in cases of death or divorce (in adult attachment); (b) it is beyond the attachment figure's capacity to provide security, e.g. in times of extreme stress or crisis; and (c) the developed attachment style is insecure and unstable and thus by nature inhibits any sense of security. In all the above instances, the individual will seek to form attachment bonds with surrogate figures that can restore comfort and security in them. The compensation hypothesis therefore suggests that God is such a substitute attachment figure. He compensates for the lack of love and security in one's "earthly" attachments, primarily those with their parents, caregivers, or partners. So the compensation hypothesis predicts that individuals with a history of insecure attachments, will tend to form a secure attachment with God, they will tend to pray more (or perceive prayer as central to their religious practices), they will be more likely to have experienced sudden religious conversion, and they will tend to have more strict, fundamental religious beliefs.

The first to test the above hypotheses were the actual proponents of them. Kirkpatrick and Shaver (1990) asked 213 participants who responded to a newspaper advert to fill in questionnaires about their parents' levels of religiousness (dichotomized into high or low), their own religious orientation (intrinsic/extrinsic total), their perception of God (loving, controlling and so forth) and religion, their religious practices, and their early-life attachment styles (secure/avoidant/anxious). They found that avoidant individuals had on average significantly higher intrinsic orientation scores, while the picture in respect to the extrinsic orientation was not clear. Avoidant individuals were also the most likely ones to have experienced sudden religious conversions, and have more fundamental religious thoughts. However, all those results held only when the mother's religiousness was low. When maternal religiousness was high, or when controlling for the father's religiousness, all the above effects disappeared. The authors concluded that their findings provide partial support to the compensation hypothesis, and that maternal religiousness tends to moderate the relationship between attachment and religiosity.

These findings were replicated by Pehr Granqvist (1998) in 203 Swedish university students, with the only difference that he found paternal religiousness also to have a moderating effect. In 2001, Annette Mahoney and her colleagues ran a meta-analysis of ninety-four studies on religion and marital or parental functioning and found that "greater parental religiousness relates to more positive parenting and better child adjustment" (p. 559). Furthermore, Kirkpatrick (1999) offered additional, mainly indirect, evidence in support of the compensation hypothesis.

That said, in 1992, Kirkpatrick and Shaver ran a similar to their previous one survey study ($N = 213$) by adding a measurement of adult attachment styles and a measurement they devised to assess attachment to God. This time, however, they found that secure individuals tended to form more secure attachments with God than insecure ones, be more religious and committed, while avoidant participants were the most likely to be agnostic. This result provides support for the correspondence hypothesis. The hypothesis was also partly supported in a study with 72 kindergarten Dutch children (de Roos, Miedema, & Iedema, 2001) in which it was found that although negative concepts of God had a very low to no relationship with attachment measurements, positive concepts of God were predicted by a secure attachment to the teacher but not to the mother. Finally, Kirkpatrick (1998), performed a large-scale longitudinal study with 1126 (at *T1*) and 297 (at *T2*) university students, and found that his cross-sectional data supported the compensation hypothesis, while his longitudinal data corroborated the correspondence one (also of interest is Saroglou, Kempeneers, & Seynhaeve, 2003).

All of the above studies suffer to an extent from methodological problems. All, except that of de Roos et al., tended to use either rather simplified measurements for assessing attachment or religious intensity and commitment usually addressed through single-item questions, or measurements developed for the specific study and thus had unknown psychometric properties. This move is understandable, since the authors were interested in attracting a large-N sample and since their intentions were to generate an initial

impression of the underlying relationships. The de Roos et al. study has limitations of its own. For example although the authors assessed the attachment styles of the child-mother bond directly from the children's responses to a role-play measurement, the child-teacher attachment styles were assessed through the teachers' responses to a questionnaire. This may have introduced a response bias in the study. In addition, the authors say that although maternal attachment correlated with teacher attachment, only the latter correlated with positive beliefs in God. However, they fail to address the possibility that teacher attachment may be a direct total mediator in the relationship between maternal attachment and beliefs in God.

Regardless of the shortcomings, the above studies collectively provide evidence for an important association between attachment and religiosity leading to the inclusion of the attachment variable in the present thesis. As neither of the generic hypotheses could be rejected, both were assessed, to a degree possible, in this thesis.

In accordance with the *correspondence hypothesis*, the more securely attached a person is the more likely they will be to exhibit mature religious orientation, while the more insecure the attachment the more their orientation will tend to be an immature one or they will show low religious orientation indiscriminately.

According to the *compensation hypothesis* the above pattern was expected to be reversed, with insecure individuals exhibiting mature religious orientations. In addition, insecure individuals, were expected to pray more often and go to church more frequently than secure ones.

THREE INTEGRATED MODELS

Thus far I have described all the variables used in the two studies to be presented in this thesis, as well as evidence of the kind and degree of association between them. Given the information available and the aims of this thesis, I will now attempt to integrate all those variables in a structural model. Since the main aim of this thesis was to investigate the relationship between religiosity and schizotypy, the model is based on the predictions I have made earlier about this relationship. In fact, the five religion-schizotypy hypotheses discussed earlier

Figure 4.2. Alternative theoretical models of religion and schizotypy.

combined with the rest of the predictions allow for the generation of three models, namely one that places religiosity as a predictor, one that treats it as an outcome, and finally, one that does not assume any causal relationships. The rest of the variables may serve as mediators in the first two models and as covariates in the final one (Figure 4.2). I do not intend to test all three models, unless the evidence from the rest of the analyses are inconclusive. Instead, I expect through testing the various predictions a picture to emerge that would make one of those three models more likely to represent the relationships in the dataset.

CHAPTER SYNOPSIS

In this chapter, I presented the concepts behind the variables used in the two studies of this thesis that follow. The variables of primary focus were: (1) religious orientation, as measured through Allport's and Batson's approaches; and (2) schizotypal personality traits of the DSM-IV classification. Secondary variables that were treated as mediators/covariates were: (3) general personality traits, as measured using Eysenck's theory; (4) aspects of identity, both personal and group; and (5) adult attachment styles, assessed using Bowlby's theory. Finally, variables whose role was also considered were: religious practices relating to (6) church attendance and (7) prayer, (8) religious (Christian) denomination, (9) age, (10) gender, (11) social desirability, and (12) when feasible, additional sociodemographic characteristics.

Furthermore, the relationship between mainly the primary and secondary variables, with the central focus being on religiosity versus the rest, was considered from both a theoretical and mainly an empirical perspective. The evidence presented and discussed helped formulate the predictions tested in the questionnaire study (and in part shaped the focus of the interview study), and design the three integrated models above.

SUMMARY OF PREDICTIONS

PRIMARY PREDICTORS (RELIGIOSITY VS. SCHIZOTYPY)

Higher levels of certain schizotypal traits will predict higher levels of certain religious orientations (the *excitement hypothesis*).

Higher levels of certain schizotypal traits will predict lower levels of certain religious orientations (the *prevention hypothesis*).

Certain religious orientations will predict certain schizotypal traits (no direction is stated) (the *causal hypothesis*).

Certain religious orientations will form clear and relatively stable groups with certain schizotypal traits (no direction is stated) (the *covariance hypothesis*).

An assessment into the degree of spuriousness in the relationship between religiosity and schizotypy will be made (the *phenotype hypothesis*).

The mediating effect of the secondary and the sociodemographic variables on the religiosity-schizotypy relationship will be assessed in an integrated model

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SECONDARY PREDICTORS RELATED TO RELIGIOSITY

Neuroticism will tend to have a positive relationship with religiosity.

Psychoticism will have a negative, low to moderate, relationship with religiosity.

Psychoticism will be inversely related to frequency of prayer and church attendance.

Frequency of church attendance and prayer will have an inverse relationship with schizotypy.

Personal identity will be positively associated with church attendance, and mainly intrinsic and quest religious orientations

Group identity will exhibit a positive association with extrinsic orientation.

The more securely attached one is the more likely they will be to exhibit mature religious orientation, while the more insecure the attachment the more their orientation will tend to be an immature one or they will show low religious orientation indiscriminately (*correspondence hypothesis*).

Alternatively, insecure individuals will possess a more mature form of religious orientation, would pray more often and go to church more frequently than secure ones (*compensation hypothesis*).

SECONDARY PREDICTORS RELATED TO THE REST OF THE PSYCHOMETRIC VARIABLES

Schizotypy will have a positive and moderate relationship with neuroticism, a very low or negative one with extraversion, and a positive low relationship with psychoticism.

The relationship between schizotypy and aspects of identity will be explored.

Aspects of identity will relate primarily to neuroticism and secondarily to extraversion and psychoticism.

Adult attachment will be related to at least some of the schizotypal traits, and that this relationship will be stronger for the insecure attachment styles.

Adult attachment will relate positively to both neuroticism and psychoticism.

The relationship between adult attachment and aspects of identity will be explored.

OTHER PREDICTORS & MISCELLANEOUS EXPLORATORY GOALS

An attempt will be made to recover Allport's religious orientation dimensions.

Intrinsic orientation will relate to both internal and external orientations.

Extrinsic orientation will only show a low association with external.

Quest orientation will be largely independent from all the rest of the orientations, and only show a low negative association with the intrinsic orientation.

The possibility of the existence of nonlinear relationships between the religious orientations will be explored.

The variation in the intensity of schizotypal traits between different Christian denominations will be explored.

The bivariate effects of the sociodemographics on the psychometric variables will be assessed.

CHAPTER V

THE QUESTIONNAIRE STUDY: METHODOLOGY

"Though this be madness, yet there is method in it."
(Shakespeare, Hamlet, act II, scene ii)

CHAPTER AIMS & ORGANISATION

In this chapter, a detailed presentation of the methodology employed for the questionnaire study of this thesis is given. Initially issues regarding sampling and participant selection are presented. Standardised or otherwise measurements, their rationale and psychometric properties are discussed, followed by a description of the research procedure. Finally, issues relating to data analysis and the statistical procedures used in the study are addressed.

QUESTIONNAIRE STUDY AIMS

By assessing the predictions presented in the previous chapter, the questionnaire study aimed to map the quantitative aspects of the religiosity-schizotypy relationship, and identify and incorporate the effects of psychological and sociodemographic variables in

this relationship.

DESIGN

SAMPLING

Sampling is the process of selecting to observe some part (a sample) of a target population, in order to estimate some characteristics of interest in that population. Generally, there are two broad types of sampling (Barnett, 2002): (a) *probability* or *random sampling*, which is a family of sampling techniques through which every population unit has a known, though not necessarily equal, chance (probability) of being included in the sample; (b) *non-probability* or *non-random sampling* that defines a family of sampling techniques that do not take into account elements of chance.

Through probability sampling one can inductively infer, with a degree of confidence and error (bias), accurate, precise, and meaningful estimates of the characteristics of interest in the target population. Non-random sampling techniques on the other hand do not allow for such inferences, i.e. findings based on such sampling procedures may not be used to generate inferences to the population of interest. In other words, any generalisation of conclusions needs to be based on some a priori knowledge of the sampling distribution, knowledge that can only be available through random sampling.

On these premises, it is claimed that inferential statistical procedures can only be used with data collected through random sampling techniques (Anderson, 2001; Cochran, 1977; Krishnaiah & Rao, 1988). At the same time it has been argued (e.g. Oakes, 1986; Rosenthal & Rosnow, 1991) that such statistics can be used with non-probability sampling (a) if evidence suggests that the sample appears to be sufficiently representative of the population, and (b) in the form of convenience, if somewhat

arbitrary, assessment criteria – a practice widespread in psychological research.

In the current study the initial approach was towards devising a probability sampling technique, through which, based on an a priori specified confidence interval, a random sample of congregations would be drawn from all the Christian congregations in Greater Edinburgh, and a *cluster sampling* method would be subsequently applied, through which all members of the selected congregations would be requested to take part in the study. However, this approach was dropped for the following reasons.

My initial contact with various congregations in the wider Edinburgh was discouraging. Indeed, all of the clergy or elders I spoke to, although they found the topic interesting, were not willing to allow or encourage their congregations to take part in the study. They claimed they had been over-researched (though they were not clear by whom) to an extent that they felt they needed to "protect" their members. In addition, they were not comfortable with the idea of psychology analysing their faith, and Freud's ideas were indeed mentioned in a number of instances – which brings back the issues discussed in chapter III regarding the uneasy relationship between religion and psychology. This response alone, made the application of the random selection process infeasible.

Furthermore, since the aim of the study was not to estimate a true value of a population parameter, as is the case with surveys or opinion polls, but rather identify a model that could provide a reasonable and plausible explanation of the association between the variables of interest, probability sampling may have been indeed unnecessary (see also Rosenthal & Rosnow, 1991, pp. 219-220).

Therefore, a non-random sampling method was adopted. This sampling technique was *purposive* in the sense that certain inclusion criteria were a priori layed down forming the study protocol. Thus potential participants needed to (a) classify themselves as Christians, (b) be adults and thus potentially have a more mature approach to their faith,

(c) either be British nationals or have lived in Britain for a minimum of one year in order to allow for a degree of familiarity with the British culture, and (d) speak English fluently.

SAMPLE SIZE & POWER

When estimating an acceptable sample size for a study, the following two measurements are of central importance: (a) *statistical power,* which refers to the probability of detecting an existing effect, or in other words the probability of rejecting a false null hypothesis (Everitt, 1998, p. 259), and (b) *effect size,* which is a measure of the degree of manifestation of an effect in a population (Cohen, 1988, pp. 9-10).

A priori estimations of these measures can be calculated from previous findings, and they can be used to estimate the optimum sample size needed for a study. For example, the study by Diduca and Joseph (1997) (discussed in the previous chapter), found no statistically significant bivariate correlations between the religiosity dimensions used and schizotypal symptoms. By running a power analysis, I found that their power was .19 and their tests showed an effect size of $r = .08$. These findings suggest that detecting an effect was highly improbable for them (probabilistically speaking, they would have needed to conduct five trials like the one they did, in order to get significant results in one of them). In fact, under these conditions, had they wanted to increase the power of their tests, say to .40 they would have needed to recruit about 320 participants (they actually had 201 subjects).

Sample size in the current study was estimated through an a priori power analysis. The literature suggests that the bivariate associations between religiosity and the other variables used in this study tend to have a small to medium effect size (approx. $r = .10$ to .38). Assuming a desirable statistical power of .80 at an α-level of .05 (two-tails), the above effect-size range suggests that the sample size needed to be between 84 and 800

subjects. However, since this is obviously an impractical interval, it was compressed down to 100-200 individuals, which allowed for an effect-size range of $r = .19$ to .27 to achieve an 80% power at the above α-level.

PARTICIPANTS

A total of 161 adult individuals took part in the study. Participants were drawn from the following groups:

1. The psychology volunteer panel of the University of Edinburgh. The panel consists of a growing number of individuals (currently 214) who have shown interest in taking part in psychological research. These individuals had responded to invitations through posters, newspaper articles, and adverts. The department of psychology keeps a database record of their contact details and some basic demographic information.

2. University students. All Christian first and second year undergraduates in the psychology department of the University of Edinburgh were encouraged to take part in the study, through direct contact in classrooms.

In addition, several participants from the above groups volunteered to function as intermediators and help recruit other individuals from their familial or broader circles.

I am aware that the use of volunteers may have introduced biases in the data that could have led to a misestimation of the relationships present in the dataset and a reduction in the validity of the measurements. Indeed a number of characteristics have been identified that differ between volunteers and non-volunteers (for an overview see Rosenthal & Rosnow, 1991), of which the ones that are of relevance to this study suggest that volunteers (a) tend to be more educated than non-volunteers, (b) tend to be both or either

more sociable and in higher need for social approval, (c) tend to be less conforming and less authoritarian, (d) tend to have a higher interest in religion, and (e) tend to exhibit more maladjusted behaviour than non-volunteers. Since data from a non-volunteer sample were not available in this study, I simply acknowledge the potential of a presence of a volunteer bias in my sample, and suggest caution with the generalizability of the results.

MATERIAL

PSYCHOMETRIC PROPERTIES

For all the standardised questionnaires used in the current study, the following psychometric properties were reported when available in their manuals:

RELIABILITY

Reliability refers to the degree of random error in the observed variability of the results of a measurement (Rosenthal & Rosnow, 1991, p. 46). The reliability of a psychological test can be assessed through statistics. For each measurement used in this study up to two types of reliability estimates are presented:

1. Internal consistency: The degree of consistency of related components of a scale. In other words, internal consistency provides a measurement of respondents' tendency to reply to related questionnaire items in similar ways. The most commonly used measure of internal consistency, and the one reported in this study, is *Cronbach's alpha* (or *alpha coefficient*) based on Luis Guttman's work and made popular by Lee Cronbach in 1951. The coefficient alpha could be seen as an average (weighted) intercorrelation between a set of items, although it is commonly and wrongly perceived as a measure of unidimensionality. Alpha is expected to lie within zero and one, with values closer to

one suggesting better internal consistency. However, it can still take negative values or values greater than one (for example, when the scale consists of two items with equal variances and a perfectly negative correlation, their alpha will reach infinity) (Nichols, 1999). For a set of items to be considered a (psychological) scale a common cutoff point of alpha is .70 (de Vaus, 2002), while some suggest .80 (Carmines & Zeller, 1990).

It should be noted that whenever a study utilises a standardised psychometric questionnaire, it is advisable always to check the internal consistencies of the scales, as they may vary (at times dramatically) from the normative ones reported by their developers. This can be a result of number of reasons. For example, (a) the questionnaire may possess flaws that were not picked up by its developers, such as unclear instructions and wording of items or inappropriate inclusion of items; or (b) the instrument may be only or mainly applicable to certain age, area, or socioeconomic groups. When in a given study a questionnaire is found to possess much lower internal consistencies than its norms, the researcher may wish to investigate the source of this discrepancy and either omit this questionnaire from the study, especially if its reliability is also much lower than the recommended cutoff points, or apply caution when interpreting results that are based on this measurement.

2. Test-retest reliability: An estimate of a scale's stability over time, assessed by the administration of the same measurement to the same respondents at two or more points in time. For a scale to be reliable, a respondent's scores need to be similar across all time-points. The assumption that appears to underline test-retest reliability is that individuals possess a "true score" on the latent construct the instrument is measuring, and that score is relatively stable through time. It is this assumption that allows for the estimation of an instrument's normative scores within a population of interest. This assumption may hold for personality traits for example, whereas attitudinal measurements may generate more variable responses and be susceptible to the timing of the sampling and the length of the interval between two consecutive sampling points.

Correlational statistics are commonly used to assess the degree of agreement between pairs of scores. I would argue that these statistics alone, although necessary, are not sufficient to reveal the stability of a scale through time, i.e. its test-retest reliability. Though true that in a reliable scale pairwise comparisons should demonstrate positive, high, and at least monotonic relationships, in order to satisfy the true-score assumption, point-pairs should also be free of systematic error. Correlational statistics do not tend to take into account the presence of systematic error. So if the paired data differ by a constant, or in other words, if scores at a time-point tend to be systematically higher or lower than scores taken at another time, correlational statistics will fail to notice it. Thus I suggest that in addition to the above statistical techniques one should use tests that measure average differences (e.g. paired-samples *t*-test or equivalent) that indirectly take into account the presence of systematic error. In this instance of course one would wish these statistics to reveal zero or near zero average differences between the compared pairs. To my knowledge, researchers tend not to combine the above two groups of statistical procedures when assessing a scale's test-retest reliability.

<u>VALIDITY</u>

In general, a test is said to be valid if it measures what it claims to measure (Black, 1993, pp. 68-71). However, this is a rather vague definition. In the social sciences where the "thing" measured is usually an abstract concept or construct, it may appear at first that the empirical validation of a measurement is a rather futile process. How do we know that this abstract "thing" is there and that a given instrument does indeed measure it? A simple response to this is that we do not know. In fact, a psychosocial construct may exist only within the instrument that measures it – the famous positivistic view of intelligence being what intelligence tests measure. All this led Lee Cronbach (1990) to claim that declaring that an instrument is either valid or invalid in any absolute sense is unjustifiable. In the same line of thought, Bram Oppenheim (2001) suggested that depending on the level of desirable and acceptable conclusions one wants to draw, instruments can have more than one validity, i.e. they can be measuring more than one,

and potentially an infinite number of constructs. Despite these considerations, instruments can still be, and indeed are, validated. Ultimately, confidence on an instrument's validity rests on the meaningfulness of the theoretical framework that the instrument is based upon and the accumulating evidence from empirical investigations into the matter.

Several types of validity have been proposed (for an overview see Bryant, 2002), most of which, though not all, can be assessed through statistical procedures (Rosenthal & Rosnow, 1991, pp. 550-553). Moreover, Norman Anderson (2001, pp. 8-16, 572-575) demonstrates how any validity type can be conceptually represented on a two-dimensional space defined by what he calls *focus of concern* and *generality* dimensions. Focus of concern is expressed through the *outcome-process* polarity, where research on the *outcome* end is concerned with practical applications of outcomes, while the focus on the *process* end is on conceptual interpretations of the underlying processes. The generality dimension is expressed through the *internal-external* polarity, which indicates the extent to which validity can be applied within a given research setting (internally) or generalised to other (external) settings.

At this point it is worth noting that reliability and validity are highly related concepts, with the former being a necessary, but not sufficient condition for the latter. In other words, a valid measurement needs to be reliable, while a reliable measurement may not be valid within a given framework.

For each measurement used in this study up to two types of validity are presented when available in their manuals:

1. Convergence validity: A type of validity that refers to the degree of agreement (convergence) between different measurements of the same construct. One would expect that scales or instruments that claim to measure the same thing, albeit through different

means, to be highly related. Convergence validity is commonly measured through correlational statistics, while multivariate statistics, like exploratory or confirmatory factor analysis allow for a finer assessment. Fred Bryant (2002, pp. 113-114) favours the use of confirmatory statistics, as these techniques provide goodness-of-fit indices of the tested models against a model that assumes absence of convergent validity between the model components.

2. Discriminant validity: A type of validity that refers to the degree of distinctiveness between measures of different constructs. In other words, one would expect that scales or instruments that measure unrelated constructs to exhibit no or low association. The same statistics as in the previous type of validity can also be used here, although in this instance either low correlations or distinct factors formed by the different measurements are expected. Addressing issues of convergence and discriminant validity simultaneously is therefore possible – and in fact, these two validity types combined form in part the concept of *construct validity*.

Moreover, regressing the instruments under validation against an outcome measure allows for the assessment of discriminant validity since conceptually unrelated scales should exhibit low levels of *multicollinearity* (i.e. intercorrelation), and thus should demonstrate unique contributions to the variability of the outcome measure.

Another way of assessing discriminant validity is through evaluating the ability of a set of scales to classify correctly (i.e. discriminate) responses into well-defined groups (e.g. presence or absence of a particular disorder). This can be done through the use of binary or multinomial logistic regression, or discriminant analysis.

DESCRIPTION OF THE QUESTIONNAIRE MEASUREMENTS

From the appropriate pool of standardised psychometric questionnaires, the following seven were selected based on (a) their frequency of occurrence in previous studies in the area, (b) their psychometric properties, (c) the level upon which their results can be combined and compared, and (d) the researcher's personal correspondence with other investigators in the area. All questionnaires were in the public domain and no explicit permission for use was required from their developers. A summary of the psychometric and descriptive characteristics of these measurements is presented in Table 5.1.

AGE-UNIVERSAL INTRINSIC/EXTRINSIC-REVISED SCALE (I/E-R)

(Gorsuch & McPherson, 1989)

A 14-item pen-and-pencil measurement of the *intrinsic* and *extrinsic* religious orientations initially conceptualised by Allport (1950) and operationalised by Allport and Ross (1967). To remind the reader, intrinsic orientation refers to a mature form of religious sentiment that serves as a master motive and guide for one's way of life (e.g. " My whole approach to life is based on my religion" [item 12]), while extrinsic orientation addresses the issue of immature faith that serves as a means of convenience for self-serving goals (e.g. "I go to church mostly to spend time with my friends" [item 11]) (for more see the relevant discussion in chapters III and IV)

The original Allport-Ross scale (a 20-item scale) had been initially revised by Gorsuch and Venable in 1983 to make it an "age universal" scale that can be used with children, young adults, and various educational levels – the revision was almost exclusively at the wording level. When, however, Lee Kirkpatrick (1989) used a *Principal Axis Factor Analysis* with *Equamax* rotation and re-analysed data from twelve studies done in the US (total $N = 1070$) that used the original Allport-Ross scale he found the presence of two distinct extrinsic dimensions he termed *extrinsic-personal* and *extrinsic-social*. The former refers to a form of extrinsic orientation that is personally directed (e.g. "What

religion offers me most is comfort in times of trouble" [item 8]), while the latter addresses extrinsic aspects that are socially oriented (e.g. "I go to church because it helps me make friends" [item 2]).

In a parallel attempt, Gorsuch and McPherson (1989) revised their 1983 scale by factor-analysing data (Principal Axis Analysis, no information on rotation was provided) from a large sample study ($N = 771$, US college students) to accommodate for the presence of three dimensions (the three-dimensional structure was also confirmed in a later study by Genia, 1993). The new scale is the I/E-R one used in the current study (for a critique of the above see chapter IV).

The I/E-R consists of 14 items, eight that measure intrinsic religiousness, and three items in each of the extrinsic forms (Appendix III). Internal consistencies are .83 for intrinsic, .57 for extrinsic-personal and .58 for extrinsic-social (.65 for a combined extrinsic dimension). Gorsuch and McPherson do acknowledge that the reliabilities of the extrinsic orientations are rather low, but they explain this by the small number of items that make up these scales (1989, p. 352). In addition, they are confident that the brevity of the measurement would make its use possible with large samples ($N > 100$), where statistical power would be high enough to overcome any reliability issues. Discriminant validity is reported as .07 (intrinsic vs. extrinsic-personal), -.12 (intrinsic vs. extrinsic-social), and .41 (between the two extrinsic subscales).

Responses on I/E-R are measured on a 5-point Likert scale (from 1 = Strongly disagree, to 5 = Strongly agree). Three reverse-keyed items are present (all located in the intrinsic dimension). The scales are scored by adding up the responses in all of their items. Thus scores range from 8 to 40 for intrinsic, and from 3 to 15 for each of the extrinsic scales. Higher scores indicate higher levels of a given religious orientation.

RELIGIOUS LIFE INVENTORY (RLI)

(Batson & Schoenrade, 1991a, 1991b)

A 34-item self-report measurement that assesses religious orientation on three independent dimensions – namely *internal*, *external* and *quest* – as defined by Batson and Ventis (1982). As it was discussed in chapter IV, these dimensions are conceptually based on Allport's ideas, but unlike the I/E-R or the original Allport-Ross measurement they centre around the mature form of religiousness.

Thus the internal or end orientation is essentially similar to the generic definition of the intrinsic religiousness, although it is more tailored towards addressing the importance of internal needs for religious balance and certainty to one's religious orientation (e.g. "God's will should shape my life" [item 9]). The external or means aspect is also related mainly to intrinsic orientation (and partly to extrinsic) and it refers to the degree to which various external influences shape one's perspective on their religion (e.g. "The church has been very important for my religious development" [item 1]). Finally, the quest dimension (initially called the *interactional scale*, Batson, 1976) assigns to doubt a central and positive role in one's religious outlook and development (e.g. "For me, doubting is an important part of what it means to be religious" [item 11]).

The RLI has gone through various revisions in order to improve the psychometric properties mainly of the quest dimension, and its final version is the one used in this study (Appendix IV). In its final incarnation the quest orientation has been broken down into three subscales (Batson & Schoenrade, 1991b, p. 431), viz. (a) "readiness to face existential questions", which in the current study is referred to as *quest complexity* (e.g. "I was not interested in religion until I began to ask questions about the meaning & purpose of my life" [item 8]); (b) "self-criticism and perceptions of religious doubts as positive" (e.g. "Questions are far more central to my religious experience than are answers" [item 32]), here referred to as *quest doubt*; and (c) "openness to change" (e.g. "As I grow and change, I expect my religion also to grow and change" [item 3]), termed

quest openness.

RLI's final structure derives from factor-analysing (Principal Axis Analysis with *Varimax* rotation) data from two independent studies run on Christian undergraduate students at the University of Kansas (Lawrence) (N_1 = 210, N_2 = 214). Internal consistencies reported from these studies were .84 for internal, .77 to .81 for external, and .75 to .81 for quest. Discriminant validities ranged from .60 to .65 (internal vs. external), -.21 to -.22 (internal vs. quest), -.14 to -.18 (external vs. quest). Finally, convergence validity between I/E's intrinsic versus internal and external were .72 and .60 respectively.

Of the total items of RLI, nine address internal orientation, six refer to external, and twelve to the quest dimension (four for each subscale), while seven items serve as unscored buffers. The scale has six reverse-keyed items (three in internal, one in external, and two in quest). Responses are scored on a 9-point Likert-like scale, from 1 = Strongly disagree, through 5 = I'm not sure, to 9 = Strongly agree. Scoring is done by summing up the responses in all the items of each dimension. Thus, scores range between 9 and 81 for internal, 9 and 54 for external, and 9 to 108 for quest. Higher scores indicate higher levels of the given orientation.

Both the I/E-R and RLI are the most commonly used measures of religious orientation (Wulff, 1997). Although I could have used only one of them in this study, given the centrality of religiousness in my research, I took extra caution to ensure that the results produced were as reliable and as valid as possible. The decision to use both instruments in the current study was based on the following considerations, which relate to my discussion on the two scales presented in the previous chapter:

(a) Neither measurement exhibits superior psychometric properties. The I/E-R suffers from low internal consistencies, while the RLI's validity has been frequently attacked

(for an overview see Batson & Schoenrade, 1991a; Ventis, 1995). Since, however, the two measures are to a great extent compatible and comparable, they can be used jointly to check consistency of responses, and therefore increase confidence in the results.

(b) The various religious orientations assessed by the two measurements are not "real", but they rather represent regions in n-dimensional spaces. This makes their "existence" vulnerable to methodological or statistical insufficiencies. Bearing in mind that the field of the psychology of religion is rather unsettled, and that there does not seem to be a definitive consensus on the meaning and the nature of the notions it involves, the use of both of the above measurements seems prudent if not necessary.

(c) Finally, each instrument offers a unique dimension of religiousness (the extrinsic and the quest), whose effects on the psychosocial world of the individual, as I have sketched in the previous chapter, have been repeatedly reported in the literature. The inclusion of all five religious orientations allows for the empirical coverage of almost the entire notion of religiousness as it has been operationalised and studied thus far.

SCHIZOTYPAL PERSONALITY QUESTIONNAIRE (SPQ)
(Raine, 1991)
A 74-item self-report measure of symptoms of schizotypal personality disorders (Appendix V). The SPQ was developed by British psychologist Adrian Raine (currently professor of psychology at the University of Southern California) as a screening instrument to be used in the general population to identify individuals with schizotypal tendencies and to assess differences across individuals in schizotypal personality.

The instrument's conceptual structure is based on the nine DSM-III-R (American Psychiatric Association, 1987) diagnostic criteria of schizotypal personality disorder (as presented in the previous chapter), which also classify the disorder in DSM-IV. The SPQ consists of the above nine criterion-based, first-order factors that subsequently were

found to load onto three oblique second-order factors tapping into specific schizotypal orientations (Raine et al., 1994).

The first second-order factor identifies the *Cognitive-Perceptual Deficits* (sometimes called *positive schizotypy* - 33 items) characterised by distorted *ideas of reference* (9 items), *odd beliefs* or *magical thinking* (7 items), *unusual perceptual experiences* (9 items), and *paranoid ideation* (8 items) (e.g. "I often hear a voice speaking my thoughts aloud" [item 31]).

The second factor describes the *Interpersonal Deficits* (closely related to *negative schizotypy* - 33 items), characterised by excessive *social anxiety* (8 items), lack of *close friends* (9 items), *constricted affect* (8 items), and as with the previous factor, *paranoid ideation* (8 items) (e.g. "I tend to keep my feelings to myself" [item 73]).

The final factor is termed *Disorganized* (16 items) and it involves individuals who exhibit *odd* or *eccentric behaviour* (7 items) and *odd speech* (9 items) (e.g. "I am an odd unusual person" [item 67]).

The above factorial structure of the instrument has been closely replicated, primarily through confirmatory techniques, in various settings, cultures, and populations (Fossati et al., 2003; Raine et al., 1994; Reynolds et al., 2000; Suhr & Spitznagel, 2001). New evidence suggests that the SPQ could also be used successfully with psychiatric populations (Rossi & Daneluzzo, 2002; Vollema & Hoijtink, 2000). In fact, Raine (1991) found that in his validation US sample of undergraduate volunteers ($N = 497$), 55% of the respondents who were in the 90th percentile of the instrument's scores, had been clinically diagnosed with a schizotypal personality disorder as assessed by the *Structured Clinical Interview for DSM-III-R personality Disorders* (SCID-II, Spitzer et al. 1990).

Raine (1991) reports internal consistencies for the nine first-order scales ranging from .63 to .81 (total alpha of SPQ .90); total test-retest reliability over a two-month interval is .82; convergence validity is mainly demonstrated through the high correlations (.65 to .81) between the SPQ and the STA (Claridge & Broks, 1984) and between the SPQ and the SCID-II (.55 to .80); finally the discriminant validity of the measurement is shown through its low correlation with instruments that assess psychotic-proneness outside the DSM criteria of schizotypy (e.g. .19 to .37 with Eysenck's psychoticism scale).

Responses on the SPQ are registered on a No (= 0) / Yes (= 1) scale. No reverse-keyed items are present. Scoring is done by summing up all the "yes" responses in each factor. Thus scores range from 0 to 33 for cognitive perceptual, 0 to 33 for interpersonal, and 0 to 16 for disorganised. Higher scores indicate higher schizotypal tendencies.

The SPQ, having been translated into at least 11 languages (Raine, n.d.), appears to be a rather powerful, highly stable measure, being widely used in schizophrenia-related research. In addition, it is the only self-report instrument that directly assesses schizotypy as defined by the DSM criteria (Fossati et al., 2003).

EYSENCK PERSONALITY QUESTIONNAIRE, REVISED, SHORT SCALE (EPQ-R-S)
(Eysenck, Eysenck, & Barrett, 1985)
A self-report measure that assesses personality dimensions in the general population (Appendix VI). Conceptually the instrument is based on Eysenck's traits theory of personality as described in the previous chapter.

Eysenck makes it explicitly clear (Eysenck & Eysenck, 1991) that the EPQ only attempts to measure the phenotypical manifestations of personality, while genotypic aspects are best studied through experimental or clinical designs.

The EPQ assesses a person's personality under three independent dimensions, viz. Neuroticism, Extraversion, and Psychoticism. The version used in this study is the short form of the instrument. It consists of 36 items, 12 for each personality trait. In addition, in its original form it includes a 12-item *Lie scale* that measures subjects' tendency to "fake good" (Eysenck & Eysenck, 1991, pp. 13-14). The Lie scale was not used in this study, as it was substituted by the *Balanced Inventory of Desirable Responding* (see below), since the latter offers a broader coverage of the issue.

The EPQ-R-S was developed in Britain from data collected in two studies (N_1 = 674, a random sample of adults; N_2 = 902, volunteer adults) that were subjected to *Principal Component Analyses* with *Direct Oblimin* rotation (Eysenck, Eysenck, & Barrett, 1985). Internal consistencies ranged from .80 to .84 for neuroticism, .84 to .88 for extraversion, and .61 to .62 for psychoticism. Test-retest reliabilities were .76 to .81 for neuroticism, .83 to .89 for extraversion, and .77 to .81 for psychoticism. Discriminant validity ranged from .04 between extraversion and psychoticism to .14 between neuroticism and psychoticism.

Responses on the EPQ-R-S are registered on a No (= 0) / Yes (= 1) scale. Nine reverse-keyed items are present (two in extraversion and seven in psychoticism). Scoring is done by summing up all the "yes" responses in each trait. Thus, scores for any of the traits range from 0 to 12. Higher scores on a trait indicate a stronger presence of that trait in the individual.

The EPQ is one of the most commonly used self-report measurements of personality (for an overview see Ferrando, 2003; van Hemert et al., 2002), and it has been used extensively in research in the psychology of religion as I have discussed in the previous chapter.

ASPECTS OF IDENTITY QUESTIONNAIRE - IIIx (AIQ-IIIx)

(Cheek, Tropp, Chen, & Underwood, 1994)

A 35-item self-report measure that assesses the degree of importance individuals assign to three distinct aspects of identity, viz. *personal*, *social*, and *collective* (Appendix VII). Personal identity (10 items) is defined as the private sense of one's uniqueness and the perception of oneself (e.g. "My personal self-evaluation, the private opinion I have of myself" [item 28]). Social identity (7 items) describes one's public image or social reputation (e.g. "My popularity with other people" [item 3]). Finally, collective identity (8 items) is conceptualised as the individual's collective self-esteem and feelings of belonging to a group or a community (e.g. "My feeling of pride in my country, being proud to be a citizen" [item 26]).

The developers of the instrument make it clear that the social identity dimension is based on William James' ideas of the *social Me* (James, 1891/1981), and that it is the collective identity dimension that roughly corresponds to Tajfel and Turner's social identity theory (Tajfel, 1978, 1982; Tajfel & Turner, 1986). Finally, personal identity incorporates elements from both James's *I* and Erikson's *ego-identity* (1959/1980, 1968).

AIQ-IIIx is a revised edition of the third version of the measurement – the revision was centred around the improvement of the psychometric properties of the collective identity dimension. The instrument's three dimensions derive from the first three orthogonal components of an exploratory factor analysis run on data collected from 185 US undergraduate university students. Reported internal consistencies are .84 for personal, .86 for social, and .74 for the revised collective identity. Test-retest reliabilities over a 60-day interval are .77 (personal), .77 (social), and .81 (collective). Finally, discriminant validities are .15 (personal vs. social), .22 (personal vs. collective), and .18 (social vs. collective).

Responses on AIQ-IIIx are recorded on a 5-point unbalanced scale (from 1 = Not important to my sense of who I am, through 3 = Somewhat important to my sense of who I am, to 5 = Extremely important to my sense of who I am). No reverse-keyed items are present. However, the developers have included ten unscored buffer items to be used as moderators or demographic questions (Cheek & Tropp, 1997). The instrument is scored by adding up the responses to all the items in each identity dimension. Thus scores range from 5 to 50 for personal, 5 to 35 for social, and 5 to 40 for collective. Higher scores indicate higher levels of importance on a given aspect of identity.

The AIQ-IIIx has been used in a number of studies (Cheek & Tropp, 1997, summarise the findings of 33 studies that used the instrument in its various versions), where it has shown acceptable psychometric behaviour. To my knowledge, it has never been used in the psychology of religion research. That said, I am also not aware of any other identity psychometric instrument used in this area, except the ones measuring exclusively Erikson's personal identity stages, which have been almost exclusively used with adolescent participants (see previous chapter). The decision to include the AIQ-IIIx in the current study was partly based on the instrument's psychometric properties, and mainly on the fact that it appears to be the only standardised instrument that can assess both personal and group identities.

EXPERIENCE OF CLOSE RELATIONSHIPS SCALE (ECR)

Developed by Brennan, Clark and Shaver (1998). ECR is a forced choice, 36-short statement, self-report measure (Appendix VIII) that assesses adult attachment on two higher-order orthogonal attachment dimensions (half of the items for each dimension): *avoidance* or discomfort with closeness and depending on others (e.g. "I try to avoid getting too close to my partner" [item 17]), and *Anxiety* or fear of abandonment and need for approval (e.g. "I worry a lot about my relationships" [item 4]).

In developing the instrument, Kelly Brennan and her colleagues conducted a large scale

study in the US ($N = 1086$, psychology undergraduates at the University of Texas, Austin) in which they extracted from all available attachment measurements to that date 482 items (after excluding redundant items the final pool consisted of 323 items) that addressed 60 attachment constructs. Results from a factor analysis suggested the existence of two independent factors, which corresponded to the avoidance - anxiety dimensions.

Responses on ECR indicate degree of agreement on a 7-point Likert-like scale (from 1 = Strongly disagree, through 4 = Neither agree nor disagree, to 7 = Strongly agree). Ten items are reverse-keyed (nine in avoidance). Each factor is scored by adding up the responses in all of its 18 items. Thus, total scores range from 18 to 126 points per factor. Higher scores suggest higher levels of avoidance or anxiety, and thus a more insecure attachment.

Among the ten most commonly used adult attachment measures, ECR claims to possess the highest internal consistency, which is .94 for the avoidance and .91 for the anxiety dimension. In addition, ECR is also the most recently developed attachment measurement. Being that so, to my knowledge the instrument has not been used in the psychology of religion studies yet.

BALANCED INVENTORY OF DESIRABLE RESPONDING VERSION 6 (BIDR-6)
(Paulhus, 1991, 1994)
A self-report instrument that assesses the tendency to give socially desirable responses. There are several reasons why someone may seek to deceive us. First, they may not know that they do it – which relates to the cognitive and attribution biases a person may hold – in which case they may quite possibly be deceiving themselves too by believing in something that is wrong. Lack of trust especially to an outsider could be another reason. Idiosyncratic and personality characteristics may also offer an explanation; it may be simply a matter of impression formation processes, i.e. people may inflate

certain aspects of themselves and their environment or degrade others to create a favourable impression. Finally, the deception may be indirect in the sense that the participant, by omitting the-for-granted, may communicate the wrong message (for more see Holden et al., 2003; Kroner & Weekes, 1996; Peterson, Driver-Linn, & DeYoung, 2002).

BIDR-6 consists of 40 proposition-like items (Appendix IX). Half of the items measure *Self-Deception Enhancement* (SDE), defined as the subconscious tendency to give positively biased, yet honest, self-reports (e.g. "I always know why I like things" [item 5]); SDE indexes levels of ego-enhancement under the assumption that individuals with self-deceptive inclinations tend to overreport positive cognitive attributes, or in other words, they tend to be overconfident with their reasoning and judgement (this scale is also labelled *cognitive rigidity* or *dogmatism*).

The other half of the BIDR-6 items assess *Impression Management* (IM), conceptualised as the conscious tendency to report inflated self-descriptions (e.g. "I never swear" [item 24]). IM rests on the assumption that certain individuals in presenting themselves as "nice people" may deliberately and systematically exaggerate their socially desirable behaviours, while at the same time understate any unpreferred behaviours. In other words, IM indexes the individual's tendency to lie consciously, and thus conceptually the construct is similar to Eysenck's Lie scale and the MMPI Lie scale (Paulhus & Reid, 1991).

The above two constructs were developed from the first two extracted orthogonal factors from a series of exploratory principal component analyses with Varimax rotation on data from three studies conducted in Canada ($N_1 = 130$, $N_2 = 670$, $N_3 = 137$, all undergraduate university students) (Paulhus & Reid, 1991). The orthogonal two-factor model was further assessed in a separate study ($N = 180$, Canadian undergraduate students) through confirmatory factor analysis, and it was found to have a better fit than the alternative

one-factor and oblique two-factor models (Paulhus, 1994). The final forty items of the inventory were selected from a large pool of items ($K = 993$) based on the stability and strength of their loadings on the two factors.

Paulhus (1991) reports that the instrument's internal consistency, as measured through Cronbach's alpha, is ranging from .68 to .80 for the SDE and from .75 to .86 for the IM factor. Reported test-retest reliability over a five-week period is .69 for SDE and .65 for IM. Discriminant validity between the two factors ranges from .05 to .40. Finally, convergence validity of the IM against Eysenck's Lie scale has been reported at .41 (Gillings & Joseph, 1996).

Responses in BIDR-6 are registered on a 7-point unbalanced scale (from 1 = Not true, through 4 = Somewhat true, to 7 = Very true). Half of its items are reverse-keyed (ten items in each factor). Two ways of scoring are possible: continuous scoring, in which each factor is scored by adding the responses in all 20 items, and thus scores range between 20 and 140 points per factor; or dichotomous scoring, where only responses on points 6 and 7 (approximately the 4th quartile of the scale) receive a point each, and thus scores range from 0 to 20 per factor. In the current study the first method of scoring was employed. In both cases, higher scoring suggests a greater tendency to desirable responding.

Due to the measurement's demonstrated association with general personality traits, it has been suggested that either or both of its factors should be used as controls for personality self-reports (Holden & Fekken, 1989; Lewis, 2000; Paulhus & Reid, 1991; Pauls & Stemmler, 2003; Rowatt & Kirkpatrick, 2002).

It was deemed necessary to include a social desirability scale in this study, since, as the literature review in the previous chapter suggests, social desirability appears to be associated with religiosity and tends to mediate the religiosity-schizotypy relationship, and for that matter possibly any religiosity relationship. BIDR-6 has been used, though not extensively, in psychology of religion studies and has given consistent evidence of

its association with religiosity (for an overview see Rowatt & Kirkpatrick, 2002; also Saroglou & Galard, 2004).

For example, Gillings and Joseph (1996; also Joseph, 2000) found IM to be positively correlated with the Francis Scale of Attitudes towards Christianity (Francis & Stubbs, 1987) ($r = .20$, $N = 106$, $p < .05$), while Leak and Fish (1989) identified an association between intrinsic religiosity (but neither extrinsic nor quest) and both the SDE ($r = .27$, $N = 84$, $p < .05$) and the IM factor ($r = .23$, $N = 84$, $p < .05$).

Finally, the BIDR-6 was preferred to other existing measurements of social desirability (e.g. Eysenck's Lie scale), because of its two-dimensional structure, which other measurements lack.

Table 5.1. Summary of the psychometric properties of the questionnaires used in this study

	Reliability		Validity	
	Internal	Test-retest	Convergence	Discriminant
I/E-R 14 items	Intrinsic: .83 E-personal: .57 E-social: .58			-.12 to .41
RLI 34 items	Internal: .84 External: .77 to .81 Quest: .75 to .81		.60 to .72	-.22 to .65
SPQ 74 items	.63 to .78	.82	.65 to .81 with STA .55 to .80 with SCID	.19 to .37
EPQ-R-S 36 items	N: .80 to .88 E: .84 to .88 P: .61 to .62	N: .76 to .81 E: .83 to .89 P: .77 to .81		.04 to .14
AIQ-IIIx 35 items	Personal: .84 Social: .86 Collective: .74	Personal: .77 Social: .77 Collective: .81		.15 to .22
ECR 36 items	Avoidance: .94 Anxiety: .91			
BIDR-6 40 items	IM: .75 to .86 SDE: .68 to .80	IM: .65 SDE: .69	IM: .41 with Eysenck's Lie scale	.05 to .40

SOCIODEMOGRAPHIC VARIABLES

Participants were also requested to respond to a number of sociodemographic and descriptive questions. These questions asked the participants:

GENERAL SOCIODEMOGRAPHICS

(i) Gender (female, Male)

(ii) Age, measured in years (free response)

(iii) Ethnic background (free response)

(iv) Nationality (free response)

(v) Duration of stay in Britain, measured in years (free response)

(vi) Student status (full-time, part-time, neither)

(vii) Employment status (full-time, part-time, unemployed, home-maker)

(viii) Marital status (married or living with a partner, in a relationship but not living with a partner, single, divorced, widowed, separated)

DEMOGRAPHICS ON RELIGION

(ix) Religious denomination (Presbyterian, Episcopalian/Anglican, Roman Catholic, other).

(x) Duration of being a Christian, measured in years (free response).

(xiii) Religious groups: Whether they would categorise themselves as being (a) monk/nun, (b) clergy, (c) churchgoer, (d) born-again Christian, and (e) member of a Christian group/society (multiple response).

RELIGIOUS PRACTICES

(xi) Frequency of church attendance (8-point scale, from 1 = never or almost never, to 8 = every day).

(x) Frequency of prayer (8-point scale, from 1 = never or almost never, to 8 = every day).

These variables were used to check whether the study protocol was satisfied (e.g. the duration of stay in Britain), or they served as controls in the religiosity-schizotypy relationship (e.g. gender). The selection of the control variables was based upon their frequency of use and their empirical importance as identified in related studies and discussed in the previous chapter (for an overview see Argyle, 2000; Batson *et al.*, 1993; Beit-Hallahmi & Argyle, 1997; Brown, 1987; Jonte-Pace & Parson, 2001; Wulff, 1997).

Participants were also asked to indicate whether they would have been interested in being interviewed (74 [46%] expressed interest), and whether they would have wanted feedback after the completion of the study (88, 54.7% requested feedback, which they received at the completion of the study in a form of a short general description of the study's findings). Finally, participants were encouraged to provide comments that could be of relevance to their responses (56, 34.8% of the participants did so).

The final questionnaire battery was titled "The Faith & Well-being Questionnaire", and it was arranged in the form of an A4, double-sided booklet, with a "peacock blue" front/back cover. All instructions were printed in bold, size 14 Arial fonts, while the questionnaire items were presented in normal, size 11 Times New Roman fonts. The booklet opened with an introductory statement, which briefly described the aims of the study, gave instructions to the participants on how to fill in the measurement and how to contact the researcher, and addressed ethical issues (Appendix II). The battery took approximately twenty-five minutes to fill in.

PROCEDURE

PILOT STUDY

A pilot study was conducted in order to help (a) finalise the number and type of psychometric or otherwise measurements, (b) address issues of proper/desirable presentation of the materials to the participants, (c) get an estimate of the time needed to be spent per participant, and finally (d) identify and prevent any design pitfalls.

The study involved the recruitment of 18 participants (academic staff and postgraduates) from the psychology department of the University of Edinburgh (of whom three stated that they were not religious). Besides having been instructed to fill in all the sociodemographic questions and the initially selected psychometric questionnaires (nine in total, see below), the participants were requested in writing to provide written comments on the overall format of the measurement compilation and give any advice that could help improve the organisation and presentation of the material.

The comments received helped improve the presentation of the material by pointing to alternative and simpler ways to phrase the instructions, or by suggesting a different, more welcoming, order of presentation of the questionnaires, e.g. by placing at least one of the two religiosity instruments in the beginning of the battery. Moreover, the comments led to the exclusion of two measurements, viz., the *Oxford-Liverpool Inventory of Feelings & Experiences* (O-LIFE; Mason et al., 1995) that measured schizotypal traits, and the *Relationship Questionnaire* (RQ; Bartholomew & Horowitz, 1991) that assessed attachment styles, bringing the final number of questionnaires in the study to seven.

The O-LIFE was initially included in the battery as I was not sure whether to use that one (a British-based instrument) or the SPQ (an American-based one). The O-LIFE was

finally excluded because it had inferior psychometric properties to the SPQ, was not entirely based on the DSM criteria of schizotypy, was heavily criticised by the pilot-study participant on the way it worded its items (e.g. double-negatives or unclear questions), and it felt too long (103 items). The RQ was initially included as an additional measurement of adult attachment, since it represented attachment styles in a categorical manner (see chapter IV for more details about the Bartholomew and Horowitz model). However, it was decided that this was not necessary, since the dimensional assessment of the ECR appeared to provide all the important information needed for this study.

MAIN STUDY

CONTACT

Participants were recruited through (a) direct contact (e.g. students at the psychology department of the University of Edinburgh, the psychology volunteer panel), (b) indirect contact through volunteers that functioned as intermediators. Students were verbally invited by the researcher, while participants from the volunteer panel were initially contacted by either email or post. All conductees were presented with the same script (see Appendix I)

QUESTIONNAIRE DISTRIBUTION

Questionnaires were posted to the participants either directly or indirectly through an intermediator. In all cases a stamped self-addressed return envelope was also included. Almost all responses were returned by post, except for very few that were handed to the researcher in person. A total of 200 questionnaires were handed out of which 163 (81.5%) were returned. Two of the returned questionnaires were discarded as invalid, because the participants, who had remained anonymous, had not filled in most of the items. In two other separate instances, where participants had left large sections of the battery unchecked, but had provided their contact details, they were contacted and requested to fill in the blanks, which they subsequently did. As the questionnaires were

anonymous (unless the participants had volunteered their details), there was no way for me to know who the non-respondents were, and thus I could not contact them with a reminder.

ETHICAL ISSUES

The study complied with the University of Edinburgh ethical standards. Treatment of participants was in accordance with the ethical standards of the APA (American Psychological Association, 1992) and the UK Data Protection Act (1998).

STATISTICAL ANALYSIS

DATA INPUT & STATISTICAL PACKAGES

A dataset was created in SPSS™ version 11 in which responses in all 161 questionnaires were entered and coded. The standardised questionnaires were scored according to the instructions from their manuals, as described above. A number of statistical packages were utilised that allowed for a more specialised analytical and graphical treatment of the data. SPSS™ (v11) was used for t-tests, ANOVAs, Pearson's correlations, multiple linear and nonlinear regression analyses, binary logistic regression analysis, Exploratory Factor Analysis, and missing data analysis; algebraic and matrix operations were performed in Corel Quattro Pro™ 2000 and KyPlot™ version 2 (Yoshioka, 2000); exploratory data analysis and a number of multivariate analyses, namely canonical correlation analysis, cluster analysis, and nonlinear correlations, were conducted in NCSS™ version 2001 (Hintze, 2001) and MiniTab™ version 13.1 (Ryan, Jr., Ryan, & Joiner, 2000); power and effect size analyses were run in PASS™ version 2001 (Hintze, 2001) and GPower™ version 2 (Faul & Erdfelder, 1992); nonparametric tests were run in StatXact™ version 3.1 (Cytel Software Corporation, 1997); Confirmatory Factor Analysis and Structural Equation Modeling were tested in Statistica version 6 (StatSoft, Inc., 2001) and AMOS™ version 4 (Arbuckle, 1999); finally, scaling procedures were

run in part in MDSX™ version 2.5 (Coxon & Brier, 2002) and PerMap™ version 9.7 (Heady & Lucas, 2002). Results were presented in accordance with the APA publication manual directions (American Psychological Association, 2002).

OVERVIEW OF THE MAIN ANALYSES USED

Three general groups of statistical analyses were utilised in this study: exploratory data analysis (EDA), inferential statistics, and modelling statistics.

EXPLORATORY DATA ANALYSIS (Tukey, 1977)

EDA was used as a graphical and statistical set of tools to (a) generate an initial impression of the data, specifically regarding the distribution of the variables through averages, dispersion, skewness and kurtosis measurements; (b) identify outlying cases and their impact on the data; (c) assess the presence of missingness in the dataset; and (e) describe the psychometric properties of the seven standardised questionnaires in this study, by applying the same procedures used to develop those measurements as described earlier and in their manuals.

INFERENTIAL STATISTICS

These were employed to test the study's predictions. One of the main issues regarding the use of specific inferential tests relates to their statistical assumptions. Traditionally, inferential statistical tests were based on certain sets of qualifiers called *parameters* or *moments*, and thus those tests are called *parametric* (mainly the mean and the variance of a distribution; for more see Stuart & Ord, 1994, ch. 8; Tacq, 1997). Whenever a parametric test was used in this study, its specific parametric assumptions were checked.

The main inferential parametric tests used in this study were the *t*-test for comparisons between two related or unrelated groups, the analysis of variance family (ANOVA) for comparisons between more than two related or unrelated groups, Pearson's product

moment correlation for the assessment of bivariate relationships, multiple linear regression for the identification of causal linear relationships between a set of predictors and an outcome measure, and canonical correlation for linear relationships between two sets of variables (although these two last methods are mentioned here, they were mainly used for modelling purposes).

At the same time *nonparametric* tests, which do not make such strict assumptions about the properties of the data, were used either with categorical data or when parametric assumptions were grossly and irreversibly violated, i.e. when no permissible operations would allow for their satisfaction. Having said that, however, I would like to clarify that nonparametric tests, contrary to the common belief, do require certain assumptions to be satisfied in order to produce reliable outcomes. For example, almost all require the data to be symmetrically distributed around the median (Gravetter & Wallnau, 1996; Siegel & Castelian, 1988). As with the previous tests, whenever a nonparametric test was used, its assumptions were assessed.

The main nonparametric statistics used in this study were: Spearman's *rho* for bivariate associations between ordinal data, and the chi-square family for associations between dichotomous or nominal data.

Although nonparametric techniques were indeed utilised in this study, parametric procedures were the main inferential tools. This is mainly so because (a) all previous research I have come across in this area has used parametric tests for the same or similar scales, and thus by following their example I was able to easily, and perhaps meaningfully, compare my results with theirs, allow for effect size comparisons, and even allow for the future option of performing meta-analyses; and (b) the recent development of modern statistics permits the accurate use of parametric techniques, even when data seem to violate the parametric assumptions (Wilcox, 1998).

For all inferential statistics used, the values of post hoc power and effect size measurements were also presented when applicable. Finally, unless otherwise stated, an α-level of .05 was accepted as a cutoff point for a result to be statistically significant.

MODELLING STATISTICS

Besides regression and canonical correlation models, two additional techniques were employed for the identification of underlying structures in the dataset: *factor analysis* and *multidimensional scaling*.

1. Factor analysis (FA) is a generic term that refers to a general multivariate statistical data reduction approach, which objective is to analyse interrelations among variables and represent them, with a minimum loss of information, in terms of a smaller number of common underlying hypothetical dimensions called *factors* or *components* (Kim & Mueller, 1994). Thus, FA has a twofold purpose: (a) to reduce meaningfully a large number of variables, and (b) to identify the underlying structure in the relationship among those variables.

Factor analysis encompasses a variety of statistical techniques, which can be classified into two general groups: *Exploratory Factor Analysis* (EFA), and *Confirmatory Factor Analysis* (CFA). Exploratory factor analysis is the most commonly used type of factor analysis in psychometric research and research in the psychology of religion. As its name suggests, it is used for exploring underlying variable relationships. It can be used in areas of study where no prior analyses are available, for example in the construction of a questionnaire measurement. The main tests of this kind used in this study were *Principal Component Analysis* (PCA), and *Principal Axis Factor Analysis* (PFA).

Exploratory factor analysis has had a series of criticisms (for an overview see Mulaik, 1987; also of interest Meehl, 1993). Its philosophical foundations have been questioned on the basis that without the existence of prior assumption, the extraction of knowledge

from empirical evidence cannot be logically validated. In that sense interpretation of the results may be misleading, unjustifiable, and at times inappropriate. Also the commonly used linear model of EFA may lead to misinterpretations of variable relationships when these relationships are nonlinear. Put simply, EFA was devised always to fit the data, without taking into account the "true" underlying relationships.

CFA on the other end is a theory-based approach, which tests the goodness-of-fit between predetermined, and at times theoretical, variable relationships and factor constructs within a given set of observations (Bryant & Yarnold, 2001). This analysis is rather useful when the researcher wants to develop theoretically based models, or check whether data fit the profile of existent standardised scales. It should be noted that CFA is also grouped under a general class of confirmatory structural procedures, collectively known as *Structural Equation Modeling* (SEM), through which causal relationships are sought among a set of variables, some of which may not be directly measured (Bollen, 1989).

The main criticism of CFA (and as an extension of SEM) revolves around procedural issues (Stevens, 2002). Critics have questioned (a) the validity of post hoc model modifications, i.e. the series of correction steps, through which researchers may attempt to adjust the original model in order for it to fit in with a given dataset; (b) the adequacy of the sample sizes employed in many studies of that kind; and (c) the arbitrary, and at times erroneous, way in which researchers select the "best" model to fit their data.

2. Multidimensional scaling (MDS) is another large family of statistical modelling techniques (which could include *cluster analysis, correspondence analysis*, and *optimal scaling*) that attempt to generate a visual representation of the latent structure of the data in a low-dimensional space (these techniques are also known as *perceptual mapping, spatial analysis* or *smallest space analysis*) (Borg & Groenen, 1997; Cox & Cox, 2001).

MDS, like factor analysis, seeks to identify the underlying dimensions of a set of data. Unlike factor analysis, which insists on the relations being linear, MDS has the ability to generate reasonably accurate representations of a set of variables at a low dimensionality, e.g. two or three dimensions, as it can utilise nonlinear or monotonic relationships (Coxon, 1982). Therefore, provided that the distances or similarities (e.g. correlations) between the variables are meaningful, the MDS solutions tend to be more parsimonious and interpretable than the factor analytic ones. MDS also tends to have fewer and less strict assumptions than FA and it can be used potentially with any kind of data (Bartholomew et al., 2002). Finally, MDS like FA can be employed as either an exploratory or a confirmatory technique.

The main criticism of MDS relates to (a) the arbitrariness of the criteria used to select the number of dimensions, (b) the susceptibility of the method to the so-called *local minima* solutions, i.e. solutions that are less than optimal, and (c) its apparent inability to represent the asymmetry of causal models (Coxon, 2003).

CHAPTER SYNOPSIS

A total of 161 adult Christians, all British residents, took part in the study. A non-probability purposive sampling was used. Sample size was estimated through an a priori power analysis with effect sizes based on previous findings. Participants were recruited from the undergraduate programs of the University of Edinburgh, the volunteer panel of the psychology department of the above university, and through individuals who served as intermediate contacts. Alongside a series of sociodemographic questions, seven standardised questionnaires were used measuring religiosity (I/E-R and RLI), personality (EPQ-R-S), schizotypal traits (SPQ), identity (AIQ-IIIx), attachment (ECR), and desirable responding (BIDR-6). Participants were asked to complete the questionnaires at their own pace and mail them back to the researcher. A series of

statistical techniques were utilised to analyse the data, test the study hypotheses (presented in the previous chapter), and allow for the identification of any underlying structures present.

CHAPTER VI

THE QUESTIONNAIRE STUDY: RESULTS & DISCUSSION

"To understand God's thoughts we must study statistics,
for these are the measure of His purpose"
(Attributed to Florence Nightingale by Karl Pearson, 1924)

CHAPTER AIMS & ORGANISATION

In this chapter, I present the statistical analysis of the questionnaire data of this thesis and discuss the findings, by focussing on those directly relevant to the study predictions presented in chapter IV. The chapter is divided into three sections. In the first section, descriptive information about the variables in the dataset is given, followed by an in-depth analysis of missing values, and an assessment of the psychometric properties of the standardised questionnaires. The second section explores the relationships between the psychometric measurements and the sociodemographic variables. In the first two sections all miscellaneous predictions (chapter IV) are assessed. In the final and main section of this chapter the relationships among the primary variables as well as between the primary and the secondary variables of this study are assessed (primary and secondary predictions), and based on the results of this assessment the most plausible integrated model is developed and analysed.

EXPLORATORY DATA ANALYSIS

DESCRIPTIVE INFORMATION

GENERAL SOCIODEMOGRAPHICS

1. Gender & age: Of the total 161 participants, 68.3% (110 of 161) were females. The age distribution was bimodal (kurtosis, Fisher's $g2$ = -1.27) and slightly negatively skewed (skewness, Fisher's $g1$ = -0.12[6]), with a median age of 50 years and a semi-interquartile range of 16.36 years.

2. Ethnic background & nationality: White was the modal ethnic background (55.3%, 89 of 161), while the categories White, Scottish, Caucasian and British collectively represented 86.3% (139 of 161) of the respondents. British was the modal nationality (57.8%, 93 of 161), while British, Scottish, English, and N. Irish collectively represented 94.4% (152 of 161) of the sample.

3. Duration of stay in Britain: The distribution of the duration of stay in Britain was bimodal (kurtosis, Fisher's $g2$ = -1.07) and slightly negatively skewed (skewness, Fisher's $g1$ = -0.22), with a median duration of 49 years, a semi-interquartile range of 18 years, and a minimum stay of one year (this was the minimum accepted length of stay for inclusion in this study, as specified in the previous chapter).

4. Student status: Of the sample, 21.7% (35 of 161) were full-time university students, 6.2% (10 of 161) were part-time university students, while the rest 69.6% (112 of 161) did not study (four individuals [0.5%] did not provide an answer). The students in the sample (full and part-time) came from 22 different study areas, with the modal frequency

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[6]

Following APA guidelines (2002), a zero before the decimal point is only used when the number can take values greater than |1|.

being that of psychology students (35.5%, 16 of 45). In the analyses that follow student status is dichotomized into students (full-time and part-time) and non-students.

5. Employment status: 26.7% (43 of 161) were in full-time employment (modal frequency), 23% (37 of 161) in part-time employment, 14.3% (23 of 161) were unemployed, and 19.3% (31 of 161) presented themselves as home-makers (ten individuals [6.2%] did not provide an answer). Moreover, 17 participants (10.6%) added the category of "retired", which was not an option in the questionnaire.

6. Marital status: Finally, responses to the marital status question indicated that 53.4% (86 of 161) were married or living with a partner (modal frequency), 8.1% (13 of 161) were in a relationship but did not live with their partner, 23.6% (38 of 161) were single, 4.3 % (7 of 161) divorced, 6.8% (11 of 161) widowed, and 3.7% (6 of 161) separated.

DEMOGRAPHICS ON RELIGION

1. Religious denomination: 14.9% (24 or 161) were Roman Catholics, while the rest 85.1% (137 of 161) were Protestants. Of the Protestants, 45.3% (73 of 161) were Presbyterian, 18% (29 of 161) Episcopalian or Anglican, and the rest (21.7%, 35 of 161) belonged to other denominations. Eighteen Other Protestant denominations were represented, although almost all consisted of one to three participants, with Baptists and Jehovah's Witnesses occupying the two modal frequencies of 11.4% (4 of 35) respectively.

2. Duration of being a Christian: Of the total sample, 66.5% (107 of 161) had been Christians for all of their life. The distribution of the duration of being a Christian was unimodal but rather platykurtic (kurtosis, Fisher's $g2$ = -1.31) and symmetrical (skewness, Fisher's $g1$ = -0.06), with a median duration of 41 years and a semi-interquartile range of 20 years.

3. Religious groups: Finally, of the total, 1.2% (2 of 161) were a nun and a monk, 6.2% (10 of 161) were clergy, 64.6% (104 of 161) were churchgoers, 23% (37 of 161) were born-again Christians, and 19.9% (32 of 161) declared themselves as members of a Christian group, such as church choir, church elders, and so forth (all these responses were part of a multiple response item, and thus they add up to more than 100%).

RELIGIOUS PRACTICES

1. Church attendance: Frequency of church attendance (8-point scale), had an asymmetrical distribution (skewness, Fisher's $g1$ = -0.86; kurtosis, Fisher's $g2$ = -0.56), with a median and modal frequency of once a week and a semi-interquartile range of 1.5.

2. Prayer: The distribution of the frequency of prayer (8-point scale) was mirror L-shaped (skewness, Fisher's $g1$ = -1.72; kurtosis, Fisher's $g2$ = 1.75), with a median frequency of more than once a week but not every day, and a semi-interquartile range of 0.5. The two religious practices had a monotonic positive high association with each other (rho = .60, N = 160, p < .005, two-tailed), although their relationship could perhaps be best described by a cubic curve (pseudo-R = .65, N = 160, p < .005, two-tailed).

POWER

Stepwise power analysis during various stages of the sampling process, indicated that the final sample size seemed sufficient to reveal any statistically important effects that may exist in the dataset. Indeed, not only was the current power high enough to detect any bivariate relationship in the data at α = .05 with an effect size of r > |.15|, but also any effect size equal to or greater than .38 appeared to be stable already when the sample size consisted of 100 participants.

MISSING DATA

Missingness refers to the situation where missing values are present in a dataset (Little & Rubin, 1997). In the current study, missingness refers to nonresponses to questionnaire items. Although missingness is a common and expected phenomenon in questionnaire studies, it can be problematic. Besides the obvious undesirable reduction in the sample size, a question one needs to try to answer is why responses were not given by certain participants to certain items. This question consists of the following two components.

First is the issue of the participants themselves. Is there anything idiosyncratic about the participants who did not give answers? If there is, it may suggest a sampling error, for example these people should not have been in the study in the first place. It could also suggest that perhaps these participants form a separate group (a specific cluster of the population) that is of interest in each own right, and requires special attention. In psychological sense, people may avoid responding to questions that are of a sensitive, personal, or private nature to them, and sometimes, it is exactly those people that are of interest to psychologists.

This brings me to the second component of the initial question, which relates to the questionnaire items. Why did specific items receive a nonresponse? It could be because they did not apply to some of the participants; or perhaps they were too difficult or too vague; or perhaps the questionnaire felt too long to some people; or, as I said above, these items were addressing sensitive issues.

In psychology we tend not to pay attention to missingness, an attitude that may have led to erroneous research findings and claims. Before proceeding with analysing any dataset that contains missing values, one needs to attempt to answer the above two questions. Missingness is *ignorable* when evidence indicates the absence of an underlying

systematic pattern that governs the missing values (participant-wise and item-wise). Only in this instance may one safely proceed with the analysis by either ignoring the missing data or *imputing* them through a number of available techniques (see Allison, 2001).

MISSING BY PARTICIPANTS

Overall in the current dataset there were 834 (1.8%) missing cases out of a total of 47012 (161 participants by 292 initial variables). In total 60% (97 of 161) of the participants had one or more missing responses, of which 67 were females (69.1% of the participants with missing values; 60.9% of total females), and 30 were males (30.9%; 58.8% as above) – the gender variable had no missing cases itself.

In the total sample, the proportion of males vs. females was (.317 : .683; that is 51/161 [males] : 110/161 [females]). Using these as the expected frequencies, a goodness-of-fit chi-square test was utilised to assess whether the observed frequencies of males and females with missing data deviated from chance. The test results suggest that this was not so, χ^2 (1, $N = 97$) = 0.02, *ns*, effect size $W = 0.02$, power$_{.05}$ =.05. Also the number of missing values was not on average statistically different between the sexes, $t(95) = 0.81$, *ns*, two-tailed, confidence intervals (CI$_{95\%}$) = -3.15 to 7.47, effect size $d = 0.17$, power$_{.05}$ = .11.

The same procedure as above was followed with the rest of the major sociodemographic variables that did not have missing values themselves. Those were religious denomination, and marital status, while student status and employment status were not assessed, because the presence of ten and four missing cases respectively would have rendered the above procedure inaccurate if not invalid. Descriptive information is presented in Table 6.1. The table shows, for example, that 42 Presbyterians had missing values, and these made up 43.3% of the missing cases in the religious denomination variable (42 of 97), while at the same time they constituted 56.7% of the total number

of Presbyterians in the sample (42 of 74). Once again by treating the actual frequencies of each category in the total sample as the expected frequencies, the number of participants with missing values among the four denominational groups did not differ significantly from chance, χ^2 (3, $N = 97) = 0.99$, ns, effect size $W = 0.10$, power$_{.05} = .11$. In addition, the number of missing values was on average not statistically different between the denominations, $F(3, 93) = 0.18$, ns, effect size $\eta^2 = .01$, power$_{.05} = .08$.

In the same line of thought, the number of participants with missing values among the six marital status categories did not differ significantly from what was expected by chance, χ^2 (5, $N = 97) = 1.29$, ns, effect size $W = 0.12$, power$_{.05} = .12$. Finally, the number of missing values was on average not statistically different among marital statuses, $F(5, 91) = 1.16$, ns, effect size $\eta^2 = .06$, power$_{.05} = .39$.

Table 6.1. Missingness broken down by the main sociodemographic variables that did not have missing values.

Variable	Categories	Number of cases with missing data	% of total group	% within missing per variable*
Religious denomination	Presbyterians	42	56.7	43.3
	Episcopalians Anglicans	21	72.4	21.6
	Catholics	15	62.5	15.5
	other Protestants	19	55.8	19.6
Marital status	Married or living as married	49	56.9	50.5
	In a relation, not living with partner	8	61.5	8.2
	Single	22	57.9	22.7
	Divorced	6	85.7	6.2
	Widowed	8	72.7	8.3
	Separated	4	66.6	4.1

* these numbers add up to 100% within each variable

Within the subsample of people with missing values, age did not have either a linear (r = .02, N = 97, ns, two-tailed, power$_{.05}$ = .05.), or a nonlinear (maximum pseudo-R = .04) association with number of missing values. In the whole sample, there was no significant difference between the average age of the people without missing values (mean = 44.7 years, SD = 17.3 years) and those with missing (mean = 48.2 years, SD = 19.8 years), $t(159)$ = 1.14, ns, two-tailed, confidence intervals (CI$_{95\%}$) = -9.48 to 2.52, effect size d = 0.18, power$_{.05}$ = .22.

Finally, all the above sociodemographic variables, viz. gender, religious denomination, marital status, and age, were put in a standard binary logistic regression model as predictors against a dichotomous variable of missingness (missing vs. not missing, prediction towards the former), to investigate whether their predictive power would change in the presence of each other. The model was not significantly better from a model with only the constant in, χ^2 (10, N = 161) = 7.03, ns, effect size W = 0.17, power$_{.05}$ = .24, and it had very low predictive value (Nagelkerke R^2 = .06), with none of the predictors' log-odds being statistically significant.

All the above findings seem to suggest the absence of an obvious pattern in overall missingness in respect to the participants.

MISSING BY QUESTIONNAIRE ITEMS

Of the total 292 items, 211 (72.2%) items had one or more missing responses. Focussing on the responses to the psychometric questionnaire items (K = 269), Q-analysis revealed that the median number of missing values was one (semi-interquartile range = 1), coming from a heavily L-shaped distribution (skewness, Fisher's $g1$ = 2.17; kurtosis, Fisher's $g2$ = 5.05), with a range of 0 to 20 missing values, where 90.7% of the items (244 of 269) had between 0 and 8 missing cases inclusively.

Table 6.2 shows a clearer picture of this distribution broken down by inventory. The I/E-

R and the AIQ-IIIx had very similar patterns of missingness followed by the EPQ-R-S. The outlying item of the AIQ-IIIx that had 20 missing cases asked about the importance of one's student status to who one was [Item 34]. Some participants commented that they could not answer this question since they either were not or had never been students. However, this was a buffer item that did not contribute to the development of any of the identity factors of that questionnaire, and thus these responses could be safely ignored.

Table 6.2. Percentage of missing values and number of items within each inventory (modal frequencies are underlined).

missing values	I/E-R	RLI	SPQ	EPQ-R-S	AIQ-IIIx	ECR	BIDR-6
0			50 (67.6%)				25 (62.5%)
1	12 (85.7%)		19 (25.7%)	20 (55.6%)	31 (88.6%)		10 (25%)
2	2 (14.3%)	19 (55.9%)	4 (5.4%)	13 (36.1%)	3 (8.6%)		2 (5%)
3		10 (29.4%)	1 (1.3%)	3 (8.3%)			
4		4 (11.8%)					1 (2.5%)
5		1 (2.9%)				1 (2.8%)	
6						5 (13.9%)	
7						2 (5.6%)	
8						4 (11.1%)	2 (5%)
9						11 (30.6%)	
10						7 (19.4%)	
11						6 (16.6%)	
...							
20					1 (2.8%)		
%*	.71	1.62	.25	.95	1.01	5.45	.53

* percent of missing of the total cases

Nonresponses on the SPQ appeared to have a similar distribution to those on the BIDR-6. Incidentally, the two items of the BIDR-6 that had eight missing cases addressed driving behaviour [Items 8 and 33], and some of the participants who did not respond to these commended that they did not drive and thus the questions seemed not applicable to them.

The RLI had slightly higher number of missing values than any of the above questionnaires. The item with the highest number of missing cases (five) ("My religious development is a natural response to our innate need for devotion to God" [Item 4]) was found too abstract by a number of participants. Participants, mainly from other Protestant denominations, also commented on the use of the word "church", which they found not applicable to their practices. A few participants also expressed their unease to discuss religion in general. For example:

> I find it a bit difficult to talk about "my" religion. I have certain beliefs that one might call religious; also I am a member of a church that adds to my spiritual life. But my religion is not something I keep in a drawer and get out at the appropriate moments. [59-year-old female, other Christian]

> I find "religious" quite a scary and alienating term. [19-year-old female, Quaker]

> The concept of faith cannot be analysed. [24-year-old male, Presbyterian]

Although these comments could equally apply to the study as a whole, it should be said that of the two religious orientation questionnaires, RLI may have been perceived to be addressing more personal issues, perhaps because of the way it phrases the items or the inclusion of the quest dimension. Should this have been the case, it is conceivable that a number of people may have been reluctant to answer certain items. Finally, it is worth mentioning that the RLI was presented last in the battery (before the

sociodemographics), and thus there is also a possibility that participants were getting tired – and indeed a small number of them commented that the questionnaire battery felt too long.

In relation to the total number of items in each questionnaire, the SPQ had the smallest proportion of nonresponses – 30 cases (0.25%) of a total of 11914 (161 participants by 74 items in the SPQ) – followed by the BIDR-6 (0.53%).

However, by far the most distinct pattern of missingness was observed in the ECR, which accessed adult attachment. This inventory had both the highest number of missing cases per item (30% of the items fell on the modal frequency of 9 missing values), and the highest percentage of nonresponse (5.45%). Once again participants' comments can help with the understanding of this pattern:

> My answers to the questions on romantic partners were vague because I have never been in a romantic relationship, so don't know how I'd react.
> [21-year-old female, Catholic]

> [This questionnaire] does not apply as I have no partner at present but I had a long and happy marriage. [64-year-old female, Presbyterian]

In fact, I once received a call during the study from an 80-year-old female participant asking me to help her complete the ECR. She commented she could not see how the issues addressed in the instrument could apply to her, as she had only had a single partner in her whole life. Taking these comments into consideration, I investigated whether missingness in the ECR was related to any of the sociodemographic information. No important associations were found.

In all fairness, however, I would have to admit post hoc that the wording of the inventory

and its instructions, through phrases like "we are interested in how you generally experience relationships, not just in what is happening in a current relationship" [instructions, see Appendix VIII] or "when romantic partners disapprove of me, I feel really bad about myself" [Item 34], seem to suggest that one was expected to have had more than one relationship. This study has made clear, at least to me, that this is not necessarily so. Thus, the questionnaire may be biased towards certain groups of people with perhaps relatively more "modern" or "liberal" attitudes. Perhaps in the future the wording of the inventory could be adjusted to accommodate people who have had a single partner.

So far the analysis by item suggests that missingness appears to be relatively similar between the psychometric questionnaires. The Scheffé test can give us an additional impression of how the questionnaires group in terms of number of missing values (Table 6.3). This picture complements that of Table 6.2 and it seems to agree with what has been discussed so far, i.e. that most of the tests tend to possess similar levels of missingness except for the ECR and possibly the RLI.

Table 6.3. Homogenous subsets of questionnaires based on their mean number of missing values as displayed in each subset (generated by the Scheffé test).

| Inventory | Total items | Subset | | |
		1	2	3
SPQ	74	0.41		
BIDR	40	0.85		
I/E-R	14	1.14		
EPQ	36	1.53	1.53	
AIQ	35	1.63	1.63	
RLI	34		2.62	
ECR	36			8.78

Is this evidence that missingness is *nonignorable*? Not really. It only suggests that as far as the psychometric questionnaires are concerned, missing values do not appear to be

allocated completely at random. However, missing values can still be random, conditional upon the given questionnaire, or in other words, when within each questionnaire no patterns of missingness are observed. Should this be the case, missingness can still be considered ignorable (Allison, 2001).

When the items of the psychometric questionnaires were replaced by the questionnaire factors and buffer items were excluded from the dataset ($k = 17$, present in AIQ-IIIx and RLI), the total number of variables (sociodemographics plus psychometric factors) was reduced to 49, of which 42 (85.7%) had at least one missing value. Focussing on the psychometric questionnaires, as it was shown in Table 6.2 only two had items with no missing cases (the BIDR-6 and the SPQ). For these two measurements, in order to assess whether the number of items with missing values that each of their factors had was significantly different from chance, two goodness-of-fit chi-squares were utilised, one for each measurement, by using the actual number of items that made up each factor as the expected frequencies.

Test results were nonsignificant for both measurements: For the BIRD-6 (expected frequencies .5 : .5), $\chi^2 (1, N = 15) = 3.26$, *ns*, effect size $W = 0.46$, power$_{.05}$ = .43; for the SPQ (expected frequencies .34 : .34 : .22 : .10, $\chi^2 (3, N = 24) = 1.55$, *ns*, effect size $W = 0.25$, power$_{.05}$ = .15 (the degrees of freedom in this last test were 3 because two of the second order factors of the SPQ, viz. "cognitive perceptual" and "interpersonal" had a common first order factor, viz. "suspiciousness", which, for the purpose of this analysis, was excluded from their scoring and was used as a separate factor). For the rest of the questionnaires the above analyses were not performed since all of their items had missing values, and thus their expected frequencies would have been identical to their observed ones.

For all the psychometric questionnaires it was investigated whether the mean number of missing values was significantly different between their factors (Table 6.4). These results

suggest that, on average, cases with missing values did not vary significantly between the questionnaire factors.

Table 6.4. Comparisons between the mean number of missing values in the factors of each questionnaire (none of the results were statistically significant at $\alpha = .05$).

Statistic	I/E-R	RLI	SPQ	EPQ-R-S	AIQ-IIIx	ECR	BIDR-6
F	0.61	0.62	1.35	2.14	0.77	.15	0.11
df	2, 11	2, 24	8*, 65	2, 33	2, 22	1, 34	1, 38
η^2	.10	.05	.14	.11	.06	.004	.003
power$_{.05}$	.13	.14	.57	.41	.16	.07	.06

* the nine first-order factors were used

These results indicate that although missingness seemed to be related to the content of the questionnaires, within each measurement, both missing values and number of items with missing cases appeared to be randomly allocated.

Overall the findings presented in this section were taken as evidence of ignorable missingness. Thus, subjects or items with missing values were not excluded from the dataset. Missing values were only imputed for certain tests that did not accept empty cells for their calculations; in these cases the imputations were left to be dealt by the statistical package used.

QUESTIONNAIRE PSYCHOMETRIC PROPERTIES

RELIABILITY

Internal consistency statistics for all questionnaires are shown in Table 6.5. As it can be seen from that table, the scales appear to possess very similar, and most of the times

better internal reliabilities that their normative ones. Allow me to discuss the scales that had reliabilities below .70.

First the reliability of the extrinsic personal scale, though just below .70 was still twelve units higher than its normative value, and thus it was considered adequate.

Also the relatively low reliability of the psychoticism scale (.63) was expected, and as Eysenck and Eysenck (1991) state " the *P* scale taps several different facets (hostility, cruelty, lack of empathy, nonconformity, etc.) which may hold reliabilities lower than would be true" (p. 19). I decided to look closer into what may be causing this low reliability.

I ran an *Alpha-factoring* analysis (Kaiser & Coffrey, 1965) with Direct Oblimin (i.e. non-orthogonal) rotation on the 12 items that form the psychoticism scale. Alpha-factoring is a type of exploratory factor analysis appropriate for items that form scales, which fall into the psychological theory of measurement (Tabachnick & Fidell, 2001). Thus the factors extracted are such that maximise the internal reliability of the scale based on the values of the alpha coefficient.

The most parsimonious and meaningful model, extracted three factors, which when unrotated accounted for 48.48% of the variance in the psychoticism. When rotated the factors appeared relatively independent, with the highest correlation being between the first and the second factor (.24), and the lowest between the second and the third factor (-.08) – factor independence was confirmed by the very similar item-factor correlations reported in both the structure and the pattern matrixes. Although most of the items loaded on the first factor, of interest were the four items that formed the other two factors.

Table 6.5. Cronbach's alpha coefficients for all the scales (in brackets are the reported reliabilities by the developers of the measurements, where available).

Inventory	Sub-scales	alpha
I/E-R	Intrinsic	.86 (.83)
	Extrinsic personal	.69 (.57)
	Extrinsic social	.75 (.58)
RLI	Internal	.86 (.84)
	External	.72 (.77-.81)
	Quest (total)	.73 (.75-.81)
	Quest (complexity)	.58
	Quest (doubt)	.62
	Quest (openness)	.64
SPQ*	Cognitive perceptual	.90
	Interpersonal	.92
	Disorganised	.86
	Ideas of reference	.77 (.71)
	Social anxiety	.84 (.72)
	Magical thinking	.78 (.81)
	Unusual experiences	.73 (.71)
	Eccentric behaviour	.85 (.76)
	No close friends	.81 (.67)
	Odd speech	.73 (.70)
	Constricted affect	.78 (.66)
	Suspiciousness	.76 (.78)
EPQ-R-S*	Neuroticism	.84 (.80-.84)
	Extraversion	.86 (.84-.88)
	Psychoticism	.63 (.61-.62)
AIQ-IIIx	Personal identity	.79 (.84)
	Social identity	.87 (.86)
	Collective identity	.65 (.74)
ECR	Anxious attachment	.90 (.91)
	Avoidant attachment	.92 (.94)
BIRD-6	Self-deception	.71 (.68-.80)
	Impression management	.80 (.75-86)

* Since responses in these scales are dichotomous, the Kuder-Richardson 20 (K-R 20) coefficient is presented (Kuder & Richardson, 1937).

The second factor consisted of the following three items, presented in descending order of loadings: "Is it better to follow society's rules than go your own way?" (Item 33, reverse coding), "Do you prefer to go your own way rather than act by the rules?" (Item 11), and "Do you take notice of what people think?" (Item 2, reverse coding). These

items are the only ones in the inventory that appear to be directly addressing issues of nonconformity.

The third factor had a single item, viz. "Do you think people spend too much time safeguarding their future with savings and insurances?" (Item 24). This last item had the lowest item-scale correlation (.09) in the reliability diagnostics, which, by also taking into account the single-item factor it formed, may suggest either that it needs to be reworded or that perhaps it should be excluded from the scale. In fact, when all four items of the second and third factor were excluded from the scale, the internal reliability of the scale improved considerably (*K-R 20* = .73).

However, this misbehaviour of the above four items could be sample-specific. Unfortunately, both the EPQ manual and the Eysenck et al. (1985) article (in which the development of the psychoticism scale was presented) do not provide enough information to access the normative behaviour of those items. That said, in a recent article, Aluja, Garćia, and Garćia (2003) ran a psychometric assessment of EPQ-R-S (Spanish version) by using both exploratory and confirmatory analyses (*N* = 1006). Among other findings, they identified six items in psychoticism that were significantly reducing the goodness-of-fit indices of the scale. Of those items, three were the same as the ones identified above (item 2 was not one of them). This additional evidence seems to suggest that the misbehaviour of these items may not be sample-specific, and that the psychoticism scale may indeed need to be modified.

The other scale that had a reliability value below .70, and one that was well below its normative value (.74), was collective identity (observed reliability was .65). In this case, however, diagnostics indicated that a single item was entirely responsible for the decrease in reliability. Interestingly, this item asked how important religion was to the sense of who one was (Item 10). The item-scale correlation was -.07, and when the item was excluded, the reliability of the scale was raised to .72. Spearman's correlations

between this item and each of the rest seven items in the scale tended to have negative, but near zero coefficients, with only two exceeding the value of |.10|, viz. against the importance of the place one lives (Item 13) (*rho* = -.17, *N* = 160), and against the importance of one's language (Item 33) (*rho* = -.18, *N* = 160). In addition, curve estimations revealed the absence of nonlinear bivariate relationships. Finally, this lack of association did not appear to be based on outlying cases.

It is possible that because the sample was largely homogenous in respect to religion, Item 10, which can be seen as a crude and broad index of religious identity, may lack discriminating power. Indeed, 65.2% of the respondents (105 of 161) said that religion was very important or extremely important to the sense of who they were, and this percentage rose to 81.3% when responses on the "somewhat important" point were added. According to de Vaus (2002, pp. 48-53) this pattern of responding is indicative of a nondiscriminating item.

Finally, perhaps of minor concern are the relatively low reliabilities of the quest sub-scales (.58, .62, and .64). Reliability diagnostics suggest that none of the items in each of these scales was problematic. Moreover, lack of comparative results does not allow me to assess their consistency in relative terms. Since each of these sub-scales consisted of four items, it is conceivable that their low reliabilities are at least in part artefacts of the small number of items involved (Hair et al., 1998). I revisit this issue when I examine the structural integrity of these scales below.

Overall, it can be said that the scales appear to function reliably enough with the sample of this study.

VALIDITY

Both convergence and discriminant validities were assessed primarily by replicating the exact statistical analyses run by the developers of the instruments, while additional analyses were performed when further clarifications were necessary.

RELIGIOSITY (I/E-R)

The correlation matrix of the 14 items of the scale was subjected to a Principal Axis analysis with Equamax rotation, and three factors were requested (Table 6.6). The three factors were extracted in nine iterations, while the rotation converged in five iterations.

Based on the results of the Kaiser-Meyer-Olkin measure of sampling adequacy (Kaiser & Cerny, 1977), the proportion of variance in the items attributed to common variance was 80.5%, while the Bartlett's test of sphericity (Bartlett, 1950) suggested that the items' correlation matrix was significantly different from the identity matrix, χ^2 (91, N = 158) = 809.9, $p < .005$. The extracted three factors accounted for 49.18% of the total variance, and as can be seen from Table 6.6, they show unambiguously the three religious orientations of the inventory.

To check whether factor independence was an artefact of the rotation used, Principal Axis analysis was rerun using direct Oblimin rotation. The results suggested that indeed the three factors were largely independent, with the highest correlation (.10) being between the extrinsic personal and the extrinsic social factors. When the items were scored on the three religious orientations, i.e. by summing up the responses on the items of each factors, the above levels of very low correlations were sustained, with the highest correlation still being between extrinsic personal and extrinsic social, which in this instance had slightly increased to .16, while the rest were below |.08|. It is also worth mentioning that the mean levels of the orientation of this sample were significantly lower than the norms.

Table 6.6. Principal Axis factor loadings after Equamax rotation of the 14 I/E-R items after scoring. Loadings below |.30| are not shown*.

	Factor		
	1	*2*	*3*
Item 12 (intrinsic)	.87		
Item 14 (intrinsic-reversed)	.82		
Item 10 (intrinsic-reversed)	.67		
Item 7 (intrinsic)	.66		
Item 1 (intrinsic)	.65		
Item 3 (intrinsic-reversed)	.64		
Item 4 (intrinsic)	.51		
Item 5 (intrinsic)	.51		
Item 13 (extrinsic social)		.74	
Item 11 (extrinsic social)		.74	
Item 2 (extrinsic social)		.71	
Item 6 (extrinsic personal)			.72
Item 8 (extrinsic personal)			.64
Item 9 (extrinsic personal)			.59
Extracted eigenvalues (unrotated)	*3.79*	*1.87*	*1.22*
Mean (SD)	29.72 (6.88)	15.25 (3.96)	
Norm**	37.2	25.6***	
t(158)	13.69****	32.97****	

* Although Stevens (2002, p. 394) suggests |.40|, I opted for a less conservative cutoff point; ** from Hill & Hood, 1999; *** only the combined norm was available; **** $p < .005$, two-tailed

To test further the study's prediction that the I/E-R structure would be recovered in the current sample, an MDS analysis of the measurement was carried out, which generated a very interesting picture. Kruskal's non-metric monotone regression algorithm was used (Kruskal, 1964), because it does not require any metric assumptions from the data (such as multidimensional normality or linearity), and it tends to produce a clearer picture of the distances between the variables in comparison to a metric alternative, when the fewest possible dimensions are desirable (Hammond, 1987). Proximities were calculated from the scored items using Euclidean distances with a primary approach to ties. In order to minimize the risk of a less-than-optimum solution, two thousand initial random
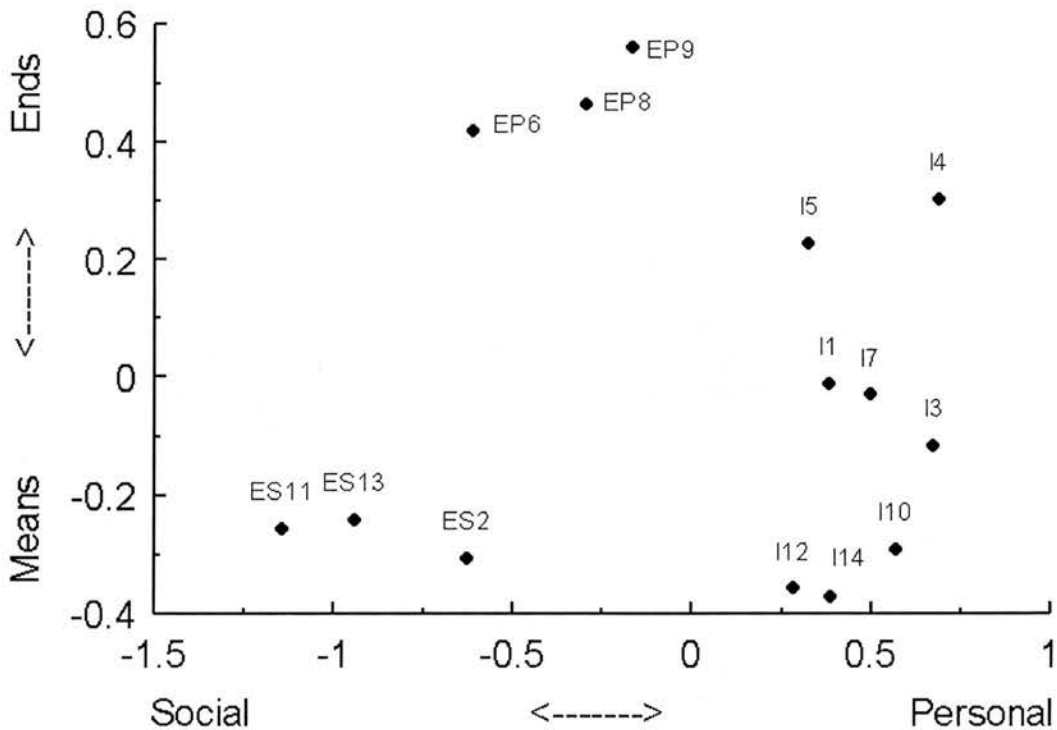
Figure 6.1. A two-dimensional representation of Allport's religious orientations as mapped through a non-metric multidimensional scaling analysis (I = intrinsic, EP = extrinsic personal, ES = extrinsic social; numbers shown are item numbers).

configurations were requested. A two-dimensional solution was selected (Kruskal's *Stress* = .053) for being the most parsimonious one (solution converged in 50 iterations), which accounted for 46.2% of the variance and maintained 56.7% of the rank ordering of the dissimilarities (Figure 6.1).

First observation from the two-dimensional map is that the three orientations form clearly defined clusters. Second, since MDS is reproducing a spatial picture of the underlying structure of the data, the meaning of the dimensions is not as central as are the factors in factor analysis. However, in the above configuration, I was tempted to name the dimensions since they appeared to be very meaningful. The x-axis seems to represent the continuum between social and personal aspects of religiosity, with the extrinsic social orientation lying on the one end, the intrinsic on the other, while the

extrinsic personal forming a bridge between the two. The y-axis, however, is the most interesting one. As discussed in chapter IV, Kenneth Pargament (1997) theorised that any orientation (intrinsic, extrinsic, or quest) could be classified as being either the ends or the means of someone's approach to life (see Table 4.1). He suggested that an intrinsic means orientation is highly embedded in one's life, while the intrinsic ends has more of a spiritual nature. At the same time the extrinsic means is a lightly held religiosity, while the extrinsic ends deals with the need for safety and comfort.

The MDS map not only seems to support empirically Pargament's ideas, but it also suggests that the means and ends distinction is not a categorical classification but rather a dimensional one. The y-axis can be seen as the continuum between the ends and means religiosity. The ends pole is populated by the extrinsic personal, which taps into issues of comfort, safety and happiness, while the two intrinsic items on this end (I4 and I5) address issues of private prayer and the feeling of a strong presence of God. At the means pole, the extrinsic social deals with using religion mainly as the means to socialising, while the three intrinsic items (I10, I12, and I14) refer to religion as being the centre of one's life. In addition, the intrinsic orientation provides the link to the two poles of this dimension.

All the above findings suggest in a rather clear manner that Allport's measurement consists of three independent and rather stable orientations of religiosity. At the same time they indicate that the three orientations can be meaningfully represented in a lower two-dimensional space defined by the social-personal and the means-ends aspects of religiosity[7].

7

Whenever a conclusion relates to any of the predictions of this study, it is presented in a box.

RELIGIOSITY (RLI)

The correlation matrix of the 27 items (seven of the total 34 items in the inventory were buffer items) of the scale was subjected to a Principal Axis analysis with Varimax rotation, and three factors were requested (Table 6.7). The three factors were extracted in ten iterations, while the rotation converged in five iterations.

Based on the results of the Kaiser-Meyer-Olkin measure of sampling adequacy, the proportion of variance in the items attributed to common variance was 81%, while the Bartlett's test of sphericity suggested that the items' correlation matrix was significantly different from the identity matrix, χ^2 (351, $N = 153$) = 1581.7, $p < .0005$. The extracted three factors accounted for 37.96% of the total variance. However, as it can be seen in Table 6.7 the factors extracted did not correspond to the three orientations of the measurement. The first factor contained both the internal and external orientation items plus one quest item, while the rest of the quest items were split between the other two factors.

When only the items of the quest orientation were factor-analysed through Principal Axis with Varimax rotation, and three factors were requested, the picture that emerged was still not the one proposed by Batson (Table 6.7). The three factors were extracted in 29 iterations, while the rotation converged in five iterations. The Kaiser-Meyer-Olkin measure of sampling adequacy suggested that the proportion of variance in the items attributed to common variance was 75.1%, the Bartlett's test of sphericity suggested that the items' correlation matrix was significantly different from the identity matrix, χ^2 (66, $N = 159$) = 440.6, $p < .0005$, while the extracted three factors accounted for 39.39% of the total variance. However, once again the factors did not resemble the three divisions of the quest orientation.

Table 6.7. Principal Axis factor loadings after Varimax rotation of the 27 RLI items after scoring. Loadings below |.30| are not shown, unless no higher loading is available.

	Factor total			Factor quest		
	1	2	3	1	2	3
Item 1 (external)	.71					
Item 9 (internal)	.68	-.35				
Item 27 (internal)	.67					
Item 12 (internal)	.66					
Item 30 (internal)	.65					
Item 23 (internal-reversed)	.63	-.32				
Item 4 (internal)	.62					
Item 7 (external)	.60					
Item 25 (external)	.57					
Item 34 (internal-reversed)	.56					
Item 13 (internal)	.50					
Item 20 (external)	.49		.34			
Item 18 (internal-reversed)	.47					
Item 33 (external-reversed)	.36					
Item 17 (quest, doubt-reversed)	-.32					.56
Item 15 (external)	.30					
Item 5 (quest, openness)		.78		.82		
Item 6 (quest, doubt)		.77		.74		
Item 11 (quest, doubt)		.61		.62		
Item 26 (quest, openness)		.61		.60		
Item 16 (quest, openness-reversed)		.51		.49		
Item 32 (quest, doubt)		.44		.44		
Item 3 (quest, openness)		.38		.36		
Item 24 (quest, complexity)		.38	.32	.36	.34	
Item 29 (quest, complexity)			.82		.86	
Item 8 (quest, complexity)			.74		.70	
Item 19 (quest, complexity)			.26			-.27
Extracted eigenvalues (unrotated)	6.24	3.39	2.27	2.87	1.38	.48

As exploratory factor analysis only allows for the manipulation of the number of factors to be extracted and not for the forced placement of items to given factors, I decided to run two confirmatory factor analyses (CFA), one for all the items (except the buffer ones) in the RLI and one for only the quest subscales. The models converged in eleven

and nine iterations respectively, and the goodness-of-fit statistics are shown in Table 6.8.

The *minimum discrepancy function* (χ^2) was significant for both of Batson's models, suggesting that the data do not adequately fit the hypothesised models. However, researchers have long ceased relying on this index of absolute fit, due to its unrealistically strict expectations from the data, and its sensitivity to sample size and non-normality in the variables (Byrne, 2001). A better index of fit is given by the minimum discrepancy divided by the degrees of freedom (CMINDF). Marsh and Hocevar (1985) suggested that a CMINDF below five indicates a good fit. Both models in the current study have much smaller values on this index (2.16 for the total RLI and 1.83 for the quest subscales model).

Table 6.8. CFA goodness-of-fit statistics for Batson's models of the whole RLI and the quest subscales.

	Total RLI (N =159)			Quest only (N = 159)		
	Batson's model	*Saturated model*	*Independence model*	*Batson's model*	*Saturated model*	*Independence model*
χ^2	694.68	0	10077.01	93.44	0	3764.38
df	321	-	378	51	-	78
p <	.0001	-	.0001	.0001	-	.0001
CMINDF	2.16	-	26.66	1.83	-	48.26
NFI	.93	1	0	.97	1	0
CFI	.96	1	0	.99	1	0
RMSEA	.086	0	.403	.073	0	.547
90%CI$_{RMSEA}$	.07 - .09	-	.39 - .41	.05 - .06	-	.53 - .56
ECVI	5.46	5.13	64.12	1.08	1.14	23.98
90%CI$_{ECVI}$	5 - 6	-	62.1- 66.2	0.9 - 1.2	-	22.7 - 25.3

The Bentler-Bonett *normed fit index* (NFI) and the Bentler *comparative fit index* (CFI) are two commonly used indices of relative fit. Both indices range from zero (independence model, no fit) to one (saturated model, perfect fit), with values greater than .90 suggesting a good fit (Bentler, 1992). As can be seen, in the current models these indices are within the acceptable range.

The *root mean square error of approximation* (RMSEA) is another index of fit. Browne and Cudeck (1993) suggested as a rule of a thumb that values of .08 or less should be regarded as indicative of a close fit. By taking into account the 90% confidence intervals of the index, Batson's models appear to possess acceptable levels of RMSEA. The final index presented in Table 6.8 is the *expected cross-validation index* (ECVI), which is a measure of how well the model would fit with a similar-sized sample taken from the same population (Byrne, 2001). The index can take any value, with values either or both close to zero and the saturated model suggesting a good fit. Again both Batson's models satisfy this assumption.

Taken as a whole the above indices suggest that the structures of both the RLI and the quest subscales appear to possess acceptable levels of convergence validity.

Unlike, however, Batson's assumption and the subsequent development of the scale on orthogonal (i.e. independent) orientations, the CFA run in the current study revealed that for the RLI model to have adequate fit the three orientations needed to be free to covary – and indeed when the items were scored, the orientations did tend to do so (Table 6.9). As it can be seen from this table, the internal and external orientations had a high positive association ($r = .60$). The quest appeared to be independent from the external orientation ($r = -.06$), but relatively related to the internal one, though this last relationship was of an inverse nature ($r = -.21$).

When the quest orientation was broken down into its three subscales, once again it

appeared to have no important association with external, while with the internal it was primarily the doubt and secondarily the openness subscale that had a relationship, while complexity seemed to be independent from the internal orientation.

Although no reports are available in the literature regarding the levels of association between the quest subscales and the rest of Batson's orientations, the three higher orientations had to a great extent the expected relationships with each other. Indeed, Batson and Schoenrade (1991), and Batson et al. (1993) report correlations between internal an external ranging from .60 to .65, and between internal and quest ranging from -.21 to -.22.

Table 6.9. Pearson's product moment correlation coefficients between the RLI orientations, with observed and norm means for each orientation.

	Internal	External	Quest total	Quest complexity	Quest doubt	Quest openness
	Upper off diagonal elements are observed correlations in the dataset					
Internal		.60[a]***	-.21[b]**	.03[a]	-.34[a]***	-.19[a]*
External	.76[a]***		-.06[c]	.02[b]	-.12[a]	-.04[b]
Quest total	-.32[b]**	-.002[c]		.64[a]***	.77[a]***	.82[a]***
Quest complexity					.15[b]	.24[a]***
Quest doubt				.14[b]		.60[a]***
Quest openness				.18[a]	.93[a]	
	Lower off diagonal elements show estimated correlations through CFA					
Mean (SD)	6.69 (1.52)	5.54 (1.59)	4.98 (1.15)			
Norm†	6.42	5.89	5.04			
t(155)	2.19*	2.75**	0.59 ‡			

† from Batson & Schoenrade, 1991; ‡ *df* = 154; [a] *n* = 155, [b] *n* = 154, [c] *n* = 153; * *p* < .05; ** *p* < .01; *** *p* < .005, all two-tailed

The current study's results sit comfortably at the lower end of those ranges. However, the correlation between external and quest in their studies ranged from -.14 to -.18, which is two and a half to three times as high as the one found in my study (-.06) – although by using Fisher's z-transformation this difference was not statistically significant.

Finally, it should be noted that this sample was on average significantly more internally and significantly less externally orientated than the norms, while it showed similar quest levels to the latter.

CONVERGENCE VALIDITY BETWEEN I/E-R & RIL

The correlations between I/E-R and RLI are presented in Table 6.10. As predicted, intrinsic orientation had relatively high correlations with both internal ($r = .79$) and external ($r = .48$). Moreover, external had a relatively low association with extrinsic social ($r = .27$) and a much lower one with extrinsic personal ($r = .15$), supporting the notion that it is primarily a facet of mature religiosity, and only partially a component of the immature one. Although quest as a whole had the predicted low and negative correlation with intrinsic ($r = -.15$), while at the same time it appeared to be almost totally independent from both the extrinsic ones, when broken down to its three subscales an interesting picture emerged.

Quest openness showed almost the same profile as total quest. Quest doubt, however, had a much higher negative correlation with intrinsic ($r = -.26$), which for the current sample size was statistically significant. Finally, quest complexity appeared to exhibit a low, yet much higher than the total quest, association with extrinsic personal ($r = .13$), while at the same time being almost orthogonal to the other I/E-R orientations.

Table 6.10. Pearson's product moment correlation coefficients between the RLI and the I/E-R scales.

RLI \\ I/E-R	Intrinsic	Extrinsic personal	Extrinsic social
Internal	.79[b]**	.10[b]	.16[c]*
External	.48[b]**	.15[b]	.27[c]**
Quest	-.15[a]	.06[a]	-.01[b]
Quest complexity	.05[b]	.13[b]	-.06[c]
Quest doubt	-.26[c]**	-.03[c]	.003[d]
Quest openness	-.14[b]	0[b]	.01[c]

[a] $n = 153$, [b] $n = 154$, [c] $n = 155$, [d] $n = 156$; * $p < .05$, ** $p < .01$, both two-tailed

These results support to an extent Donahue's (1985) suggestion that quest is not a mature form of religiosity, but rather a stage of religious sentiment, through which an individual passes in order to acquire a mature orientation (I revisit this issue later).

Overall, these results suggest that (a) the I/E and the RLI appear to have acceptable levels of convergence validity, (b) internal and intrinsic orientations seem to be rather similar, (c) external appears to be mainly a part of intrinsic, and (d) quest, or at least an aspect of it, viz. doubt, may not be as independent from intrinsic as it was initially predicted.

Furthermore, the relationship between the orientations of the two measurements exhibited a degree of nonlinearity. Only nonlinear associations with the highest and statistically significant pseudo-R were compared with the corresponding linear r-coefficients. The following techniques were used in order to assess whether the correlation coefficients of the nonlinear functions were significantly higher than the linear ones:

i. For quadratic ($Y = b_0 + b_1X + b_2X^2$) or cubic ($Y = b_0 + b_1X + b_2X^2 + b_3X^3$) functions, one of the two variables in the pair was assigned to Y and the other to the X position. The X^2 and X^3 were both calculated when necessary, and inserted as new variables in SPSS. Hierarchical linear multiple regressions were run, in which X, and X^2, X^3 (the last only for the cubic function) were added in the model in this block-order, and the significance of the change in the R^2 was assessed.

ii. For any other nonlinear functions (e.g. logarithmic, growth, exponential, and so forth) the formula found in Cohen & Cohen (1983, p. 57) was used. One of the two orientations in the pair was subjected to the given function-transformation and a new variable was created in SPSS. An SPSS syntax file was created to compute the significance of the difference between the two *R*s (Appendix X).

Table 6.11. Hierarchical multiple linear regression results for tests of cubic relations between three quest scales and the intrinsic orientation of I/E-R.

Block	Predictor	partial-r	R^2 change	R^2
1†	Quest	-.15		.02
2	Quest	-.08		
	Quest^2	-.05	.06*	.08*
	Quest^3	-.02		
1‡	Quest complexity	.05		.002
2	Quest complexity	-.04		
	Quest complexity^2	.01	.054*	.056*
	Quest complexity^3	.02		
1‡	Quest openness	-.14		.02
2	Quest openness	-.08		
	Quest openness^2	.05	.02	.04
	Quest openness^3	-.04		

† $N = 153$; ‡ $N = 154$; * $p < .05$

Extrinsic personal possessed no significant nonlinear associations with any of the RLI orientations. Extrinsic social had a significant cubic relationship with external, which however, was of an equal magnitude to the linear one (pseudo-R = .27), and a significant cubic association with internal (pseudo-R = .18), which was not significantly higher from the linear one (R^2-change = .006, N = 154, ns).

The intrinsic orientation had statistically significant nonlinear associations with all the RLI orientations. The highest nonlinear one was against the internal orientation and followed a logarithmic function [$Y = b_0 + (b_1 \ln X)$], which however, was of a smaller magnitude than the linear one presented in Table 6.10 (pseudo-R = .77). In relation to external, the highest nonlinear association had an S-shaped function [$Y = e^{(b0 + (b1/X))}$] and an almost identical magnitude to the linear one (pseudo-R = .48).

Total quest, quest complexity, and quest openness, all had cubic relationships with intrinsic, which, with the exception of quest openness, were significantly higher that their linear ones (Table 6.11). Finally, the highest nonlinear association between intrinsic and quest doubt was of an exponential nature ($Y = b_0 e^{(b1X)}$) (pseudo-R = .28) and significantly higher than the linear one, $t(152) = 4.24$, $p < .005$, (two-tailed).

> Summing up, it can be said that nonlinear relationships between the orientations of the I/E-R and RLI were present in the current dataset. However, by taking into account issues of parsimony and simplicity, these relationships did not appear to possess much greater predictive values than their linear counterparts, with perhaps the exception of quest and more specifically the quest complexity orientation against intrinsic.

SCHIZOTYPY

The developers of the SPQ assessed its structural integrity only through confirmatory models, and at the level between the nine first-order and the three second-order factors (Raine et al., 1994; Reynolds et al., 2000; Rossi & Daneluzzo, 2002). Following their
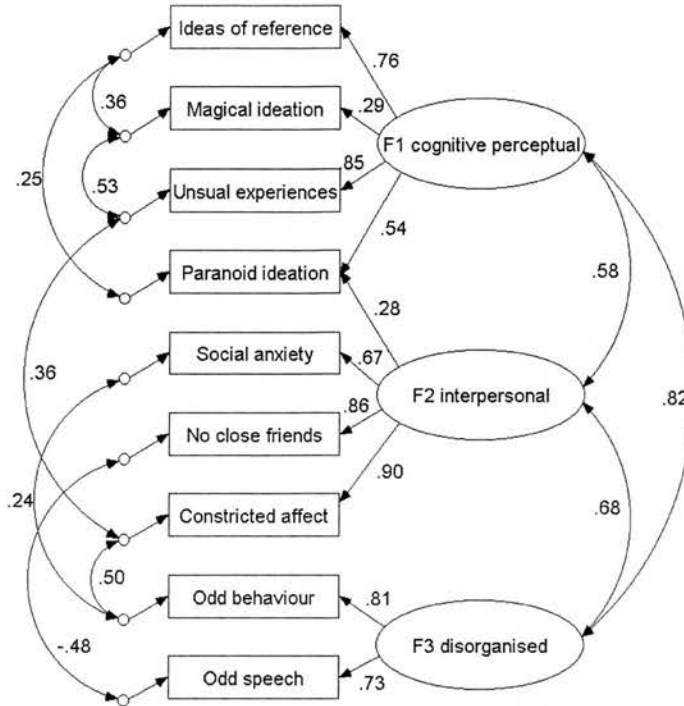
Figure 6.2. Structural representation of the SPQ second-order traits, showing correlation coefficients, and standardised loadings.

method, the covariance matrix of the nine first-order scales was subjected to a CFA (see Table 6.12 for factorial structure). The model converged in nine iterations. However, goodness-of-fit statistics were not satisfactory. The CMINDF was 10.12 (values below 5 are needed for a good fit), the NFI was .80 and the CFI .82 (for both indices values above .90 suggest a good fit), and the RMSEA was .24 (below .08 for a good fit).

I decided to investigate further into potential modifications that could be applied to the model to improve fit. However, AMOS™ does not produce modification indices for incomplete data. Therefore I imputed the missing values through the SPSS *expectation-maximization* (EM) maximum likelihood algorithm (Dempster, Laird & Rubin, 1977), and reran the model. The goodness-of-fit indices of the initial model remained essentially the same. However, this time, modification indices were available.

Given that the structure of the instrument is explicitly based on the DSM-III-R nine diagnostic criteria of schizotypy, only theoretically permissible Lagrange modifications were considered. So for example, modifications pointing to causal paths between the first-order factors were ignored. Also ignored was the suggestion that magical thinking should be allowed to load on the interpersonal factor as this has not been so with any tested or proposed conceptual model of the inventory (see Rossi & Daneluzzo, 2002). Therefore, the only modifications made were in respect to residual covariation.

Table 6.12. CFA goodness-of-fit statistics for the SPQ inventory, after imputation of missing values and modification of residual covariation.

	SPQ	Saturated model	Independence model
χ^2	15.29	0	776.71
df	16	-	36
$p<$	ns	-	.0001
CMINDF	0.96	-	21.57
NFI	.98	1	0
CFI	.99	1	0
RMSEA	.0001	0	.36
$90\%CI_{RMSEA}$	0 - .07	-	.34 - .38
ECVI	0.46	0.56	4.97
$90\%CI_{ECVI}$	0.46 - 0.54	-	4.42 - 5.56

Out of the possible 36 residual pairs, seven were allowed to covary. The model was rerun and it converged in nine iterations. As the two models were nested, improvements in fit could be directly computed through the difference in the minimum discrepancy function ($\Delta\chi^2$) and with $df = df$(original model) - df(final model). The final model had a significantly improved fit than the original one, $\Delta\chi^2(16, N = 161) = 308.65, p < .0005$. No further modifications were indicated, and the goodness-of-fit statistics (Table 6.12) were now all acceptable.

Factor loading and correlation coefficients are shown in Table 6.13 and Figure 6.2. As it can be seen, the loadings were generally high, except for those of magical ideation on the cognitive-perceptual factor and of paranoid ideation (suspiciousness) on the interpersonal factor. Paranoid ideation was expected to have a low loading (Raine et al., 1994), though not as low. The result regarding the loading of magical ideation was unexpected.

Looking at the observed correlations between the first and second-order factors after scoring (Table 6.14), the above discrepancy appeared less severe. Indeed, magical ideation had a high correlation with the cognitive-perceptual factor ($r = .69$), while paranoid ideation had high correlations with both the cognitive-perceptual ($r = .77$) and the interpersonal ($r = .74$) factors.

Table 6.13. AMOS™ maximum-likelihood Oblimin second-order factor loadings of the nine first-order SPQ factors after scoring. Loadings not shown were fixed to zero. All shown loadings were statistically significant ($p < .0005$).

	Factor		
	Cognitive-Perceptual	*Interpersonal*	*Disorganisation*
Ideas of reference	.76		
Magical ideation	.29		
Unusual experiences	.85		
Paranoid ideation	.54	.28	
Social anxiety		.69	
No close friends		.86	
Constricted affect		.90	
Odd behaviour			.81
Odd speech			.73
Mean (SD)	7.83 (6.25)	8.01 (6.88)	4.14 (3.64)
Norm*	11.1	9.7	6
t(160)	6.54**	3.12**	6.50**

* from Raine (nd); ** $p < .005$, all two-tailed

Finally, compared with the norms presented in Table 6.13 it appears that the current

sample tended to be significantly less schizotypal than the general population. Could this have something to do with the religiosity of the participants? I am addressing this issue later in the chapter.

Table 6.14. Pearson product moment correlations between the first and second-order factors of the SPQ. Coefficients in bold were not statistically significant; all other coefficients were significant at $\alpha = .01$.

	1	2	3	4	5	6	7	8	9	10	11	12
1 Cognitive perceptual		.61a	.58b	.87c	.69c	.86c	.77c	.42b	.42b	.46b	.58c	.46b
2 Interpersonal			.61e	.51e	**.16c**	.56e	.74f	.82f	.86f	.86f	.63f	.48e
3 Disorganised				.52g	**.16e**	.59g	.54g	.52h	.36h	.59g	.88i	.91i
4 Ideas of reference					.45d	.64h	.64h	.37g	.35h	.39h	.53i	.42g
5 Magical ideation						.51d	.22d	**.11e**	**.13f**	**.08e**	.21g	**.08e**
6 Unusual experiences							.59h	.42g	.38h	.50h	.58i	.49g
7 Paranoid ideation								.47g	.49i	.53i	.52j	.45g
8 Social anxiety									.54h	.58h	.51i	.43h
9 No friends										.76j	.42l	.24h
10 Constricted affect											.61k	.46g
11 Eccentric behaviour												.61i
12 Odd speech												

[a] $n = 148$, [b] $n = 149$, [c] $n = 150$, [d] $n = 152$, [e] $n = 153$, [f] $n = 154$, [g] $n = 155$, [h] $n = 156$, [i] $n = 157$, [j] $n = 158$, [k] $n = 159$, [l] $n = 160$

GENERAL PERSONALITY

The correlation matrix of the 36 items of the EPQ-R-S was subjected to a Principal Components analysis with Direct Oblimin rotation, and three factors were requested (Table 6.15). The three factors were extracted in three iterations, while the rotation converged in nine iterations.

Based on the results of the Kaiser-Meyer-Olkin measure of sampling adequacy, the proportion of variance in the items attributed to common variance was 72.4%, while the Bartlett's test of sphericity suggested that the items' correlation matrix was significantly different from the identity matrix, $\chi^2 (630, N = 151) = 2023.5, p < .0005$.

Table 6.15. Principal Components loadings (pattern matrix) after Direct Oblimin rotation of the 36 EPQ-R-S items after scoring. Loadings below |.30| are not shown, unless no higher loadings are available for a given item on the factor it belongs.

	Factor		
	1	*2*	*3*
Item 12 (extraversion)	-.75		
Item 36 (extraversion)	-.71		
Item 6 (extraversion)	-.70		
Item 18 (extraversion)	-.68		
Item 21 (extraversion-reversed)	-.68		
Item 31 (extraversion-reversed)	-.67		
Item 34 (extraversion)	-.66		
Item 3 (extraversion)	-.62		
Item 25 (extraversion)	-.51	-.44	
Item 15 (extraversion)	-.49		
Item 9 (extraversion)	-.48	-.34	
Item 28 (extraversion)	-.46		
Item 30 (psychoticism)		.74	
Item 22 (psychoticism-reversed)		.64	
Item 27 (psychoticism-reversed)		.62	
Item 17 (psychoticism)		.58	
Item 14 (psychoticism-reversed)		.55	
Item 5 (psychoticism-reversed)		.51	
Item 20 (psychoticism-reversed)		.48	
Item 8 (psychoticism)		.45	
Item 2 (psychoticism-reversed)		.25	-.47
Item 33 (psychoticism-reversed)		.25	
Item 11 (psychoticism)		.18	
Item 24 (psychoticism)		.12	
Item 4 (neuroticism)			.63
Item 1 (neuroticism)			.62
Item 29 (neuroticism)			.61
Item 23 (neuroticism)			.61
Item 19 (neuroticism)			.60
Item 7 (neuroticism)			.59
Item 10 (neuroticism)			.58
Item 13 (neuroticism)			.55
Item 35 (neuroticism)			.54
Item 26 (neuroticism)			.51
Item 16 (neuroticism)			.51
Item 32 (neuroticism)		.31	.49
Extracted eigenvalues (unrotated)	*6.51*	*3.7*	*2.97*
Mean (SD)	7.67 (3.46)	2.01 (1.90)	4.87 (3.44)
Norm*	6.98	2.72	5.43
t(154)	2.49**	4.63***	2.04***†

* from Eysenck & Eysenck, 1991; † *df* = 157; ** *p* < .05, *** *p* < .005, both two-tailed

The extracted three factors accounted for 36.61% of the total variance (the correlations between the traits are presented in Table 6.16). Interestingly, extraversion was the first extracted factor accounting for 18.07% of the total variance before rotation, while neuroticism was the last (8.25% of the total variance before rotation).

Although overall, the EPQ-R-S appears to possess a satisfactory factorial structure, the four psychoticism items that were already identified in the reliability analysis section, viz. Items 2, 11, 24, 33, all have rather low loadings on the psychoticism trait, while interestingly Item 2 has its main loading on the neuroticism dimension (-.47).

It should also be noted that the current sample tended to be significantly higher on extraversion, and lower on both neuroticism and psychoticism than the norm.

Table 6.16. Pearson's product moment correlation coefficients between the EPQ-R-S traits. The correlations between the oblique factors of the Principal Components analysis are shown in round brackets.

	Extraversion	Psychoticism
Neuroticism	$-.32^{b*}$ (-.21)	$.11^{b}$ (.14)
Extraversion		$-.06^{a}$ (-.06)

[a] $n = 152$, [b] $n = 154$; $* p < .005$

ASPECTS OF IDENTITY

The correlation matrix of the 25 items of the AIQ-IIIx scale (10 of the 35 items of the questionnaire were buffer items) was subjected to a Principal Components analysis with Varimax rotation, and three factors were requested (Table 6.17). The three factors were extracted in nine iterations, while the rotation converged in five iterations.

Based on the results of the Kaiser-Meyer-Olkin measure of sampling adequacy, the proportion of variance in the items attributed to common variance was 80%, while the Bartlett's test of sphericity suggested that the items' correlation matrix was significantly different from the identity matrix, χ^2 (300, $N = 159$) = 1382.1, $p < .0005$. The extracted three factors accounted for 43.82% of the total variance.

To check whether factor independence was an artefact of the rotation used, Principal Components analysis was rerun using Direct Oblimin rotation. The results suggested that indeed the three factors were largely independent, with the highest correlation (.19) being between social and personal identity.

Table 6.17. PCA loadings after Varimax rotation of the 25 AIQ-IIIx scored items. Loadings below |.30| are not shown, unless no higher loadings are available for a given item on the factor it belongs.

	Factor		
	1	2	3
Item 24 (personal)	.74		
Item 14 (personal)	.65		
Item 28 (personal)	.63		
Item 11 (personal)	.58	.35	
Item 8 (personal)	.58		
Item 21 (personal)	.56		
Item 19 (personal)	.56		
Item 17 (personal)	.54		
Item 2 (personal)	.50		
Item 5 (personal)	.40		
Item 3 (social)		.76	
Item 15 (social)	.31	.75	
Item 6 (social)		.73	
Item 9 (social)		.73	
Item 12 (social)		.69	
Item 22 (social)	.31	.66	
Item 25 (social)	.42	.49	
Item 4 (collective)			.73
Item 26 (collective)			.71
Item 13 (collective)		.32	.66
Item 33 (collective)			.61
Item 7 (collective)			.58
Item 23 (collective)	.34		.41
Item 31 (collective)			.41
Item 10 (collective)		-.37	-.03
Extracted eigenvalues (unrotated)	6.16	2.76	2.03
Mean (SD)	37.37 (6.11)	20.74 (5.19)	23 (5.25)
Norm*	41.24	23.81	22.94
$t(159)$	7.99***†	7.48**	0.15

* from Cheek et al., 1994; † $df = 158$; ** $p < .005$, two-tailed

However, when the items were scored on the three identity dimensions, the actual correlation between personal and social was $r = .44$, between personal and collective $r = .21$, and between social and collective $r = .32$.

Finally, the sample exhibited similar to the norm average levels of collective identity, while it showed significantly lower levels of both personal and social identity.

ADULT ATTACHMENT STYLES

The correlation matrix of the 36 items of the ECR was subjected to a Principal Components analysis with Varimax rotation (rotation converged in three iterations), and two factors were requested (Table 6.18).

According to the results of the Kaiser-Meyer-Olkin measure of sampling adequacy, the proportion of variance in the items attributed to common variance was 85.3%, while the Bartlett's test of sphericity suggested that the items' correlation matrix was significantly different from the identity matrix, $\chi^2 (630, N = 145) = 2946.4, p < .0005$. The extracted two factors accounted for 43.99% of the total variance, and as it can be seen from Table 6.18, they show unambiguously the two attachment styles of the inventory. To check whether factor independence was an artefact of the rotation used, Principal Components analysis was rerun using Direct Oblimin rotation. The results suggested that indeed the two factors were largely independent, $(r = .10)$. However, when the items were scored on the two attachment dimensions, the actual correlation was $r = .21$.

Finally, the current sample tended to have levels of anxious attachment similar to the norm, while showing significantly lower levels of avoidant attachment.

Table 6.18. Principal Components loadings after Varimax rotation of the 36 ECR items after scoring. Loadings below |.30| are not shown.

	Factor	
	1	2
Item 17 (avoidance)	.77	
Item 25 (avoidance-reversed)	.76	
Item 27 (avoidance-reversed)	.76	
Item 33 (avoidance-reversed)	.76	
Item 35 (avoidance-reversed)	.74	
Item 13 (avoidance)	.71	.32
Item 23 (avoidance)	.69	
Item 11 (avoidance)	.67	
Item 9 (avoidance)	.67	
Item 31 (avoidance-reversed)	.67	
Item 5 (avoidance)	.66	
Item 21 (avoidance)	.64	
Item 19 (avoidance-reversed)	.62	
Item 29 (avoidance-reversed)	.61	
Item 7 (avoidance)	.60	
Item 3 (avoidance-reversed)	.60	
Item 15 (avoidance-reversed)	.39	
Item 1 (avoidance)	.36	
Item 2 (anxiety)		.75
Item 18 (anxiety)		.72
Item 8 (anxiety)		.69
Item 4 (anxiety)		.67
Item 24 (anxiety)		.63
Item 14 (anxiety)		.63
Item 22 (anxiety-reversed)		.62
Item 36 (anxiety)		.61
Item 6 (anxiety)	.39	.61
Item 10 (anxiety)	.31	.60
Item 28 (anxiety)		.60
Item 30 (anxiety)	-.31	.59
Item 16 (anxiety)		.59
Item 26 (anxiety)	.42	.54
Item 12 (anxiety)		.54
Item 20 (anxiety)		.54
Item 32 (anxiety)		.52
Item 34 (anxiety)		.35
Extracted eigenvalues (unrotated)	*9.62*	*6.21*
Mean (SD)	45.91 (19.04)	65.21 (20.40)
Norm*	52.74	62.28
t	4.37**†	1.73‡

* personal communication with Kelly Brennan (November, 2003); † $df = 147$; ‡ $df = 144$; ** $p < .05$, two-tailed

SOCIAL DESIRABILITY

Finally, the correlation matrix of the 40 items of the BIDR-6 was subjected to a Principal Components analysis with Varimax rotation (rotation converged in three iterations), and two factors were requested (Table 6.19).

Based on the results of the Kaiser-Meyer-Olkin measure of sampling adequacy, the proportion of variance in the items attributed to common variance was 63.3%, while the Bartlett's test of sphericity suggested that the items' correlation matrix was significantly different from the identity matrix, $\chi^2 (780, N = 146) = 1588.93, p < .0005$. The extracted two factors accounted for 21.39% of the total variance.

When the analysis was rerun using Direct Oblimin rotation, the two factors appeared largely independent ($r = .11$). However, the observed correlation in the sample after scoring was much higher ($r = .32$). Overall, however, the factorial structure of the BIDR-6 does not seem adequate at least for the current sample and in particular in respect to the self-deception factor. Therefore, subsequent results on the association between the instrument and the rest of the variables should be treated with caution. Finally, taken at face value, the sample was similar on average to the norm levels of impression management, while it showed significantly higher levels of self-deception.

Summing up, the findings from the psychometric analyses of the questionnaires appear to suggest that the measurements, with the exception perhaps of the BIDR-6, possess acceptable levels of internal reliability, as well as both convergence and discriminant validity.

Table 6.19. PCA loadings after Varimax rotation of the 40 BIDR-6 scored items. Loadings below |.30| are not shown, unless when no higher loadings are available for a given item on the factor it belongs.

	Factor	
	1	*2*
Item 40 (impression management)	.64	
Item 21 (impression management-reversed)	.62	
Item 23 (impression management-reversed)	.60	
Item 34 (impression management)	.51	
Item 35 (impression management-reversed)	.51	
Item 28 (impression management)	.51	
Item 29 (impression management-reversed)	.51	
Item 36 (impression management)	.50	
Item 27 (impression management-reversed)	.50	
Item 26 (impression management)	.48	
Item 24 (impression management)	.47	
Item 39 (impression management-reversed)	.44	.33
Item 32 (impression management)	.40	
Item 25 (impression management-reversed)	.39	
Item 37 (impression management-reversed)	.38	
Item 31 (impression management-reversed)	.35	
Item 30 (impression management)	.30	
Item 22 (impression management)	.28	
Item 33 (impression management-reversed)	.24	
Item 38 (impression management)	.23	
Item 17 (self-deception)		.72
Item 5 (self-deception)		.60
Item 12 (self-deception-reversed)		.56
Item 11 (self-deception)		.55
Item 20 (self-deception-reversed)		.50
Item 15 (self-deception)		.42
Item 19 (self-deception)		.39
Item 9 (self-deception)		.38
Item 13 (self-deception)		.38
Item 18 (self-deception-reversed)		.38
Item 7 (self-deception)		.37
Item 1 (self-deception)		.36
Item 4 (self-deception-reversed)	.42	.34
Item 10 (self-deception-reversed)		.30
Item 8 (self-deception-reversed)		.27
Item 6 (self-deception-reversed)	.50	.25
Item 3 (self-deception)	.19	.10
Item 14 (self-deception-reversed)	.18	.06
Item 2 (self-deception-reversed)	.22	.05
Item 16 (self-deception-reversed)	.16	-.01
Extracted eigenvalues (unrotated)	*13.95*	*7.44*

	Mean (SD)	88.56 (17.90)	80.89 (12.71)
	Norm*	86.4	72.3
	t	1.49†	8.24**‡

* from Paulhus, 1994; † *df* = 150; ‡ *df* = 148; ** *p* < .005, two-tailed

THE RELATIONSHIP BETWEEN PSYCHOMETRIC & SOCIODEMOGRAPHIC VARIABLES

RELIGIOSITY (I/E-R)

The three orientations had an almost zero correlation with age (Pearson's r ranged from -.04 to .07), and with the duration one had been a Christian (Pearson's r ranged from -.08 to .01).

Table 6.20. Pearson's product moment correlation coefficients between the I/E-R religious orientations and frequency of prayer and church attendance.

	Prayer	Church attendance
Intrinsic	.65[a]**	.69[a]**
Extrinsic personal	.17[a]*	.02[a]
Extrinsic social	.12[b]	.28[b]**

[a] $n = 159$, [b] $n = 160$; * $p < .05$, ** $p < .005$ (both two-tailed)

However, the correlations with either frequency of prayer and church attendance tended to be rather high (Table 6.20). All orientations had a positive association with both prayer and church attendance, with intrinsic showing the highest relationship. This result was expected since the more central religion is to an individual, the more frequently he or she would practise it.

Table 6.21. Means (and standard deviations) between females and males on the three religious orientations. None of the results were statistically significant at $\alpha = .05$. Unless otherwise indicated, number of subjects was as follows: Females = 109, Males = 50.

	Females	*Males*	F^{a}	*df*	η^2	power $_{.05}$
Intrinsic	29.12 (6.71)	31.04 (7.13)	2.69	1, 157	.02	.37
Extrinsic personal	9.22 (2.66)	8.62 (2.86)	1.66	1, 157	.01	.25
Extrinsic social	6.16 (2.37)*	6.34 (2.62)	0.18	1, 158	.001	.07

* $n = 110$; [a] based on Type IV sum of squares

On average females did not differ from males in respect to the intensity of their religious orientations (Table 6.21). Among religious denominations, a single significant difference was found, with Other Protestants having a higher on average intrinsic orientation than Catholics (Table 6.22).

Table 6.22. Means (and standard deviations) between Christians on the three religious orientations[1]. Unless otherwise indicated, number of subjects was as follows: Mainstream Protestants = 100, Other Protestants= 35, Catholics = 24.

	Mainstream Protestants	Other Protestants	Catholics	F^a	df	η^2	power $_{.05}$
Intrinsic	29.64 (6.99)	32.29† (5.78)	26.33† (6.62)	5.65*	2, 156	.07	.86
Extrinsic personal	8.68 (2.74)	9.49 (2.58)	9.83 (2.71)	2.39	2, 156	.03	.48
Extrinsic social	6.36 (2.51)‡	6.51 (2.38)	5.21 (2.06)	2.51	2, 157	.03	.49

[1] For all the analyses that follow the Protestant denominations were divided into Mainstream ones (Presbyterian & Episcopalian / Anglican) and Other (all the rest); † denotes significant pairwise differences based on the Scheffé test; ‡ n =101; [a] based on Type IV sum of squares; * $p < .005$

Table 6.23. Means (and standard deviations) between students and non-students on the three religious orientations. None of the results were statistically significant at $\alpha = .05$. Unless otherwise indicated, number of subjects was as follows: Students = 45, Non-students = 110.

	Students	Non-students	F^a	df	η^2	power $_{.05}$
Intrinsic	28.87 (6.79)	30.25 (6.88)	1.30	1, 153	.01	.21
Extrinsic personal	6.40 (2.75)	6.15 (2.33)	3.10	1, 153	.02	.41
Extrinsic social	9.64 (2.46)	8.80* (2.82)	0.30	1, 154	.002	.09

* $n = 111$; [a] based on Type IV sum of squares

Students (full-time and part-time combined) and non-students had similar levels of religiosity (Table 6.23), while as far as employment status was concerned, participants in full-time employment tended to have significantly lower levels of extrinsic personal orientation than both unemployed and home-makers (Table 6.24). Finally, no significant differences were found between the marital statuses (Table 6.25).

Table 6.24. Means (and standard deviations) between employment statuses on the three religious orientations. Unless otherwise indicated number of subjects was as follows: Full-time = 43, Part-time = 37, Unemployed = 23, Home-makers = 30, Retired = 17.

	Intrinsic	Extrinsic personal	Extrinsic social
Full-time	29.12 (7.86)	7.63†§ (2.41)	6.12 (2.38)
Part-time	29.68 (6.27)	9.43 (2.46)	5.78 (2.26)
Unemployed	27 (6.78)	9.83† (2.35)	6.43 (3.42)
Home-maker	30.90 (6.68)	9.93§ (3.19)	6.65[b] (2.33)
Retired	32.24 (4.99)	9.65 (2.74)	6.18 (2.16)
F^a	1.8	4.91*	0.56
df	4, 145	4, 145	4, 146
η^2	.05	.12	.01
power $_{.05}$	.54	.95	.18

[a] based on Type IV sum of squares; †, § denote significant pairwise differences based on the Scheffé test; [b] $n = 31$; * $p < .001$

Table 6.25. Means (and standard deviations) between marital statuses on the three religious orientations. None of the results were statistically significant at $\alpha = .05$. Unless otherwise indicated number of subjects was as follows: Married/living as married = 86, In a relationship = 13, Single = 38, Divorced = 7, Widowed = 10, Separated = 6.

	Intrinsic	Extrinsic personal	Extrinsic social
Married / Living as married	30.01 (7.10)	8.79** (2.98)	5.88 (2.40)
In a relationship not living with partner	29.54 (6.38)	9.15 (2.23)	6.85 (2.44)
Single	30.34 (6.66)	9.32 (2.12)	6.82 (2.69)
Divorced	30.17* (5.34)	9 (3.21)	6 (1.53)
Widowed	29.30 (7.12)	9.10 (2.81)	6.80 (2.25)
Separated	22.33 (2.94)	10.33 (3.27)	5.17 (2.14)
F^a	1.51	0.49	1.31
df	5, 153	5, 153	5, 154
η^2	.05	.02	.04
power $_{.05}$	.52	.18	.45

* $n = 6$; ** $n = 85$; [a] based on Type IV sum of squares

RELIGIOSITY (RLI)

The three orientations had low correlations with age (Pearson's r ranged from -.14 to -.01; the highest value was with quest and the lowest with internal), and with the duration one had been a Christian (Pearson's r ranged from -.12 to -.06; the highest value was with internal and the lowest with external). A single significant, yet rather low, association was found between quest complexity and duration of being a Christian, $r = -.18$, $N = 151$, $p < .05$, two-tailed, power$_{.05}$ = .60. Interestingly, although these relationships were low, they were all negative. These findings provide a weak support to Hood & Morris' (1985) results that showed that quest tended to decrease with age, suggesting once again that perhaps it is not a mature form of religiosity as Batson may have wanted it to be.

Table 6.26. Pearson's product moment correlation coefficients between the RLI orientations and frequency of prayer and church attendance.

	Prayer	Church attendance
Internal	.64[b] **	.68[b] **
External	.32[b] **	.52[b] **
Quest	-.07[a]	-.15[a]
Quest complexity	.08[b]	.03[b]
Quest doubt	-.20[c] *	-.23[c] **
Quest openness	-.04[b]	-.13[b]

[a] $n = 154$, [b] $n = 155$, [c] $n = 156$; * $p < .05$, ** $p < .005$ (both two-tailed)

In respect to frequency of prayer and church attendance, both internal and external orientations showed significant positive correlations, with the former having the highest ones (Table 6.26). On the quest front, it was only doubt that had an association, albeit a negative one, with both religious practices.

No gender (Table 6.27), denominational (Table 6.28), student status (Table 6.29), nor employment status (Table 6.30) significant differences in the levels of religiosity were observed.

Table 6.27. Means (and standard deviations) between females and males on the three religious orientations. None of the results were statistically significant at $\alpha = .05$. Unless otherwise indicated, number of subjects was as follows: Females = 107, Males = 48.

	Females	Males	F^a	df	η^2	power $_{.05}$
Internal	59.59* (13.69)	61.52 (13.77)	0.4	1, 154	.004	.13
External	32.37 (9.71)	35.12* (9.01)	2.8	1, 154	.02	.38
Quest	59.17 (13.76)**	61.27 (14.04)	0.8	1, 153	.01	.14

* $n = 108$, ** $n = 49$; ^{a} based on Type IV sum of squares

However, in respect to marital status, separated individuals tended to be significantly less externally orientated that those who were married, had a partner, or were single (Table 6.31).

Table 6.28. Means (and standard deviations) between Christians on the three religious orientations. Unless otherwise indicated, number of subjects was as follows: Mainstream Protestants = 100, Other Protestants = 23, Catholics = 32.

	Mainstream Protestants	Other Protestants	Catholics	F^a	df	η^2	power $_{.05}$
Internal	59.68 (14.42)	62* (13.73)	59.78 (10.27)	0.4	2, 153	.01	.11
External	33.34** (10.23)	33.28 (9.09)	32.74 (7.09)	0.04	2, 153	0	.05
Quest	59.54 (12.71)	59.69 (17.54)	61.22 (13.31)	0.1	2, 152	.002	.07

* $n = 33$, ** $n = 101$; ^{a} based on Type IV sum of squares

In order to explore whether participants belonging to the above three denominational classes also formed the same denominational groups post hoc on the basis of their responses on both the religiosity questionnaires (i.e. the I/E and the RLI), an *agglomerative hierarchical cluster Q-analysis* was performed on the standardised values of the six religious orientations (i.e. intrinsic, extrinsic personal, extrinsic social, internal, external, and quest). Various clustering methods were tested. The unweighted group average linkage with Euclidean distances was preferred, because it produced the highest *cophenetic correlation coefficient*[8] ($r_c = .64$). However, not only the value of this

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This is the correlation between the original distances and those that result from the cluster configuration (Everitt, Landau, & Leese, 2001).

coefficient fell short of the suggested cutoff point of .75 (Hintze, 2001), but also no meaningful denomination-defined clusters were observed at any distance obtained from the cluster configuration. This result indicates that any religiosity pattern present in the dataset does not appear to be distinctively different among the participants that belonged to the above three denominational categories, or in other words, it does not appear to be bound by denomination.

Table 6.29. Means (and standard deviations) between students and non-students on the three religious orientations. None of the results were statistically significant at $\alpha = .05$. Unless otherwise indicated number of subjects was as follows: Students = 43, Non-students = 109.

	Students	Non-students	F^a	df	η^2	power $_{.05}$
Internal	60.28 (12.59)	60.56 (14.03)	0.01	1, 150	0	.05
External	33.3 (8.99)	33.54 (9.71)	0.02	1, 150	0	.05
Quest	62.51 (11.78)	58.41* (14.27)	2.8	1, 149	.02	.38

* $n = 108$; ^{a} based on Type IV sum of squares

Table 6.30. Means (and standard deviations) between employment statuses on the three religious orientations. Unless otherwise indicated number of subjects was as follows: Full-time = 42, Part-time = 37, Unemployed = 22, Home-makers = 30, Retired = 16.

	Internal	External	Quest
Full-time	58.83 (13.78)	32.43 (10.64)	61.19^a (15.21)
Part-time	60.7 (12.86)	32.33^b (9.47)	61.97 (14.59)
Unemployed	56.18 (15)	31.86 (7.73)	62 (10.13)
Home-maker	61.7 (13.82)	33.63 (10.10)	54.28^c (13.45)
Retired	64.25 (14.31)	35.38 (9.31)	55.67^d (11.27)
F^a	1.01	0.42	2
df	4, 142	4, 141	4, 141
η^2	.03	.01	.05
power $_{.05}$	.31	.15	.59

^{a} $n = 43$, ^{b} $n = 36$, ^{c} $n = 29$, ^{d} $n = 15$, ^{a} based on Type IV sum of squares

Table 6.31. Means (and standard deviations) between marital statuses on the three religious orientations. None of the results were statistically significant at $\alpha = .05$. Unless otherwise indicated number of subjects was as follows: Married/living as married = 82, In a relationship = 13, Single = 37, Divorced = 7, Widowed = 11, Separated = 6.

	Internal	External	Quest
Married / Living as married	59.72 (13.88)	33.29† (9.64)	59.65[a] (15.02)
In a relationship not living with partner	61.15 (14.40)	37.38‡ (10.06)	64.46 (9.79)
Single	63.27 (11.57)	35.14§ (6.54)	60.21[b] (14.44)
Divorced	62 (12.67)	29.57 (8.02)	58 (12.52)
Widowed	55.64 (19.67)	31.45 (11.42)	57.09 (10.76)
Separated	51.67 (7.28)	19.33[†‡§] (10.23)	56.67 (6.95)
F^a	1.14	3.95*	0.46
df	5, 150	5, 150	5, 149
η^2	.04	.12	.01
power $_{.05}$	.40	.94	.17

[a] $n = 80$, [b] $n = 38$; † ‡ § denote significant pairwise differences based on the Scheffé test; [a] based on Type IV sum of squares; * $p < .005$

SCHIZOTYPY

Schizotypal traits tended to have low and negative correlations with both age and duration of being a Christian (Table 6.32).

On average females tended to report significantly lower levels of constricted affect and odd behaviour than males (Table 6.33). The literature is unclear about the relationship between gender and schizotypy, with studies showing higher levels among males (Maier et al., 1992), females (Roth & Baribeau, 1997) or neither (Golomb et al., 1995).

Table 6.32. Pearson's product moment correlation coefficients (plus *N*) between the subjects' age, duration of being a Christian, and the SPQ first and second-order factors.

		Age	*Duration of being Christian*
Second-order	Cognitive-perceptual	-.20*	-.13
		(150)	(145)
	Interpersonal	-.13	-.06
		(154)	(149)
	Disorganised	-.26**	-.20*
		(157)	(152)
First-order	Ideas of reference	-.27**	-.23**
		(157)	(152)
	Magical ideation	.03	.05
		(155)	(150)
	Unusual experiences	-.17*	-.10
		(157)	(152)
	Suspiciousness	-.16*	-.09
		(158)	(153)
	Social anxiety	-.19*	0.14
		(157)	(152)
	No close friends	.07	.10
		(160)	(155)
	Constricted affect	-.05	.02
		(159)	(154)
	Odd behaviour	-.23**	-.19*
		(161)	(156)
	Odd speech	-.24**	-.16*
		(157)	(152)

* $p < .05$; ** $p < .01$ (both two-tailed)

Among religious denominations, Catholics reported significantly higher levels of cognitive-perceptual schizotypal traits than mainstream Protestants, and this result appears to be mainly attributable to the significant differences between these two denominational groups in ideas of reference, unusual experiences, and suspiciousness (Table 6.34.).

Table 6.33. Means (and standard deviations) between females and males on the SPQ first and second order traits. Unless otherwise indicated, number of subjects was as follows: Females = 110, Males = 50.

	Females	Males	F^a	df	η^2	power $_{.05}$
Cognitive-perceptual	7.28[b] (6.40)	9.06[c] (6.63)	2.46	1, 148	.01	.30
Interpersonal	7.42[d] (7.42)	9.17[c] (8.04)	2.07	1, 152	.01	.19
Disorganised	3.82[e] (3.32)	4.84 (4.32)	2.63	1, 155	.01	.21
Ideas of reference	1.80[f] (2.15)	2.51[g] (2.07)	3.81	1, 155	.02	.31
Magical ideation	1.92[h] (1.99)	1.94[j] (2.09)	0.003	1, 153	.001	.06
Unusual experiences	1.84[i] (1.94)	2.42[c] (2.07)	2.81	1, 155	.01	.30
Suspiciousness	1.61[i] (1.89)	2.16[g] (2.14)	2.62	1, 156	.01	.28
Social anxiety	3.11[e] (2.52)	2.90 (2.79)	0.23	1, 155	.01	.15
No close friends	1.48 (1.99)	2.18 (2.41)	3.68	1, 158	.02	.41
Constricted affect	1.27[i] (1.64)	1.96 (2.29)	4.75*	1, 157	.02	.44
Odd behaviour	0.89 (1.67)	1.92[j] (2.18)	10.89**	1, 159	.06	.82
Odd speech	2.94[e] (2.0)	2.88 (2.58)	0.03	1, 155	.002	.09

[a] based on Type IV sum of squares; [b] $n = 102$, [c] $n = 48$, [d] $n = 106$, [e] $n = 107$, [f] $n = 108$, [g] $n = 49$, [h] $n = 104$, [j] $n = 51$, [i] $n = 109$; * $p < .05$; ** $p < .001$

Table 6.34. Means (and standard deviations) between Christians on the SPQ first and second order traits. Unless otherwise indicated, number of subjects was as follows: Mainstream Protestants = 100, Other Protestants = 33, Catholics = 24.

	Mainstream Protestants	Other Protestants	Catholics	F^l	df	η^2	power $_{.05}$
Cognitive-perceptual	6.74[a] † (5.93)	8.91[b] (7.60)	11.38[c] † (6.03)	5.19**	2, 147	.07	.82
Interpersonal	7.46[d] (6.76)	8.91 (7.96)	8.74[e] (6.75)	0.69	2, 151	.01	.17
Disorganised	3.73 (3.52)	4.79 (3.94)	5 (3.86)	1.80	2, 154	.01	.23
Ideas of reference	1.64† (1.74)	2.58 (2.67)	2.83† (2.53)	4.61*	2, 154	.06	.77
Magical ideation	1.78[d] (1.88)	2.09[f] (2.38)	2.36[g] (2.04)	0.89	2, 152	.02	.33
Unusual experiences	1.74† (1.93)	2.12[h] (2.03)	3.09[e] † (1.86)	4.57*	2, 154	.06	.77
Suspiciousness	1.56[i] † (1.88)	1.76 (1.82)	2.75† (2.38)	3.59*	2, 155	.04	.66
Social anxiety	3.03[j] (2.66)	2.88 (2.53)	3.33 (2.58)	0.21	2, 154	0	.05
No close friends	1.57[k] (2.02)	2.17[f] (2.61)	1.57[e] (1.93)	1.08	2, 157	.02	.35
Constricted affect	1.38 (1.69)	1.77f (2.44)	1.50 (1.77)	0.56	2, 156	.02	.25
Odd behaviour	1.01[l] (1.77)	1.60[f] (2.25)	1.54 (1.82)	1.68	2, 158	.03	.42
Odd speech	2.74 (2.09)	3.09 (2.34)	3.46 (2.40)	1.16	2, 154	.01	.10

† denotes significant pairwise differences based on the Scheffé test; [l] based on Type IV sum of squares; [a] $n = 97$, [b] $n = 32$, [c] $n = 21$, [d] $n = 98$, [e] $n = 23$, [f] $n = 35$, [g] $n = 22$, [h] $n = 34$, [i] $n = 101$, [j] $n = 99$, [k] $n = 102$; * $p < .05$, ** $p < .01$

Students tended to have significantly higher scores than non-students on ideas of reference, unusual experiences, suspiciousness, and on both the disorganised traits, i.e. odd behaviour and odd speech (Table 6.35).

Within employment status, part-timers had the highest score on cognitive perceptual traits, which was mainly due to their high scores on ideas of reference, while unemployed received the highest scores on unusual experiences and social anxiety traits. Although the omnibus F-statistic was statistically significant, once again, no post-hoc pairwise differences were identified after correcting for the familywise error (Table 6.36).

Table 6.35. Means (and standard deviations) between students and non-students on the SPQ first and second order traits. Unless otherwise indicated, number of subjects was as follows: Students = 45, Non-students = 108.

	Students	Non-students	F^a	df	η^2	power $_{.05}$
Cognitive-perceptual	9.28[b] (6.12)	7.21[c] (6.31)	3.31	1, 144	.03	.50
Interpersonal	9.13 (7.12)	7.36[d] (6.88)	2.05	1, 148	.01	.24
Disorganised	5.58 (3.95)	3.52 (3.40)	10.57[***]	1, 151	.06	.84
Ideas of reference	2.73 (2.42)	1.71 (1.89)	7.82**	1, 151	.05	.75
Magical ideation	1.68[e] (1.79)	2.01[f] (2.08)	0.84	1, 149	.01	.14
Unusual experiences	2.55[e] (1.90)	1.78[g] (1.88)	5.16*	1, 151	.03	.56
Suspiciousness	2.29 (2.14)	1.59[g] (1.88)	4.09*	1, 152	.04	.66
Social anxiety	3.64 (2.75)	2.81 (2.54)	3.30	1, 151	.02	.38
No close friends	1.51 (1.96)	1.72[h] (2.18)	0.31	1, 154	.01	.13
Constricted affect	1.69 (2.09)	1.35[i] (1.77)	1.08	1, 153	.01	.14
Odd behaviour	1.91 (2.17)	0.95[j] (1.72)	8.65**	1, 155	.04	.68
Odd speech	3.67 (2.24)	2.57 (2.10)	8.29**	1, 151	.05	.80

[a] based on Type IV sum of squares; [b] $n = 43$, [c] $n = 103$, [d] $n = 105$, [e] $n = 44$, [f] $n = 107$, [g] $n = 109$, [h] $n = 111$, [i] $n = 110$, [j] $n = 112$; * $p < .05$, ** $p < .01$, *** $p < .005$

Finally, an overall significant difference was found among marital statuses on the disorganised traits, which was concentrated to the differences in odd behaviour, where all divorced participants received a zero score (Table 6.37).

Table 6.36. Means (and standard deviations) between employment statuses on the SPQ first and second order traits. Unless otherwise indicated, number of subjects was as follows: Full-time = 42, Part-time = 36, Unemployed = 23, Home-makers = 30, Retired = 16.

	Full-time	Part-time	Unemployed	Home-maker	Retired	F^a	df	η^2	power.05
Cognitive-perceptual	7.76[b] (6.09)	10.51[c] (8.22)	9.68[d] (5.44)	5.54[e] (4.68)	6.44 (7.15)	2.88*	4, 135	.08	.77
Interpersonal	7.66[b] (7.57)	9.39[f] (8.49)	9.65 (6.50)	5.69[g] (4.85)	9 (6.41)	1.47	4, 139	.04	.46
Disorganised	3.90 (3.80)	4.89[h] (4.07)	5.74 (4.11)	2.86[g] (1.98)	3.75 (4.16)	2.41	4, 142	.07	.69
Ideas of reference	1.95 (1.93)	2.86 (2.77)	2.57 (2.09)	1.27 (1.55)	1.56 (2.03)	2.86*	4, 142	.08	.77
Magical ideation	2.21 (1.89)	2.33 (2.53)	1.68[d] (1.46)	1.75[e] (1.97)	1.47[i] (2.21)	0.86	4, 140	.03	.33
Unusual experiences	1.83 (1.94)	2.39 (2.16)	3.09 (2.26)	1.40 (1.28)	1.94 (2.24)	2.81*	4, 142	.07	.76
Suspiciousness	1.74 (1.94)	2.33 (2.32)	2.26 (1.94)	1.26[j] (1.93)	1.44 (1.55)	1.65	4, 143	.08	.77
Social anxiety	2.43 (2.35)	3.50 (2.77)	4.48 (3.03)	2.67 (2.50)	2.75 (1.81)	2.91*	4, 142	.10	.77
No close friends	1.91[k] (2.44)	1.78[h] (2.45)	1.39 (1.62)	1.23 (1.50)	2.65[i] (2.50)	1.36	4, 145	.04	.40
Constricted affect	1.50 (2.02)	1.53 (2.17)	1.52 (2.15)	1.26[j] (1.24)	1.88[i] (2.12)	0.28	4, 144	.02	.19
Odd behaviour	1.30[k] (2.02)	1.54[h] (2.24)	2 (2.28)	0.48[j] (0.85)	1.06[i] (1.60)	2.41	4, 146	.07	.70
Odd speech	2.60 (2.20)	3.35[h] (2.35)	3.74 (2.30)	2.45[g] (1.50)	2.63 (2.71)	1.79	4, 142	.05	.51

[a] based on Type IV sum of squares; [b] $n = 41$, [c] $n = 33$, [d] $n = 22$, [e] $n = 28$, [f] $n = 35$, [g] $n = 29$, [h] $n = 37$, [i] $n = 17$, [j] $n = 31$, [k] $n = 43$; * $p < .05$ (the Scheffé test did not identify any significant pairwise differences)

Table 6.37. Means (and standard deviations) between marital statuses on the SPQ first and second order traits. Unless otherwise indicated, number of subjects was as follows: Married/living as married = 85, In a relationship = 13, Single = 38, Divorced = 7, Widowed = 11, Separated = 6.

	Married Living as married	In a relationship	Single	Divorced	Widowed	Separated	F^a	df	η^2	power$_{.05}$
Cognitive-perceptual	8.01[b] (6.68)	7.42[c] (3.98)	9.41[d] (6.94)	6.86 (7.34)	4.64 (6.19)	4.83 (3.37)	1.25	5, 144	.04	.43
Interpersonal	8.20[e] (7.53)	6.15 (3.89)	10.17[f] (7.32)	3.86 (2.85)	5.45 (5.57)	4.83 (4.71)	1.96	5, 148	.06	.62
Disorganised	3.83[g] (3.64)	4.31 (3.66)	5.82 (4.10)	2.43 (1.90)	2.82 (1.94)	2.00 (2.00)	2.85*	5, 151	.09	.83
Ideas of reference	1.89[h] (2.02)	2.38 (2.06)	2.72[f] (2.54)	1.14 (1.86)	1.09 (1.64)	1.50 (1.76)	1.66	5, 151	.06	.56
Magical ideation	2.23[e] (2.08)	1.67[c] (1.97)	1.53 (1.83)	2.86 (2.55)	1.09 (2.07)	1.33 (1.03)	1.51	5, 149	.04	.43
Unusual experiences	1.95[h] (2.02)	2.00 (1.29)	2.50[f] (2.25)	1.86 (2.34)	1.27 (1.49)	1.67 (1.21)	0.80	5, 151	.03	.34
Suspiciousness	1.86 (2.05)	1.38 (1.45)	2.33[f] (2.13)	1.00 (1.53)	1.18 (1.66)	0.33 (0.51)	1.79	5, 152	.06	.63
Social anxiety	3.05[g] (2.63)	3.15 (2.34)	3.53 (2.86)	1.57 (1.13)	2.36 (2.42)	2.67 (2.50)	0.88	5, 151	.04	.39
No close friends	1.96 (2.29)	0.69 (0.86)	1.92 (2.27)	0.71 (1.25)	1.09 (1.81)	1.00 (2.00)	1.53	5, 154	.05	.55
Constricted affect	1.53 (1.99)	0.92 (1.19)	2.05i (2.13)	0.57 (0.79)	0.82 (0.98)	0.83 (0.98)	1.70	5, 153	.05	.53
Odd behaviour	1.12[j] (1.80)	1.08 (1.94)	2.03 (2.31)	0 (0)	0.55 (0.93)	0.50 (1.23)	2.58*	5, 155	.08	.76
Odd speech	2.71[g] (2.20)	3.23 (1.92)	3.79 (2.37)	2.43 (1.90)	2.27 (1.56)	1.50 (1.38)	2.25	5, 151	.06	.58

[a] based on Type IV sum of squares; [b] $n = 80$, [c] $n = 12$, [d] $n = 34$, [e] $n = 81$, [f] $n = 36$, [g] $n = 82$, [h] $n = 84$, [i] $n = 37$, [j] $n = 86$; * $p < .05$ (the Scheffé test did not identify any significant pairwise differences)

GENERAL PERSONALITY

The three personality traits had negative, albeit low correlations with age (Pearson's r ranged from -.14 for psychoticism to -.13 for neuroticism), and with the duration one had been a Christian (Pearson's r ranged from -.13 for psychoticism to -.07 for neuroticism).

Table 6.38. Means (and standard deviations) between females and males on the three personality traits. None of the results were statistically significant at $\alpha = .05$.

	Females	*Males*	F^a	*df*	η^2	power $_{.05}$
Neuroticism	5.01 (3.25) ($n = 109$)	4.57 (3.84) ($n = 49$)	0.6	1, 156	.003	.11
Extraversion	7.71 (3.42) ($n = 107$)	7.58 (3.59) ($n = 48$)	0.04	1, 153	0	.06
Psychoticism	1.88 (1.94) ($n = 108$)	2.32 (1.80) ($n = 47$)	1.8	1, 153	.01	.26

* $n = 110$; ^{a} based on Type IV sum of squares

Females and males tended to have rather similar levels on the three personality dimensions (Table 6.38). These results agree with those reported by Eysenck & Eysenck (1991), and Eysenck et al. (1985).

Table 6.39. Means (and standard deviations) between Christians on the three personality traits. Unless otherwise indicated number of subjects was as follows: Mainstream Protestants = 100, Other Protestants = 34, Catholics = 24.

	Mainstream Protestants	*Other Protestants*	*Catholics*	F^a	*df*	η^2	power $_{.05}$
Neuroticism	4.52[†] (3.26)	4.62 (3.67)	6.71[†] (3.38)	4.21[*]	2, 155	.05	.73
Extraversion	7.79[b] (3.45)	6.88[c] (3.58)	8.29 (3.29)	1.31	2, 152	.02	.28
Psychoticism	1.75[d] (1.91)	2.66[e] (2.01)	2.25 (1.57)	3.06	2, 152	.04	.58

† denotes significant pairwise differences based on the Scheffé test; ^{a} based on Type IV sum of squares; ^{b} $n = 98$, ^{c} $n = 33$, ^{d} $n = 99$, ^{e} $n = 32$; * $p < .005$

Among religious denominations, a single significant difference was found, with Catholics being on average more neurotic than mainstream Protestants (Table 6.39).

Table 6.40. Means (and standard deviations) between students and non-students on the three personality traits.

	Students	Non-students	F^a	df	η^2	power $_{.05}$
Neuroticism	5.87 (3.56)	4.45 (3.29)	5.64*	1, 152	.04	.66
	($n = 45$)	($n = 109$)				
Extraversion	8.09 (3.39)	7.61 (3.41)	0.63	1, 149	.004	.12
	($n = 44$)	($n = 107$)				
Psychoticism	2.09 (1.53)	1.97 (2.02)	0.13	1, 149	.001	.06
	($n = 43$)	($n = 108$)				

^{a} based on Type IV sum of squares; * $p < .05$

Students tended to be significantly more neurotic than non-students (Table 6.40). In respect to employment status, unemployed were significantly more neurotic than participants in full-time employment or those who were retired (Table 6.41). Finally, no significant differences were found between the marital statuses (Table 6.42).

Table 6.41. Means (and standard deviations) between employment statuses on the three personality traits. Unless otherwise indicated number of subjects was as follows: Full-time = 43, Part-time = 37, Unemployed = 23, Home-makers = 30, Retired = 15.

	Neuroticism	Extraversion	psychoticism
Full-time	4.33† (3.21)	8.36^b (3.44)	2.49 (1.64)
Part-time	4.81 (3.73)	7.66^c (3.48)	2.22^d (2.24)
Unemployed	7.17†‡ (3.40)	7.74 (3.29)	1.83 (1.11)
Home-maker	4.20‡ (3.23)	7.67 (3.54)	1.53 (2.37)
Retired	5.13 (2.95)	5.87 (3.83)	1.36 (1.50)
F^a	3.30*	1.41	1.73
df	4, 143	4, 140	4, 141
η^2	.08	.04	.05
power $_{.05}$	.83	.43	.52

†, ‡ denote significant pairwise differences based on the Scheffé test; ^{a} based on Type IV sum of squares; ^{b} $n = 42$, ^{c} $n = 35$, ^{d} $n = 36$; *$p < .05$

Table 6.42. Means (and standard deviations) between marital statuses on the three personality traits. None of the results were statistically significant at $\alpha = .05$. Unless otherwise indicated number of subjects was as follows: Married/living as married = 85, In a relationship = 13, Single = 37, Divorced = 7, Widowed = 10, Separated = 6.

	Neuroticism	Extraversion	Psychoticism
Married / Living as married	4.49 (3.24)	7.51[b] (3.65)	2.02[d] (1.98)
In a relationship not living with partner	6 (2.1)	8.69 (3.20)	1.62 (1.71)
Single	5.59 (4.1)	7.33[c] (3.59)	2.34[e] (1.81)
Divorced	5.29 (3.95)	8.29 (2.50)	1.71 (2.36)
Widowed	3.50 (3.78)	8.10 (3.03)	1.22[f] (1.48)
Separated	5.17 (2.49)	8.33 (2.58)	2.17 (2.04)
F^a	1.17	0.44	0.69
df	5, 152	5, 149	5, 149
η^2	.04	.02	.02
power $_{.05}$	.41	.17	.24

[a] based on Type IV sum of squares; [b] $n = 83$, [c] $n = 36$, [d] $n = 82$, [e] $n = 38$, [f] $n = 9$

ASPECTS OF IDENTITY

All three aspects of identity had statistically significant correlations with both the subjects' age and the duration of being a Christian, although only the correlations involving collective identity were positive (Table 6.43).

Table 6.43. Pearson's product moment correlation coefficients between the AIQ-IIIx identity aspects versus subjects' age and duration of being a Christian.

	Age	Duration of being a Christian
Personal	-.32[c] **	-.26[a] **
Social	-.23[d] **	-.20[b] *
Collective	.17[d] *	.22[b] **

[a] $n = 154$, [b] $n = 155$, [c] $n = 159$, [d] $n = 160$; * $p < .05$, ** $p < .005$ (both two-tailed)

On average, no statistically significant differences in all three identities were observed between females vs. males (Table 6.44), and between marital statuses (Table 6.48). Among religious denominations, Catholics tended to have significantly higher personal identity than both mainstream and other Protestants, while they tended to be significantly higher on collective identity against other Protestants (Table 6.45).

Table 6.44. Means (and standard deviations) between females and males on the three identity aspects. None of the results were statistically significant at $\alpha = .05$. Unless otherwise indicated number of subjects was as follows: Females = 110, Males = 50.

	Females	Males	F^a	df	η^2	power $_{.05}$
Personal	37.52* (6.36)	37.04 (5.57)	0.2	1, 157	.001	.07
Social	20.66 (5.15)	20.92 (5.32)	0.08	1, 158	.001	.06
Collective	22.62 (5.35)	23.84 (4.97)	1.9	1, 158	.01	.28

* $n = 109$; ª based on Type IV sum of squares

Students tended to have a significantly higher personal identity and a significantly lower collective identity than non-students (Table 6.46). Finally, as far as employment status is concerned, although unemployed participants appear to have the highest levels of personal identity, after correcting for the familywise error, post-hoc pairwise comparisons did not yield any statistically significant differences (Table 6.47).

Table 6.45. Means (and standard deviations) between Christians on the three identity aspects. Unless otherwise indicated, number of subjects was as follows: Mainstream Protestants = 101, Other Protestants = 24, Catholics = 35.

	Mainstream Protestants	Other Protestants	Catholics	F^a	df	η^2	power $_{.05}$
Personal	36.73† (6.14)	36.53‡ (6.04)	41.25^{b} †‡ (4.59)	6.09**	2, 156	.07	.88
Social	20.64 (5.33)	19.91 (4.89)	22.38 (4.84)	1.67	2, 157	.02	.35
Collective	23.35 (5.15)	20.97† (4.53)	24.50† (5.98)	3.95*	2, 157	.05	.70

* $p < .05$, ** $p < .005$; †, ‡ denote significant pairwise differences based on the Scheffé test; ª based on Type IV sum of squares; ^{b} $n = 34$

Table 6.46. Means (and standard deviations) between students and non-students on the three identity aspects. Unless otherwise indicated number of subjects was as follows: Students = 45, Non-students = 111.

	Students	*Non-students*	F^a	*df*	η^2	power $_{.05}$
Personal	40.40 (4.93)	36.31[b] (6.18)	15.64**	1, 153	.09	.98
Social	22.07 (5.68)	20.32 (4.91)	3.72	1, 154	.02	.48
Collective	21.64 (5.03)	23.56 (5.31)	4.28*	1, 154	.03	.54

* $p < .05$, ** $p < .0005$; [a] based on Type IV sum of squares; [b] $n = 110$

Table 6.47. Means (and standard deviations) between employment statuses on the three identity aspects. Unless otherwise indicated number of subjects was as follows: Full-time = 42, Part-time = 37, Unemployed = 23, Home-makers = 31, Retired = 17.

	Personal	Social	Collective
Full-time	36.93 (5.86)	20.98 (4.66)	22.86 (5.06)
Part-time	39.11 (4.87)	21.62 (5.32)	22.97 (5.25)
Unemployed	39.70 (5.56)	21.83 (5.88)	21.70 (5.06)
Home-maker	35.93[b] (4.95)	19.81 (5.62)	22.94 (5.94)
Retired	35.65 (4.95)	18.71 (4.74)	25.18 (4.90)
F^a	2.57*	1.42	1.08
df	4, 144	4, 145	4, 145
η^2	.07	.04	.03
power $_{.05}$	.71	.43	.33

[a] based on Type IV sum of squares; [b] $n = 30$; * $p < .05$ (the Scheffé test did not identify any significant pairwise differences)

Table 6.48. Means (and standard deviations) between marital statuses on the three identity aspects. None of the results were statistically significant at $\alpha = .05$. Unless otherwise indicated, number of subjects was as follows: Married/living as married = 86, In a relationship = 13, Single = 37, Divorced = 7, Widowed = 11, Separated = 6.

	Personal	Social	Collective
Married / Living as married	37.21* (5.43)	20.67 (4.68)	23.56 (5.07)
In a relationship not living with partner	39.15 (4.74)	20.46 (3.99)	21 (4.14)
Single	37.76 (6.95)	21.46 (6.47)	22.76 (5.09)
Divorced	36.29 (6.47)	20.86 (5.67)	22.71 (5.16)
Widowed	34.18 (8.41)	18.09 (6.01)	20.82 (7.81)
Separated	40.50 (6.63)	22.67 (3.08)	25.17 (5.12)
F^a	1.23	0.89	1.18
df	5, 153	5, 154	5, 154
η^2	.04	.03	.04
power $_{.05}$	.43	.31	.41

* $n = 85$; ª based on Type IV sum of squares

ADULT ATTACHMENT STYLES

Although avoidant attachment had a very low positive association with both age and duration of being a Christian (Pearson's r ranged from .10 to .11), anxious attachment was significantly correlated with both the above variables (with age: $r = -.27$, $N = 145$, $p < .005$, two-tailed, power$_{.05} = .91$; with duration of being Christian: $r = -.23$, $N = 140$, $p < .01$, two tailed, power$_{.05} = .79$).

Table 6.49. Means (and standard deviations) between females and males on the two attachment styles. None of the results were statistically significant at $\alpha = .05$. Unless otherwise indicated, number of subjects was as follows: Females = 104, Males = 44.

	Females	*Males*	F^a	df	η^2	power $_{.05}$
Avoidance	45.89 (19.13)	45.93 (19.04)	0	1, 146	0	.05
Anxiety	63.47* (19.33)	69.33** (22.46)	2.5	1, 143	.02	.35

* $n = 102$, ** $n = 43$; ª based on Type IV sum of squares

No statistically significant differences in attachment styles were observed between females and males (Table 6.49), and among the three main Christian denominations (Table 6.50). Students tended to have a significantly more anxious attachment than non-students (Table 6.51).

Table 6.50. Means (and standard deviations) between Christians on the two attachment styles. None of the results were statistically significant at $\alpha = .05$. Unless otherwise indicated, number of subjects was as follows: Mainstream Protestants = 92, Other Protestants = 23, Catholics = 33.

	Mainstream Protestants	Other Protestants	Catholics	F^a	df	η^2	power $_{.05}$
Avoidance	44.76 (18.14)	48.58 (19.18)	46.65 (22.61)	0.51	2, 145	.01	.13
Anxiety	64.36* (19.33)	64.30 (21.94)	70.05** (22.47)	0.73	2, 142	.01	.17

* $n = 90$, ** $n = 22$; ^{a} based on Type IV sum of squares

Although unemployed participants exhibited the highest levels of anxious attachment, post-hoc pairwise comparisons did not show any significant differences, after correcting for the familywise error (Table 6.52).

Table 6.51. Means (and standard deviations) between students and non-students on the two attachment styles. Unless otherwise indicated, number of subjects was as follows: Students = 41, Non-students = 103.

	Students	Non-students	F^a	df	η^2	power $_{.05}$
Avoidance	45.12 (20.43)	45.73 (18.40)	0.03	1, 142	0	.03
Anxiety	75.85 (21.60)	61.01* (18.68)	16.74**	1, 139	.10	.98

* $n = 100$; ^{a} based on Type IV sum of squares; ** $p < .0005$

Finally, in respect to marital statuses, participants who had been separated had the highest levels of avoidant attachment, but as above no post-hoc pairwise differences were observed, while single participants tended to have a significantly higher anxious attachment than those being married or living with a partner (Table 6.53).

Table 6.52. Means (and standard deviations) between employment statuses on the two attachment styles. Unless otherwise indicated, number of subjects was as follows: Full-time = 41, Part-time = 33, Unemployed = 22, Home-makers = 29, Retired = 13.

		Avoidance	Anxiety
Full-time		43.88 (16.87)	59.55* (17.05)
Part-time		44.21 (19.85)	68.58** (21.93)
Unemployed		45.09 (19.25)	75.86 (24.91)
Home-maker		45.59 (17.24)	62.28 (20.23)
Retired		56.92 (23.79)	65.77 (15.86)
	F^a	1.32	2.67†
	df	4, 133	4, 130
	η^2	.04	.08
	power $_{.05}$	.40	.73

* $n = 40$, ** $n = 31$; ^{a} based on Type IV sum of squares; † $p < .05$ (the Scheffé test did not identify any significant pairwise differences)

Table 6.53. Means (and standard deviations) between marital statuses on the two attachment styles. Unless otherwise indicated, number of subjects was as follows: Married/living as married = 82, In a relationship = 13, Single = 32, Divorced = 7, Widowed = 9, Separated = 5.

		Avoidance	Anxiety
Married / Living as married		42.17 (17.80)	58.18^b† (17.46)
In a relationship not living with partner		40.62 (12.76)	73.08 (14.51)
Single		53.94 (20.80)	79.34† (20.78)
Divorced		50 (15.61)	70.86 (13.64)
Widowed		50.67 (23.65)	61.22 (29.06)
Separated		55.20 (22.44)	64.60 (15.13)
	F^a	2.51*	6.58**
	df	5, 142	5, 139
	η^2	.08	.19
	power $_{.05}$	.77	.99

† denotes significant pairwise differences based on the Scheffé test; ^{a} based on Type IV sum of squares; ^{b} $n = 79$; * $p < .05$; ** $p < .005$; (the Scheffé test did not identify any significant pairwise differences)

SOCIAL DESIRABILITY

Of the two desirability factors, impression management appears to be the most important in respect to the subjects' age ($r = .33$, $N = 151$, $p < .0005$, two-tailed, power$_{.05} = .99$)

and duration of being a Christian ($r = .28$, $N = 146$, $p < .005$, two-tailed, power$_{.05} = .93$), while self-deception was largely independent from both of them (maximum $r = .14$)

Table 6.54. Means (and standard deviations) between females and males on the BIDR-6 factors.

	Females	*Males*	F^a	*df*	η^2	power$_{.05}$
Impression management	91.14 (17.32) ($n = 101$)	83.36 (18.09) ($n = 50$)	6.55*	1, 149	.04	.72
Self-deception	80.83 (13.32) ($n = 100$)	81 (11.50) ($n = 49$)	0.01	1, 147	0	.05

* $p < .05$ [a] based on Type IV sum of squares

Impression management tended to be significantly higher in females (Table 6.54), and in non-students (Table 6.56). Both these results are similar to those reported by Paulhus (1994). The levels of desirable responding were not significantly different among the religious denominations (Table 6.55).

Table 6.55. Means (and standard deviations) between Christians on the BIDR-6 factors. Unless otherwise indicated, number of subjects was as follows: Mainstream Protestants = 95, Other Protestants = 23, Catholics = 33.

	Mainstream Protestants	*Other Protestants*	*Catholics*	F^a	*df*	η^2	power$_{.05}$
Impression management	88.51 (19.23)	92.97 (13.71)	82.48 (16.20)	2.37	2, 148	.03	.47
Self-deception	81.59[b] (13.02)	79.94[c] (12.80)	79.48 (11.60)	2.37	2, 148	.01	.47

[a] based on Type IV sum of squares; [b] $n = 92$, [c] $n = 34$

Table 6.56. Means (standard deviations) between students and non-students on the BIDR-6.

	Students	*Non-students*	F^a	*df*	η^2	power$_{.05}$
Impression management	83.19 (18.77) ($n = 42$)	90.73 (17.11) ($n = 105$)	5.52*	1, 145	.04	.65
Self-deception	78.83 (13.11) ($n = 41$)	81.60 (12.70) ($n = 104$)	1.37	1, 143	.01	.21

[a] based on Type IV sum of squares; * $p < .05$

Unemployed participants showed the lowest impression management responses, which were significantly lower from those given by the part-time employed, home-makers, and retired (Table 6.57). Moreover, home-makers (who tended to have the highest levels of

impression management) were significantly higher from the full-time employed.

Table 6.57. Means (and standard deviations) between employment statuses on the BIDR-6 factors. Unless otherwise indicated, number of subjects was as follows: Full-time = 42, Part-time = 32, Unemployed = 21, Home-makers = 29, Retired = 17.

	Impression management	Self-deception
Full-time	81.67† (16.41)	81.78[b] (13.16)
Part-time	92.28‡ (18.24)	79.15[c] (13.99)
Unemployed	76.10‡ § $ (17.55)	76.50[d] (14.60)
Home-maker	97.83† § (12.88)	82.71[e] (8.89)
Retired	94.65$ (11.97)	84.29 (10.55)
F^a	8.68*	1.28
df	4, 136	4, 135
η^2	.20	.04
power $_{05}$	.99	.39

†, ‡, §, $ denote significant pairwise differences based on the Scheffé test; [a] based on Type IV sum of squares; [b] *n* = 41, [c] *n* = 34, [d] *n* = 20, [e] *n* = 28; * $p < .0005$

Finally, although widowers appear to show the highest levels of impression management, after correcting for the familywise error, post-hoc pairwise comparisons did not yield any statistically significant differences (Table 6.58).

Table 6.58. Means (and standard deviations) between marital statuses on the BIDR-6 factors. Unless otherwise indicated, number of subjects was as follows: Married/living as married = 80, In a relationship = 12, Single = 37, Divorced = 7, Widowed = 10, Separated = 5.

	Impression management	Self-deception
Married / Living as married	89.83 (16.38)	80.99[b] (11.73)
In a relationship not living with partner	87.83 (15.23)	82.75 (7.24)
Single	81.95 (20.04)	78.43[c] (14.42)
Divorced	93 (13.70)	87.67[d] (12.28)
Widowed	101.50 (21.08)	80.11[e] (19.97)
Separated	87 (16.91)	85.20 (12.71)
F^a	2.33*	0.77
df	5, 145	5, 143
η^2	.07	.03
power $_{05}$	.74	.27

[a] based on Type IV sum of squares; [b] *n* = 82, [c] *n* = 35, [d] *n* = 6, [e] *n* = 9; * $p < .05$ (no significant pairwise differences were identified by the Scheffé test)

SUMMARY OF FINDINGS

In this section the relationships between the sociodemographic and psychometric variables were presented. Although most of those relationships are not directly relevant to the aims and the predictions of this thesis, and as such they will not be discussed in any further detail, their presentation was deemed appropriate, in order to allow the reader to form an as much of a complete picture of the dataset as possible.

Overall, the sociodemographics exhibited several significant effects on the psychometric variables. However, caution should be applied when interpreting those effects because (a) their sizes, as measured by the η^2 coefficient, tended to be rather small, and thus it is possible that they could be artefacts of statistical power, which tended to be high; and (b) the robustness of a number of them cannot be assessed due to the general absence of previous findings. The results can be summarised as follows:

AGE & CHRISTIAN DURATION

Age and duration of being a Christian did not appear to be statistically at least important to one's religious orientation (with the exception perhaps of quest) and personality, although both were moderately related to all the rest of the variables. The findings, in respect to religiosity, were to an extent unexpected as previous research tends to show a low to moderate relationship between at least internal, quest and those variables (Beit-Hallahmi & Argyle, 1997, ch. 8; Joseph et al., 2002; Maltby & day, 2002; Maltby et al., 2000). Additional analyses of the current dataset suggested that at least two of the rest of the sociodemographic variables had a significant effect on the above relationships. Within Christian denomination, Catholics (but no other denominational group) tended to have relatively high associations between both age and duration of being a Christian vs. intrinsic ($r = .52$, in both cases), extrinsic social ($r = -.20$, in both cases), internal ($r = .22$, in both cases), and quest complexity ($r = -.23$, in both cases). The other sociodemographic variable that appeared to have a significant moderating effect on these

relationships was student status, where among students, quest showed an increased association with age ($r = -.25$), while quest complexity had a moderate association with duration of being a Christian ($r = -.33$). Future research may attempt to clarify the nature of the above moderations, and understand their meaning within a psychosocial context.

GENDER

Religious orientation, personality, aspects of identity, and attachment styles were not significantly different between females and males. Males tended to have significantly higher levels of constricted affect and odd behaviour, and significantly lower levels of impression management desirable responses.

RELIGIOUS DENOMINATION

The three religious denominational groups did not differ significantly in respect to attachment styles, desirable responses, and most of the religious orientations. However, Other Protestants tended to be significantly more intrinsically orientated, while Catholics showed significantly higher levels of certain schizotypal traits, were more neurotic, and tended to have stronger personal and collective identities.

STUDENT STATUS

Students did not differ significantly from non-students in respect to religious orientation. Students, however, tended to be significantly higher in a number of schizotypal traits, more neurotic, have a more anxious attachment, a stronger personal and a weaker collective identity, and they were less likely to provide impression management desirable responses. These findings, as well as the ones presented earlier in respect to the association between religiosity and age or duration of being a Christian, suggest that to an extent the student population tends to be different from the non-student population, and as such, inferences based on results from the former group should be treated with caution.

EMPLOYMENT STATUS

Employment statuses tended to show similar levels on most religiosity orientations, with home-makers having a significantly stronger extrinsic personal orientation. In the rest of the variables a number of significant findings were observed, most of which concentrated on unemployed individuals having higher levels of certain schizotypal traits, being more neurotic, with a stronger personal identity, a more anxious attachment, and a lower level of impression management.

MARITAL STATUS

Finally, marital status had the least number of significant results. Religious orientations (with perhaps the exception of external, which was significantly higher in separated individuals), personality, and identity, were all similar across the marital statuses. Single individuals tended to have significantly higher levels of certain schizotypal traits, and they tended to have a more avoidant and anxious attachment. Finally, widowed participants tended to show a higher impression management.

THE RELATIONSHIP AMONG THE PSYCHOMETRIC VARIABLES

INTRODUCTION

So far in this chapter I have described the main statistical characteristics of the dataset, assessed the psychometric properties of the questionnaires, and explored the relationships between the sociodemographic data and the psychometric variables. In this following section, I test the predictions regarding the relationships between the psychometric measurements. Where predicted, certain sociodemographic variables were used as controls in the above relationships. The two religious practices (frequency of prayer and church attendance), due to being fairly independent from the religious orientations – with the exception perhaps of intrinsic and internal (see Tables 6.20 and 6.26) – were used alongside the religiosity variables and at the same level of functioning, e.g. as predictors, outcomes, or covariates.

This section builds gradually, starting from the secondary predictions regarding the expected relationships among the measurements, moving to the primary predictions, i.e. the relationship between religion and schizotypy, and finally ending with the assessment of the most plausible integrated model or models based on analysis evidence of this study. The last two steps above involve a progression from micro- to macro-analysis. At the micro level of analysis, the relationships between the individual components of religion and schizotypy were examined, while at the macro level, religion and schizotypy served as lattent *variates* and the overall associations were assessed.

SECONDARY PREDICTIONS

RELIGIOSITY VS. PERSONALITY

All three personality traits showed relatively low associations with religiosity. Neuroticism had three statistically significant correlations with intrinsic ($r = -.21$, $N = 156$, $p < .01$, two-tailed, power$_{.05} = .76$), extrinsic personal ($r = .22$, $N = 156$, $p < .005$, two-tailed, power$_{.05} = .80$), and frequency of church attendance ($r = -.23$, $N = 157$, $p < .005$, two-tailed, power$_{.05} = .80$), with all other effect sizes being smaller than $|.13|$. Extraversion had two statistically significant, albeit rather low, correlations with quest ($r = -.16$, $N = 151$, $p < .05$, two-tailed, power$_{.05} = .50$), and quest openness ($r = -.19$, $N = 151$, $p < .05$, two-tailed, power$_{.05} = .65$), with the rest of the relationships having smaller than $|.13|$ coefficients. Finally, psychoticism also had two statistically significant correlations with quest ($r = .23$, $N = 151$, $p < .005$, two-tailed, power$_{.05} = .82$), and quest complexity ($r = .29$, $N = 152$, $p < .0005$, two-tailed, power$_{.05} = .95$), while all other effects were below $|.11|$. All the above relationships were checked further to ensure they were not artefacts of outlying influences in the dataset.

These bivariate relationships were to an extent expected and to another extent surprising. First, as expected, all effect sizes were rather low. Neuroticism showed the predicted and well-documented relationship with extrinsic (personal) both in terms of magnitude and direction (see Table 4.4, in chapter IV for previous research results). In the literature, however, neuroticism had a near zero, not always negative, association with both intrinsic orientation and church attendance. This was not the case with the current sample, where it clearly showed a negative relationship with both religiosity variables. This result contradicts to an extent Freud's ideas, according to which one would have expected a positive association at least between church attendance and neuroticism. However, the present results partly support my ideas discussed in chapter III, through which I argued that although religious practices may appear to have a "superficial" resemblance to neurotic acts, at closer examination the core elements of neurotic behaviour, such as compulsion, obsession, anxiety and so forth, appear to be normatively

absent from such practices. Not only that, but the current results suggest that mature religiosity and church attendance appear to be associated with lower levels of such neurotic behaviour.

Psychoticism was also expected to relate to quest, even though the results in the literature have been rather unclear, with studies showing both positive (e.g. Hills et al., 2004) and negative (e.g. Joseph et al., 2002) correlations between the two constructs. Finally, extraversion showed the highest, reported in the literature, associations with religiosity, and specifically the quest orientation. However, these were still rather low to allow for any meaningful conclusions.

As the relationship between religiosity and personality is of central at least theoretical importance, I decided to look further into it. In order to assess the pattern of this relationship at a multivariate level, a Principal Components Analysis was run on the correlation matrix of all the religiosity (the overall quest was used) and personality variables.

Table 6.59. Pattern matrix of the Principal Components factor loadings after Direct Oblimin rotation of the religiosity and the personality variables. Loadings below |.30| are not shown.

	Factor		
	1	2	3
Intrinsic	.90		
Internal	.89		
Church attendance	.84		
Prayer	.81		
External	.64		
Neuroticism		.71	.37
Extraversion		-.68	
Quest		.54	
Psychoticism		.44	-.42
Extrinsic personal			.79
Extrinsic social			.49
Extracted eigenvalues (unrotated)	*3.60*	*1.44*	*1.23*

The results of the Kaiser-Meyer-Olkin measure of sampling adequacy indicated that the proportion of variance in the items attributed to common variance was 75%, while the Bartlett's test of sphericity suggested that the items' correlation matrix was significantly different from the identity matrix, χ^2 (55, $N = 143$) = 503.76, $p < .0005$. The scree plot (Cattell, 1966) clearly suggested the retention of one factor (32.7% of total variance), while the Kaiser criterion (Kaiser, 1960) pointed to four (67.2% of total variance).

All four factor solutions were tested, and although all two-, three-, and four-factor solutions were to an extent meaningful, I opted for the three-factor one (57% of total variance). The three factors were allowed to covary, thus a Direct Oblimin rotation was used (rotation converged in six iterations), although that was not entirely necessary since the factors were relatively independent from each other (largest $r = -.18$). As it can be seen in Table 6.59, at this level of analysis, it appears that of all the religiosity variables, the quest orientation is of most relevance to personality, followed perhaps by mainly extrinsic personal.

In conclusion, it can be said that the expected relationships between religiosity and personality were partially recovered. In the current dataset, at a bivariate level (a) neuroticism, as predicted, was inversely related mainly to intrinsic orientation and church attendance, and positively related to extrinsic personal; (b) extraversion had an inverse low relationship with both quest and quest openness (no predictions were made regarding the behaviour of extraversion); while (c) psychoticism was positively related to quest and quest complexity, counter to predictions. At the multivariate level, quest and extrinsic personal appear to be the most relevant orientations to personality.

RELIGIOSITY VS. IDENTITY

Although there were a number of statistically significant associations between religiosity and identity, overall the effect sizes were rather low. As predicted, personal identity had

a positive relationship with quest ($r = .25$, $N = 153$, $p < .005$, two-tailed, power$_{.05} = .88$), which could be attributed primarily to its relationship with quest complexity ($r = .22$, $N = 154$, $p < .01$, two-tailed, power$_{.05} = .79$) and to a lesser degree with quest openness ($r = .17$, $N = 154$, $p < .05$, two-tailed, power$_{.05} = .56$). However, counter to my predictions personal identity did not show significant associations with intrinsic, internal, and church attendance (Pearson's r ranged from -.08 to .11).

Social identity did correlate significantly with intrinsic ($r = -.23$, $N = 158$, $p < .005$, two-tailed, power$_{.05} = .83$), extrinsic personal ($r = .23$, $N = 158$, $p < .005$, two-tailed, power$_{.05} = .83$), and church attendance ($r = -.26$, $N = 159$, $p < .001$, two-tailed, power$_{.05} = .91$). Finally, collective identity also showed a few significant, albeit low, relationships with extrinsic personal ($r = .18$, $N = 158$, $p < .05$, two-tailed, power$_{.05} = .62$), quest ($r = .17$, $N = 154$, $p < .05$, two-tailed, power$_{.05} = .56$), and quest openness ($r = .17$, $N = 155$, $p < .05$, two-tailed, power$_{.05} = .56$)

It seems that whether religion is or is not a driving force of one's life (intrinsic orientation), is not of major relevance to the importance one assigns to their personal identity, at least as measured by the AIQ-IIIx. At the same time, the more intrinsically one is orientated toward religion, the less likely one is to assign importance to social aspects of identity, such popularity, physical appearance, and reputation. The importance of these identity aspects, on the other hand, appears to be concordant with the degree to which one is "using" religion as a means for comfort and support, i.e. the degree to which one has developed an extrinsic personal orientation toward religion.

Moreover, the more one is driven to ask existential questions, to try to understand one's place in the universe, i.e. the higher one's quest orientation is, the more likely one is to view as important at least certain aspects of personal identity such as personal values and goals, ideas, and feelings of uniqueness.

The lack of association between church attendance and personal identity was not expected, although to a degree it can make some intuitive sense: Why should the importance of who one is at the personal level (e.g. the importance of one's values, dreams, uniqueness, etc.) be related to how often one goes to church? The negative relationship between church attendance and social identity came as a surprise. Although I could attribute this finding to chance, I would like to attempt a different approach.

The scale used to measure social identity seems to capture only the degree to which this identity is important to who one is, and not the quality of that identity (this of course applies to the rest of the identities assessed by this measurement). That is obvious, one may say, as this was a quantitative questionnaire. Not quite so, I believe. Most of the rest of the instruments used in this study attribute certain qualities to the observed measurements. A person with a high score on neuroticism or anxiety or intrinsic orientation is expected to have a number of direct, explicit, and specific psychological qualities attached to her or his score. But what are the direct, explicit and specific psychological qualities of a person with a high score on social identity? Perhaps they value more the opinion other people have about them; perhaps they pay more attention to their manners or appearance. All these, however, say nothing about the quality of their identity. The quality of one's identity can vary from functional to totally dysfunctional (as Erikson and Tajfel & Turner have theorised). However, from the answers to the questionnaire used in this study, I can only assess the prominence of one's identity, and not how functional it is. What I am trying to say is that perhaps this negative relationship between church attendance and social identity could be based on the not-so-functional forms of the latter. In other words, perhaps a number of participants in my sample, who so happened to give to their social identity a central place in their sense of who they were, in fear of rejection and negative criticism were less likely to go to church.

Overall, the predicted relationship between religiosity and aspects of identity was to an extent supported. As expected, personal identity showed a positive association with quest, while social identity was positively related to extrinsic personal, and negatively to intrinsic. Counter to my predictions, church attendance had an inverse association with social identity, while it lacked an obvious association with personal identity.

RELIGIOSITY VS. ATTACHMENT

In order to understand the relationship between attachment styles and religiosity, we need to remind ourselves of the interpretation of the scores in the attachment scale. Items in the ECR are scored so that the higher the scores the more insecure the attachment. Therefore, any positive correlations between religiosity and attachment indicate that the more an insecure attachment one possesses the more one is orientated toward a given religiosity. Negative correlations of course suggest the opposite trend.

As it can be seen in Table 6.60, prayer, church attendance, intrinsic, internal and external tend to have significant negative associations with attachment (avoidance dimension). As mature orientations form the basis of this group, it could be said that these results suggest that the more securely attached one is, the more likely one is to have a mature religiosity.

At the same time extrinsic personal had a positive, statistically significant, correlation with attachment (anxiety dimension), while extrinsic social appeared to be independent of attachment. These results indicate a relatively weak link between immature religiosity and insecure attachment.

The quest orientations showed a positive, statistically significant, association with anxious attachment. I would not, however, call this necessarily an "unhealthy" relationship. Let us remind ourselves that the anxiety dimension of attachment taps into the positive-negative mental model of the self, with higher scores indicating a more negative self-image. Granted the results suggest that a negative model of the self appears to be associated with higher levels of quest orientation, but these results could be

interpreted as indicating that Christians who tend to have a negative self-image, may be more orientated toward trying to understand their place in this world, and who they are. In other words, they may be utilising their religious beliefs in such ways that could help them improve their concept of the self. By placing this assumption into attachment theory, it could be said that these individuals are attempting to adjust or improve their model of the self, in order to restore or achieve adequate levels of security.

Table 6.60. Pearson's product moment correlations (plus N) between attachment styles and the religiosity variables.

	Avoidance	Anxiety
Prayer	-.22**	.01
	(147)	(144)
Church attendance	-.26***	-.07
	(147)	(144)
Intrinsic	-.23**	-.08
	(146)	(143)
Extrinsic personal	.02	.28***
	(146)	(143)
Extrinsic social	-.06	.09
	(147)	(144)
Internal	-.21*	.06
	(144)	(141)
External	-.25***	.08
	(144)	(141)
Quest	.05	.22**
	(143)	(140)
Quest complexity	-.04	.20*
	(144)	(141)
Quest doubt	.08	.09
	(145)	(142)
Quest openness	.07	.19*
	(143)	(140)

$* p < .05, ** p < .01, *** p < .005$, all two-tailed

Overall, the above results do not support the compensation hypothesis. At least in this dataset, the correspondence hypothesis is largely supported, leading to the conclusion that the more securely attached a person is, the more likely he or she is to possess a mature form of religiosity, and less likely to have an immature one.

RELIGIOSITY / SCHIZOTYPY VS. SOCIAL DESIRABILITY

By looking at the associations between social desirability and either religiosity or schizotypy (Table 6.61) the main conclusion is that impression management, but not self-deception, is of primary importance to these relationships. In other words, the tendency to lie consciously (or for that matter, be more truthful) appears to dominate these relationships and not so much the subconscious disposition to provide positively biased self-reports (although the latter still exhibited some strong associations with schizotypy).

The religiosity-social desirability affair closely replicates previous research findings, by showing that people who tend to pray more, go to church more often, be more intrinsically or internally orientated, also tend to (consciously) inflate socially desirable self-descriptions and behaviour. Immature forms of religiosity did not and were not expected to demonstrate any important associations with social desirability.

Quest, once again, showed an interesting pattern, by having a negative relationship with both social desirability dimensions. It seems that when believers are driven to ask questions about their faith, they are more likely to be truthful to themselves and to others regarding their behaviour. This of course makes intuitive sense, if one's quest to seek existential answers is an honest act itself, and I see no empirical or theoretical reason why it should not be.

All schizotypal traits had statistically significant moderate correlations with at least one of the social desirability dimensions. It should also be pointed out that all meaningful

associations here were negative. To my knowledge, no literature exists that directly addresses these relationships. Are schizotypal individuals more honest? I do not know. I am inclined, however, to suggest that the more schizotypal a person is, the more incapable of providing or perhaps less willing to provide socially desirable responses they are. In fact, almost all of the questions in the SPQ ask primarily about socially undesirable characteristics.

Table 6.61. Pearson's product moment correlations (plus N) between social desirability and both religiosity and schizotypy.

	Impression management	Self-deception	Impression management	Self-deception	
Prayer	.20**	.07	-.39****	-.09	Cognitive-perceptual
	(150)	(148)	(142)	(140)	
Church attendance	.27***	.06	-.34****	-.22**	Interpersonal
	(150)	(148)	(144)	(143)	
Intrinsic	.32****	.09	-.32****	-.25***	Disorganised
	(149)	(147)	(147)	(145)	
Extrinsic personal	.04	-.05	-.32****	-.12	Ideas of reference
	(149)	(147)	(147)	(146)	
Extrinsic social	.03	.03	-.26***	.03	Magical ideation
	(150)	(148)	(146)	(144)	
Internal	.23**	.02	-.37****	-.01	Unusual experiences
	(146)	(145)	(148)	(146)	
External	.15	-.03	-.30****	-.17*	Suspiciousness
	(147)	(145)	(148)	(147)	
Quest	-.31****	-.17*	-.29****	-.24***	Social anxiety
	(145)	(143)	(147)	(145)	
Quest complexity	-.13	-.15	-.20**	-.12	No friends
	(146)	(144)	(150)	(148)	
Quest doubt	-.21**	-.03	-.30****	-.12	Constricted affect
	(147)	(145)	(149)	(148)	
Quest openness	-.34****	-.20*	-.35****	-.20**	Odd behaviour
	(146)	(144)	(151)	(149)	
			-.22**	-.26***	Odd speech
			(147)	(145)	

* $p < .05$, ** $p < .01$, *** $p < .005$, **** $p < .001$, all two-tailed

To be classified as highly schizotypal a person would have to admit to such things as being strange, unsociable, oversuspicious, and having unusual beliefs. In such cases, consistency dictates that this person would have to deny a number of socially desirable characteristics as they appear in the BIDR-6, such as being rational, not paying attention to other people's opinions about them, or obeying the law. Whatever the meaning of these findings, they are nevertheless fascinating, and I believe they deserve further attention.

In conclusion, social desirability had the expected relationship with religiosity, with maturely orientated individuals having a tendency to give more socially desirable responses. Quest had a negative association with desirability, which although not predicted, could have been expected. Finally, the new finding is the consistently negative relationship between schizotypy and desirability.

Viewed collectively the above relationships between religiosity and the rest of the psychometric variables seem to suggest that although religiosity shows some associations with them, these tend to be rather low, leading me to conclude that religiosity is a fairly independent construct from the rest of the mainstream psychological variables present in this dataset.

SCHIZOTYPY VS. PERSONALITY

Schizotypal traits tended to exhibit rather strong correlations with general personality traits (Table 6.62). As predicted, all correlations between neuroticism and schizotypy were positive and statistically significant, ranging from .17 (with magical ideation) to .51 (with social anxiety). Psychoticism had also the expected positive, albeit relatively lower, correlations with schizotypy, ranging from the near zero one with odd speech (r = .02) to a moderate one with the second-order cognitive-perceptual factor (r = .36). These results follow closely the empirical evidence presented in the literature (e.g. Deary et al., 1998; Joseph et al., 2002; Raine, 1991; Wuthrich & Bates, 2001; all discussed in

chapters IV and V).

Unlike, however, the literature findings, in which extraversion tended to exhibit near zero and mainly negative association with schizotypy, in the present study, extraversion demonstrated some relatively high, still negative, correlations with schizotypy, which were exclusively concentrated around the interpersonal first and second-order traits.

Table 6.62. Pearson's product moment correlation coefficients (plus *N*) between schizotypal and general personality traits.

	N	E	P
Cognitive-perceptual	.38****	.05	.36****
	(148)	(146)	(145)
Interpersonal	.46****	-.44****	.26***
	(152)	(151)	(149)
Disorganised	.39****	-.01	.14
	(155)	(152)	(152)
Ideas of reference	.37****	.05	.28****
	(155)	(153)	(152)
Magical ideation	.17*	.13	.28****
	(152)	(149)	(149)
Unusual experiences	.29****	.07	.32****
	(155)	(153)	(152)
Suspiciousness	.42****	-.13	.31****
	(156)	(154)	(153)
Social anxiety	.51****	-.43****	.11
	(155)	(153)	(152)
No friends	.28****	-.47****	.21**
	(157)	(154)	(154)
Constricted affect	.33****	-.36****	.29****
	(156)	(155)	(153)
Odd behaviour	.32****	-.04	.26***
	(158)	(155)	(155)
Odd speech	.38****	.01	.02
	(155)	(152)	(152)

$* p < .05, ** p < .01, *** p < .005, **** p < .001$, all two-tailed

This behaviour could to an extent have been theoretically predicted. As discussed in chapter IV, Eysenck & Eysenck (1991) suggested that a person with a tendency toward

psychosis is more likely to be highly psychotic and highly introverted, as measured by the Eysenck's model (the role of neuroticism in this relationship is not discussed). The bivariate relationships here appear to support such claim. This relationship is further discussed when the integrated model is presented later.

> In conclusion, as predicted schizotypy had a positive and moderate relationship with neuroticism, and a positive yet lower relationship with psychoticism. Interestingly, extraversion had a negative and moderate association with the interpersonal schizotypal traits. Moreover, the current results can be seen as providing some support to the dimensional approach to psychopathology.

SCHIZOTYPY VS. IDENTITY

Generally, schizotypy was fairly independent from identity, showing only a few significant, yet rather low, correlations mainly with personal identity (versus cognitive-perceptual: $r = .22$, $N = 149$, $p < .01$, two-tailed, power$_{.05}$ = .78; ideas of reference: $r = .22$, $N = 156$, $p < .01$, two-tailed, power$_{.05}$ = .80; magical thinking: $r = .17$, $N = 153$, $p < .05$, two-tailed, power$_{.05}$ = .56), and secondarily with social identity (versus ideas of reference: $r = .17$, $N = 157$, $p < .05$, two-tailed, power$_{.05}$ = .57; social anxiety: $r = .17$, $N = 156$, $p < .05$, two-tailed, power$_{.05}$ = .57). As no prior evidence is available regarding these relationships, the current results should be seen as exploratory in nature.

> Schizotypal traits had a low positive association with personal and social aspects of identity (no directional predictions were made regarding this relationship).

SCHIZOTYPY VS. ATTACHMENT

Although attachment was predicted to correlate positively with schizotypy, it did so in a far more obvious and consistent manner (Table 6.63). The picture seems rather clear to me: The attachment-schizotypy pair shows some of the strongest relationships presented in this study, which indicate that insecure attachment is associated with higher levels of schizotypal traits.

Not surprisingly, a central part of this relationship is formed by the attachment-interpersonal traits pairs, which indicate the person's inability to regulate their interpersonal distance. The association between anxious attachment and both cognitive-perceptual and disorganised traits suggests that these two psychological variables possess a fundamental, possibly, biologically-rooted relationship, a relationship that deserves future attention, as it may provide a valuable insight into the workings and development of schizotypy and schizotypal personality disorder.

Table 6.63. Pearson's product moment correlation coefficients (plus N) between schizotypal traits and attachment styles.

	Avoidance	Anxiety
Cognitive-perceptual	.07	.26**
	(139)	(136)
Interpersonal	.37***	.28***
	(143)	(140)
Disorganised	.13	.34***
	(145)	(142)
Ideas of reference	.10	.30***
	(146)	(143)
Magical ideation	-.16	-.07
	(142)	(139)
Unusual experiences	.03	.24**
	(146)	(143)
Suspiciousness	.26**	.29***
	(147)	(144)
Social anxiety	.25**	.31***
	(145)	(142)
No friends	.39***	.13
	(147)	(144)
Constricted affect	.35***	.22*
	(147)	(144)
Odd behaviour	.13	.25**
	(148)	(145)
Odd speech	.10	.36***
	(145)	(142)

* $p < .01$, ** $p < .005$, *** $p < .001$, all two-tailed

> In conclusion the results suggest a clear and possibly fundamental association between insecure attachment and schizotypal symptomatology.

PERSONALITY VS. IDENTITY

The only observed statistically significant correlations were those between neuroticism and personal ($r = .29$, $N = 156$, $p < .0005$, two-tailed, power$_{.05}$ = .96) and social identities ($r = .23$, $N = 157$, $p < .005$, two-tailed, power$_{.05}$ = .83), and a single rather low correlation between psychoticism and personal identity ($r = .18$, $N = 153$, $p < .05$, two-tailed, power$_{.05}$ = .61). As collective identity derives from the ideas of community membership it was not expected to show any important relationships with personality.

> As predicted, aspects of identity, namely personal and social, were almost exclusively related to neuroticism.

PERSONALITY VS. ATTACHMENT

Attachment was indeed primarily related to neuroticism (avoidant attachment: $r = .20$, $N = 146$, $p < .05$, two-tailed, power$_{.05}$ = .68; and anxious attachment: $r = .48$, $N = 143$, $p < .0005$, two-tailed, power$_{.05}$ = .99), while a single statistically significant correlation was found between extraversion and avoidant attachment ($r = -.31$, $N = 145$, $p < .0005$, two-tailed, power$_{.05}$ = .97). All other correlation coefficients, including those involving psychoticism, had near zero values (highest was -.04 between extraversion and anxious attachment).

This pattern of associations does make intuitive sense. A person who is highly avoidant and primarily anxious in their relationships would be expected to be more emotionally unstable (i.e. neurotic). In fact, anxiety is a key construct of neuroticism. At the same time, the negative relationship between avoidance and extraversion, seems also reasonable, since a person who tends to avoid forming intimate bonds, could be doing so in part because they are not sociable, impulsive, or active enough.

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Although a lack of a relationship between psychoticism and attachment was not expected, in all honesty I cannot see how these two constructs, at least as measured in this study, could have been related. Although an insecurely attached individual may exhibit, in extreme cases, some forms of maladaptive behaviour, it seems more likely that this behaviour is related to emotional instability or perhaps inadequate levels of sociability, rather than any antisocial or for that matter prosocial tendencies.

> In conclusion, attachment styles were primarily related to neuroticism (as predicted) and secondarily to extraversion (no predictions were made regarding this relationship), while they appeared to be completely independent from psychoticism (counter to predictions).

IDENTITY VS. ATTACHMENT

Exploring the relationship between aspects of identity and attachment styles, it was anxious attachment that had the largest and only significant correlations with personal identity ($r = .30$, $N = 144$, $p < .0005$, two-tailed, power$_{.05}$ = .96) and social identity ($r = .42$, $N = 145$, $p < .0005$, two-tailed, power$_{.05}$ = .99). Avoidant attachment showed rather low associations with identity (highest correlation coefficient was .14 against social identity). Collective identity was almost entirely independent from attachment styles.

How does one go about explaining these relationships? I am not entirely sure. The relationship between social identity and anxious attachment, seems rather straightforward, as soon as we remind ourselves of what the two constructs refer to. The anxious style captures one's need for approval, while social identity (the social ME) refers, among other things, to one's desire to be noticed. I can easily see how these two ideas can relate to each other. The lack of association between collective identity and attachment, was to an extent expected, given that collective identity refers to the individual's sense of belonging to a community, and as such does not seem to possess any obvious resemblance to romantic attachment styles.

The positive correlation between personal identity and anxious attachment though is not clear to me. Personal identity refers to the private sense of one's uniqueness and the perception of oneself. If we bring forward Erikson's ideas, we can remind ourselves that depending on in which of the four stages of personal identity development a person is, his or her personal identity can be from functional to totally dysfunctional. However, as I discussed earlier, from the answers to the identity questionnaire used in this study, I can only assess the strength of one's personal identity, and not how functional it is. The literature suggests that the stability of attachment affects the development of personal identity (Haigler, Day & Marshall, 1995; Matos et al., 1999; Meeus et al., 2002; Zimmermann & Becker-Stoll, 2002). Therefore, the above relationship is expected to be a causal one with attachment predicting identity.

So, it could be claimed that the more insecure one's attachment the more dysfunctional his or her personal identity will be, and it so happened that in the current sample a few of those people with such identities also gave them a central place in their sense of who they were. I could discuss this further, but as it is not central to the sense of what this thesis is, I will leave it here.

> In conclusion, the attachment-identity relationship seems to be almost exclusively represented by the relationship between anxious attachment and social, personal identities (no specific predictions were made regarding this relationship).

PRIMARY PREDICTIONS

THE EXCITEMENT & PREVENTION HYPOTHESES

Both the excitement and prevention hypotheses, which expect schizotypy to predict religiosity, were tested simultaneously through a series of multiple linear stepwise regressions using all the first-order schizotypal traits as predictors against each of the religiosity variables (multicollinearity did not appear to be a problem in these models, since maximum VIF [*variance inflation factor*] = 3.40 was below the cutoff point of 10, Stevens, 2002, pp. 91-93). The bivariate correlations between the two groups of

variables (Table 6.64) show a number of moderate associations.

Frequency of church attendance had the highest correlations from all the religiosity variables, being significantly associated with ten out of the twelve schizotypal traits. This behaviour is followed closely by intrinsic, internal, and frequency of prayer. Moreover, all these variables had consistently negative associations with schizotypy. Both extrinsic orientations appeared to be relatively independent from schizotypy, with extrinsic personal showing a few significant, albeit rather low, positive correlations, while the behaviour of extrinsic social seems to be practically just noise. External orientation also appears to be largely orthogonal to schizotypy. Quest on the other hand had a consistently positive association with schizotypy, with a number of significant coefficients. Looking into the quest subscales, the quest-schizotypy relationship seems to be best captured by the behaviour of quest openness. Interestingly, magical ideation showed near zero associations with religiosity.

Summing up, these results suggest that at least at this level of comparison, mature religiosity and religious practices appear to be the most important bivariate correlates of schizotypy (negative association), followed closely by quest (positive association), while the extrinsic / external orientations are to a large extent unrelated to the traits.

The results from the stepwise regressions of the total sample presented in Table 6.64 seem to suggest that both hypotheses could be supported to an extent. Suspiciousness and close friends tended to have negative coefficients thus supporting the prevention hypothesis, unusual experiences, constricted affect, odd behaviour and speech tended to have positive coefficients thus favouring the excitement hypothesis, while social anxiety appeared to have an amphi-directional effect (at times positive and at other times negative). Of all the schizotypal traits, social anxiety appeared to be the most significant predictor, being present in four out of the eleven models.

Looking at the second-order traits, it appears that interpersonal schizotypal traits are the most relevant to religiosity. Interestingly magical ideation did not appear as a significant

predictor in any of the models. Frequency of church attendance seemed to have the highest, yet negative, association with schizotypy ($R^2 = .13$), followed by intrinsic orientation ($R^2 = .10$). Extrinsic religiosity did not appear to be a significant outcome of schizotypal traits, except for the 4% of the variability in extrinsic personal being predicted by unusual experiences.

Given the unclear picture in the literature regarding the moderating effect of gender in the above relationship, I decided to rerun the analyses separately for men and women (Table 6.66). However, given sample size limitations, especially with men ($n = 51$), the results of these analyses may not cross-validate well, and thus they should be interpreted with caution and only be seen as possible and broad indicators of the underlying relationships (for a further discussion see Stevens, 2002, pp.143-146).

Although overall the direction of the effects did not change, thus still supporting to an extent both hypotheses, the magnitude of the effects tended to be higher for men. The main schizotypal predictor for women seemed to be social anxiety, while the rest of the significant effects were distributed among the ideas of reference, odd speech, and odd behaviour. For women, the model best predicted intrinsic religiosity ($R^2 = .14$) and church attendance ($R^2 = .10$).

For men the statistically significant effects of schizotypy were distributed among constricted affect, no friends, social anxiety, odd behaviour, odd speech, and suspiciousness. In this case, most of the religiosity variables were highly accounted by schizotypy, with quest openness being the most significant outcome ($R^2 = .31$)

> Overall these results could be seen as providing a relatively weak support to both the excitement and prevention hypotheses. The model holds better for men.

Table 6.64. Pearson product moment correlation coefficients (plus *N*) between the schizotypal first and second-order traits and the religiosity variables.

	Prayer	Church attendance	Intrinsic	Extrinsic personal	Extrinsic social	Internal	External	Quest	Quest complexity	Quest doubt	Quest openness
Cognitive-perceptual	-.15 (149)	-.27*** (149)	-.25*** (148)	.18* (148)	-.01 (149)	-.17* (146)	-.04 (146)	.14 (146)	.13 (146)	.06 (147)	.11 (146)
Interpersonal	-.31*** (153)	-.32*** (153)	-.30*** (152)	.10 (152)	.03 (153)	-.28*** (150)	-.16 (150)	.24*** (150)	.15 (150)	.12 (151)	.24*** (150)
Disorganised	-.05 (156)	-.17* (156)	-.16* (155)	.15 (155)	.14 (156)	-.08 (152)	.02 (152)	.17* (153)	.12 (153)	.05 (154)	.19* (153)
Ideas of reference	-.15 (156)	-.22** (156)	-.15 (155)	.14 (155)	-.04 (156)	-.09 (153)	-.01 (153)	.12 (153)	.16* (153)	.04 (154)	.07 (153)
Magical ideation	-.04 (154)	-.15 (154)	-.14 (153)	.06 (153)	-.01 (154)	-.13 (150)	-.03 (150)	.09 (150)	.05 (150)	.11 (151)	.05 (151)
Unusual experiences	-.08 (156)	-.21** (156)	-.23*** (153)	.19* (153)	.02 (154)	-.12 (150)	-.02 (153)	.18 (153)	.12 (153)	.07 (154)	.19* (153)
Suspiciousness	-.23*** (157)	-.27*** (157)	-.26*** (156)	.15 (156)	-.04 (157)	-.21** (154)	-.10 (154)	.09 (153)	.11 (154)	.01 (155)	.08 (153)
Social anxiety	-.25*** (156)	-.30*** (156)	-.26*** (155)	.11 (155)	.01 (156)	-.27*** (152)	-.17* (152)	.27*** (153)	.20* (153)	.16* (154)	.24*** (153)
No friends	-.27*** (159)	-.25*** (159)	-.21** (158)	.03 (158)	-.01 (159)	-.24*** (155)	-.14 (155)	.19* (154)	.13 (155)	.08 (156)	.22** (155)
Constricted affect	-.24*** (158)	-.20* (158)	-.20* (157)	.09 (157)	.07 (158)	-.18* (155)	-.10 (155)	.25*** (153)	.15 (154)	.12 (155)	.27*** (154)
Odd behaviour	-.09 (160)	-.16* (160)	-.18* (159)	.09 (159)	.13 (160)	-.15 (156)	-.08 (156)	.19* (155)	.13 (156)	.11 (157)	.19* (156)
Odd speech	-.01 (156)	-.14 (156)	-.12 (155)	.17* (155)	.10 (156)	-.01 (152)	.09 (152)	.11 (153)	.10 (153)	-.01 (154)	.15 (153)

* $p < .05$, ** $p < .01$, *** $p < .005$, all two tailed

Table 6.65. Testing the excitement & prevention hypotheses through stepwise multiple regression analysis. Only statistically significant standardised beta coefficients are shown.

DVs \ IVs	Ideas of reference	Magical ideation	Unusual experiences	Suspiciousness	Social anxiety	No close friends	Constricted affect	Odd behaviour	Odd speech	R^2
Prayer						-.27				.07**
Church attendance				-.20	-.22					.13***
Intrinsic				-.31						.10***
Extrinsic personal			.17							.04*
Extrinsic social								.17		.03*
Internal					-.26					.07**
External					-.26				.21	.07**
Quest					.25					.06**
Quest complexity										.02
Quest doubt										.02
Quest openness							.27			.07**

*$p < .05$, ** $p < .005$, *** $p < .0005$

Table 6.66. Testing the excitement & prevention hypotheses separately for men and women through stepwise multiple regression analysis. Only statistically significant standardised beta coefficients are shown. Results that refer to men are presented in round brackets; results for women in square bracket.

DVs \ IVs	Ideas of reference	Magical ideation	Unusual experiences	Suspiciousness	Social anxiety	No close friends	Constricted affect	Odd behaviour	Odd speech	R^2
Prayer						(-.44)				(.20**) [.04*]
Church attendance				[-.21]		(-.46)				(.21**) [.10**]
Intrinsic				[-.31]	(-.40)					(.16*) [.14***]
Extrinsic personal	[.23]			[-.37]					(.32)	(.10*) [.05*]
Extrinsic social								(.42)		(.17**) [0]
Internal				[-.23]	(-.43)					(.19**) [.06*]
External				(-.49)				[-.35]	(.38) [.29]	(.23**) [.08*]
Quest							(.43)		[.23]	(.18**) [.05*]
Quest complexity	[.28]									(0) [.08*]
Quest doubt							(.37)			(.14*) [0]
Quest openness				(-.29)			(.60)		[.20]	(.31***) [.04*]

$* \ p < .05, ** \ p < .005, *** \ p < .0005$

THE CAUSAL HYPOTHESIS

In order to test the causal hypothesis that treated religiosity as a predictor of schizotypy, the religious variables were grouped into two separate models. Both models included the two religious practices (frequency of prayer and church attendance), and the I/E-R and RLI orientations. However, in one of the models the three quest subscales were used instead of the overall quest orientation. Moreover, the internal orientation was excluded from both models, under the assumption that due to its high correlation with intrinsic (r = .79) its behaviour would be largely expressed by the latter orientation – this was also done to avoid potential collinearity problems in the regression models (maximum VIF for the variables that remained in the two models was 2.70). As no hierarchy in the predictive behaviour of the religious variables was a priori assumed, a number of multiple linear stepwise regressions were run, with each of the two models above as predictors against each of the first and second-order schizotypal traits.

The total-sample results point to a far more interesting picture than the one observed when schizotypy functioned as a predictor of religiosity (Table 6.67). Supporting the evidence from the literature discussed in chapter IV, higher levels of intrinsic orientation tended to predict significantly lower levels of schizotypy, while higher levels of extrinsic appeared to predict significantly higher levels of schizotypy, though this result was mainly concentrated in the personal domain of this orientation. At the same time, frequency of church attendance, but not as much as frequency of prayer, emerged as a significant deterrent of schizotypy.

One of the most frequently significant predictors of schizotypal traits appeared to be the quest orientation, with higher levels of it predicting higher levels of schizotypy. This effect can be almost exclusively attributed to the quest openness subscale. Finally, the external orientation did not have a significant effect on any of the schizotypal traits; this result does not seem to be an artefact of multicollinearity problems (tolerance = .66).

Almost all schizotypal traits appeared to be significant outcomes of religiosity. The most relevant were again the interpersonal traits (R^2 = .14) – mainly social anxiety, lack of

close friends, and constricted affect – followed by the cognitive-perceptual traits ($R^2 =$ .10) – especially ideas of reference and unusual experiences. Finally, once again, magical ideation had only 2% of its variability accounted for by the variability in religiosity.

When the analyses were run separately for men and women, the picture changed (Table 6.68). The direction of the effects remained the same to the one observed in the total sample. Still religiosity appeared to behave better as a predictor of schizotypy, although the religiosity variables with statistically significant effects tended to be different between the two sexes.

For women church attendance and quest complexity were the most frequent predictors of schizotypy, while for men it was mainly intrinsic and the two extrinsic orientations that appeared more often. Unlike, however, the schizotypy-as-a-predictor models, where the effects were stronger for men, in this case the effects appear to be equally strong for both sexes.

Taking into account all the above models, gender seems to have an important moderating effect on the religiosity-schizotypy relation. This moderation, however, mainly impacts on the kind of variables from both sides that have a significant effect, and not on the direction of the relationship. In addition, it seems that the strength of the relationship may vary between the sexes depending on whether schizotypy acts as a predictor of religiosity or vice versa.

Moving on, it is worth commenting at this point on the magical ideation schizotypal trait. The magical ideation scale in this sample did receive some "yes" answers (mean = 1.93, SD = 2.02), although given that the range of the scale was 0 to 7, one can see that the distribution of the responses was heavily positively skewed (in fact, almost L-shaped), suggesting that most people gave the "no" response. In the literature it has been assumed that there would be a relationship between magical ideation and religiosity.

Table 6.67. Testing the causal hypothesis through stepwise multiple regressions (the internal orientation was not included in the analyses). Only statistically significant standardised beta coefficients are shown.

DVs \ IVs	Prayer	Church attendance	Intrinsic	Extrinsic personal	Extrinsic social	External	Quest	$R^{2\,a}$	Quest complexity	Quest doubt	Quest openness	$R^{2\,b}$
Cognitive-perceptual		-.26		.18				.10**				.10**
Interpersonal		-.29					.19	.14***			.20	.14***
Disorganised			-.17					.03*			.18	.03*
Ideas of reference		-.21		.16				.07**	.17			.07**
Magical ideation								.02				.02
Unusual experiences			-.22	.18				.08**			.16	.11**
Suspiciousness			-.27					.07**				.07**
Social anxiety		-.27					.22	.14***				.14***
No close friends		-.25					.17	.10**			.20	.11***
Constricted affect	-.22						.24	.11***			.27	.13***
Odd behaviour			-.17				.17	.09**				.09**
Odd speech				.17	.17			.03*				.03*

[a] *Model A* includes the overall quest orientation; [b] *Model B* includes the quest sub-scales; * $p < .05$, ** $p < .005$, *** $p < .0005$

Table 6.68. Testing the causal hypothesis separately for men and women through stepwise multiple regressions (the internal orientation was not included in the analyses). Only statistically significant standardised beta coefficients are shown. Results that refer to men are presented in round brackets; results for women in square brackets.

IVs \ DVs	Prayer	Church attendance	Intrinsic	Extrinsic personal	Extrinsic social	External	Quest	R^{2a}	Quest complexity	Quest doubt	Quest openness	R^{2b}
Cognitive-perceptual								(.04)				(.07)
Interpersonal		[-.27] (-.52) [-.29]		[.23]	(.29)		[.19]	[.17**] (.30*) [.08**]	[.21]		(.29)	[.18**] (.30**) [.08**]
Disorganised		[-.21]	(-.30)	(.32)	(.39)			[.04*] (.33*)	[.25]			[.11**] (.33**)
Ideas of reference		[-.25]		[.22]				(0) [.11*]	[.26]			(0) [.17***]
Magical ideation			(-.34)	[.21]		[.23]		(0) [.10*]		[.21]		(0) [.09*]
Unusual experiences	[.26]	[-.42]	(-.34)					(.11*) [.12*]				(.11*) [.12**]
Suspiciousness		(-.32)	[-.33]					(.10*) [.33*]				(.10*) [.33**]
Social anxiety		[-.26]	(-.35)				(.30)	(.25*) [.07*]	[.23]		(.34)	(.27**) [.12**]
No close friends		(-.44) [-.20]						(.20*) [.04*]				(.20**) [.04*]
Constricted affect	(-.45)			(.30)	(.26)		(.34)	(.44**) [.04]			(.41)	(.43***) [.04]
Odd behaviour		[-.28]			(.39)			(.15*) [.08**]	[.26]			(.15*) [.15**]
Odd speech		(-.31)	(-.31)	(.34)	(.32)			(.30*) [0]	[.22]			(.30**) [.05*]

ᵃ *Model A* includes the overall quest orientation; ᵇ *Model B* includes the quest sub-scales; * $p < .05$, ** $p < .005$, *** $p < .0005$

That said, only one study in the religiosity-schizotypy area has found such a relationship (Diduca & Joseph, 1997, discussed in chapter IV). That was between religious preoccupation – a measure devised for that study – and only among men. The results of the current study suggest that this relationship appears to be present only among women, but is absent both in the total sample and among men. By taking into account the bivariate relationships presented earlier, this trait appears to be largely independent from religiosity. Is this finding strange? I do not think so.

By believing to a supernatural deity, it could be argued that Christians exhibit a degree of magical ideation, but this is not necessarily comparable to the structure of magical ideation within schizotypy. In the latter context, magical ideation refers to beliefs in UFOs, extra terrestrials and certain parapsychological concepts, such as telepathy, clairvoyance and so forth. Most of these concepts are not part of (at least mainstream) Christian teachings, and the ones that may be, are characteristics that are clearly attributed to saints and God, and are not normally seen as abilities humans would tend to possess.

As such, it seems to me that at least an "orthodox" Christian would be less inclined to admitting believing in them or at least a number of them. In the same line of thought, I fail to see a relationship between religious orientation and magical ideation. In my mind, a Christian, or for that matter any religious person, is not necessarily someone with a disposition toward indiscriminate magical thinking. In conclusion, both previous and current findings clearly suggest that one should not expect to find an important relationship between religiosity and magical thinking, at least within the context of schizotypy.

> Overall, the above results seem to provide a relatively strong support to the causal hypothesis, generally in the direction predicted by the literature. The causal models had equally strong predictability for both men and women.

Therefore, it seems that, at least in this dataset, religiosity functions better as a predictor of schizotypy and not vice versa. In order to clarify this observation, a Canonical Correlation Analysis was performed between the two sets of variables on the total sample.

Given sample size considerations (see Tabachnick & Fidell, 2001, p. 180), only the second-order schizotypal traits were used (three variables in the set) against the religiosity model that included the overall quest orientation and excluded the internal orientation (seven variables in the set). For this configuration, the maximum number of possible canonical variate pairs was three, i.e. equal to the smallest of the two sets (see Stevens, 2002, p.473).

With all three canonical pairs included, $F(21, 371) = 2.54$, $p < .0005$, with the first canonical pair removed, $F(12, 260) = 1.77$, $p = .052$, while with both first and second canonical pairs removed, $F(5, 131) = 1.01$, $p = .42$. Therefore, only the first pair of canonical variates, with a canonical correlation coefficient of $R = .45$ (20.3% overlapping variance), appeared to account significantly for the relationship between these two sets – the second pair just missed inclusion.

The religiosity variate accounted for 26.1% of the variability within the religiosity set, while the schizotypy variate covered 65.8% of the variability in the schizotypy set. The schizotypy variate explained 5.3% of the variability in the religiosity variate, while the latter accounted for 13.5% of the variability in schizotypy. This last result supports the previous observation that the causal hypothesis appears to be more plausible, at least in the current dataset.

By inspecting the loadings on the first canonical variates (Table 6.69) and using a suggested loading cutoff point of |.30| (see Tabachnick & Fidell, 2001, p. 199) it appears that the external religiosity and both the extrinsic ones do not belong to this variate – in fact, these three variables loaded primarily on the second religiosity variate, which was

not included in the final model.

Table 6.69. Primary loadings of the religiosity and schizotypy variables on the first canonical variate they belong ($N = 139$).

	Religiosity	Schizotypy
Frequency of prayer	.60	
Frequency of church attendance	.75	
Intrinsic	.67	
Extrinsic personal	(-.26)	
Extrinsic social	(-.18)	
External	(.27)	
Quest	-.53	
Cognitive-perceptual traits		-.71
Interpersonal traits		-.99
Disorganised traits		-.71

Focussing on the extracted first canonical pair, the relationship between the two sets could be described as follows: Individuals who tend to pray more frequently, go to church more often, be more intrinsically and less quest orientated, have lower levels of schizotypal traits.

THE COVARIANCE HYPOTHESIS

However, one thing still remains unanswered. Why attribute causality in the first place? After all, the results of the canonical correlation indicate a 20.3% overlap between the religiosity and schizotypy variability, and although the *redundancies* (i.e. the amount of variation in each of the variates explained by the other; see Tabachnick & Fidell, 2001, pp. 189-190) were not balanced, this could be an artifact of forced-variate membership. What if we allowed the variables to fall into the variates freely? Would that result in groups formed with elements of both religiosity and schizotypy components?

This question of course addresses the covariance hypothesis of chapter IV, and in order to check its plausibility a Principal Components Analysis (PCA) was run on the second-order schizotypal traits and the religiosity set that included the overall quest orientation and excluded the internal one. Given sample size considerations (see Tabachnick & Fidell, 2001, p. 588), PCA was run only with the total sample. It still remains to be seen whether the results presented below would hold for men and women.

The results of the Kaiser-Meyer-Olkin measure of sampling adequacy indicated that the proportion of variance in the items attributed to common variance was 71%, while the Bartlett's test of sphericity suggested that the items' correlation matrix was significantly different from the identity matrix, χ^2 (45, $N = 139$) = 465.76, $p < .005$. The scree plot clearly suggested the retention of two factors (52.6% of total variance), while the Kaiser criterium pointed to three (62.7% of total variance). For reasons of parsimony I opted for two factors. A Direct Oblimin rotation suggested that these two factors were independent from each other ($r = -.05$), thus a solution based on a Varimax rotation was adopted (Table 6.70).

Table 6.70. Principal Components factor loadings after Varimax rotation of the primary religiosity variables and the second-order schizotypal traits. Loadings below |.30| are not shown.

	Factor	
	1	2
Church attendance	.84	
Intrinsic	.79	
Prayer	.77	
External	.72	
Extrinsic social	.46	
Disorganised schizotypy		.84
Interpersonal schizotypy		.81
Cognitive-perceptual schizotypy		.81
Extrinsic personal		.34
Quest		.32
Extracted eigenvalues (unrotated)	*3.22*	*2.04*

The results clearly indicate a religiosity factor and a separate schizotypy factor. Interestingly, extrinsic personal and quest orientations loaded primarily on the schizotypy factor. However, the distance between the loadings of those two orientations and the principal loadings of the schizotypal traits suggests that probably these orientations do not belong in this factor and if placed there, perhaps they should not be seen as forming a stable group with the schizotypal traits.

When a three-factor solution was requested, the third factor (unrotated eigenvalue = 1.02) was formed by the extrinsic social ($r = .66$) and the extrinsic personal ($r = .64$) orientations, while quest cross-loaded on that factor ($r = -.47$) and the schizotypy one ($r = .50$).

In order to view the above configuration from a different perspective, an MDS analysis was run on these data using Kruskal's non-metric monotone regression algorithm. Proximities were calculated from the standardised values of the data[9] using Euclidean distances with a primary approach to ties.

Two thousand initial random configurations were requested. A two-dimensional solution was selected (Kruskal's *Stress* = .06), which accounted for 52.2% of the total variance in the set and maintained 52.3% of the rank ordering of the dissimilarities (solution converged in 61 iterations). As it can be seen in Figure 6.3, the two factors can be fairly reproduced (dashed line). Both quest and extrinsic personal appear to be relatively "closer" to the schizotypal group than to the group formed by the rest of the religiosity variables.

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[9]

 Standardisation was seen as a necessary step, in order to avoid the problem of *degeneracy* in the MDS solution (Stalans, 2001, pp. 154-156). As the variables were measured on different scales, when they were entered into the MDS model in their raw scores, a degenerative solution occurred whereby variables formed very tight, distinct, yet artificial clusters, leading to a perceptual map that was misleading and of little to no use.
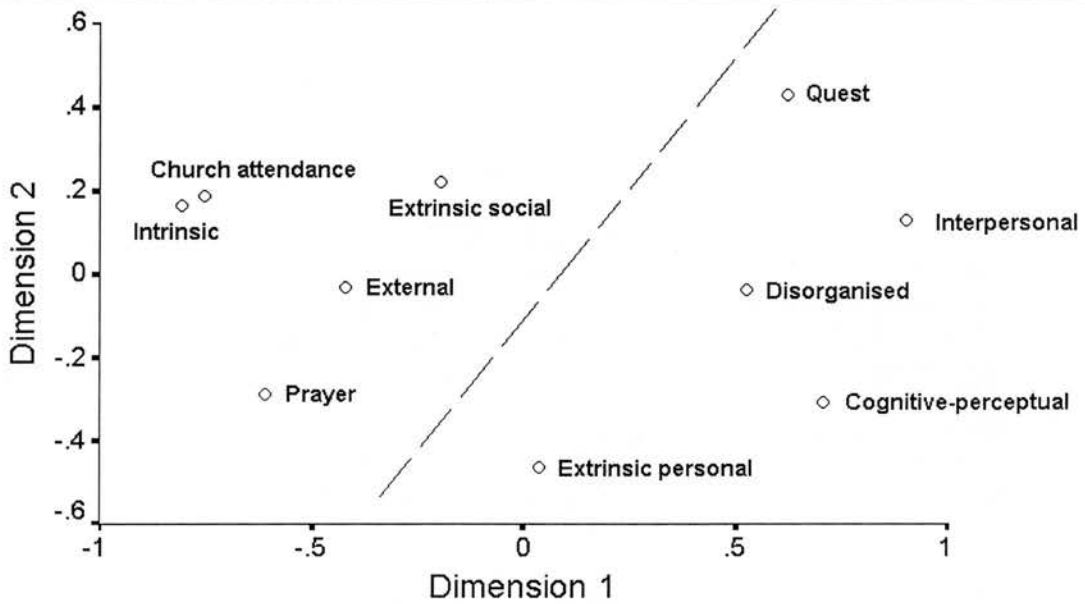
Figure 6.3. A two-dimensional representation of the religiosity-schizotypy relation as mapped through a non-metric multidimensional scaling analysis.

One may point out that the arrangement of the variables on the map could also suggest that the two-factor solution may not reflect a simple, and perhaps stable, underlying structure of the relationship between religiosity and schizotypy, since the space can be partitioned into a number of alternative ways, e.g. a group defined only by church attendance and intrinsic orientation. However, I would argue that the applied partitioning, when viewed alongside the FA results, is both conceptually meaningful and empirically useful, since it shows that not only religiosity tends to occupy its own "space", which is distinct from that populated by schizotypy, but also that the two religiosity variables that appear to be "attracted" to schizotypy do not form a clear group with it.

Therefore, collectively the FA and MDS results seem to provide a rather weak support to the covariance hypothesis.

Together the findings from the four hypotheses that attempted to identify the underlying relationship between schizotypy and religiosity suggest that a causal model that places

religiosity as a predictor of schizotypy seems to be the most plausible one in this dataset. Moreover, collectively seen these results point to another interesting finding.

Although in the literature the effect of quest is unclear (for an overview see Batson et al., 1993, chap. 8), in this study quest not only comes as one of the main predictors of schizotypy, but should one adopt the causal model, then higher levels of the quest orientation appear to result consistently in higher levels of schizotypal traits.

This is a very important observation, because if we accept Batson's model that places quest as the most mature form of religiosity, then one is compelled by the above results to admit that the more mature one's religion is, the more likely one is to be schizotypal, and as an extension, the more likely one is to develop a schizotypal personality disorder.

That said, as I commented earlier, the results of this study do not seem to support Batson's model. Quest and its subscales showed in a rather consistent manner negative, albeit generally low, associations with age ($r = -.14$), duration of being a Christian ($r = -.18$, for quest complexity), frequency of prayer ($r = -.20$, for quest doubt), frequency of church attendance ($r = -.15$), intrinsic ($r = -.15$) and internal ($r = -.21$), while at the same time quest appeared almost entirely independent from the external and the two extrinsic orientations.

According to these findings, it seems more likely that, at least in this sample, quest is not a form of mature religiosity. It could be, as Donahue (1985) suggested, a passage to maturity. In other words, quest could be the doubt stage or process through which one will need to go in order to acquire a mature form of faith.

Whatever the case is, I will agree with David Wulff that quest deserves special attention in future studies, since it may be capturing a unique element of religiosity with properties well-worth investigating.

THE INTEGRATED MODEL

Given the findings above, the integrated model presented hereinafter treats religiosity as a predictor of schizotypy. Having identified the model that best describes the religiosity-schizotypy relationship in the current dataset, the next step was to take into account the mediating effects of the rest of the variables and assess their impact on the initial model. To allow for the structural model (a *recursive* one) to emerge, a number of steps were necessary.

First, the *exogenous variate* (religiosity) consisted of the three I/E-R orientations, the three RLI orientations, and the two religious practices. By taking into account theoretical considerations as well as the bivariate relationships between these variables, I grouped them as follows: intrinsic, internal, external, prayer, and church attendance formed a group I named "mature"; extrinsic personal and extrinsic social formed another group, I called " immature"; quest was left on its own (see Figure 6.4). Finally, external was allowed to cross-load on the immature group. The *endogenous variate* (schizotypy) consisted of the three SPQ second-order traits.

Due to sample size restrictions it was not possible for all measured variables to enter the model as controls – when this was attempted, the structural model was *unidentified*. General personality, identity, attachment, and desirability, all served as mediators, because, as described earlier in this section, they tended to show clear and relatively large associations with both or either the religiosity and schizotypy variables. However, of all the sociodemographic variables, only age was included in the model as a mediator, and given its large correlation with the duration of being a Christian ($r = .92$), it was assumed that the effect of the former would also represent that of the latter.

All other sociodemographics, which would have served as moderators in the structural model, i.e. they would have partitioned the model into a number of sub-models equal to

the number of groups that formed them, had to be dropped. While student status, employment status, and marital status could be viewed to an extent as secondary to the psychological assessment of the religiosity-schizotypy relationship (even though they indeed showed some interesting effects, as presented earlier in the chapter), the main disappointment was the exclusion of gender and religious denomination, both of which showed a number of significant effects on either religiosity or schizotypy.

Missing values were imputed through the SPSS expectation-maximization (EM) algorithm (Dempster et al., 1977). Structural discrepancies were estimated through a maximum likelihood procedure. The structural model was run twice, once with the initial data and once with the imputed data. As missingness was found earlier to be ignorable, the goodness-of-fit indices were essentially identical in the two models. Although these models had acceptable levels of fit (Table 6.71), the fit could clearly be improved with only a few modifications. By considering primarily theoretically permissible modifications and secondly the magnitude of the Lagrange multipliers, only three adjustments were made through which (a) a path was added between personality and schizotypy – a move that is justifiable both theoretically and empirically –, (b) the residuals of extraversion and interpersonal schizotypal traits were allowed to covary, and (c) the residuals of extrinsic social and church attendance were also allowed to covary.

The final model consisted of 61 variables of which 22 were observed and 39 were unobserved. Of these variables, 31 served as exogenous and 30 as endogenous. The model contained 275 distinct sample moments, 43 fixed parameters, and 75 parameters to be estimated (Figure 6.4). A minimum discrepancy function was achieved in 26 iterations. The three modifications led to a significant reduction in the minimum discrepancy function of the initial model, $\Delta\chi^2(3, N = 161) = 83.56, p < .0005$.

The other major improvement was the relatively large reduction of the expected cross-validation index (ECVI), suggesting that of the two models the final one had a greater

potential for replication. Overall the values of the indices in Table 6.71 suggest that the final model has an acceptable fit.

Table 6.71. SEM goodness-of-fit statistics for the initial model and the final nested model after post hoc modifications ($N = 161$).

	Initial model	Final model	Saturated model	Independence model
χ^2	505.83	422.27	0	9056.26
df	203	200	0	253
$p <$	.0005	.0005	-	.0005
CMINDF	2.49	2.11	-	35.80
NFI	.94	.95	1	0
CFI	.97	.98	1	0
RMSEA	.10	.08	0	.47
90% CI$_{RMSEA}$	.09 - .11	.07 - .09	-	.46 - .48
ECVI	4.06	3.58	3.44	56.88
90% CI$_{ECVI}$	3.67 - 4.50	3.23 - 3.73	-	54.95 - 58.84

Moving away from these indices and looking into the effects on schizotypy, a far more interesting picture emerges (Table 6.72). Focussing on the three variates that directly connect with schizotypy, religiosity clearly appears to have a substantial effect. The direct standardised effect (standardised regression weight) of religiosity on schizotypy (-.21) was rather similar to that of personality (.26) and not much smaller than the effect of all the mediators taken collectively (.35).

In fact, and perhaps to the surprise of mainstream psychologists, the total standardised effect of religiosity (-.34) was larger than that of personality – which remained the same as above. Moreover, only around one third of the total effect of religiosity (-.13) was mediated by the other variables in the model. Finally, according to the value of the square multiple correlation, the final model explained 40% of the variability in

schizotypal traits.

Therefore, based on these findings, the first conclusion is that the phenotype hypothesis, according to which the religiosity-schizotypy relationship is a spurious one, should be rejected.

Table 6.72. The effect on schizotypy of the three variates with direct paths to it (standardised effects are given in round brackets).

	Religiosity	*Mediators*	*Personality*
Direct effect	-5.18 (-.21)	0.05 (.35)	0.37 (.26)
Indirect effect	-3.19 (-.13)	0.12 (.15)	-
Total effect	-8.37 (-.34)	0.17 (.50)	0.37 (.26)

By inspecting the path diagram, a number of additional interesting observations can be made. First, it is not surprising that a relatively "maladaptive" personality – in this case, one that tends to be neurotic, introverted and relatively psychotic – would be positively associated with schizotypal traits. These results follow closely the empirical evidence presented in this study (see the schizotypy vs. personality section earlier). In the current model it seems that the most important general personality trait to schizotypy is neuroticism, while the least is psychoticism – the low loading of psychoticism is not surprising given the trait's rather low correlations with the rest of the personality dimensions (see the first section of this chapter under the EPQ heading).

The high negative residual correlation (-.79) between extraversion and interpersonal traits was also to an extent expected given the relatively high negative bivariate correlation between the two traits (-.44) identified earlier. This relationship leads to the conclusion, which follows closely the Claridge and Davis (2003) theorising, that the more introverted a person is, the more likely he or she is to possess (or for that matter, develop) relatively "dysfunctional" interpersonal traits.

Moving to the mediator variate, it appears to be composed, in descending order of "importance", by (a) primarily a tendency toward an insecure attachment (mainly a highly anxious one); (b) a tendency to provide responses less socially desirable, i.e. a tendency to honesty or inability to lie as discussed earlier; followed by (c) relatively "maladaptive" general personality traits (as described above); and (d) a relatively strong sense of identity (mainly social identity). Finally, the mediator variate had an inverse relationship with age (standardised coefficient = -.36), which indirectly suggests also an inverse relationship with the duration of one being a Christian.

Therefore, all mediating variables in the model seem to make a relatively important contribution to the religiosity-schizotypy relationship, with the most important mediator appearing to be attachment, closely followed by social desirability, while the least important, but by no means unimportant, appear to be aspects of identity.

The mediator shows the profile of a person that is relatively not so healthy-minded. The direct positive effect of the mediator on schizotypy appears to suggest that such a person is more likely to possess higher levels of schizotypal traits.

Homing in on the religiosity variate, it can be seen that, given the rest of the results presented in this chapter, the variables behave in a rather expected way. Internal, intrinsic, prayer, and church attendance, have all high positive loadings on the mature group, as they all showed relatively high correlations with each other. External loads moderately mainly on mature and less on immature, again in accordance with both its observed behaviour and its theoretical construction discussed in chapter IV.

The immature group appears to be a relatively "weak" one, which was also expected given the rather low correlations among the three variables that form it. The bivariate correlation between extrinsic social and church attendance (.28) can explain to an extent the residual covariation between the two variables in this model (.31). Finally, the

relatively low and negative loading of quest on religiosity (-.19) is not surprising given its tendency to distance itself from the rest of the religious variables in the dataset and consistently show low and negative associations with them.

An interesting finding here is that the immature group appears to have a negative association with schizotypy, while in the regression models earlier, it showed a positive one. Although these findings may at first seem inconsistent, in fact they are complementary. Extrinsic social and personal (and external for that matter) had in this study either a positive or at times a nonexistent association with the rest of the religiosity variables (see Tables 6.9, 6.10, and 6.20). Therefore, when all the religiosity variables formed a single variate in the integrated model, the immature ones were expected to have loadings pointing to the same direction with the variables they associated positively with. And this is what we are witnessing here. In fact, when I ran a PCA on the religiosity variable, and requested a single factor, the picture was essentially identical to that in the integrated model.

All this suggests that immature religiosity, when treated as part of the total religious profile of an individual, may have a relatively small, yet positive effect on mental health. This is an interesting finding that previous studies appear to have failed to identify, primarily because they either used exploratory statistical techniques or treated the immature religiosity independently from the rest of the religiosity variables. Moreover, it points to a more complex relationship between religiosity and, at least, schizotypy than the literature appears to suggest. Therefore, the religiosity variate consists of lower quest levels and higher levels on each of the rest of the religious variables, primarily those making the mature group. Such a profile appears to account for lower levels of schizotypal traits, or in other words, by taking into account also its direct effect on the mediator (-.26), it seems to promote psychological well-being, by leading to a more healthy-minded individual.

Figure 6.4. The integrated structural model of the causal relationship between religiosity and schizotypy, by taking into account the mediating effect of a number of mainstream psychological variables. Numbers are standardised loadings and correlation coefficients.

This finding is of an utmost importance as it forms half the core of this thesis. The other half is formed by the indirect effect of religiosity on schizotypy. Here again the results seem to speak for themselves: When such a profile is filtered through an ill-minded person, one that is relatively high neurotic, insecurely attached to others, with a relatively strong sense of primarily social identity, it tends to produce the opposite results and increase the levels of schizotypal traits.

Collectively these results suggest that at least in this dataset, and perhaps to an extent in any dataset coming from the same or similar population, religiosity appears to have a substantial and unique contribution to the variability in schizotypy, which is not accounted for by the variability in the (mainstream) psychological variables measured in this study. Taken at face value, certain aspects of religiosity appear to enhance psychological well being, and may only become problematic when filtered through a dysfunctional psychological profile.

CHAPTER SYNOPSIS

In this chapter I have attempted to the best of my abilities to analyse the questionnaire data and provide answers to the predictions made in chapter IV. Given the size of the dataset the possible associations between the variables were practically endless. However, I had to maintain focus on the predicted relationships, instead of going for a treasure-hunt. Consequently, the potential effects of a number of variables in the dataset were not checked. So for example, all identity and religiosity buffer items (17 variables in total) were ignored. Moreover, certain variables, like ethnic background, number of years the participant had lived in Britain, areas of study, and so forth, were only used to check whether the inclusion criteria in the study protocol were met.

That said, sample size restrictions also forced me to ignore the effects of variables that

could have potentially played a serious part in the shaping of the main relationships. Regrettably variables like gender, religious denomination, student, employment and marital statuses had to be dropped from the final model.

When assessing the predictions, I also had to constrain the analysis. One of my implicit purposes in respect to the outcomes was to ensure as best as I could that the results are not artefacts of the statistical tests used, but rather accurate enough representations of the actual underlying relationships. With that in mind, I triangulated my analysis by using different techniques, and thus increased my confidence in the results.

However, I only did so when I felt it was necessary, or when the information sought seemed to be of central importance to this thesis. Granted I could have done that more frequently or for that matter less frequently; granted I could have used a number of other analytical tools, alternatively or additionally. I had, however, to strike a balance between overanalysing and superficially exploring the data. Ultimately, the level of analysis I used was sufficient to reveal at least a part of the essential elements of the major relationships in the dataset.

What follows is a summary of the main results, and of the results I found of interest despite their centrality to this thesis:

1. Students appear to be different from the general population in a number of psychological aspects. This functions more as a warning than a finding. A large part of the research in the psychology of religion (and I will concentrate on this area to avoid offending too many people) is carried out on the student population. This population, as discussed in chapter IV, is also not checked for religious background. This is a potential recipe for disaster. Perhaps a greater consensus among the literature findings would have been achieved if researchers had taken into account these issues. Psychology (of religion) may be a cumulative science, but let us also ensure it is not built on straw.

2. People belonging to different Christian denominations appear to have different psychological characteristics. This is again an issue of control that could be of great value to the psychology of religion, potentially reducing unnecessary noise in research findings, and allowing for the generation of denomination-specific knowledge of applied as well as academic importance.

3. Alongside personality, attachment seems to be of great relevance to schizotypy. It seems surprising to me that research in this area appears to have so far largely neglected it. Understanding the relationship between attachment and schizotypy, I would argue, could be of greater applied value than understanding the relationship between personality and schizotypy. Why? Because personality is a fuzzier and more abstract construct than attachment. Therefore, when it comes to developing and applying health policies, counselling strategies and so forth, attachment seems easier to work with. As attachment directly refers to human bonding, by affecting that bonding we can catalytically influence its development. If attachment affects schizotypal symptomatology, we potentially have a relatively straightforward way of preventing, controlling, and even treating SPD. If, on the other hand, it is schizotypy that affects the nature of attachment, by focussing on the latter we can develop the means of offering a more accurate prognosis or diagnosis of the disorder.

4. Gender appears to be a serious moderator of the religiosity-schizotypy relationship. Its effect should be considered further, as it seems to suggest that different variables are important for the different sexes. Again finer knowledge can lead to more accurate predictions and better application of research findings. That said, although gender is important, its effect should not "worry" us, as the moderation appears to be of an ordinate nature. By that I mean that gender appears to affect mainly the nature of the variables involved in the religiosity-schizotypy relationship, less the strength of those relationships, and not at all the direction of those relationships.

5. Magical ideation, at least within the context it has been used thus far in the literature,

does not appear to be of great relevance to religiosity. Magical ideation seems to be too "new age" a construct to be expected to either be normatively present in Christian thought, or be something that Christians would openly admit having, not least because aspects of it may conflict with certain elements of Christian teaching. Therefore, using magical thinking as a link between religiosity and schizotypy may be a fruitless enterprise. Instead, other aspects of schizotypy like suspiciousness, anxiety, and the eccentric elements may be more accurate and stable indicators of that relationship.

6. The relationship between extrinsic religiosity and schizotypy may be more complex than initially thought. On its own it appears to have a small, yet positive association with schizotypy, while in the company of the rest of the religiosity variables, this relationship is inversed. Although, according to Allport, it is theoretically possible for a person to have only an extrinsic orientation towards religion, I doubt this is often the case in real life. Given that extrinsic is a dimension of religiosity, it seems less appropriate to me to assess its behaviour independently and outside the total religious profile of the individual, as studies have done so far.

7. The quest orientation does not behave like a mature form of religiosity. All the evidence from this study consistently points toward this conclusion. It seems more likely that quest is a stage of religious development that may lead to a mature religiosity. Does this diminish its value? On the contrary. If quest is found to be a stage of maturity, it will occupy a unique niche in the religiosity space with properties as valuable as, or if we take into account its relationship with psychopathology, at times even more valuable than the mature and immature forms.

8. Finally, the integrated model was an epiphany. Not only does it place religiosity at the same level as mainstream psychological variables by showing that it has a unique effect on schizotypy, which is as strong as theirs, but it also paints a picture of a relationship that is far more complex than research so far has shown.

The effect of religiosity on schizotypy is there, and it is such that should not be ignored. The direction of this effect, however, seems to be determined by the interplay between the religious and the psychological profiles of the individual. In the current dataset, these profiles come out crystal clear. The psychological one is of a relatively maladjusted, dysfunctional individual, while the religious one is of a straightforward ordinary believer. The religious one has a negative effect on schizotypy, the psychological one a positive; put them together and you have potentially created a time-bomb. Religiosity on its own and in its "natural", ordinary state seems to enhance the well-being of the individual. It is only through its interplay with certain kinds and degrees of other psychological elements that psychopathology is born.

CHAPTER VII

THE INTERVIEW STUDY: METHODOLOGY

"[We live in] an age in which it is in the highest degree unfashionable
to speak of religion or spiritual peace or consolation,
an age in which words like these
draw forth only derision, pity, or contempt."
(Abdullah Yusuf Ali, 1934/2000, p. iv)

CHAPTER AIMS & ORGANISATION

The aims of this chapter are to present and discuss the methodology used for the second study in this thesis, which was based on qualitative interviews. Initially I present my views on the quantitative and qualitative methodologies, and attempt to justify their use in this thesis. The aim of this study appears next, followed by the participant selection process, the rationale behind the use of the interview as the research technique, the item development, and the results of the pilot study. Finally, the procedure of the study is laid out, and the analytic approach employed is presented.

MIXING QUALITATIVE WITH QUANTITATIVE APPROACHES

Before I home in on the specific methodological issues of this study, I would like to pause the flow of this thesis, and present my views and position on the quantitative versus qualitative research approaches. Given the apparently bitter dispute over the years between the two camps (e.g. Cook & Reichardt, 1979; Nau, 1995; Salomon, 1991) that still seems to be largely unresolved (e.g. Bavelas, 1995; Creswell, 2001; Krantz, 1995; Redmond, Keenan, & Landorf, 2002), I find this a necessary step, in order to justify to either of those "arch-rival" sides why I used both approaches in this thesis. Thus for a little while allow me to sketch as "graphically" and as subjectively as permissible the way I understand the difference, or shall I say the similarity between "counting sunsets [and] appreciating them" (courtesy of Hugh Coolican, 1999, p. 42).

THE QUANTITY VS. THE QUALITY OF LIFE

For most of the past sixteen years of my life, I had embarked on a mental journey of argonautic proportions to discover and comprehend any probability-based research procedure I would encounter. When during my undergraduate studies I was introduced to statistical inferences and probability-based sampling, I initially received these ideas with confusion, skepticism, and rejection. The whole notion of my world as a solid, stable, and controllable unit was being dangerously challenged. My shock was so great that I exorcised this new and threatening knowledge into the depths of my subconscious. However, by doing so, without knowing it, I had placed that knowledge into an incubating state, and it was not long until it spawned out in full glory and converted me. Suddenly my reality wore a different "veil".

I adopted a positivistic attitude and advocated with the euphoric zeal of a fundamentalist preacher that any phenomenon could be reduced to observable facts and studied through mathematical relationships. Paraphrasing Henry Thoreau, I would argue that anything

that we can perceive we can measure in this way. Moreover, by measuring the world with the use of mathematics, to be more precise statistics, we gain information at the highest level of objectivity – or so I thought. I will not attempt to produce an essentialistic definition of objectivity, since greater minds than mine have failed, however, I will suggest that it points to "factual evidence". By that I mean, interpretations of clues that can be verified and confirmed irrespectively of the idiosyncratic nature and the time-space limited specificities of the observer. To put it in a simple statement, I thought that a number by itself could not lie. By using statistics, researchers can communicate ideas and findings in the "ecumenically trusted" language of numbers.

Through quantitative research one can build hypotheses and test them in strictly structured ways. A well-organised experiment, for example, can be to a great extent foolproof and therefore its outcomes may possess high levels of *internal validity*, i.e. those outcomes will be the direct results of the experimental treatment. In the same line of thought, by carrying those virtues, quantitative research allows fellow scientists to scrutinise or replicate findings, even by using different settings and instruments. Validity, reliability, and replicability are central characteristics of the hypothetico-deductive model that shapes the quantitative enquiry (also see Meehl, 1998). They also permit inductive inferences and predictions, often at a nomothetic level (for example, John Stuart Mill, 1843/1963, was a main advocate of the power of such reasoning).

The single aspect of quantitative procedures that had the greatest impact on me was that they could be falsified or disconfirmed. The world was no longer a dogmatic bipolar system of "yes" and "no", of "black" or "white", of error-free experts and naive followers, but a colourful continuum where no one held "The Truth", and where there was no "absolute yes" but instead many "maybes". The world had become a frightening, fluid, and complicated place, but at the same time it had become radiant, interesting, and infinite. As Jack Smart acknowledges "... it is precisely such a reality that science reveals

[...] a reality of a different order" (1968, pp. 158-159). I had found the panacea to my thoughts and I let it bloom in the fertility of its brave new world.

However, not long ago I began doubting the power of that knowledge. In a Kantian way, the idea of "reality" emerged only when I was confronted with too many contradictions.

The foundations of classical scientific thought advocate that not only are there observable, measurable facts out in the real world (i.e. states-of-affairs that exist independently of how people interpret them), but there are also objective measurements of them. Determinism appears to have dominated science (and with good reason I suppose – see the science vs. religion debate in chapter III) at least up until statistics became mainstream methods of scientific investigation and challenged the whole notion of scientific truths and laws. However, this new paradigm grew up to become as rigid as its predecessor. Perhaps there were no facts out there, as Newton may have wanted them to be, but there were objective "factual", "unmistakable" measurements (i.e. statistics) that could to a degree generate those facts.

I realised that the world (i.e. the psychosocial world) was too complex to be captured just in numeric relations. Thus the information obtained through this type of procedures appeared to be rather narrow and artificial, and thus at times failed to attain ecological validity, i.e. failed to allow for real-life applications.

Furthermore, I realised that numbers can indeed deceive and lie, in the sense that they can conceal an error. The true significance (i.e. impact) of an event, state, behaviour, etc. is not bound by its statistical significance, therefore, the real importance of a finding may be exaggerated or overlooked. For example, statistics can estimate the probability of dying in a plane-crash, but it cannot capture directly the impact of that "improbable" death on the family of the deceased. In recent years, several scholars (Cohen, 1994; Falk & Greenbaum, 1995; Rossi, 1997; Wilcox, 1998) have warned about the dangers of

treating those two concepts (statistical importance vs. practical importance) as meaning the same thing. Regrettably, more often than not researchers, in their ignorance or because of their "political agendas", do make such claims. A recent example involves the publication of two articles, where in the first (Enstrom & Kabat, 2003) the authors claimed absence of evidence for a long-term health effect on passive smoking, while in the second (Gilliland et al., 2003) the reverse claim was made, even though the studies in both articles had produced very similar results – in the first article the claim was based on the final probability values, while in the second on odds ratios and confidence intervals.

Moreover, I found out that the inductive validity of quantitative procedures had been at times ferociously criticised by scholars. William Jevons (1999), for example, argued that the consequences of a finding would have to agree with what was observed, and induction could not provide such an agreement indisputably. More than two centuries before Jevons, David Hume (1739/1985) questioned the entire acceptability of inductive inferences and predictions, by claiming that formal logic does not permit past uniformities to be used as a basis for future ones (cf. Harre, 1965, pp. 113-134). This may well be the case with the social and behavioural sciences, not only in regard to future inferences, but also to cross-cultural ones (for evidence see Berry et al., 1992).

Finally, I realised that there were scientific theories (such as Newton's laws, or the Theory of Evolution by Natural Selection) that it was very difficult – a difficulty reaching the boundaries of impossibility – to falsify. And I was not alone in this realisation. Indeed, some psychologists have abandoned the idea of falsification altogether, and have adopted alternative strategies along the lines of *counterfactual reasoning*[10] (for more see Gorman, 1996, pp. 54-56; Lewis, 1973; Menzies, 2001).

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[10] Counterfactual reasoning posits that the meaning of a singular causal claim of the form "event X caused event Y" can be explained in terms of counterfactual conditionals of the form "if X had not occurred, Y would not have occurred".

This accumulating evidence delivered an unsettled blow to my new world of science, and hung like a Damoclean sword over my *Popperian* attitude. Since, however, I could not find an alternative to replace or modify my research approach, I felt, in an opaque way, trapped. And then I was introduced to the qualitative measurement procedures afresh.

Qualitative research is generally formulated on the idea that the social space is discursively constructed. This is widely communicated through perhaps the aphorism that "there is nothing outside the text" (Laclau & Mouffe, 1985, p. 108). However, before we fall into an acute catatonic state, the above authors rush to explain themselves by saying that "what is denied is not that [...] objects exist externally to thought, but the rather different assertion that they could constitute themselves as objects outside any discursive conditions of emergence" (p. 108). Post-structuralist thinkers, for example, not only propose the idea that people construct the phenomenal *alethea* of the world through a meaning-making discursive process, but also that this process is neither stable nor finite (Mills, 1997). However, having said that, they also argue that at certain times in all societies certain world-constructs achieve hegemonic status through the influence of *power* (e.g. Worth, 1999, pp. 91-92).

Qualitative research adopts a more interpretivist philosophical approach to the social world. Through this approach the scientist is concerned with the way the social world is interpreted, understood and ultimately (re)produced (Potter, 1996). The approach advocates that the information gathered is rich and that richness is not represented by numbers but by text, speech, images, and written accounts of events and behaviour, observed in real life settings. There are no sophisticated "artificial" laboratories where the researcher distances him or herself from the participants, and by controlling and manipulating variables can "play God" – or in the words of Hammersley & Atkinson "a Martian [...], viewing society from outside" (1995, pp. 11).

The observer, qualitative researchers claim, is often a "humble" participant, thus allowing the *social actors* studied, the freedom to behave as naturally as possible. Using a social setting as a natural laboratory, the researcher interacts with subjects, and in a *maieutic* way gains in-depth, inside knowledge of their life (for more see Fetterman, 1997; Stewart & Shamdasani, 1997).

I became truly captivated by the qualitative approach. It was a revelation of a plethora of new research techniques, which flooded an abundant gathering of knowledge into my "scientific" world and cocooned it like a halo. For a time it felt that this fresh craft, I dare say, dwarfed and preceded all quantitative research methods I had previously experienced. My "brave new world" was, for once more, enriched by dimensions of fine light. By paving my way with rhapsodic ardour and a glance of confidence I began praising this new approach like the roman legionnaires praised Caesar. Ceteris paribus, however, soon the clouds of scepticism gathered around my convictions.

Due to the nature of qualitative research, the information obtained is rather subjective. What one scientist finds important, may be viewed as trivial by another (Boyatzis, 1998). Adding insult to injury, Michel Foucault states that the way we talk about the world affects how we understand and see it (1990). It appears that there is no standardised, structured design that all researchers in this field accept and follow. Consequently, the reliability of the findings seems doubtful. In addition, the results of such studies cannot be replicated, or perhaps can only be partially replicated, since they belong to the place and time they refer to. Thus, making inferences from this type of studies may be very dangerous. Indeed, qualitative research is, or at least should be, idiographic in nature, and researchers tend to be discouraged to make generalisations (e.g. Mason, 1996).

In conversations I had with social anthropologists – a field where qualitative research is frequently used – they argued that though the issues of reliability and replicability are

marginal, in this approach, validity and reflexivity are central. However, their argument begged the question. If we are not able to replicate findings, if we are not sure whether we would have observed the same events and interpreted them in the same way, how can we realistically trust and accept results? What is there that prevents a malicious, or at best, ill-qualified researcher from providing us with false information?

This was not science; this was fiction. Indeed, I was told by my social constructionist acquaintances that qualitative research is more like art, where the researcher like the artist seeks the particular, as the general resides in the particular. All these artistic parables automatically brought in mind D. H. Laurence's admonition not to trust the artist.

Unlike art, however, qualitative research has an agenda that is explicitly formulated within and for the psychosocial scientific community. The artist does not have nor need to prove or disprove anything (perhaps beyond themselves); she or he does not have to conduct any research in order to produce art, and certainly contributing to the general knowledge-pool is not any of her or his main concerns. I am using a *category entitlement* here – a familiar term in qualitative research – since I am an artist myself. However, one can notice how my writing style and attitude change throughout this thesis depending on the focus of my thoughts and the content of my discourse. I wear one hat when I express myself as an "objective" researcher, and another when I attempt to reflect my inner "subjective" thoughts and feelings. Furthermore, these distinct selves of mine – perhaps products of a false dichotomy – spontaneously materialise when the conditions request it. Though I cherish the idea, I have to accept that qualitative research, as it tends to be used in the social and behavioural sciences, is not art. Its purpose, its function, and its environment are not artistic. It does not behave though like a science too. So what is it?

The psychosocial sciences are not arts (in the strong use of the term) by their nature, and

they are not pure sciences by definition. The qualitative approach may just be filling the necessary and appropriate niche in these disciplines; a connoisseur in social research: a *sciencart*.

DIFFERENT HORSES FOR DIFFERENT COURSES

I neither condemn nor prefer any of the above research paradigms. At the level I have approached the issue, I would be naive to claim any preference. In fact, I do think that they are the appropriate designs for the questions they address. When used interdependently and, in an eclectic way, interactively they can strengthen our suppositions and allow for more pluralistic interpretations. The synergy of their powers can indeed produce a powerful tool, a magic wand, in our quest to understand the human world.

The value of any scientific inquiry needs to be judged within a pragmatic, pluralistic and empirical, yet most of the times non-statistically-based framework that takes into account references of practical importance, meaningfulness, and plausibility. These references are tightly related to, and to an extent derive from, the actual context of the study, and vary – at times dramatically – among areas, disciplines, and settings. It is those references that assign meaning and importance to research findings (and not the other way around).

As true scientists we need to assess and understand the real-life importance of our findings above and beyond the application of any quantitative or qualitative methodology. Failure to do so may lead to claims that are trivial, meaningless or even implausible, and yet have enormous consequences (I refer you to "The Mismeasure of Man" by the late Steven Jay Gould, 1997). Since one of the main things that makes us scientists is the way we look at the world, our greatest weapons against pitfalls of the kinds I mention above are intuition, in-depth knowledge of our field, and (not)

surprisingly common sense. By recognising and utilising the subjectivity in our thought, I believe, as I mentioned in chapter I, we can gain much more than by promoting our objective selves, and perhaps we may eventually be able to generate those powerful "imaginary" tools by which Sir Francis Galton believed "an opening can be cut through the formidable thicket of difficulties that bars the path of those who pursue the Science of Man" (1889, p. 63).

INTERIM SYNOPSIS

For most of my academic life I had been a true advocate of the quantitative paradigm and fully implemented it into my research. I was captivated by its clarity of measurement, its structured organisation, and its unambiguity of findings. However, I now understand that with its reductionistic approach, it tends to manipulate or even limit one's view of the human world. My exposure to the qualitative paradigm, caused a radical shift in my scientific attitude, and left me astonished by its pluralism and its richness. Nevertheless, this approach is not foolproof either, and it raises considerations about its objectivity, its validity, and its wider applicability.

Besides their shortcomings and problems, or maybe because of them, these two approaches may produce better results when combined and used interdependently. This approach requires from us scientists to steer our focus away from the specific methodological "cans and cannots" and instead concentrate on the interpretation of our findings by placing them into an appropriate real-life context.

Having placed my position onto the quantitative-qualitative continuum, I proceed by discussing the specific issues around the methodology of the quantitative interview study of this thesis.

INTERVIEW STUDY AIMS

The general aim of this study was to generate an impression of the participants' representation, understanding, and conception of religion, religious life, and their thoughts on the acquisition and development of their religious practices and commitments, by taking into account the participants' characteristics on the rest of the variables in this thesis (primarily on the seven psychometric measurements) as they emerged through their responses in the questionnaire study.

This study was run after the completion of the questionnaire one and the analysis of the quantitative data. As such, its aims are based on the results of the first study, with a primary focus on the integrated model.

More specifically, the integrated model presented me with an issue I believe required further investigation. As I said in the closing discussion in the previous chapter, the natural, ordinary state of religiosity appears to enhance both psychological well-being and mental health. But what makes up that "natural, ordinary state" of religiosity? The quantitative analysis points to internal aspects of religiosity, low levels of existential questioning, and frequent religious practices. But are these elements important to the believer or are they some sort of phenotypic expressions of other more personal or more specific components of their religion? And even if it is these elements that are important to the equation, what are the characteristic aspects of them that the believer tends to identify with, and cogitate upon?

Therefore, the specific aim of the interview study was to identify the main bottom-up elements that make up that natural and ordinal mental health enhancing state of religiosity.

PARTICIPANT SELECTION

Of the total sample that took part in the questionnaire study, 46% (74 of 161) showed interest in taking part in the interview. Because of time constrains, but mainly because of my interest in receiving accounts that would be as variable as possible, I did not attempt, or for that matter intended to interview all 74 participants. Instead a form of *heterogeneity theoretical sampling* was employed. Theoretical sampling has been defined as a form of systematic, purposive, non-probabilistic collection of sample-units that is based on the idea of making comparisons that increase the possibility of establishing maximum variation in the studied concepts and allow for a more holistic picture of the dimensionality of these concepts to emerge (Strauss & Corbin, 1998, ch.13).

The actual sampling procedure I devised and its rationale are as follows: First, it was decided that it was best not to include in the interview questions that addressed schizotypy-related issues. This was a tactical decision, as I feared that the implication of mental illness could potentially create a negative atmosphere during the interview, especially at a time when the September 11 terrorist attack on the US was still fresh in people's minds and the war on Iraq was imminent. In fact, a few people had already expressed their concerns in the previous study that appeared to be related to the content of the schizotypy questionnaire, through comments (written on the margins of the questionnaire) like:

If you believe that you are without sin then you don't need religion.
[24-year-old male Presbyterian]

My faith can appear to make me at odds with current scientific discoveries however to me all these findings help to make me appreciate the wonders of God's creation. [57-year-old woman Roman Catholic]

This study is biased before it starts. It doesn't really consider the positive aspects of Christianity (which is completely different to religion) as the possibility that it might be real. [22-year-old female Presbyterian]

Because of all the above, schizotypy scores were used in the interview study as a grouping variable as follows:

The responses of all 74 participants who showed interest in being interviewed were categorised on their total score on the schizotypy scale. The initial grouping was according to the following percentile cutoffs: less than or equal to the 10th percentile, between the 40th and the 60th percentile (roughly the semi-interquartile range), more than or equal to the 90th percentile; anything else was given a score of zero and was discarded.

The decision to generate the above percentile cutoff points was a result of an attempt to increase the between-groups heterogeneity and increase the within-groups homogeneity of responses in a controlled manner. The underlying assumption here was that the artificially increased between-groups variability would manifest itself in the interview responses and thus produce a more diverse and pluralistic picture of the studied concepts. More specifically, it was expected that if the structure of the integrated model was valid, then at least aspects of the predicted pattern in religiosity and the mediating psychological variables would be more distinct and obvious in the two extreme schizotypal groups, while the "average" group would possess somewhat undifferentiated or unclear characteristics (i.e. the group would be indiscriminately heterogeneous).

According to the above grouping, 6.8% of the participants (5 of 74 cases) fell into the less than or equal to the 10th percentile group, 32.4% (24 of 74) between the 40th and 60th percentile (median group), 9.5% (7 of 74) into the more than or equal to the 90th percentile group, while 51.3% of the cases (38 of 74) belonged to the group that included the rest of the percentiles and were subsequently ignored. Therefore, a total of

36 participants were potential interview candidates. Three were instantly excluded from the study as they had not provided any contact details, while four more had given wrong or invalid contact details. Of the ones left, 27.6% (8 of 29) agreed to be interviewed, of which two belonged to the less than or equal to the 10th percentile group, five to the median group, and one to the more than or equal to the 90th percentile group (Table 7.1).

Table 7.1. Sociodemographic characteristics of the interview participants and the schizotypy group membership.

Interview	Gender	Age	Denomination	Student status	Employment status	Marital status	schizotypy group
1	Female	23	Baptist	Student	Part-time	Single	40th - 60th
2	Female	69	Quaker	Non-student	Retired	Single	≥ 90th
3	Female	66	Presbyterian	Non-student	Home-maker	Married	≤ 10th
4	Male	72	Episcopalian	Non-student	Retired	Married	40th - 60th
5	Female	69	Presbyterian	Non-student	Home-maker	Widowed	40th - 60th
6	Male	50	Episcopalian	Non-student	Full-time	Married	40th - 60th
7	Female	76	Methodist	Non-student	Home-maker	Married	40th - 60th
8	Female	58	Christian Fellowship	Non-student	Home-maker	Married	≤ 10th

However, it soon became clear that the three-group split was not working in practical terms, since the two extreme groups had a very low membership. Therefore, a decision was taken to dichotomize the sample on the median split. By doing so, interviewees 1 and 7 fell in the lower-schizotypy group, while interviewees 4, 5, and 6 grouped with the higher-schizotypy one. This move resulted in two groups of four participants each.

I do acknowledge that this partitioning may have made the distinctiveness of the two extreme groups less obvious, but not necessarily by much. In Table 7.2, I present the distances between the mean normalised schizotypy scores of the four participant subgroups (lower schizotypy, average-low, average-high, and higher schizotypy). Since the numbers in the table are normalised, they have a range from zero to one, with smaller

numbers indicating more similar scores. As it can be seen, the average-low group is more similar to the lower group (distance = .183) than to the average-high group (distance = .349). At the same time, the average-high group is more similar to the higher group (distance = .452) than to the lower-schizotypy one (distance = .532), although its highest similarity still lies with the average-low one.

Table 7.2. Distances between the mean normalised schizotypy scores of the four interview subgroups (percentiles in brackets).

Interviews:	3, 8	1, 7	4, 5, 6	2
	Lower group ($\leq 10^{th}$)	Avg-low group (40th to 50th)	Avg-high group (50th to 60th)	Higher group ($\geq 90^{th}$)
Lower group	0	.183	.532	.984
Avg-low group		0	.349	.802
Avg-high group			0	.452
Higher group				0

These results seem to suggest that at least the low end of the dichotomy (lower and average-low group) could be expected to be relatively homogenous (should the integrated model stand), while perhaps the other half of the dichotomy (average-high and higher group) may be more heterogenous in nature. At the same time, the distinctiveness of the two extreme groups may have not been as jeopardised as initially thought.

I am aware that all this is post hoc justification, and that ideally I should have avoided such partitioning. Because of all the above, this study should be seen as a small scale exploratory inquiry that attempts to provide additional evidence that can strengthen the validity of the identified quantitative relationships. My suggestion for future studies is that if one follows the sampling procedure used in this study, perhaps one should (a) exclude the average-scores group, and (b) use a less strict grouping of extreme cases, and instead of the extreme 10%, perhaps use the extreme 20% or even 25% of cases, thus allowing for larger group memberships to occur.

INTERVIEW RATIONALE & ITEM DEVELOPMENT

THE QUALITATIVE INTERVIEW

Besides our high scores on the *encephalisation* index, the next characteristic that makes us unique as human species is, as Daniel Dennet (1995) boldly advocates, *language*. Language has certain properties, three of which are of relevance to this study; language is *rulebound*, *referential*, and *constructive* (Whitney, 1998). At the micro-level these properties have been studied and addressed for aeons through psycholinguistic approaches.

However, only when these properties are projected to a macro-(sociocultural)-level, their true power, the realistic niche language occupies and at the same time transforms that shapes our social and personal world is revealed. After all, the social arena is governed by language. Indeed, since language appears to be a socioculturally constructed product, social psychology seems to be dependent on language as the latter forms one of the fundamental means of human interaction. As Jonathan Potter and Margaret Wetherell suggest, "texts are not part of some natural process like a chemical reaction or electrons moving around a circuit. They are complex cultural and psychological products, constructed in particular ways to make things happen" (1992, p. 3).

One of the main ways language, and consequently knowledge, is communicated is through conversations. In research settings, at least within the psychosocial sciences, these conversations have been primarily and dynamically generated through various forms of interview methods (Kvale, 1996). What purpose does an interview as a study tool serve to the researcher? If qualitative observations carry all those potential traps, some of which I mentioned earlier, then I would argue that the interview is a directly dialectic approach to deciphering the observed events (situations, conditions, behaviour etc.), clarifying and evaluating them, and perhaps identifying what hinges on them.

Through this process the researcher should initially try to make the interviewee visualise the events he or she takes part in, become conscious of them, and if this step is successful only then the researcher may proceed to seek the interviewee's opinion about those events. Since we wish to receive meaningful answers, we would need to lead that person to realise his or her ideas, perception, feelings, and behaviour before homing in on more specific issues.

During this *realisation process,* using direct questions or statements may not always be possible or appropriate. We may feel that the subject is of a sensitive nature, taboo, personal, or we may have evidence that the respondent would deny our claims. In those cases especially, indirect assumptions or leading questions may be useful or even unavoidable. I do acknowledge that what I say may be objected to. Indeed, often the researcher may not be able to know whether the interviewee is aware of his or her behaviour, or may make a wrong judgement due to perhaps insufficient observations; sometime the answer "I don't know" may reveal useful information nevertheless. Finally, by leading the respondent to *realisation*, he or she may be obliged to comply with our ideas and give us desirable, yet false (i.e. unrealistic) explanations.

Furthermore, interviews are a valuable tool in qualitative research as they allow for a controlled, at times manipulative, way of producing knowledge, by leading the subjects to construct interactively and progressively their own perception of their world. Through the qualitative interview the researcher enhances the subject's freedom of communicative expression, while at the same time indirectly "oppresses" the meandering of their thoughts by encouraging them to flow in a comprehensive way within the framework of the research interests.

Interviews were chosen as the qualitative research tool for this study, because their properties and potentials seemed most appropriate for the study's aims and the content of the investigation. Indeed, the participant's religious convictions were viewed as best

approached through one-to-one conversational interactions due to their personal, at times sensitive, and possibly subconsciously structured characteristics.

INTERVIEW-ITEM DEVELOPMENT

Interview-items were developed through a hierarchical approach. Through this approach, abstract concepts were initially formulated (e.g. intrinsic religiosity) and subsequently broken down into progressively more specific and empirically manageable components (e.g. direct relation with God) until a level of specificity was reached (e.g. prayer) at which exact questions could be formulated (e.g. "What do you mainly pray for?").

Questions were designed to be open-ended, involving no double-negatives or jargon terms. In addition, in order to facilitate a more natural flow of the interview, questions were further organised under five general modules, which were discussed in the following order: (a) the participants' sense of being Christians, (b) their upbringing and personal development in relation to religion, (c) the role of religious beliefs in their lives, (d) their religious practices, and (e) the possibility of religion not being part of the participants' lives.

The interviews were semi-structured in the sense that, although all participants were asked the same questions, (a) the actual wording was allowed to be adjusted according to the participants' specific characteristics (e.g. the word "Quaker" was used with a participant that belong to this faith group), and (b) the researcher would alter the order of the questions within limits, to allow for a more naturalistic form of interaction, whenever the situation prompted it.

PILOT STUDY

Initially a total of thirty-five questions was formulated. The initial interview protocol was piloted in two stages. In the first stage, the protocol was distributed to three members of the psychology department at the University of Edinburgh that either specialised in qualitative interview research or had a good experience with it. Their comments helped (a) reduce the number of questions to sixteen, by either combining questions or omitting less central ones that had their content covered by others; and (b) rearrange the order of the questions in a more naturally flowing manner.

In the second stage two interviews were conducted following the same procedure as in the main study (see next section below). These interviews were run with two participants that had not been selected for the main study because they did not belong to any of the three initial groups (low, average, high). These interviewees were encouraged to provide live comments on the interview protocol. The experience through this pilot led to the final version of the protocol, which consisted of an introductory and closing statement, a total of fifteen questions – three of which containing sub-questions – and a number of prompts on questions that appeared to possess a somewhat less obvious content (Appendix XII).

PROCEDURE

CONTACT

Prior to the interview each of the 33 initially selected participants (36 minus the three that had not provided any contact details) was contacted through means of letter or email. They were reminded of their willingness to take part in an interview study and were asked whether they were still interested in doing so. A short description of the

interview procedure was also included in the contact (Appendix XI).

As mentioned earlier, of the 33 conductees, two email addresses were returned as unknown, and two letters were also returned as "recipient unknown". No further attempts were made to contact the people that did not respond to the interview invitation ($N = 21$), as it would have been inappropriate.

With the 8 participants that responded to the invitation, arrangements were made for the interviews to take place. What became obvious from their responses was that most of them were not able to come to Edinburgh for the interview. Only three people lived in Edinburgh while the rest were located all over Scotland. Therefore, a decision was taken to conduct all the interviews through the telephone.

TELEPHONE INTERVIEWS

Although the choice of telephone interviews came out of necessity rather than being part of the initial design, it appears to allow for a set of advantages that are of relevance to this study. The interviews were conducted at the highest participant convenience. Indeed, all but one decided to be interviewed while at home (the one exception chose his office settings); the problem with their geographic dispersion was instantly eliminated; no expenses were involved (e.g. transport costs) at least on the part of the participant; at a deeper level it can be argued that participants, being in a condition of higher anonymity and at the same time not being influenced by any visual stimuli (e.g. the appearance of the researcher) that may have negatively affected their expressions and behaviour, may have been keener on being more open and producing truthful accounts of personal matters (Oppenheim, 2001).

However, in the same line of thought, telephone interviews may produce a set of undesirable effects. The most obvious one is that answers tend to be somewhat short and

perhaps shorter than during face-to-face interviews – this situation was indeed observed with one of the participants in this study; naturally visual stimuli, such as body language, cannot be used to enhance the interaction between interviewee-researcher; by being in an uncontrolled environment, interviewees may be distracted and lose their train of thought; finally, that level of anonymity may also lead participants to act irresponsibly or in a more spontaneous manner, e.g. hang up if they feel unhappy with the way the interview is progressing.

INTERVIEW PROCEDURE

The interviews were conducted over a period of two weeks. Ten minutes before each interview participants were contacted and were briefly told about the five main focus areas of the interview, as they are described above. I am not aware if this procedure is common practice in telephone interviews, but in this study it was done primarily in order to allow the participants some time to gather their thoughts and thus provide more readily available answers. Moreover, they were advised to find a comfortable setting for themselves for when the actual interview would take place. Ten minutes later, they were called again and the actual interview commenced.

Each participant was interviewed individually, and each interview lasted between 25 and 45 minutes. Each participant was welcomed and thanked for taking part in the study. They were asked to adjust the meaning of any generic terms used in the interview (e.g. "Church" or "Minister") to fit their own specific understanding or circumstances, although the researcher also tended to adjust these terms as appropriate and when additional information was available (see interview protocol in Appendix XII). Participants were also explicitly allowed not to answer any questions they did not feel they wished to, although no one did so. In order to preserve anonymity and guarantee confidentiality, participants were advised not to disclose any identifying information during the interview process. When the interviews concluded, participants were once

again thanked and they were also reminded that they would receive feedback on the thesis's findings as requested. Also they were given the option of sending additional remarks, comments, or thoughts to the researcher regarding the issues touched by the interview items, through means of email or letter – however, no one did.

All interviews were tape-recorded with the explicit permission of the interviewees, and with the use of a tape-recorder (PhonApart™, Automatic 2-way telephone conversation recorder, model TL 1076) connected directly to the telephone line, allowing for a rather clear audio signal.

ANALYSIS

THEMATIC QUALITATIVE ANALYSIS

The interviews were transcribed in their entirety (using a SANYO™ Memo-scriber, TRC-8080) and subjected to a form of *thematic analysis*. This approach is seen as rather useful for analysing in-depth interview data (Banister et al., 2001, p. 57; Smith, 1995, pp. 9-26). The general aim of thematic analysis is to allow the researcher to learn about the participants' ideas, perception, and feelings of their psychosocial world and make sense out of them (Dittmar & Drury, 2000). Thematic analysis is usually a bottom-up method (although to an extent it can be at times theory-driven) of analysing written or spoken language at a macro-level, by encoding and interpreting qualitative information (that may initially appear unrelated) into theme-based patterns (Kellehear, 1993). This is accomplished through the identification of recurring and underlying themes (i.e. similar ideas, topics, and ways of talking) within and across the interview transcripts (Boyatzis, 1998). These themes are rarely a priori constructed by the researcher, as is the case with *content analysis*, but they emerge from the data through a diligent and purposive process of identification – this is the most commonly used form of thematic

analysis, also known as *inductive* thematic analysis. It has been acknowledged (e.g. Cinnirella & Loewenthal, 1999) that although the interaction between interviewer and interviewee may affect the quality and content of the data, the interviewee's responses will nevertheless carry distinctive elements of their ideas, beliefs and intentions.

In the current study, although the thematic analysis used was not a top-down, theory-driven approach, it was nevertheless mainly focussed on the identification of themes that appeared to be relevant to the findings of the questionnaire study, and in particular the integrated model. In other words, the specific questions that resulted in the development of this study (see interview study aims above), shaped and guided the search for patterns and meaning in the data.

TRANSCRIPTION CODING

Spoken text requires, and at the same time permits, a detailed, yet at times rather painstaking, transcription. A variety of transcription levels and coding notations exist, from extremely detailed, and at times unreadable, transcripts (e.g. Stenström, 1994) to more relaxed forms (e.g. Wetherell & Potter, 1992). Obviously, the level of transcription depends on either or both the questions asked (i.e. the focus of the investigation) and the theoretical background of the researcher. Since thematic analysis deals with the ideas people present us with, and not the detailed ways they articulate those ideas in a discursive or linguistic manner, the transcription of the interviews of this study only included speech errors and word segments, in order to keep the consistency of the flow of the speech. However, it ignored features to do with breathing, changes of speed, volume, or emphasis, since they were not analysed. Moreover, no punctuation was transcribed, with the exception of question marks. Although punctuation could have made the transcript more readable, it could have also hindered the theme-identification process, since it would have been to a great extent arbitrary. Unclear utterances were indicated in the transcripts with round brackets, while square brackets were used to indicate omitted or altered material. The latter was mainly done with identifying information that could potentially compromise the anonymity of the participant. Finally,

in the extracts presented in the next chapter, the researcher is represented with the letter "Q" (for "Question") and the participant with "A" (for "Answer"), while line numbers refer to the lines that the extract appeared in the interview transcripts.

ANALYSIS PROCEDURE

Interview transcripts were systematically read several times by the researcher separately and in conjunction with the tape recordings. Initially, *first-order* or *proto-themes* were identified, e.g. themes that occurred within each interview. Most of those proto-themes arose directly from the aims of this study, and were directly related to the results of the questionnaire study. However, new ones emerged from the interview experience and from reading the transcripts. In the next step, first-order themes across the interviews were clustered under *higher* or *second-order* or *true themes* based on their commonality of meaning. At this level, a theme was considered "stable" if it appeared, in one form or another, in the accounts of at least three out of the four members of each of the two groups of participants. Proto-themes that were only relevant to isolated participants were ignored. Finally, when grouping of second-order themes was plausible it was carried out. Those groups were then used to generate *superordinate themes*, which, when possible, were linked with existing literature. This was a cyclical process, and as the themes were developed and better understood, the researcher would go back to the interview transcripts and look for instances that could now be seen as relevant to the themes, or that could provide further information and support to the themes. During this process, the merging of the themes was also refined. When the process was over, representative interview instances that illustrated each theme were selected and they are presented in the following chapter.

It should be noted that this kind of analysis appears to be potentially influenced by the researcher's preconceptions, and thus it may be meaning-dependant or situation-dependant. Although, as Gill (1996) points out, the analyst before conducting a

qualitative analysis should not only suspend their prior beliefs in the-for-granted, but also by assuming nothing they should question everything, it should be apparent that more than one readings are often possible. That said, one should be aware that thematic analysis – and in that sense, perhaps any kind of analysis – does not deal with any sort of facts and thus it is subject to multiple, and at times diverse, yet plausible, interpretations.

Two of the main safeguards of the validity of such research are the internal coherence of the arguments made, and the sufficiency of the presentation of evidence (Smith, 1996). The former refers to the degree to which the arguments presented are justified and internally consistent with the data. The latter suggests that a sufficient amount of evidence (in the current study this refers to the interview extracts) should be presented to allow the reader to form an educated opinion about their interpretation in the study.

CHAPTER SYNOPSIS

Both qualitative and quantitative methodologies were employed in this thesis as they are seen as complementary approaches to the scientific production of knowledge. The focus of the qualitative study of this thesis was to identify conceptual themes, through participants' religious discourse, that directly related to the thesis aim. The study utilised semi-structured, open-ended, telephone interviews with a sample of eight participants who had taken part in the first study, selected through a process of theoretical sampling that allowed for a greater heterogeneity in the responses. Fifteen main interview-items were developed that addressed issues of religious life, upbringing, meaning, and practices. Interview transcripts were analysed through thematic analysis.

CHAPTER VIII

THE INTERVIEW STUDY:
RESULTS & DISCUSSION

"I'm fighting so I can die a martyr and go to heaven to meet God"
(Osama bin Laden, quoted in Boston Globe; Nye, 2001, September 16)

"God told me to strike at al Qaeda and I struck them,
and then he instructed me to strike at Saddam, which I did"
(George W. Bush, quoted in The Washington Post; Kamen, 2003, June 27)

CHAPTER AIMS & ORGANISATION

The aims of this chapter are to present the results of the qualitative analysis of the interview study and discuss them in connection to the findings of the questionnaire study and the overall thesis aims. The reader is reminded that interviewees 1, 3, 7, and 8 fall in the lower-schizotypy group (see also table 7.1 for descriptive information about the interviewees in both groups).

MAJOR IDENTIFIED THEMES

From the interview transcriptions, several interrelated, superordinate themes were identified that appear to be central to the participants' religious beliefs, behaviour, and practices. The most pervasive of these themes concerned (a) the nature of faith, (b) the centrality of religion, (c) religious choice, and (d) religious doubt. These four themes are elaborated into the categories presented below.

THE NATURE OF FAITH

In both groups, religiosity was seen as a personal matter. At the same time, all interviewees referred to the presence of a higher power. However, the nature of these two categories was experienced and expressed in different ways in the two groups. In the lower-schizotypy group, religiosity was expressed as an explicit and direct personal relationship with God. This relationship appears to be the essence of this group's faith. This notion was communicated through statements like:

[1: 3][11]
[being a Christian] means having a personal relationship with God

[3: 3]
it means worshipping God

[8: 3]
having a living relationship with Jesus Christ

At the same time, it seems that for this relationship to be understood, practised, and

---

[11]

Extract headings indicate the interview number and the line(s) number, e.g. [1: 3] refers to interview 1, line 3. Utterances that appear inside the extracts in square brackets indicate altered or omitted material, or additional information; utterances in round brackets were not clearly heard.

communicated, God tended to be seen as having attributed human characteristics, especially emotions:

> [1: 154-156]
> the fact that He loves me so much that He gave Jesus to die for me is really it's a huge thing for me and I know that He loves me that He's just mad about me in a way that nobody else might be

> [7: 17]
> God is loving me and forgiving me for the sins and errors I make in my life

Furthermore, this humanlike God was at times assigned a specific role in that relationship, i.e. that of the father:

> [1: 45]
> [God] wanted me to be his daughter

> [7: 165-166]
> God is father and because I never knew my father my father was killed when I was nine months old so I never really knew him you know and I just feel this is this is my father looking after me

Therefore the religiosity of the lower-schizotypy group tended to manifest itself through a relationship that had an outwards and upwards direction towards a personified God.

The above characteristics were not present in the accounts of the higher-schizotypy group. Although the descriptions here were more heterogenous than in the first group (as it was expected) they still appear to possess some broad underlying similarities. In this group religion was still referred to as a personal matter, but it was understood in rather abstract terms like:

[2: 275-276]
[Religion] is something in all of us that is that is is precious

[4: 3-4]
[By being a Christian] I am much clearer in my moral judgements by virtue of going to church hearing sermons reading the Bible

[6: 321-322]
[Religion is] a direct sort of instruction but there are there are there is a framework and there are guidelines to be for which within which decisions are made

In fact, three of the interviewees (except interviewee 4), tended to talk about their faith in terms that seem rather close to the idea of spirituality as discussed in chapter II. Thus, faith was seen as something that "gives [...] peace of mind" [5: 3], or as interviewee 6 put "something about seeing my life caught up in something greater than and beyond myself" [6: 10-11]. Moreover, interviewees 2 and 5 were rather reluctant to discuss their faith, because they wanted to "keep it pure and unadulterated" [2:197].

In addition, nowhere in all four accounts was God defined as a person, but rather as a sort of internal or supernatural power:

[2: 49-50]
[God] is a higher presence that I can turn to and that if I through prayer and meditation that I do find I get a lot of spiritual comfort

[4: 16, 19]
[God] is a fall back position [...] He is a focal point

[6: 24-25]
I experience God as within I mean part of who I am [...] within me I experience God

Therefore, in the higher-schizotypy group, faith was stated to be of a rather spiritual nature, which tended to have an inwards directed character, not clearly defined, and not

explicitly bound by specific religious practices or doctrines.

I would like to remind the reader that the formation of the two groups was post-hoc, and thus the religious characteristics of their members may not entirely represent those of the two ends of schizotypy, several interesting points can still be raised regarding the above differences.

These differences do not appear to be related to religious practices, as participants in both groups, based on their responses to both the questionnaire study and the interview, tended to pray at least once a week and go to church at least once a week (this last practice was not applicable to interviewee 2 who was a Quaker).

I suggest that these differences reflect to an extent the degree of insecurity in the attachment styles, as participants in the higher-schizotypy group tended to possess relatively higher levels of both anxious (mean = 85.50, SD = 11.85) and avoidant (mean = 55.75, SD = 19.82) attachments than the lower-schizotypy group (anxious attachment: mean = 65.25, SD = 30.51; avoidant attachment: mean = 41, SD = 13.39).

Let us remind ourselves that the results of the questionnaire study appear to support the *correspondence hypothesis* according to which, the more secure one's attachment is, the more likely one is to possess a mature form of religiosity (for more, see the relevant discussion in chapter IV). However, this does not explain why the nature of religiosity in the lower-schizotypy group tended to be outwards and upwards and in the higher group inwards? For a possible explanation of this difference, we may need to look a bit deeper into Kirkpatrick & Shaver's (1990) theory.

A relatively securely attached individual will tend to project their attachment style and form a relatively secure, healthy, and stable bond with God (at least according to the correspondence hypothesis). In doing so, such an individual will also tend to see God

as an all-loving, all-caring, parent-like figure. To an extent that is what the lower-schizotypy group appeared to be doing. They were perhaps projecting an adaptive need, and structuring their religiosity around a figure of ultimate security, as they "knew" that this had paid off in their daily life. For them it appears to be the safest bet, and apparently they seem to capitalise on that through their faith.

In the higher-schizotypy group the attachment figure appeared to be absent, as God was seen more in terms of an abstract power, which tended to be less central to the nature of their religiosity. According to the correspondence hypothesis, the characteristics of a caregiver will be projected onto God. Thus relatively insecurely attached individuals would tend to see God as a punitive, fear-inducing, or at least unreliable attachment figure. However, nothing in the accounts of the higher-schizotypy group painted such a picture of God. What came out clearly though was that their religiosity was not based on their relationship with God, and that God was not seen as an attachment figure.

Why would an adult Christian willingly project onto God such undesirable, non-beneficial attributes? What are the advantages of constructing God as an unreliable, yet all-powerful, figure, and basing the whole nature of one's religious beliefs on that figure? According to the correspondence hypothesis, that would be the obvious projection. I do acknowledge that there appear to be adherents that tend to attribute to God such characteristics, although, recent studies have linked this concept of God to child sexual abuse (Finkelhor et al., 1989; Imbens & Jonker, 1992; Webb & Whitmer, 2003). I propose that a more adaptive response would be to dissociate God from anything that resembles an attachment figure. God now becomes an abstract force, a part of who one is (as interviewees 2 and 6 noted), still all-powerful, yet without the attribution of any humanlike characteristics. Perhaps this is just what the participants in the higher-schizotypy group were communicating.

Should this be, at least in part, the case, it adds an interesting twist to Kirkpatrick &

Shaver's theory, which is well-worth further consideration. By taking into account what I have just said, and the relevant results from the questionnaire study, it could be argued that God may be seen as the ultimate attachment figure, so long as it is to the adaptive advantage of the believer to do so. This hypothesis is not only interesting on its own right, but also because of its direct derivatives, such as: What is the nature of the internal or external forces that may lead a believer to form, in a persistent manner, an insecure attachment figure of God, counter to any adaptive values or simply psychological well-being benefits? Or for that matter, assuming for the moment that Kirkpatrick & Shaver's theory stands, what factors can result in a disassociation of God from being seen as an insecure attachment figure?

Another interesting difference between the two groups in respect to the nature of their faith is that the higher-schizotypy group appeared to present their religious faith within a somewhat spiritual context (and in fact interviewees 2 and 6 explicitly used the words "spirituality" or "spiritual" when referring to their beliefs). Let us remind ourselves what I briefly discussed in chapter II regarding the notion of spirituality. Spirituality tends to be seen, at least among psychologists and psychiatrists, as a broader and more abstract concept than religiosity, in that spirituality refers to the "degree of involvement or state of awareness or devotion to a higher being or life philosophy" (Walker, 1991, p. 208). It is being perceived as "the ability to see the sacred in the ordinary" (Elkins, 1999, p.45), and it involves a wide range of beliefs in metaphysical or supernatural phenomena (Fontana, 2003). As such, although to a large extent it conceptually overlaps with religiosity, it can nevertheless be present in religious as well as nonreligious individuals (Emmons, 2003).

The accounts of the higher-schizotypy group, but not those in the lower schizotypy, appeared to be rather spiritual in nature. Can there be a link between spirituality and schizotypy? I cannot say. Since spirituality was not part of this thesis, besides these four accounts I do not have any other data that directly assessed any aspects of the concept.

Therefore, although only participants in the higher-schizotypy group referred to spirituality, I have no evidence to suggest that spirituality is a characteristic exclusive to that group. If, as interviewee 2 suggested, spiritual beliefs are a personal matter better left unspoken, it is possible that other "spiritual" participants, who could well have been placed in the lower-schizotypy group (or for that matter anywhere in the schizotypy continuum) had no interest in discussing their beliefs and thus taking part in the interview study.

Since the issue of spirituality emerged in this study, it is worth making a couple of points here. First, in a study that formed part of my Masters dissertation (2000) I interviewed a number of psychotherapists (counsellors, psychiatrists, and clinical psychologists) in order to form an impression of their views on the role religion can play in their practices, and to explore the impact those views can have on issues of treatment and training. Of relevance to this discussion is the picture that emerged, which suggested that respondents tended to be biased towards a generally positive idea of spirituality and a negative or at best neutral image of religiosity (this bias was also later observed by Seybold & Hill, 2001). It appears that at least the psychotherapists I interviewed tended to see spirituality as a fundamental, universal aspect of the human mind, associated it with something adaptive, and thus as more likely to have a positive effect on the mental health of the individual. However, if for a moment we took the results of the current study at face value, and as indicative of the spirituality-schizotypy relationship, this may well not be the case.

Second, the research literature does not appear to agree on whether spiritual beliefs are psychologically healthier than religious ones. Although it has been suggested that spirituality may promote good mental health (e.g. Daaleman, Cobb, & Frey, 2001; Elkins, 1999), studies have also shown that certain types of highly spiritual people (for example, adherents of new religious movements) are more likely than religious ones to be psychotic (Bullough, 1993; Greenberg et al., 1992), while still others failed to find

any association between spirituality, but not religiosity, and psychological well-being (Crawford, 2003). Finally, let us remind ourselves that the DSM-IV gives equal weight to both religious and spiritual problems (American Psychiatric Association, 1994).

It would be interesting to investigate whether a favouritism toward spirituality is normatively present in the mental health system, and if so, what causes it. Moreover, the role spirituality plays in mental health within and outside the realms of religion is an issue that certainly deserves further research attention, not least because it may well be another link in the religiosity-mental health relationship.

THE CENTRALITY OF RELIGION

In both groups, participants acknowledged that religion was providing them with guidance and support, at least in respect to certain areas of their lives. In the lower-schizotypy group religion was highly embedded in life, giving purpose and meaning to every of its aspects:

> [1: 4, 171-172]
> it is more of a continuous thing that affects every area of my life
>
> without God my life would feel very empty
>
> [3: 59, 88, 120]
> I wouldn't have a purpose unless I had a religious belief
>
> I always make decisions in the light of my beliefs
>
> it really enters into all the things I do
>
> [7: 25, 273-274, 430-431]
> it's the basis of my whole life
>
> it's shaped my life because it's given it a purpose it's shaped me because
> I have had to live as near to the way Christ lived as possible

I can't imagine what life would be like without having religion in it I think it would be very drab very frightening

[8: 9-10, 185-186]
it's the whole the whole basis for my life and everything I do that belief motivates all decisions and things I do with my life

Q: how do you think your life would be without religion?
A: I think that that would be absolutely awful

In contrast, in the accounts of the higher-schizotypy group the centrality of religiosity tended to be played down, or at times defused within other broadly speaking nonreligious elements:

[2: 259-261]
I feel being a Quaker I am quite happy to say that I am a dedicated pacifist and I would stick to that that that for me that is important to to be to feel that you know I am focussing in on that aspect and if I didn't' have that then I think I think then what the hell is it all about anyway?

[4: 154-155]
I am claiming too much if I say that religion shaped my life if it did shape my life and probably it did I was not aware of it

[5: 235-236]
on the whole I wouldn't say there is a large part of [my social life that] is connected with religion there is a part of it yes but I wouldn't say there was a large part that had to do with religion

[6: 264-266 discussing his involvement with community affairs]
you don't have to be religious to do it but for me that that sort of flows from a belief that society is important and community is important

[6: 366-367]
I suppose it is conceivable that I could find myself living a similar style of life [...] in some other way without a a definable belief in God

This difference in the centrality of religion between the two groups, could be to an extent explained by the difference in the levels of intrinsic religious orientation. On average the

lower-schizotypy group was more intrinsically orientated than the higher-schizotypy one – a finding that was also expected given the structure of the unified model presented in the previous chapter – lower schizotypy: mean = 37.5, *SD* = 1.92; higher schizotypy: mean = 30.50, *SD* = 4.66.

The accounts of the lower-schizotypy group clearly map on Allport's ideas about mature orientation (see chapter III). The more religiously mature a person is, the more their life and behaviour are guided by their religion, and the more their religious sentiment is expressed as a direct approach to God. In fact, this last characteristic of intrinsic religiosity could be also used as a partial explanation of why the lower-schizotypy group tended to personify God and place Him at the centre of their faith (the previous theme). It is conceivable that this was so, in part because the nature of their religious orientation dictated it.

Did the higher-schizotypy group though have a more immature form of religiosity? Given the direction of the findings in the questionnaire study and the way the interview sample was selected, this should not be expected to be the case. In fact, the higher-schizotypy group was on average lower on every religious orientation (with the exception of quest). Therefore, the accounts in this group could not be expressing characteristics of immature religiosity. So what were they expressing?

I would suggest that at least in respect to the above two themes, both groups were in part expressing elements of their intrinsic religious orientation; however, this orientation may not only have been quantitatively different between the two groups, but also qualitatively. Naturally, one may comment, as this was evident in their accounts. I am, however, referring to a specific quality, that of "religious significance" as defined by Pargament (1997) and discussed in chapter IV. To remind the reader, Kenneth Pargament theorised that any orientation could be classified as being either the ends or the means of someone's approach to life (see Table 4.1). More specifically, he suggested

that an intrinsic means orientation is highly embedded in one's life, acting as a guide for living, while the intrinsic ends has more of a spiritual nature, which is at times expressed through acts of compassion or unselfishness.

I am tempted to suggest that this was the main, or perhaps the most obvious, religious quality that differentiated the accounts of the two groups, in respect to both the nature and the centrality of their religiosity. The lower-schizotypy group clearly exhibited elements of intrinsic means orientation, while in the higher-schizotypy one, the spiritual character of religiosity, as well as the nature of the acts and thoughts of its members (e.g. being a pacifist, a full-time volunteer, or being involved in community affairs) appear to indicate an intrinsic ends orientation.

All the above explanations still leave a question largely unanswered: If both groups appear to be expressing, so far at least, a form of mainly intrinsic orientation, why was the centrality of religiosity so different between them? According to Allport's theory, this should not have been the case. The following theme may help address this issue.

RELIGIOUS CHOICE

The next highly pervasive theme across accounts was that of religious choice. In the lower-schizotypy group, being or becoming religious was seen as either a rational choice or a result of a sudden conversion or both:

> [1: 44-46]
> then just one night I really realized that [God] definitely was there and that he wanted me to be his daughter so that's when I became a Christian

> [3: 43]
> I was never forced I was left to make up my own mind the whole thing was very rational

[7: 113-116]
I just happened to stray into a Baptists' church and I thought I've never been in a Baptists' church you know and I went in and they were having a baptism and that was where and the stories suddenly came alive

[7: 238-239]
Q: how much of that [interviewee had just described some aspects of her religious development] actually would you say was choice?
A: oh well I think it was choice

[8: 76-77]
I was very very sore and downhearted and that was it was a Sunday and actually I was by myself and I just asked God to come into my life and to change my life and he did

In the higher-schizotypy group, religion tended to be seen as a natural part of life, and although religious beliefs did tend to develop, at times through questioning (see next theme), their development was not directly attributed to rational choice – except for interviewee 6 who was the only one in this group who did put it down to choice.

[2: 88-90]
I had a very traditional sort of Church of England upbringing so [religion] was a part of my life going to Sunday School going to church you know maybe at least once on a Sunday it was all very normal and ordinary

[4: 96-98]
[it was] part of my normal life all my school fellows were getting the same treatment [...] at Sunday School I knew the kids there we were all being told the same thing at the same time so it all seemed very very normal

[5: 160-161]
A: no I wouldn't say I chose [to develop my religious beliefs] I mean I didn't sort of say to myself you know this I must do something more about or what have you it's just as I said it has evolved just gradually developed

[6: 133-136]
my infant and primary school were very it (was) a church school this was back in the 50's I think there was enough scripture and and sort of

religious worship and stories and prayers for that to make an impact in my inner world because when I did come to faith and to religion as a a young adult you know those things lived on for me they were still there

I will not attempt to dwell in the realm of the psychology of religious conversion (choosing to become religious has to an extent also been viewed as a form of "gradual" conversion, e.g. Richardson, 1985), because not only is it a large area, but also because it is not part of this thesis. Perhaps of some relevance to the current study is empirical evidence that tends to demonstrate that converts (especially those who had experienced a sudden conversion) tend to report (at least initially) higher levels of subjective well-being than people who have always been religious (for an overview see Argyle, 2000, pp. 19-25; Fontana, 2003, pp. 131-135; Loewenthal, 2000, pp. 45-56; Pargament, 1997, pp. 247-260).

Moreover, the above references suggest that for the converted individuals religion tends to occupy a central place in their life, providing it with meaning and purpose. All this evidence can be used as additional explanation both of why conversion was exclusively observed in the lower-schizotypy group (i.e. apparently the more "psychologically healthy" one), and of why in that group religion was highly embedded in life. At the same time the centrality of religiosity was played down in the higher-schizotypy group, perhaps because religion was always part of their normal life; no significant event was described in these accounts that could have brought religion in the foreground, and assigned it a special and central meaning in life; they did not choose to be or become Christians (except interviewee 6), but rather accepted religion as one of those things in life that are "naturally" present.

RELIGIOUS DOUBT

Participants in both groups (except interviewee 3) acknowledged that their religious beliefs had been changing through their life, and this development was at times linked

to religious knowledge gained over the years. In the lower-schizotypy group, however, religious beliefs and religion tended to be accepted without questioning:

> [1: 180]
> [being a Christian] is not about answering questions it is more to do with the relationship with God

> [3: 46]
> I absolutely [believe] that [is] the way that life should be organised

> [7: 434, 439]
> Q: Is there anything that could make you question your religious beliefs?
> A: no I think I'm very fortunate

> [8: 92-93]
> I think that as time goes on you realise that you don't have the answer to everything

In the higher-schizotypy group, however, doubt and questioning was at times strongly communicated:

> [4: 290-291]
> Q: is there anything at all that could make you question your religious beliefs?
> A: [...] a somewhat fatalistic principle thing I dread is my wife's death

> [5: 141-142]
> as I got older I began to question more and be more interested really to sort of instead of just dealing with it

> [6: 198-200]
> questions began to loom larger and larger really so that they the shape of my believing that the sort if you like both the doctrinal content and the way I regarded a whole range of other things began to open up and loosen up

All the above accounts appear to be related to the degree one is quest orientated towards religion. Indeed, as it was predicted from the integrated model, the higher-schizotypy

group had on averaged higher levels of quest orientation than the lower-schizotypy one (lower schizotypy: mean = 45.50, SD = 23.10; higher schizotypy: mean = 63.50, SD = 23.62).

In the lower-schizotypy group, questioning religion did not appear to be part of their faith. Being relatively highly intrinsically orientated, it was expected – given the results of the previous study – that they would be relatively low on quest, as the two orientations appear to have an inverse relationship. Additionally, the new evidence that emerged in the current study can be used to enrich the significance of the above findings. These individuals either chose to be religious or had a religious revelation that converted them or both; for them religion was everything in life, and without religion their life would be, as interviewee 7 put it, "very frightening"; moreover they tended to have a personal relationship with a secure figure of an all-loving, all-caring God. Given these accounts, events, or life choices, it is very likely these participants were less inclined, if not unwilling to question their faith. As religion seemed to be a safe haven, they more or less chose to be in, it would have not been to their benefit to question it.

In the higher-schizotypy group, however, questioning appeared to occupy a significant place in their faith (perhaps not so for interviewee 4). According to Batson et al. (1993), the quest orientation develops as a direct response to "existential questions raised by the contradictions and tragedies of life" (p.169). This idea was to an extent communicated in the accounts of the higher-schizotypy group. Two participants (interviewees 4 and 6) referred to tragedies and contradictions in their lives, and directly linked them to religious questioning. For interviewee 4, such a tragedy would be the death of his wife. Interviewee 6 discussed the following contradiction and explicitly used it to justify why he was questioning:

[6: 204-206]
the answers that I thought I had got in my early twenties didn't actually fit

they didn't actually make sense of people's lives seemed to put God in a box and didn't actually help them so you begin to look outside the box

Interviewee 2 talked about war and specifically the WWII bombings and the war on Iraq, but she did not directly relate these to her religious questions. Finally, tragedies and contradictions were not present in the account of interviewee 5. Instead, she referred to certain events in the Bible (e.g. the virgin birth), whose meaning she had started questioning in her recent life, as she said, "out of interest".

Of the themes identified in this study, the one that refers to religious choice can be used to inform further these accounts. In the higher-schizotypy group, religion was always part of life, and being religious tended not to be seen as a choice. This being the case, it is conceivable that these participants may have reached a stage in their life or their religious development where they started questioning the de facto presence of religion and its meaning to them. As interviewee 5 said, she had accepted the Bible "without really thinking about it" [5: 183]; for interviewee 2, although religion was always there, she "never felt it meant anything" to her until she started in her late adult life questioning its personal significance, or as she put it "flirting with it all" [2: 93]; finally, interviewee 6 first begun questioning in his teens as a reaction to the established religious norms he was brought up.

According to James (and for that matter to both Allport and Batson), religion is a personal affair; it is "the feelings, acts, and experiences of individual men in their solitude" (James, 1902/2002, p.29) and it relates to the understanding of oneself in relation to the divine. The lower-schizotypy group had managed to construct this personal relation through means of sudden or gradual conversion. In their need to create a personal meaning to their religion, the adherents of the other group had turned to questioning.

It seems that, one way or another, religion may have to have a personal meaning to the believer. Simply adherence to or conformity with institutional or sociocultural religious norms, codes, and doctrines, may never be sufficient by itself to convey to the believer the "true" meaning of faith, to deliver him or her to the divine. An individual who "wants" to (continue to) believe, may be driven by a somewhat innate tendency to find that personal meaning in his or her faith, without necessarily abolishing its sociocultural forms, either through reason and questioning or through subconscious processes that can result in instant conversion.

CHAPTER SYNOPSIS

The aim of the interview study was to identify the main bottom-up themes that are of relevance to the elements that make up the religiosity profile – as identified in the questionnaire study – which appears to enhance both aspects of mental health (at least in relation to schizotypy) and a number of fundamental components of psychological well-being. The interview analysis revealed four major interrelated, superordinate themes, which appeared to possess clear and distinct characteristics between the two interview groups. These themes were discussed under the following groupings: (a) the nature of religiosity, (b) the centrality of religiosity, (c) religious choice, and (d) religious doubt.

The identified themes appear to be in part qualitative expressions of aspects of intrinsic and quest orientations. The characteristics of those two orientations that seem to be related to low levels of at least phenotypic manifestations of schizotypy involve an apparent absence of existential or religious questioning and a construction of religion as the foundation of one's whole approach to life.

Moreover, central to the way participants constructed their faith appears to be the

distinction between a theistic (in the lower-schizotypy group) and a more abstract, rather spiritual, form of religiosity (in the higher-schizotypy group). Specifically, a personal relationship with a personified, all-loving God, seems to be an important "faith factor" of lower schizotypal Christian individuals. The above distinction could be to an extent a result of the attachment styles of the participants, although I would not dismiss the possibility of it being artificial, since as it emerged from this study, spiritual individuals may be less willing to volunteer to discuss their faith.

Finally, an important role appears to play the degree to which religiosity is perceived as a result of choice or sudden conversion (lower schizotypy), or as a natural part of life (higher schizotypy). It seems that the former case allows for the development of a religiosity that has a personal significance to the believer, while for this to be achieved in the latter case, an element of doubt needs to enter the equation.

One should be reminded that the inferential power of these results is limited by the study's small sample size, and the post-hoc arrangement of the two interview groups, as discussed in the previous chapter. Although the identified four themes come out rather clearly in this study, future studies may be able to refine them further (or identify additional ones), by addressing these limitations.

Summing up, the results of this study suggest that the main bottom-up elements of a well-being-enhancing religiosity appear to involve: (a) a personal relationship with a loving God, (b) religious beliefs that act as guidance and provide meaning and purpose to life, (c) a conviction that religious beliefs are a result of choice or revelation, and (d) a relative absence of religious doubt.

CHAPTER IX

EPIMYTH

"A painting is never finished. It simply stops in interesting places."
(attributed to Paul Gardner)

CHAPTER AIMS & ORGANISATION

As the specific results of the two studies have already been discussed in the respective chapters, the aim of this chapter is to bring together and summarise the general findings of this thesis, by linking them back to the thesis aims and objectives. The ways this thesis addressed both its empirical and conceptual considerations are discussed and conclusions are drawn. Finally, general future directions for the field of the study of the psychology of religion are proposed.

ALL TRUTH TO LIGHT ALL CROSSES NAILED

THE THESIS AIMS

The overall aim of this thesis was to study the relationship between faith and psychological well-being. Concurrently, the circumstances under which institutional

religious faith can have a positive or negative association with mental health were explored. Specifically, an attempt was made to map the relationship between degrees and kinds of Christian religious orientation and schizotypal personality traits (psychosis-proneness), by taking into account the effects of general personality traits, as well as social and developmental psychological elements, primarily identity aspects and attachment styles.

There seems to be a genuine, mainly research-driven, interest in the role religion plays in these psychological areas, not least because of their current importance in understanding the roots of religiously-driven conflict. It needs to be said that psychological interest in religion is not exclusively concentrated in the focus areas of this thesis, and indeed topics like prosocial behaviour, social attitudes, coping, and social support are receiving their share of research activity. Although it would have been of interest to incorporate elements of those areas in this thesis, it was beyond its bounds.

EMPIRICAL CONSIDERATIONS

The four objectives of this thesis were addressed as summarised below:

TESTING OF EXISTING METHODOLOGIES

Relatively stable, relevant, as well as unequivocally important the role of religion may be in the variables of this thesis, it appears that empirical evidence has so far been rather inconclusive, and measurement or methodology dependant. In earlier chapters of this thesis I have discussed the reasons why this may be so. To summarise, it appears that psychological studies in religion seem to suffer from methodological flaws and have serious limitations, such as inappropriate sample types, little or no control over certain, potentially important, religious, psychological, or sociodemographic variables, simplistic implementation of statistical techniques, and almost total neglect of qualitative methodologies. These limitations could potentially have either or both artificially

reduced the strength of the association between religion and certain psychological variables, and inflated the levels of bias in the findings.

In this thesis, an attempt was made to apply more rigorous controls over the studied variables. By keeping the focus on the religiosity-schizotypy relationship, I partialled out the effects of the secondary psychological predictors, while at the same time identified potential moderating effects of a number of sociodemographic variables. Moreover, strenuous attempts were made to ensure that the results were not artefacts of the statistical tests used, but rather accurate enough representations of the actual underlying relationships. Triangulations of analyses were made by using different techniques, as well as a combination of quantitative and qualitative methodologies, to increase confidence in the results.

That said, sample size restrictions did not allow for all of the sociodemographic variables to enter the final integrated model. These variables could have potentially played a part in the shaping of the primary relationships. Student status, denominational adherence, and gender appear to have a moderating effect that demands further attention in future studies.

REPLICATION & EXTENSION OF PREVIOUS FINDINGS

Research so far has suggested that religion tends to play a low to moderate role in the activity in the chosen psychological areas of this thesis. Statistically speaking, the direct (standardised) effect of religiosity on schizotypy, as identified in the integrated model of the questionnaire study was .21, which taken at face value may indeed seem relatively low. After all, how serious can an overlap of 4.6% between the variability of two variables be? If we were to ask this question, we should step back a bit, and attempt to have a birds-eye view on the matter.

First, it is psychological concepts, or shall I say constructs, we are dealing with here. As

such, they are embedded in a mesh of other perhaps infinite concepts, interacting with them, fusing with them, and taking shape from them, in infinite ways and directions. Humans are not automata, following simple rules of behaviour and thought, as perhaps the behaviourists would have wanted us to be. Already the subdivisions of mainstream psychology count into the dozens and all of them have something to say about one another. Because of all this, through my experience, it is exceptional for any two psychological variables to overlap highly, unless perhaps they fall conceptually into the same psychological subdivision, or in other words are perceived to be related theoretically.

Second, the psychology of religion, to the dismay of myself and perhaps a handful of other psychologists, is nowhere close yet to being one of those mainstream psychological subdivision – although it appears to be slowly getting there. In fact, to my knowledge, no mainstream, general psychology text-book exists, that includes sections on religion or spirituality, or for that matter any major reference to either of them, in its presentation. In other words, religion does not appear to be considered by psychologists in general as a psychological area or concept.

However, religion – this not so important, a not-of-psychological nature or interest variable – seems to have, at least according to the findings of this thesis, a .21 (or even higher at times) direct effect on mainstream psychological concepts, such as in this case schizotypal personality traits. Moreover, this effect of religion on schizotypy is as strong as that of the other mainstream psychological variables included in this thesis.

This evidence leads to the conclusion that, at least at the empirical level, religion should indeed be treated as an important psychological variable, or set of them, well-worth considering in our psychological investigations, as it appears to have a potentially unique role in the shaping of major aspects of the psychosocial world of the individual.

<u>IDENTIFICATION OF AREAS THAT REQUIRE FURTHER ATTENTION</u>

Through the use of primarily advanced statistical techniques and secondarily qualitative methodologies several psychological variables were identified that deserve further research and theoretical attention.

Notably both studies in this thesis indicated that the triangle of attachment-religiosity-schizotypy was one of those areas. Attachment appears to have a rather strong relationship with schizotypy, at least among religious individuals, which so far has been relatively overlooked. A study of this relationship could potentially enhance understanding of the schizotypal personality development among religious people, and in general perhaps lead to better ways of diagnosing, preventing, and even treating schizotypal personality disorder.

Another area of interest identified but not addressed in this thesis is the possible link between spirituality and schizotypy. In the interview study, spirituality was found to have a positive relationship with schizotypy; despite the study limitations, this result may be seen as a fruitful area for further research. Specifically, an understanding of the role spirituality plays in mental health may allow us further to clarify the asaphia in the religiosity-mental health relationship.

The behaviour of extrinsic religiosity needs to be understood better, as it seems to be greatly influenced by the presence of other religiosity elements. The findings so far in the literature that tend to associate extrinsic with reduced mental health and negative social attitudes are based on rather simplistic analytical approaches that inherently fail to capture the complexity of the underlying interrelations. Future studies should attempt to model the behaviour of the extrinsic religiosity, and identify the factors that influence its strength and direction.

Another area discussed extensively in this thesis is the nature and behaviour of the quest

orientation. The evidence here shows consistently that the quest orientation is probably a passage to mature faith rather than maturity in itself. Furthermore, quest appears to have a distinct relationship with mental health. This was the only religious component in this thesis that consistently showed a positive association practically with all schizotypal traits, as well as a clear manifestation in the high schizotypy interview group.

Moreover, by taking into account the interview findings, it seems an individual may develop a quest orientation towards religion not only as a result of life tragedies and contradictions, but also through an attempt to assign to religion a unique character of personal significance. This idea has not been put forward before, either by the developers of quest or by any subsequent students of it. Should this finding hold, it has potentially important implications for the concept of the quest orientation, as it may need to be reconsidered and restructured radically.

Finally, the means-ends aspect of religious orientation needs a closer look. This thesis has found evidence that suggests that the means-ends element may function better as an independent dimension of religiosity. Should this be the case, it may influence dynamically either or both the intensity and the direction of the behaviour of the religious orientations. Consequently, a study of the means-ends role could lead to a better understanding of the performance of religiosity.

DETERMINATION OF A PLAUSIBLE STRUCTURAL MODEL

This thesis has attempted to construct an integrated model that can provide an adequate, coherent, and concise explanation of the relationships among the study variables, the first to combine these psychological and religious components into a single unified model.

I do acknowledge that alternative, theory-permissible models are possible, and that I do

not claim to have constructed the "ultimate" model. Moreover, the cross-sectional nature of the study does limit the strength of the nomothetic causal explanations of the identified model (for more on this see Stark, Roberts, & Corbett, 2002). I intend to conduct future studies employing longitudinal designs when testing causal models like this one. However, despite the limitations of the dataset, I do believe that the model I present, when viewed alongside the rest of the findings in this thesis, captures to a large extent the picture of the underlying relationships among the measured variables, and provides a clear enough structure for future research.

The findings of this thesis indicate that the relationship between religiosity and schizotypy is probably an asymmetrical, causal one, with religion functioning better as a predictor of schizotypy. In this arrangement, the model showed that a certain religious profile – which I termed that of an ordinary believer – tends to reduce at least the phenotypic manifestation of schizotypal traits. Both studies in this thesis strongly suggest that the key religiosity components in the above equation are maturity of faith (intrinsic orientation) and religious questioning (quest orientation).

Once again these results need to be interpreted with caution, since as discussed in chapter IV, the questionnaire-based nature of this study does not allow for an assessment of the presence of a genetic disposition (schizotaxia) to schizotypal traits in the sample. Therefore the observed phenotypic manifestation of schizotypy may have been to an extent an artefact of design, and not an accurate representation of the underlying traits. Besides employing longitudinal designs, future studies should attempt to test my model on individuals diagnosed with schizotypal personality disorder.

Returning to the findings of this thesis and the identified religious profile seems to enhance the overall psychological well-being of the individual, at least in respect to the rest of the psychological variables (attachment, general personality, and identity) studied in this thesis. However, the interplay between certain aspects of those psychological

variables and religiosity appears to result in poorer mental health, as expressed through schizotypy. This finding can be interpreted as suggesting that one should not be looking in the transcendental realms to identify the origins of religious harm. It is the human interpretation of the divine, the filtering of the sacred and the otherworldly domain through, in this case, certain psychological factors, that allows, promotes, or causes that harm. In order to understand the role religion plays in the economy of human behaviour and thought, psychologists need to study, decipher, and map this filtering. By doing so, it may lead to religious problems becoming manageable and largely solvable.

THE THESIS AIMS REVISITED

Putting together the findings of this thesis, an amended model of Allport's (and as an extension James's and Batson's) theory of personal religion development that incorporates elements of psychological well-being and mental health can be proposed. This model is as follows (Fig. 9.1):

According to the above theories, the individual's religious development can consist of up to three main stages. The immature religion stage is the one characterised by dominant forms of extrinsic religious orientation (personal or social). This stage of religious development, according to the findings of this thesis, is the only one that appears to be capable of having both a positive (indirect) and a negative (direct) effect on mental health. The nature of the elements that influence the direction of this effect remains to be clarified.

The prevalence of intrinsic religious orientation characterises the mature religion stage ("the completest form of religion" according to James). Both this thesis and previous research discussed in chapter IV indicate that this stage appears to enhance aspects of both mental health and psychological well-being in general.

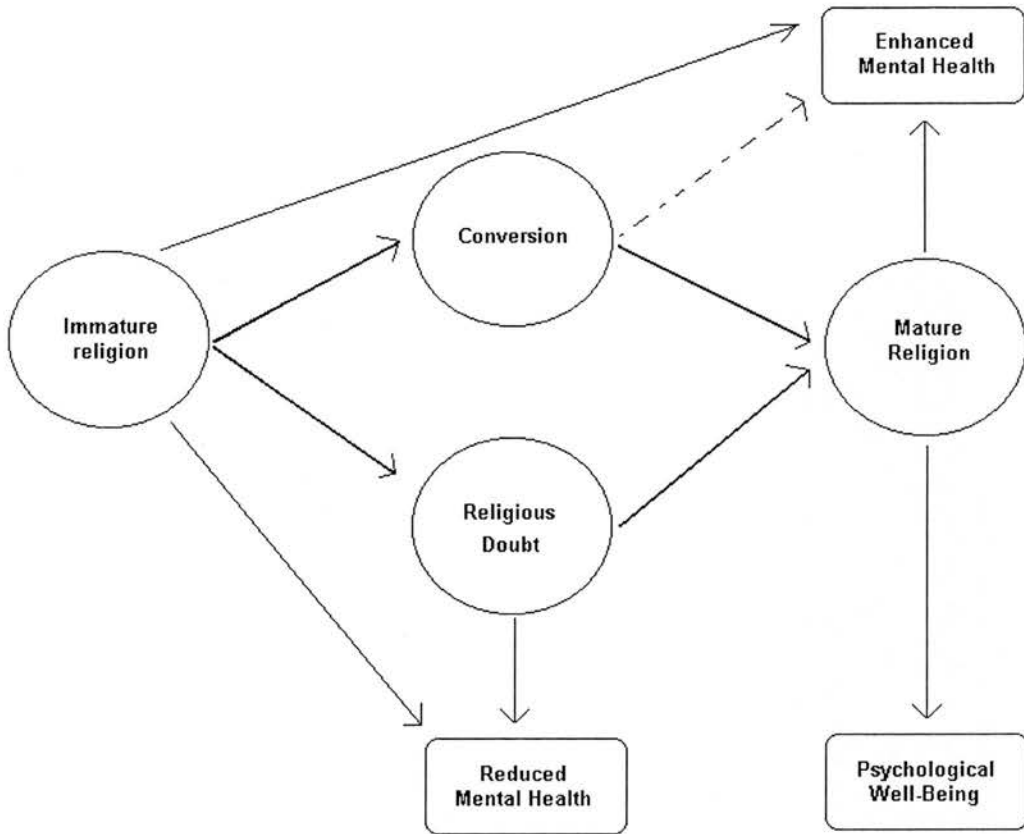The passage from the immature to the mature stage can occur either through gradual or

Figure 9.1. The proposed general model of personal religious development (dashed line indicates path not directly assessed in this thesis).

instant conversion (according to James) or through doubt (according to Allport). This thesis supports the idea that both these paths are possible. To an extent both authors identify these two paths as specific (intermediate) stages of religious development. Moreover, the results of this thesis suggest that the doubt stage is characterised by the presence of Batson's quest religious orientation, which is also recognised, at least by Batson and his followers, as a developmental stage of the religious sentiment.

It is unclear, however, whether the doubt and the conversion stages are mutually exclusive, and which (psychological) factors determine which one is more likely to occur or develop. Additionally, these two stages seem to have a diametrically opposite relationship with mental health. The conversion stage appears to be associated with an enhancement in mental health, while the doubt stage seems to be related to aspects that

can arguably lead to a reduction of mental health. Considering this, it is unclear whether both stages lead to the same kind of religious maturity.

It should be noted that, as both James and Allport indicate, a person's religious development may stop at either the immature or the mature stage, while according to Batson, this is also true for the quest stage (I know of no evidence that suggests that this is possible with the conversion stage). At the same time, all these stages appear to show a certain degree of overlap with each other, e.g. in the *indiscriminately proreligious* individuals identified by Allport & Ross (1967).

Therefore, it is possible, for example, for a person to have developed relatively high levels of intrinsic religious orientation, while still having religious doubts (as appears to be the case in this thesis with interviewees from the high schizotypy group). In situations like this, it is unclear which of the religious orientations present determines the direction and intensity of the relationship between religiosity and mental health or general psychological well-being. It is possible that it is the prominent religious orientation, or the one that has the strongest effect on mental health, or perhaps it is a combined result.

The empirical merit and the implications of this proposed model need to be assessed. This model is more general than the integrated one developed in this thesis. However, the two models are highly compatible. In fact, the model of this thesis can be used to clarify the issues raised above. At the same time, its use can lead to a further refinement of its structure. For example, how would the integrated model behave if only used on believers who had experienced instant conversion?

The proposed general model deserves further attention, because although it highlights the complex role religion plays in mental health and general psychological well-being, at the same time disseminates that role into parts with characteristics that are theoretically founded and empirically assessable.

CONCEPTUAL CONSIDERATIONS

At the conceptual level the thesis addressed the following three considerations: (a) Why should psychology be interested in religion, a topic that seems to be of greater relevance to philosophy, sociology, or anthropology? (b) what may be the contribution of such study to the psychological knowledge? and finally (c) what can psychology offer to religion? My conclusions are presented below:

PSYCHOLOGICAL INTEREST IN RELIGION

Since the dawn of modern psychology, it seems that many psychologists have been battered with similar scepticism, which apparently resulted in a rather uneasy relationship between psychology and religion. Had it not been for people like William James and Gordon Allport, who through their pioneering ideas helped lift to a great extent that doubt, the field of the psychology of religion may have been far more marginal than it is today.

Echoing their words, I have argued that religion is a fundamental, multidimensional, and multilevel aspect of humanity. Since it carries a set of experiences, communal as well as personal belief systems, and codes of values that seem to have a direct, at times powerful, and distinct impact on a person's functional and dysfunctional mental processes and behaviour, its investigation considerably overlaps with the domain of psychology.

The existence of religious objects and the transcendent are best addressed through philosophy or theology. It is the feeling or thought of transcendence and the associated attitudes and behaviours that are of interest to psychology. It would be sagacious to stress Hood et al.'s (1996) disclaimer that states that the object of the psychological study of religion is neither God nor the worldview of religious institutions, nor faith versus reason, nor religion versus science, but people. And religion appears to be

important to our understanding of people, not only because it addresses an element of life that seems to be central to most individuals and societies, but also because it seems to affect a plethora of areas, such as well-being and mental health, that are of principal interest to psychologists. Despite Sigmund Freud's attempts to present it as an anachronistic and disappearing concept, it looks like psychologists are gradually acknowledging that the psychology of religion is here to stay.

CONTRIBUTION OF RELIGION TO PSYCHOLOGICAL KNOWLEDGE

Religion, and in that sense spirituality, because of their properties fundamental to humans, have a lot to offer to psychological knowledge. For example, in the area of mental health, because of the overwhelming evidence and the influence of humanistic psychologists (e.g. Lukoff et al., 1998), religious and spiritual problems have been recognised (in the DSM-IV) to occupy a unique niche in the psychological well-being of the individual, and as such they deserve to be studied and assessed separately and independently from other mental disorders. In fact, it has been argued by religious psychologists (e.g. Heinrich, 1997) that the visions and ecstasies of religious people are not in principle pathological, and that their similarities with symptoms of mental disorders, such as psychotic ones, are epiphenomena produced by the limited capacity of humans to express extreme emotions.

At the same time, Whitwell and Barker (1980), in an article on delusional religious patients in Britain, concluded that psychotherapists, in order to form a therapeutic relation with their patients, "must" understand their patients' religious beliefs, respect them, and not treat them as part of the symptomatology. Furthermore, for Pfeifer (1993, 1994) and Tan (2003) psychotherapists and psychology counsellors should seek to strengthen the positive aspects of religious beliefs that can provide support to their clients or patients.

Issues like these challenge our views on mental illness and demand closer attention and

further research. They also suggest that our approach to mental health may need to be changed, and indeed it appears to be changing, and become more sensitive and more holistic (see also Mental Health Foundation, 1997). Psychologists can use findings like the ones reported in this thesis to gain a better understanding of the mechanisms that shape the various aspects of mental health, and of the ways these aspects manifest themselves in different individuals and sociocultural setting.

CONTRIBUTION OF PSYCHOLOGICAL KNOWLEDGE TO RELIGION

Consequently, enrichment of psychological knowledge in the area of religion can be very beneficial to religious individuals and communities. Research has shown that religious individuals with mental health problems prefer to be treated by professionals who show sensitivity and understanding of their beliefs (Bergin & Jensen, 1990; Kane, 2003; Macmin & Foskett, 2004; Rose, Westefeld, & Ansley, 2001; Sims, 1999; Sloan et al., 1999). Thus by being aware of these issues, psychotherapists have now the ability – although perhaps not yet the will or the knowledge (Coyle, 2001) – to provide better and more accurate diagnoses and treatment to religious clients and patients. This may result in religious people gaining confidence and trust in psychologists, and stop seeing them as a threat to their beliefs (see also Brown, 1988, pp.130-132; Meyers, 2004). Psychology can also show religious individuals and groups different ways they can use their beliefs and practices as coping mechanisms and psychological resources when dealing with emotional or mental disturbances, or as means to promote better cultural, intergroup, or interpersonal relations.

GENERAL FUTURE DIRECTIONS

The psychology of religion has a promising and viable future only if it can learn from its past mistakes and proceed to develop a coherent and stable conceptual and methodological framework. It appears that psychologists in this area need to develop further a positive and pluralistic attitude towards the phenomena they are investigating,

by making sure they steer clear from arguments on whether people should be religious or not, or what they should believe. They also need to be more organised with their investigations, and focus on how people process, conceptualise, and use their beliefs, and how those beliefs affect the development, the solutions, and the outcomes of psychosocial problems. Moreover, they need to develop a solid theoretical basis for the psychology of religion that inevitably requires the incorporation of more mainstream psychological concepts, such as personality, identity, and attachment.

Furthermore, when studying religion, psychologists need to attempt to produce rigorous scientific methodologies that can stand up to academic scrutiny. One should not forget that measurements are the means to an end and not the end in themselves. As discussed earlier, methodologies so far appear to have suffered from an inadequacy of measurement, lack of control for covariates, and inappropriate use of sample sizes and types. Researchers have repeatedly called for the development or at least the utilisation of improved, more appropriate, and more sensitive methods and measurements (e.g. Ellison, 1998; Gorsuch, 1988; Kirkpatrick & Hood, 1990; Loewenthal, 2000; Paloutzian & Kirkpatrick, 1995). Religion appears to be challenging, in an entertaining way, our resourcefulness to investigate phenomena and concepts that are not easily studied scientifically.

Finally, by adopting a more pluralistic approach, the psychology of religion will be able to attract the interest of more mainstream psychologists, pastoral counsellors, as well as scholars from other disciplines. So far, it appears that research in this area has been relatively ignored, or widely overlooked. In 1994, Jeffrey Levin came to the following conclusion, which, ten years later, is to a large extent still valid (see Foskett et al., 2004):

> There is no nice way to put it, mainstream scientists and scholars seem
> positively oblivious to the presence of the expanding literature base of
> empirical data supportive of a salutary role for religion (p. xvi)

It would be beneficial for all parties, if psychologists of religion tried to increase the promotion of their field in the general psychological and religious communities, by encouraging collaborations and constructive dialogues, and by promoting religious-sensitive training. The time is ripe for the field to reconstruct itself and dynamically pursue its role as an important psychological area of study.

CHAPTER SYNOPSIS

Bringing together the various findings of this thesis leads to the overall conclusion that religion is a psychologically important, complex, multidimensional concept amenable to modelling, and that psychologists need to be more informed about its effects on the individual's well-being and psychosocial world in general. Should we proceed with investigating religion through psychology, we should do so responsibly and meticulously. Further research is needed, and focussed and sophisticated psychological methodologies and measurements need to be developed that would produce coherent, interpretive, and reliable models.

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APPENDICES

APPENDIX I: The invitation script for the questionnaire study

All conductees were presented with the following script:

Dear volunteer,

My name is Niko Tiliopoulos and I am a researcher at the Psychology Department of the University of Edinburgh. Currently I am doing my PhD research on the relation between faith and well-being. More specifically, I am exploring the circumstances under which religious beliefs - in particular Christian beliefs - can influence our psychological stability. Furthermore, I am investigating the importance of various other factors that may contribute to these influences.

As you will appreciate, this is an important issue, since knowledge in this area can help Christian counsellors, and counsellors in general, provide better and more effective services. It can also help Christian individuals gain additional direct insight into their well-being and into ways of improving it.

The research is based on a questionnaire, which will be sent to you to complete at your own pace. Unless you voluntarily provide your contact details (for example, requesting feedback on the results), your participation will be anonymous, and your responses will only be used for academic purposes, and be treated in the strictest confidence.

I would be grateful if you participated in this study. The only prerequisite is that you should be a Christian of any denomination. You do not have to be actively practising your faith, as long as you generally believe in the Christian principles.

Should you decide to take part in the study, please do let me know (my contact details follow). In addition, if you think that other people in your close environment (family, friends, etc.) may be interested in it, please let me know of the number of additional questionnaires you would like to receive.

Thank you for your time

APPENDIX II: The introductory questionnaire script

Dear participant,

This study looks at the various attitudes and feelings of people who have Christian beliefs. The reasons people have for being religious may have a significant impact on their well-being. As you will appreciate, this is an important issue, since knowledge in this area can help Christian counsellors, and counsellors in general, provide better and more effective services. It can also help Christian individuals gain additional direct self-insight into their well-being and into ways of developing it. Therefore, it would be appreciated if you replied to the following questions as honestly as possible.

The questionnaire is quite long so please take your time when filling it in. It should take you approximately 30 minutes to complete it. Should you need any clarifications on certain questions, do feel free to contact the researcher:

Niko Tiliopoulos, BSc, MSc
The University of Edinburgh
7 George Square, Edinburgh, EH8 9JZ

Tel.: 0131 6503368
Fax: 0131 6503461
Email: niko.tiliopoulos@ed.ac.uk

The information gained from this study is for research purposes only, and will be treated in the strictest confidence.

Thank you for your participation

APPENDIX III: Allport's Intrinsic / Extrinsic religiosity questionnaire revised (I/E-R)

(for the actual font-size and font-type in which the questionnaires appeard in the study see chapter V)

INSTRUCTIONS: Please indicate the extent to which you agree or disagree with each item below, by writing the number in the space provided, using the following rating scale:

1	2	3	4	5
I strongly disagree	I tend to disagree	I'm not sure	I tend to agree	I strongly agree

___1   I enjoy reading about my religion
___2   I go to church because it helps me make friends
___3   It doesn't much matter what I believe so long as I am good
___4   It is important to me to spend time in private thought and prayer
___5   I have often had a strong sense of God's presence
___6   I pray mainly to gain relief and protection
___7   I try hard to live all my life according to my religious beliefs

___8   What religion offers me most is comfort in times of trouble and sorrow
___9   Prayer is for peace and happiness
___10   Although I am religious, I don't let it affect my daily life
___11   I go to church mostly to spend time with my friends
___12   My whole approach to life is based on my religion
___13   I go to church mainly because I enjoy seeing people I know there
___14   Although I believe in my religion, many other things are more important in life

PLEASE CHECK YOU HAVE ANSWERED ALL THE QUESTIONS

APPENDIX IV: Batson's Religious Life Inventory (RLI)

INSTRUCTIONS: Please indicate the extent to which you agree or disagree with each item below, by writing the number in the space provided, using the following rating scale:

1	2	3	4	5	6	7	8	9
Strongly disagree	Disagree	Tend to disagree	Somewhat disagree	I'm not sure	Somewhat agree	Tend to agree	Agree	Strongly Agree

__1	The church has been very important in my religious development.
__2	Worldly events cannot affect the eternal truth of my religion.
__3	As I grow and change, I expect my religion also to grow and change.
__4	My religious development is a natural response to our innate need for devotion to God.
__5	I am constantly questioning my religious beliefs.
__6	It might be said that I value my religious doubts and uncertainties.
__7	My minister (or priest, youth director, camp counsellor, etc.) has had a profound influence on my personal religious development.
__8	I was not very interested in religion until I began to ask questions about the meaning and purpose of my life.
__9	God's will should shape my life.
__10	On religious issues, I find the opinions of others irrelevant.
__11	For me doubting is an important part of what it means to be religious.
__12	It is necessary for me to have a religious belief.
__13	When it comes to religious questions, I feel driven to know the truth.
__14	I find my everyday experiences severely test my religious convictions.
__15	A major factor in my religious development has been the importance of religion for my parents.
__16	I do not expect my religious convictions to change in the next few years.
__17	I find religious doubts upsetting.
__18	Religion is something I have never felt personally compelled to consider.
__19	I have been driven to ask religious questions out of a growing awareness of the tensions in my world and in my relation to my world.
__20	My religion serves to satisfy needs for fellowship and security.
__21	My religious development has emerged out of my growing sense of personal identity.
__22	My religion is a personal matter, independent of the influence of organised religion.
__23	Whether I turn out to be religious or not, it doesn't make much difference to me.
__24	My life experiences have led me to rethink my religious convictions.
__25	Certain people have served as "models" for my religious development.
__26	There are many religious issues on which my views are still changing.
__27	I have found it essential to have faith.
__28	It is important for me to learn about religion from those who know more about it than I do.
__29	God wasn't very important for me until I began to ask questions about the meaning of my own life.
__30	I find it impossible to conceive of myself not being religious.
__31	The "me" of a few years back would be surprised at my present religious stance.
__32	Questions are far more central to my religious experience than are answers.
__33	Outside forces (other persons, church, etc.) have been relatively unimportant in my religious development.
__34	For me religion has not been a "must".

PLEASE CHECK YOU HAVE ANSWERED ALL THE QUESTIONS

APPENDIX V: Schizotypal Personality Questionnaire (SPQ)

INSTRUCTIONS: Please answer each item by checking YES or NO. Answer ALL items even if unsure of your answer. When you have finished, check over each one to make sure you have answered them.

1	Do you sometimes feel that things you see on the TV or read in the newspapers have a special meaning for you?	YES	NO
2	I sometimes avoid going to places where there will be many people because I will get anxious.	YES	NO
3	Have you had experiences with the supernatural?	YES	NO
4	Have you often mistaken objects or shadows for people, or noises for voices?	YES	NO
5	Other people see me as slightly eccentric (odd).	YES	NO
6	I have little interest in getting to know other people.	YES	NO
7	People sometimes find it hard to understand what I am saying.	YES	NO
8	People sometimes find me aloof and distant.	YES	NO
9	I am sure I am being talked behind my back.	YES	NO
10	I am aware that people notice me when I go out for a meal or to see a film.	YES	NO
11	I get very nervous when I have to make polite conversations.	YES	NO
12	Do you believe in telepathy (mind-reading)?	YES	NO
13	Have you ever had the sense that some person or force is around you, even though you cannot see anyone?	YES	NO
14	People sometimes comment on my unusual mannerisms and habits.	YES	NO
15	I prefer to keep to myself.	YES	NO
16	I sometimes jump quickly from one topic to another when speaking.	YES	NO
17	I am poor at expressing my true feelings by the way I talk and look.	YES	NO
18	Do you often feel that other people have got it in for you?	YES	NO
19	Do some people drop hints about you or say things with a double meaning?	YES	NO
20	Do you ever get nervous when someone is walking behind you?	YES	NO

21	Are you sometimes sure that other people can tell what you are thinking?	YES	NO
22	When you look at a person, or yourself in a mirror, have you ever seen the face change right before your eyes?	YES	NO
23	Sometimes other people think that I am a little strange.	YES	NO
24	I am mostly quiet when with other people.	YES	NO
25	I sometimes forget what I am trying to say.	YES	NO
26	I rarely laugh and smile.	YES	NO
27	Do you sometimes get concerned that friends or co-workers are not really loyal or trustworthy?	YES	NO
28	Have you ever noticed a common event or object that seemed to be a special sign for you?	YES	NO
29	I get anxious when meeting people for the first time.	YES	NO
30	Do you believe in clairvoyancy (psychic forces, fortune telling)?	YES	NO
31	I often hear a voice speaking my thoughts aloud.	YES	NO
32	Some people think that I am a very bizarre person.	YES	NO
33	I find it hard to be emotionally close to other people.	YES	NO
34	I often ramble on too much when speaking.	YES	NO
35	My "non-verbal" communication (smiling and nodding during a YES NO conversation) is poor.	YES	NO
36	I feel I have to be on my guard even with friends.	YES	NO
37	Do you sometimes see special meaning in advertisements, shop windows, or in the way things are arranged around you?	YES	NO
38	Do you often feel nervous when you are in a group of unfamiliar people?	YES	NO
39	Can other people feel your feelings when they are not there?	YES	NO
40	Have you ever seen things invisible to other people?	YES	NO
41	Do you feel that there is no one you are really close to, outside of your immediate family, or people you can confide in or talk to about personal problems?	YES	NO
42	Some people find me a bit vague and elusive during a conversation.	YES	NO

43	I am poor at returning social courtesies and gestures.	YES	NO
44	Do you often pick up hidden threats or put-downs from what people say or do?	YES	NO
45	When shopping do you get the feeling that other people are taking notice of you?	YES	NO
46	I feel very uncomfortable in social situations involving unfamiliar people.	YES	NO
47	Have you had experiences with astrology, seeing the future, UFOs, ESP or the sixth sense?	YES	NO
48	Do everyday things seem unusually large or small?	YES	NO
49	Writing letters to friends is more trouble than it is worth.	YES	NO
50	I sometimes use words in unusual ways.	YES	NO
51	I tend to avoid eye contact when conversing with others.	YES	NO
52	Have you found that it is best not to let other people know too much about you?	YES	NO
53	When you see people talking to each other, do you often wonder if they are talking about you?	YES	NO
54	I would feel very anxious if I had to give a speech in front of a large group of people.	YES	NO
55	Have you ever felt that you are communicating with another person telepathically (by mind-reading)?	YES	NO
56	Does your sense of smell sometimes become unusually strong?	YES	NO
57	I tend to keep in the background on social occasions.	YES	NO
58	Do you tend to wander off the topic when having a conversation?	YES	NO
59	I often feel that others have it in for me.	YES	NO
60	Do you sometimes feel that other people are watching you?	YES	NO
61	Do you ever suddenly feel distracted by distant sounds that you are not normally aware of?	YES	NO
62	I attach little importance to having close friends.	YES	NO
63	Do you sometimes feel that people are talking about you?	YES	NO

64	Are your thoughts sometimes so strong that you can almost hear them?	YES	NO
65	Do you often have to keep an eye out to stop people from taking advantage of you?	YES	NO
66	Do you feel that you are unable to get "close" to people?	YES	NO
67	I am an odd, unusual person.	YES	NO
68	I do not have an expressive and lively way of speaking.	YES	NO
69	I find it hard to communicate clearly what I want to say to people.	YES	NO
70	I have some eccentric (odd) habits.	YES	NO
71	I feel very uneasy talking to people I do not know well.	YES	NO
72	People occasionally comment that my conversation is confusing.	YES	NO
73	I tend to keep my feelings to myself.	YES	NO
74	People sometimes stare at me because of my odd appearance.	YES	NO

PLEASE CHECK YOU HAVE ANSWERED ALL THE QUESTIONS

APPENDIX VI: Eysenck's Personality Questionnaire revised, EPQ-R (Short version)

INSTRUCTIONS: Please answer each question by putting a circle around the "YES" or the "NO" following the question. There are no right or wrong answers, and no trick questions. Work quickly and do not think too long about the exact meaning of the questions.

1	Does your mood often go up and down?	YES	NO
2	Do you take much notice of what people think?	YES	NO
3	Are you a talkative person?	YES	NO
4	Do you ever feel "just miserable" for no reason?	YES	NO
5	Would being in debt worry you?	YES	NO
6	Are you rather lively?	YES	NO
7	Are you an irritable person?	YES	NO
8	Would you take drugs which may have strange or dangerous effects?	YES	NO
9	Do you enjoy meeting new people?	YES	NO
10	Are your feeling easily hurt?	YES	NO
11	Do you prefer to go your own way, rather than act by the rules?	YES	NO
12	Can you usually let yourself go and enjoy yourself at a lively party?	YES	NO
13	Do you often feel "fed-up"?	YES	NO
14	Do good manners and cleanliness matter much to you?	YES	NO
15	Do you usually take the initiative in making new friends?	YES	NO
16	Would you call yourself a nervous person?	YES	NO
17	Do you think marriage is old-fashioned and should be done away with?	YES	NO
18	Can you easily get some life into a rather dull party?	YES	NO
19	Are you a worrier?	YES	NO
20	Do you enjoy co-operating with others?	YES	NO
21	Do you tend to keep in the background on social occasions?	YES	NO
22	Does it worry you if you know there are mistakes in your work?	YES	NO
23	Would you call yourself tense or "highly-strung"?	YES	NO
24	Do you think people spend too much time safeguarding their future with savings and insurances?	YES	NO

25	Do you like mixing with people?	YES	NO
26	Do you worry too long after an embarrassing experience?	YES	NO
27	Do you try not to be rude to people?	YES	NO
28	Do you like plenty of bustle and excitement around you?	YES	NO
29	Do you suffer from "nerves"?	YES	NO
30	Would you like other people to be afraid of you?	YES	NO
31	Are you mostly quiet when you are with other people?	YES	NO
32	Do you often feel lonely?	YES	NO
33	Is it better to follow society's rules than go your own way?	YES	NO
34	Do other people think of you as being very lively?	YES	NO
35	Are you often troubled about feeling of guilt?	YES	NO
36	Can you get a party going?	YES	NO

PLEASE CHECK YOU HAVE ANSWERED ALL THE QUESTIONS

APPENDIX VII: Aspects of Identity Questionnaire (AIQ-IIIx)

INSTRUCTIONS: These items describe different aspects of identity. Please read each item carefully and consider how it applies to you. Fill in the blank next to each item by choosing a number from the scale below:

1 = **Not important to my sense of who I am.**
2 = **Slightly important to my sense of who I am.**
3 = **Somewhat important to my sense of who I am**
4 = **Very important to my sense of who I am**
5 = **Extremely important to my sense of who I am**

__1	The things I own, my possessions.
__2	My personal values and moral standards
__3	My popularity with other people
__4	Being a part of the many generations of my family
__5	My dreams and imagination
__6	The ways in which other people react to what I say and do
__7	My race or ethnic background
__8	My personal goals and hopes for the future
__9	My physical appearance: my height, my weight, and the shape of my body
__10	My religion
__11	My emotions and feelings
__12	My reputation, what others think
__13	Places where I live or where I was raised
__14	My thoughts and ideas
__15	My attractiveness to other people
__16	My age, belonging to my age group or being part of my generation
__17	The ways I deal with my fears and anxieties
__18	My sex, being a male or female
__19	My feeling of being a unique person, being distinct from others.
__20	My social class, the economic group I belong to, whether lower, middle, or upper class.
__21	Knowing that I continue to be essentially the same inside even though life involves many external changes
__22	My gestures and mannerisms, the impression I make on others
__23	My feeling of belonging to my community
__24	My self-knowledge, my ideas about what kind of person I really am
__25	My social behaviour, such as the way I act when meeting people
__26	My feeling of pride in my country, being proud to be a citizen
__27	My physical abilities, being coordinated and good at athletic activities
__28	My personal self-evaluation, the private opinion I have of myself
__29	Being a sports fan, identifying with a sports team
__30	My occupational choice and career plans
__31	My commitments on political issues or my political activities
__32	My academic ability and performance, such as the grades I earn and comments I get from teachers
__33	My language, such as my regional accent or dialect or a second language that I know
__34	My role of being a student in college
__35	My sexual orientation, whether heterosexual, homosexual, or bisexual

PLEASE CHECK YOU HAVE ANSWERED ALL THE QUESTIONS

APPENDIX VIII: Experience in Close Relationships Questionnaire (ECR)

INSTRUCTIONS: The following statements concern how you feel in romantic relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it. Write the number in the space provided, using the following rating scale:

1	2	3	4	5
Strongly disagree	Disagree	Neutral/ Mixed	Agree	Strongly agree

__1	I prefer not to show a partner how I feel deep down.
__2	I worry about being abandoned.
__3	I am very comfortable being close to romantic partners.
__4	I worry a lot about my relationships.
__5	Just when my partner starts to get close to me I find myself pulling away.
__6	I worry that romantic partners won't care about me as much as I care about them.
__7	I get uncomfortable when a romantic partner wants to be very close.
__8	I worry a fair amount about losing my partner.
__9	I don't feel comfortable opening up to romantic partners.
__10	I often wish that my partner's feelings for me were as strong as my feelings for him/her.
__11	I want to get close to my partner, but I keep pulling back.
__12	I often want to merge completely with romantic partners, and this sometimes scares them away.
__13	I am nervous when partners get too close to me.
__14	I worry about being alone.
__15	I feel comfortable sharing my private thoughts and feelings with my partner.
__16	My desire to be very close sometimes scares people away.
__17	I try to avoid getting too close to my partner.
__18	I need a lot of reassurance that I am loved by my partner.
__19	I find it relatively easy to get close to my partner.
__20	Sometimes I feel that I force my partners to show more feeling, more commitment.
__21	I find it difficult to allow myself to depend on romantic partners.
__22	I do not often worry about being abandoned.
__23	I prefer not to be too close to romantic partners.
__24	If I can't get my partner to show interest in me, I get upset or angry.
__25	I tell my partner just about everything.
__26	I find that my partner(s) don't want to get as close as I would like.
__27	I usually discuss my problems and concerns with my partner.
__28	When I'm not involved in a relationship, I feel somewhat anxious and insecure.
__29	I feel comfortable depending on romantic partners.
__30	I get frustrated when my partner is not around as much as I would like.
__31	I don't mind asking romantic partners for comfort, advice, or help.
__32	I get frustrated if romantic partners are not available when I need them.
__33	It helps to turn to my romantic partner in times of need.
__34	When romantic partners disapprove of me, I feel really bad about myself.
__35	I turn to my partner for many things, including comfort and reassurance.
__36	I resent it when my partner spends time away from me

PLEASE CHECK YOU HAVE ANSWERED ALL THE QUESTIONS

APPENDIX IX: Balanced Inventory of Desirable Responding (BIDR-6)

INSTRUCTIONS: Using the scale below as a guide, please write a number beside each statement to indicate how much you agree with it

1	2	3	4	5	6	7
Not True	Rather untrue	Fairly untrue	Somewhat True	fairly true	rather true	Very True

---

__1   My first impressions of people usually turn out to be right.
__2   It would be hard for me to break any of my bad habits.
__3   I don't care to know what other people really think of me.
__4   I have not always been honest with myself.
__5   I always know why I like things.
__6   When my emotions are aroused, it biases my thinking.
__7   Once I've made up my mind, other people can seldom change my opinion.
__8   I am not a safe driver when I exceed the speed limit.
__9   I am fully in control of my own fate.
_10   It's hard for me to shut off a disturbing thought.

_11   I never regret my decisions.
_12   I sometimes lose out on things because I can't make up my mind soon enough.
_13   The reason I vote is because my vote can make a difference.
_14   My parents were not always fair when they punished me.
_15   I am a completely rational person.
_16   I rarely appreciate criticism.
_17   I am very confident of my judgements.
_18   I have sometimes doubted my ability as a lover.
_19   It's alright with me of some people happen to dislike me.
_20   I don't always know the reason why I do the things I do.

_21   I sometimes tell lies if I have to.
_22   I never cover up my mistakes.
_23   There have been occasions when I have taken advantage of someone.
_24   I never swear.
_25   I sometimes try to get even rather than forgive and forget.
_26   I always obey laws, even if I'm unlikely to get caught.
_27   I have said something bad about a friend behind his or her back.
_28   When I hear people talking privately, I avoid listening.
_29   I have received too much change from a salesperson without telling him or her.
_30   I always declare everything at customs.

_31   When I was young I sometimes stole things.
_32   I have never dropped litter on the street.
_33   I sometimes drive faster than the speed limit.
_34   I never read sexy books or magazines.
_35   I have done things that I don't tell other people about.
_36   I never take things that don't belong to me.
_37   I have taken sick-leave from work or school even though I wasn't really sick.
_38   I have never damaged a library book or store merchandise without reporting it.
_39   I have some pretty awful habits.
_40   I don't gossip about other people's business.

PLEASE CHECK YOU HAVE ANSWERED ALL THE QUESTIONS

APPENDIX X: SPSS syntax file for nonlinear R comparisons

The following SPSS syntax file was used to compute the significance of the difference between two nonlinear Rs (based on the formula by Cohen & Cohen, 1983, p. 57) .

```
DATA LIST free
/rxy rvy rxv.
BEGIN DATA.
.482 .484 .959
END DATA.
COMPUTE n =154.
COMPUTE diffr = rxy - rvy.
COMPUTE detR = (1 - rxy **2 - rvy**2 - rxv**2)+ (2*rxy*rxv*rvy).
COMPUTE rbar = (rxy + rvy)/2.
COMPUTE tnum = (diffr) * (sqrt((n-1)*(1 + rxv))).
COMPUTE tden = sqrt(2*((n-1)/(n-3))*detR + ((rbar**2) * ((1-rxv)**3))).
COMPUTE t= (tnum/tden).
COMPUTE df = n - 3.
COMPUTE p_1_tail = 1 - CDF.T(abs(t),df).
COMPUTE p_2_tail = (1 - CDF.T(abs(t),df))*2.
LIST.
EXE.
```

Appendix XI: The invitation script for the interview study

Dear participant,

A few months ago you participated in a questionnaire study on religion and well-being conducted by the university of Edinburgh. Let me take this opportunity to thank you for your involvement in this research. The study is still going on, but when it is concluded you will receive a short description of the main findings as requested.

In the meantime, since in your response you have shown interest in talking to us in person, I would like to invite you for a short interview, in which you will have the opportunity to discuss your thoughts on the matter. The interview will be rather informal, it will last for approximately 30 minutes and it will be tape-recorded. It will take place at your convenience and at an agreed time - it may also be over the phone.

All interview material involving your participation will be strictly confidential and anonymous, and will only be used by me for academic purposes within the context of the current research.

Although your participation will be greatly appreciated, you are under no obligation to either respond to this invitation or take part in the interview. Whatever your decision may be it will be respected fully.

Should you decide to take part in the interview, please do let me know, so we can proceed with making the appropriate arrangements.

Do not hesitate to contact me should you need more information.

Appendix XII: The interview protocol

Thank you for agreeing to take part in this interview. Your contribution is highly appreciated. Before we begin, I would like to clarify that I will be using some terms, like "church", in a very broad way, so please feel free to adjust them to your specific circumstances. Finally, if for any reason there is a question you'd rather not answer, please do let me know and I will move to the next one.

I'd like to start by talking about your sense of...
Being a Christian
1. What does being a Christian mean to you?
   1a. So, in what way is being a Christian important for you?
2. What role does God play in your life?
3. From your point of view as a Christian, how do you view people belonging to other religions?
   3a. How do you feel about non-religious people?

Going back in time, I'd like to address your...
Upbringing and personal development
4. When was it that religion first came into your life?
5. In what way have your parents and other people influenced your religious beliefs?
6. Could you explain why you chose to (continue to be) OR (become) a Christian in your adult life?
   6a. In what way have your religious beliefs been changing through your life?

Given what you just described and focussing on the present, now I'd like to ask about the...
Role of religious beliefs in your life
7. How do you think your religious beliefs have shaped your life and your sense of who you are?
      7a. In what way do your religious beliefs contribute to what you feel is your purpose in this world?
8. To what extent are your daily behaviour & activities, including your social life, guided by your religious beliefs?
9. How important is it for you to be part of a group?
10. To what extend and in what way have you found any kind of support in your church?
11. To what extend and in what way do you feel religion provides guidance and gives you a sense of well-being?

More specifically, and centring now on your religious practice, I'd like to focus on the issue of...
Prayer
12. Do you usually pray?
[if YES] 12a. What are your prayers about?
[if NO] 12b. Why is it that you do not pray?

And just to finish off, I'd like to address as a final topic...
The possibility of religion not being part of your life
13. How do you think your life would be without religion?
14. Is there anything that could make you question your religious beliefs?
15. Finally, is there anything else you would like to add about your religious life, why you are religious, or anything you would like to say a bit differently?

Thank you very much. Remind them of the debriefing. Suggest that if they would like to add or alter anything they discussed, they are welcome to send a letter or email. Remind them that they will receive feedback at the end of the study.