Reconceptualising spirituality: The development and testing of a four-dimension taxonomy of spiritual beliefs.

Submitted by

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Declaration

I declare that this thesis contains no material publishes elsewhere or extracted in whole or in part from a thesis by which I have qualified for or have been awarded another degree or diploma.

No other person's work has been used without undue acknowledgement in the main text of the thesis.

This thesis has not been submitted towards the award of any other degree or diploma in any other tertiary institution.

All research procedures reported in the thesis received the approval of the relevant Ethics/Safety Committees (where required).

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Abstract

Aim

Existing research examining spirituality in a range of contexts is inconclusive due to: (1) a confounding of spirituality and religiosity constructs; (2) a lack of clarity pertaining to how the construct of spirituality relates to other 'like' constructs; (3) the omission of spirituality as a variable of interest in much individual difference research; and (4) a lack of clarity in how the construct is being operationalised. This dissertation set out to address these four limitations and also to identify the points of commonality between and within four dominant spiritual practice types. In so doing, it argues that there are universal beliefs relating to spirituality that provide the opportunity to bring all spiritualities under one overarching meta-philosophy, a common spirituality.

Scope

In phase 1 of this dissertation, a series of seven studies were completed. Participants in each study constituted a convenient sample recruited via the Internet. A total of 331 respondents participated with the sample consisting of 83 males (mean age was 45.56 years; *SD* = 13.30) and 248 females (mean age was 41.11 years; *SD* = 11.49). In phase 1 of this dissertation, four general spiritual beliefs held by most spiritualities practices were identified using exploratory factor analyses. The four more universal spiritual beliefs identified included: (1) the belief that there is an order to the universe that *transcends* human thinking; (2) the belief that there is a meaning and purpose to one's life that *transcends* life's more materialistic pursuits; (3) the belief that there is an interconnectedness and synchronicity to all life that *transcends* the individual; and (4) the belief that all people are consciously (and unconsciously) undertaking a journey towards a *transcended* Self (upper case 'S'). An inventory to assess an individual's spirituality according to the four general spiritual beliefs was developed and validated. The inventory (called the Spiritual Beliefs Inventory; SBI) consisted of 26 items and demonstrated sound psychometric properties. Using a cross-sectional study design, the four spiritual beliefs were found to have incremental predictive validity in predicting identity stage resolution across the lifespan. The spiritual belief of Life Meaning, Purpose and Direction was found to be the strongest

predictor of identity stage resolution. Further, a quadratic association was found between the construct of spiritual beliefs and identity stage resolution across the lifespan. The results indicate that one's spiritual development is spiral in nature. Finally, the content validity of the spiritual beliefs construct was demonstrated via the completion of higher-order exploratory factor analyses.

In phase 2 of this dissertation, three more studies were completed. A second homogeneous sample was used in phase 2. A total of 364 respondents participated in phase 2. The sample consisted of 115 males (mean age was 39.11 years; *SD* = 12.88) and 208 females (mean age was 43.63 years; *SD* = 11.95). First, a series of increasingly complex structural equation models were performed to confirm the factor structure of the Spiritual Beliefs Inventory. The confirmatory factor analysis (CFA) performed used a partial disaggregation approach with the best fitting model found to consist of four first-order factors (corresponding with the four already identified spiritual beliefs) and one second-order factor (RMSEA = .071, SRMR = .037, NFI = .952, TLI = .950, CFI = .968). A total of five item pairs were identified as potentially problematic in the CFA. The temporal stability (test-retest of 12-months) of the Spiritual Beliefs Inventory was also examined and found to be excellent (r = .701 for the Total Composite score). Finally, the presence of potential response style bias in the completion of the Spiritual Beliefs Inventory was found, with self-deceptive enhancement correlating positively and significantly with the Total Composite score of the inventory (r = .402, p < .001). Within the context of the construct of spirituality, this finding was interpreted as evidence of the 'resilience' of the ego in the face of its transcendence.

Conclusions, limitations and directions for future research

The outcome of this dissertation is the development and initial validation of a holistic conceptual framework for considering spirituality. Further, an inventory to assess an individual's spirituality according to the four general spiritual beliefs was developed and validated. Finally, this dissertation promotes the value of these four spiritual beliefs in facilitating the embracing of all spiritualities available for exploration within contemporary Australian society. Four limitations of this dissertation are discussed in detail, including: (1) the make-up of the samples utilised; (2) the source of the items used to operationalise the spiritual beliefs construct; (3) the operationalisation of conceptual complexity and spiritual

presence layers of the proposed holistic conceptual framework; and (4) the use of a cross-sectional design. Recommendations for addressing these four limitations in future research are provided. Further, an examination of the predictive utility of the spiritual beliefs construct in health and organisational contexts is suggested. Finally, this dissertation recommends that future research employ a multitrait-multimethod (MTMM) approach to assessing spirituality.

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Publications arising from this dissertation

Harmer, R. & Fallon, B. (2007). The role of emotional intelligence in the pursuit of a spiritual life: Implications for individuals in organisation. *Organisations & People*, *14(2),* 76-80.

List of Abbreviations

ASTI = Adult Self-Transcendence Inventory

EFA = Exploratory Factor Analysis

CFA = Confirmatory Factor Analysis

CFI = Comparative Fit Index

EI = Emotional Intelligence

FFM = Five-Factor Model

III = Identity Issues Inventory

IM = Impression Management

MMS = Miller Measure of Spirituality

NFI = Normed Fit Index

PCFA = Partial Confirmatory Factor Analysis

PWBS = Psychological Well-Being Scale

QM = Quantum Mechanics

RMSEA = Root Mean Square Error of Approximation

SAS = Spiritual Assessment Scale

SBI = Spiritual Beliefs Inventory

SEM = Structural Equation Modelling

SOC = Sense of Coherence

SDE = Self-Deceptive Enhancement

SRMR = Standardised Root Mean Square Residual

STS = Spiritual Transcendence Scale

SWS = Social Well-Being Scale

TLI = Tucker-Lewis Index

Extended Abstract

This dissertation reconceptualises spirituality as consisting of four layers of increasing abstraction, namely: (1) spiritual practices; (2) spiritual presence; (3) spiritual beliefs; and (4) conceptual complexity. The most tangible layer of spirituality is conceptualised as the specific behaviours and practices an individual undertakes to explore spirituality (e.g., attending church, meditation, etc). Spiritual practices are argued to be functional, theocentric (predominantly) and particularistic in structure. Conversely, the most abstract layer of spirituality is one's frame of reference (i.e., conceptual complexity), that is, their spiritual "self-theory". The spiritual beliefs layer, defined as the 'filters' through which spiritual experiences are screened, interpreted, understood and integrated as aspects of one's broader identity, is the primary focus of this dissertation. To demonstrate the appropriateness of the four layer conceptualisation of spirituality (argued by the present researcher to be a holistic conceptual framework for considering spirituality), an examination of four existing measures of spirituality is first performed (utilising a sample of 331 predominantly Australian respondents). Using partial confirmatory factor analysis (PCFA), the results indicate that the Adult Self-Transcendence Inventory (ASTI; Levenson, Aldwin, & Shiraishi, 2005), Miller Measure of Spirituality (MMS; Miller, 2004), Spiritual Assessment Scale (SAS; Howden, 1993) and Spiritual Transcendence Scale (STS; Piedmont, 1999) are all mis-specified, with absolute and incremental close fit indices lower than the guidelines recommended by Hu and Bentler (1999). Further, the discriminant validity and discriminant sensitivity of each scale's respective sub-scales could not be supported conclusively. Specifically, some sub-scales (e.g., the Alienation sub-scale of the ASTI; Meaning and Purpose sub-scale of the SAS; Universality and Connectedness sub-scales of the STS) failed to differentiate between respondents with and without a self-reported formal spiritual practice. In addition, only some sub-scales (e.g., the Self-Transcendence sub-scale of the ASTI; Transcendence sub-scale of the SAS) demonstrated discriminant sensitivity in differentiating between the four predominant spiritual practice types undertaken by Australian residents. This dissertation argues that the lack of model fit and poor discriminant validity/sensitivity of the four scales is the result of items in each scale being responded to inconsistently based upon a participant's specific spiritual beliefs/practices.

Given that each scale examined was found to be conceptually and statistically inadequate for use in contemporary Australian society, the points of commonality and differentiation between each scale and its respective sub-scales was examined. The analysis was completed within the context of the spiritual beliefs layer of this dissertation's proposed holistic conceptual framework for considering spirituality. Using higher-order exploratory factor analysis (EFA), a total of four factors were identified: (1) an openness to life's mysteries; (2) life meaning, purpose and direction; (3) fostering wholeness and interconnectedness; and (4) self-discovery and inner growth. This dissertation argued that each identified factor could be considered to be a dimension of a general taxonomy of spiritual beliefs. The resulting PCFA performed indicates the four-factor model to be a good fit from both an absolute and incremental close-fit perspective (i.e., RMSEA = .075, SRMR = .055, NFI = .982, TLI = .962 and CFI = .988).

Following the confirmation of a four-factor model of spiritual beliefs via higher-order exploratory factor analysis, item level analysis of the ASTI, MMS, SAS and STS was performed using four specific screening criteria. Of the 101 items subjected to analysis, 58.4% were identified as not relating explicitly to spiritual beliefs. More specifically, a total of 21 items (i.e., 20.8%) were identified as relating to spiritual practices, with 47.6% of those items explicitly related to a Monotheistic practice type only. A total of 42 items were identified as related to this dissertation's conceptualisation of the spiritual beliefs construct. These items were subjected to EFA and four factors emerged accounting for 54.98% of the variance. The four identified factors corresponded to the four dimensions of the general taxonomy of spiritual beliefs. Using PCFA however, the identified scale (consisting of 39 items) was found to not be an adequate fit from an incremental close-fit perspective (i.e., NFI = .847, TLI = .894 and CFI = .916). The resulting short-form (i.e., Spiritual Beliefs Inventory: Brief Version; SBI: Brief) consisting of 26 items was found to be well-fitting from both an absolute and incremental close-fit perspective (i.e., RMSEA = .060, SRMR = .029, NFI = .905, TLI = .921 and CFI = .945). The respective sub-scale and total composite score correlations between the Full and Brief versions of the SBI were all high and ranged from .961 to 1.0. The SBI: Brief and its four sub-scales shows discriminate validity. However, only the Fostering Wholeness and Interconnectedness (FWI) and Self-Discovery and Inner Growth (SDIG) sub-scales show discriminant sensitivity.

To demonstrate the holistic conceptual framework for considering spirituality to be hierarchical and consisting of layers of increasing abstraction, a series of hierarchical multiple regression analyses (Stepwise) were performed. Prior to conducting the planned analyses, a 'competing' measure of explicit religiosity (as an analog for the spiritual practices layer of the holistic conceptual framework) was developed using EFA. The measure used the 21 items identified as relating to spiritual practices. The resulting two factor explicit religiosity measure (referred to as the Explicit Religiosity Scale; ERS) accounted for 76% of the variance, with the two identified factors being: (1) Connecting with a Higher Power (CHP) and (2) Prayer/Meditation Fulfilment (PMF). The ERS was found to be well-fitting from both an absolute and incremental close-fit perspective (i.e., RMSEA = .083, SRMR = .027, NFI = .938, TLI = .944 and CFI = .956). It shall be noted that the ERS and its two sub-scales show discriminate validity only. The hierarchical multiple regression analyses used a measure of identity stage resolution (the Identity Issues Inventory; III) consisting of six sub-scales. The III was selected as an analog measure of conceptual complexity and was regressed onto the two sub-scales of the ERS at Step 1, and then regressed onto ERS and the four factors of SBI: Brief at Step 2. Although not supportive definitively, this dissertation demonstrates that a respondent's spiritual beliefs strongly predict identity stage resolution. Further, spiritual beliefs accounted for (on average) 34% additional variance in III beyond explicit religiosity (i.e., mean R^2 for explicit religiosity = .040). The strongest single contributor across all regression models tested was the SBI: Brief sub-scale of Life Meaning, Purpose and Direction (LMPD) (i.e., mean sr^2 = .330). A number of anomalies were identified in the regression analyses performed. Specifically, although the Openness to Life's Mysteries (OLM) sub-scale of the SBI: Brief was found to share a positive and significant correlation with III (mean r = .145, $p < .05$), it was found to predict negatively III in several regression analyses performed. Subsequent analyses found the relationship between the spiritual beliefs construct (as operationalised by the SBI: Brief and its four sub-scales) to have a non-linear (i.e., quadratic) association with identity stage resolution. Further, using a cross-sectional design, the non-linear (specifically, a 'U-shape') association was found to be repeated across five somewhat arbitrary age groupings (namely: 30 years or less; 31 to 40 years; 41 to 50 years; 51 to 60 years; and 61 years or greater).

The content validity of the spiritual beliefs construct was also examined. A higher-order EFA was performed that also included measures of the FFM model of personality, psychological well-being, social well-being, emotional intelligence (EI), a sense of coherence, mindfulness and ego-resilience. The results found support for the content validity of the spiritual beliefs construct. Specifically, the four sub-scales of the SBI: Brief were found to load on one factor independent of the remaining scales included in the model (all factor loadings exceeded .470) with a total of three other factors also identified. Dimensions of the FFM and EI scales loaded across multiple factors. Psychological well-being (total composite score) loaded with social well-being, Extraversion and emotional self-regulation (a sub-scale of the EI measure). This dissertation argues that the results provide further evidence of the incremental coherence of the spiritual beliefs construct beyond personality, psychological well-being and EI.

The factorial validity of the SBI: Brief was also tested using a second independent sample (*N* = 364) of predominantly Australian residents. The uni-dimensionality of the four sub-scales of the SBI: Brief was first examined and confirmed. Using a partial aggregation model (Bagozzi & Heatherington, 1994), the SBI: Brief was subjected to CFA involving four competing models. The higher-order four factor model defined by four first-order factors and one higher-order global factor was found to be the best fit with absolute and incremental close-fit indexes of RMSEA = .074, SRMR = .046, NFI = .941, TLI = .947 and CFI = .960. A total of five item pairs were identified as somewhat problematic with three specific items of the SBI: Brief recommended for review in a future study.

In two final studies, the temporal stability (12-months) of the SBI: Brief was established with disattenuated *r*s ranging from .680 (for SDIG) to .871 (for OLM). The test-retest correlation of $LMPD_{TIME1}$ and $SDIG_{TIME2}$ was found to be non-significant. Further, the SBI: Brief and its four sub-scales was found to correlate positively and significantly with self-deceptive enhancement (SDE) and inconclusively with impression management (IM). Given that SDE is argued to operate 'unconsciously' and is correlated strongly with ego-resilience, the finding may simply provide evidence of the 'resilience' of the ego in the face of its transcendence. Subsequent item-level analysis using a technique predicated on the Differential Reliability Index (Jackson, 1994) found no one item of the SBI: Brief to be too susceptible to SDE.

In concluding, this dissertation outlines its limitations and highlights directions for further research. Four limitations of this dissertation are discussed in detail, including: (1) the make-up of the samples utilised; (2) the source of the items used to operationalise the spiritual beliefs construct; (3) the operationalisation of conceptual complexity and spiritual presence layers of the proposed holistic conceptual framework; and (4) the use of a cross-sectional design. It is recommended that future researchers seek to address some of the limitations of this dissertation. For example, an examination of the cross-cultural implications of the general taxonomy of spiritual beliefs is recommended. Further, an examination of the predictive utility of the SBI in health and organisational contexts is worthy of exploration. Future research should also employ a multitrait-multimethod (MTMM) in assessing spirituality. Finally, it is recommended that future researchers consider the proposed holistic conceptual framework for considering spirituality in planning for their study.

Chapter 1

Prologue

"There are two statements about human beings that are true: that all human beings are alike, and that all are different. On these two facts all human wisdom is found."

Mark Van Doren, American Poet (1894-1972)

1.1. Introduction

Spirituality is said to be life's most fundamental task (Helminiak, 2008; Pecchenino, 2009). It is what makes life vibrant and provides one's life with meaning (Hamel, Leclerc, & Lefrançois, 2003; Park, 2005; Puchalski, 2004; Silberman, 2005; Tuck & Thinganjana, 2007). It also provides a sense of morality and ethics, it allows for one to be 'at peace' with life's trials and tribulations and, it is a vehicle for self-actualisation (Csikszentmihalyi, 1998; Vella-Brodrick, 1995). Spirituality is categorised as a core characteristic of healthy people and is argued to be the source of all other well-beings (Chandler & Holden, 1992; Seaward, 1995). Where does one sign up?

Not so fast. The conceptualisation of spirituality also lacks clear boundaries (Miovic, 2004). Spirituality, it is argued, relates to an awareness of a being or force that transcends the material aspects of life (Pargament, 1999b; Unruh, Versnel, & Kerr, 2002). But what about those individuals that report being agnostic and non-theist? Could it not be argued that a belief *not to* believe in a being or force is an equally valid perspective through which one might make meaning in life? To disagree with this premise would be to disagree with one of the oldest documented spiritualities: Buddhism (Miovic, 2004). The lack of consensus into what is and is not spirituality makes research into the construct problematic (Berry, 2005).

So, what should one believe? From a conceptual perspective, all perspectives are equally valid: there is no 'right' answer (Helminiak, 2008). It could be argued that the research community's *modus operandi* is to 'seek' the correct answer. Within the field of religion and spirituality (R/S) research, this orientation has "… contributed to a view of R/S that [is] increasingly reductionistic, mechanistic, and materialistic (p. 631)" (Berry, 2005). Granted, reductionism is inevitable because it is impossible to measure spirituality directly and in its wholeness. The situation does provide somewhat of a paradoxical challenge for this dissertation given that it is the dissolving of the boundaries (between self and other) that is the ultimate 'aim' of a person being spiritual (Levenson et al., 2005). Stated another way, the ultimate concern of spirituality is the deconstruction of one's ego (Strohl, 1998): To find the Ultimate Whole, rather than its parts. Researching the phenomena of spirituality therefore, is difficult. This task is made even more difficult using an empirical and quantitative approach. However, greater empirical rigour relating to the construct of spirituality is required and this dissertation uses a quantitative research methodology.

Further, spirituality is an intuitively complex phenomenon. Just as there is no right or wrong way to feel about any one given situation (Palmer, 2003), there is no right nor wrong way to believe about spirituality. As will be argued in this dissertation, there are universal beliefs (meta-perspectives one might say) that provide the opportunity to bind all spiritual perspectives under one overarching umbrella. As stated by Helminiak (2008): "In a globalizing world, the day of particularistic religions seems to be passing, and upon us is the need for an array of particular religions that hold an explicitly shared set of beliefs and values: a common spirituality (p. 137)." This dissertation seeks to identify – or at least to progress the investigation into the explicitly shared set of beliefs and values embraced by all spiritualities and religions.

1.2. Aim

The present dissertation focuses on the conceptualisation of spirituality in existing literature and leads to its reconceptualisation. In undertaking this focus, this dissertation will review existing literature and distil recent research findings to establish a holistic conceptual framework for considering spirituality. Then, using predominantly Australian

respondents, this dissertation will seek to identify the explicitly shared set of beliefs and values embraced by all spiritualities and religions. As it pertains to this aim, the present dissertation can be divided into six parts, namely: (1) an examination of the utility of existing measures of spirituality for use within an Australian population; (2) the generation and confirmation of a preliminary general taxonomy of spiritual beliefs; (3) an examination of the criterion validity of the spiritual beliefs construct; (4) an examination of the content validity of the spiritual beliefs construct; (5) an examination and confirmation of the factorial validity of the spiritual beliefs construct and its operationalisation via an inventory; and (6) an examination of the confound of one's ego in the 'accurate' measurement of the spiritual beliefs construct. The anticipated outcome of this dissertation will be the development and initial validation of a holistic conceptual framework for considering spirituality.

1.3. Arrangement of chapters

Chapter 2 presents a general review of existing literature examining the validity and predictive utility of the construct of spirituality. This review is brief; however, it identifies four predominant issues relating to the current conceptualisation of spirituality. These four issues are addressed in more detail in subsequent chapters. Chapter 3 examines how spirituality is currently conceptualised and defined in literature. Based upon the review, the spirituality construct is reconceptualised to align with a holistic conceptual framework of spirituality that consists of four more specific elements. Using the holistic conceptual framework as a guide, Chapter 4 examines four published models and measures of spirituality and evaluates their relevance within contemporary Australian society. The psychometric and predictive and discriminant validity issues of each measure selected are also discussed. Chapter 5 establishes the points of commonality and departure for the four selected measures. In accordance with the overarching focus of this dissertation and using a predominantly Australian sample, Chapter 5 identifies four explicitly shared beliefs and values embraced by all spiritualities. Chapter 6 establishes a four-factor model and measure of spiritual beliefs utilising items taken from the four already evaluated measures of spirituality. Chapter 7 establishes a 'competing' model and measure of explicit religiosity. Chapter 8 seeks to examine empirically the premise that spirituality is a meaning making process through which people make sense from life's experiences. In so doing, Chapter 8 explores the relationship between the established models and measures of spiritual beliefs

and explicit religiosity in predicting identity stage resolution. Using a cross-sectional design, Chapter 9 examines the linear and non-linear relationship between the construct of spiritual beliefs and identity stage resolution across the lifespan. Chapter 10 examines the content validity of the spiritual beliefs construct by subjecting it to higher-order factor analysis with a number of competing constructs, such as: personality, psychological well-being, a sense of coherence, emotional intelligence, and others. Chapter 11 confirms the factorial validity of the four identified and explicitly shared beliefs and values embraced by all spiritualities and religions. More specifically, the four-factor model and measure of spiritual beliefs (identified via exploratory factor analysis in Chapter 6) is subjected to more stringent analysis using structural equation modelling and confirmatory factor analysis. Chapter 12 confirms the temporal stability of the spiritual beliefs construct and also subjects the four-factor model and measure of spiritual beliefs to evaluation using two indicators of self-report response style bias, namely: self-deceptive enhancement and impression management. Finally, Chapters 13 and 14 provide an overall discussion of this dissertation as well as its limitations and suggested directions for future research.

Chapter 2

Spirituality and its operationalisation in research

2.1. Chapter overview

The present chapter will provide a summary of recent research operationalising spirituality. Given the explosion of spirituality-grounded research in recent years, the present chapter will provide an overview of the predictive utility of spirituality and then focus on recent spirituality research within two specific domains, namely: (1) individual health and (2) workplace performance. The review of spirituality in predicting health outcomes will also take into consideration the relationship of spirituality to Quality of Life (QoL) research. The review of spirituality in the workplace will take into consideration research examining the role of spiritual leadership in organisations. The aim of a more targeted review is to indicate the inherent methodological issues that pervade these two predominant spirituality research foci. In so doing, the present dissertation will highlight the need for a reconceptualisation of spirituality in order for research surrounding this individual differences variable to evolve with a rigour that is presently lacking. Finally, future directions for undertaking spirituality-based research will be provided.

2.2. Introduction: Spirituality in Contemporary Society

Spirituality is a universal phenomenon (Berry, 2005; Miovic, 2004) and it is not surprising that spirituality is increasingly a popular topic in both mainstream and academic literature (Dy-Liacco, Kennedy, Parker, & Piedmont, 2005). Although academic literature states that there is a decline in people globally following organised religion (Engebretson, 2003), a person only needs to turn on the television, open a newspaper, review a magazine, visit a website, read an Internet blog, download a podcast, or read an advertising billboard to observe that there is also a counter-trend that considers spirituality to be important. As just one example of many, American talk-show host Oprah Winfrey recently provided an avenue for well over one-million viewers to participate (i.e., as a member of her studio

audience and simulcast via webcast) in an episode called *Spirituality101* (Winfrey, 2009). The episode was dedicated to the exploration of spirituality in everyday life. Once aired the episode was then archived on her website (www.oprah.com) and forms part of an extensive and continually expanding online resource for people exploring spirituality.

The last decade has also seen an abundance of academic research undertaken on the construct of spirituality (Dy-Liacco et al., 2005; Mattis & Jagers, 2001; Moberg, 2002). The essence of this research describes spirituality as an individual pursuit, multidimensional and subjective in nature and personal in outcome (Adams, Bezner, Drabbs, Zambarano, & Steinhardt, 2000; Hill et al., 2000; Spilka, 1993). Research to date has focused on the defining and conceptualising of spirituality (refer to Pargament 1999b for an overview); the measurement of spirituality (Howden, 1993; Levenson et al., 2005; Miller, 2004; Piedmont, 1999); measurement issues relating to the operationalisation of spirituality (Moberg, 2002); and, spirituality's construct distinctiveness from other related constructs (Piedmont, 1999). Further, research into spirituality has examined the developmental trajectory of spirituality, including: the pre-cursors to the commencement of a spiritual path (Shahabi et al., 2002) and the development of a person's spirituality towards deeper and more comprehensive spiritual experiences (Reich, 2001; Strohl, 1998). Finally, research into spirituality has explored the function of spirituality within a range of contexts, such as the role of spirituality in facilitating healthy outcomes (Myers, Sweeney, & Witmer, 2000; Vella-Brodrick, 1995) and the utility of spirituality in the workplace (Milliman, Czaplewski, & Ferguson, 2003; Mitroff & Denton, 1999).

2.3. A review of recent research into spirituality

Contrary to the opinion that spirituality remains overlooked, if not bypassed, by the field of psychology, a leading scholar in the field of religion and spirituality has been cited as commenting that research examining spirituality is significantly more extensive than many psychologists would suppose (cited in Hill et al., 2000). Although considered a somewhat rudimentary approach for reviewing citations (Koenig et al., 1999), the present researcher conducted a 'title-only' search (review undertaken on the 31st of January 2009) within a leading psychological database (PsycINFO) to demonstrate the point that research into

spirituality is extensive. The review identified over 2,122 articles published since 1990 with the word 'spirituality' in the title compared with only 1,047 articles published with the words 'emotional intelligence' in the article title; with emotional intelligence being a construct many would argue has a groundswell following (Salovey & Grewal, 2005). It is somewhat surprising that with the quantity of research completed on the construct of spirituality there has, until recently, failed to be greater acknowledgement of spirituality as an important factor underpinning human functioning (Helminiak, 2008). For the spirituality sceptic to stop and take notice, it needed the 'hard-science' of physics and Quantum Mechanics (QM) to finally demonstrate theoretically what many people intrinsically already know – that all life is inextricably linked (Bohm, 1980; Rosado, 2000).

A complete review of all research exploring spirituality is beyond the scope of the present dissertation; however, following is a synopsis of emerging research highlighting the developmental aspects underpinning spirituality, as well as the role spirituality may have in facilitating positive and negative outcomes in both health and organisational contexts.

2.3.1. Pre-cursors to the commencement of a spiritual path

Research has uncovered a number of moderating and mediating variables that determine an individual's propensity to commence a spiritual 'journey', as well as an individual's level of development along that path. According to published research, the moderating factors linked to a person's increased likelihood of pursuing a spiritual life are: level of cognitive commitment, people with more creative and expansive thinking are more likely to be spiritual (Wink & Dillon, 2002); race, non-Caucasians are more likely to report being spiritual (Underwood & Teresi, 2002); gender, women are more likely to be spiritual than men (Underwood & Teresi, 2002); age, older people are more likely to consider spirituality more proactively (Trouillet & Gana, 2009; Verno, Cohen, & Patrick, 2007; Wink & Dillon, 2002); level of education, individuals with higher levels of education are also more likely to explore spirituality (Shahabi et al., 2002); marital status, singles are more likely to be explicitly spiritual (Granqvist & Hagekull, 2000); and personality traits, with 'positive' personality traits such as agreeableness, extraversion and openness to experience being related positively with many measures of spirituality (Trouillet & Gana, 2009).

Further, factors mediating one's ultimate level of spiritual awakening or spiritual growth include: sense of coherence (SOC), with higher levels of SOC resulting in the exploration of deeper levels of spirituality (George, Ellison, & Larson, 2002); independence or rejection of organised religion, particularly the Catholic religion; propensity to adopt a horizontal belief system; and openness to recognising the connectedness of all things, rather than just an individual connectedness with God (Shahabi et al., 2002). Finally, people do select a myriad of approaches in coping with the complexity of 'life', one being the pursuit of spirituality (Mattis, 2002). The commencement of a spiritual life – the 'trigger' – can often be a significant negative event (Bryant & Astin, 2008; Gulick, 2004; Phillips III, Lynn, Crossley, & Pargament, 2004; Wink & Dillon, 2002). For example, spirituality seeking behaviour increases significantly in medically ill elderly patients two-years from the onset of illness (Pargament, Koenig, Tarakeshwar, & Hahn, 2004). In a second example demonstrating a similar theme, individuals incarcerated within the psychiatric care division of the Canadian prison system were found to be more than 15% more likely to attend church worship at least weekly than the average Canadian (38.5% versus 22%-25%) (Mansfield et al., 2008). Even more important to the present dissertation, negative life events when experienced prior to the age of 40 years set up a dynamic within the individual that results in a greater trajectory towards post-formal stages of cognitive development (Wink & Dillon, 2002). Finally, spirituality can subsequently buffer the intensity of one's experience of that life event (Brennan, 2002).

2.3.2 Developing one's spirituality

Research also suggests that spirituality develops across the lifespan (Hill et al., 2000; Strohl, 1998; Wilbur, 2000) with that development being more than just an age effect (Trouillet & Gana, 2009). Given that one's spiritual development is dynamic, it does make it difficult to identify how best to cultivate a more spiritual life. Four factors in particular make this research agenda challenging. First, the pursuit of spirituality and spiritual growth is a complex activity (Heaton, Schmidt-Wilk, & Travis, 2004) that may not involve a linear trajectory (Reich, 2001). Second, spirituality can be expressed as an internal component of an individual's perception of reality, and therefore involves one's personal and subjective experience that may or may not be generalised to all (Strohl, 1998; Wink & Dillon, 2002). Third, spiritual growth is made more complex as one's developmental potential, as it relates to spirituality, is unlimited (Strohl, 1998; Wilbur, 2000). Finally, for most people spirituality is

a private matter that often results in people not disclosing that they are proactively undertaking spiritual development, let alone what that development entails. The discussion or displays of private matters is taboo: this is even more apparent within the context of work (Mitroff & Denton, 1999).

Even considering the four aforementioned difficulties, research into the machinations of spiritual development has commenced (Luskin, 2004). Reich offers that spirituality development is concerned with an orientation towards the transcendent objective, achievement of personhood, existentiality, awareness (of Self), the sacred, and a world-view of life (Reich, 2001). Other researchers have also offered similar interpretations for what constitutes positive spiritual development, as well as a number of additional elements. For example: personal values identification and the development of a life-purpose statement (Bruce, 2004); the cultivating of unconditional love (of self and others) through therapy (Chandler & Holden, 1992); the dissolving of self-other boundaries through structured practices, such as meditation (Levenson et al., 2005); the use of spiritual surrender as a mechanism for self-growth (Dyslin, 2008; Mattis, 2002); the adoption of pro-social beliefs, such as humility, humanity and appreciation of oneself as part of a larger whole (Miller, 2004); and the identification and cultivation of one's 'signature strengths' (i.e., the combination of intrinsic motivators that aim to foster a more meaningful life) (Peterson & Seligman, 2004a).

Of even greater importance to the development of spirituality is research supporting the premise that the 'path' for developing a spiritual life does not appear to be linear (Chandler & Holden, 1992; Hamel et al., 2003). In this way, one's spiritual development provides a medium through which an individual can develop towards a 'world-view' of self (Reich, 2001; Wink & Dillon, 2002). However, this poses the greatest challenge to the objective measurement of spiritual development because the conceptualisation of one's frame-of-reference (i.e., of a 'world-view') is based upon a premise of limitless levels of abstraction (Hy & Loevinger, 1996). Therefore, the researcher that examines the development of spirituality should do so through the lens of one or many of the stage-trait models documented in psychological literature. No easy task because according to Reich (2000), the journey of spiritual development involves nested feedback loops linked to psychologically important factors. Factors such as one's native endowment, socialization,

cultural surroundings, chance encounters, life events, socio-economic status, present level of self-awareness, and present environmental factors, just to name a few. Of the research examining the development of one's spirituality, one theme is consistent: A life built on materialism is deemed an impoverished life (Reich, 2001).

2.3.3 The role of spirituality in facilitating healthy outcomes

One of the more obvious avenues for spirituality-based research is how the construct supports individual and collective health and well-being. There is a multitude of research examining the positive and negative role spirituality has in supporting a person's mental, physical and emotional well-being (Haber, Jacob, & Spangler, 2007; Koenig et al., 1999). Most of the studies find a strong positive relationship, which has led to debate as to whether spirituality and individual health, particularly one's quality of life (QoL), can be considered analogous. The debate relating to the extent of the construct overlap between spirituality and QoL was examined recently via a meta-analysis completed by Sawatzky, Ratner and Chui (2005). The results of the analysis demonstrate only 12% shared variance between the two constructs based on a review of 51 studies.

In one such study examining spirituality and mental and physical well-being in older people (Kirby, Coleman, & Daley, 2004), results showed a positive correlation between spiritual beliefs and two sub-scales from Ryff's (1989) *Psychological Well-Being Scale*, namely: personal growth ($r = 0.18$, $p < .01$) and positive relations with others ($r = 0.18$, $p < .01$). A subsequent regression analysis showed spirituality to be a significant contributor to psychological well-being and a moderator for the contribution of perceived physical frailty in predicting psychological well-being. In another review examining the relationship between spirituality, religion and emotional well-being in adolescents completed by Hodges (2002), a positive relationship is indicated between the three constructs. Of the literature Hodges reviewed, adolescents who found meaning in life through their spirituality were also found to have lower rates of depression (but only if they perceived God to be empowering them to deal with their issues) and cope better in instances of parental break-up (i.e., separation and divorce). Further, people with intrinsic spiritual values (i.e., values that are self-serving and fluctuate depending on the specific situation) were found to experience less depression and greater life satisfaction. Finally, people with a sense of community and shared support (e.g., from a church community) were also found to experience greater attachment, social

integration, tangible assistance, guidance, positive self-worth, and also provide support to others.

Finally, based in mindfulness philosophies and pioneered by the Mindfulness-Based Stress Reduction (MBSR) Program developed by Jon Kabat-Zinn of the University of Massachusetts (Kabat-Zinn, 2005b), has come a number of physical, mental and emotional health and wellness-based programs. Often referred to as the "fourth wave" of psychology (Hayes, Follette, & Linehan, 2004), are a range of mindfulness-based therapies that explicitly and implicitly use spirituality-grounded philosophies, including: MBSR; Mindfulness-Based Cognitive Behavioural Therapy for Depression (MBCT) (Segal, Williams, & Teasdale, 2002); Acceptance and Commitment Therapy (ACT) (Hayes, 2002); Dialectical Behaviour Therapy (DBT) (Lynch, Chapman, Rosenthal, Kuo, & Linehan, 2006); and Relapse Prevention Therapy (RPT) (Marlatt, 2002). Numerous research studies examining the efficacy of these therapies in both clinical and non-clinical populations have been undertaken with the findings being overwhelmingly positive (Baer, 2003).

Although numerous research studies demonstrating the positive impact spirituality has on a number of health-related variables have been published, there remain conceptual and measurement issues that underpin the efficacy of research completed (Berry, 2005). Firstly, the issue that much research considering *spirituality* and health is concurrently exploring *religion* and health. Indeed, many articles published under the guise of 'spirituality' reviewed by the present researcher were in fact spirituality/religiosity in focus. This blending of constructs creates a dilemma for future researchers because it does not allow for a true account of the validity or practical utility of spirituality as a stand alone predictor of health related outcomes. Coupled with the confounding of spirituality and religiosity constructs within present research, is the lack of conceptualisation of how spirituality (or religion) relates to other domains, particularly the psychological and social domains of the individual (O'Connell & Skevington, 2007). With existing models and measures for both psychological well-being (see Ryff, 1989) and social well-being (see Keyes, 1998) already published, it is imperative that spirituality not be used interchangeably with these constructs in health-based research. According to O'Connell and Skevington (2007), a failure to do so will result in it remaining unclear as to whether spirituality better represents important health outcomes, such as quality of life, than psychological or social factors. A

related issue to this second limitation is the possibility that the relationship between spirituality and related health outcome variables is actually accounted for by a third unidentified variable (Thoresen & Harris, 2002). Thirdly, it could be argued that spirituality is a cornerstone factor that influences the extent to which individual and collective quality of life is manifested. However, spirituality is more often than not omitted from such research as an important variable of consideration. And when spirituality is included as a variable of note, it is consistently used interchangeably with a religiosity-based measure. This demonstrates a lack of understanding amongst researchers of the possible discriminate nature between spirituality and religiosity. Finally, it remains unclear within many of the published findings if the specific research authors have operationalised spirituality as a set of beliefs or attitudes (i.e., a way of *being* spiritual), or behaviours and practices (i.e., a way of *doing* spirituality). The way spirituality is operationalised in health-related research may, in part, explain why some researchers find spirituality to have only low or moderate impact on well-being (Kohls, Walach, & Wirtz, 2009) while others still state that it is unwarranted to explore the association between spirituality and health outcomes (Thoresen & Harris, 2002).

2.3.4 The role and utility of spirituality in the workplace

With organisations increasingly considered to be the 'new church' it could be argued that the examination of spirituality in the workplace is crucial. Research examining the role of spirituality in the workplace has commenced; however, some researchers state that the rigour of academic research into workplace spirituality is poor (Milliman et al., 2003). In addition, the place of academic research into spirituality in the workplace is also contested. The criticism has come from the lack of rigour or critical thinking related to the theoretical link between spirituality and a range of individual, group and organisation-wide workplace success variables (Milliman et al., 2003). The resistance to spirituality in the workplace transpires on two fronts: firstly, from the perspective of the employee; and secondly, from the perspective of the organisation. This resistance stems from the perception that spirituality-based research in organisations to date has focused solely on examining the positive impacts of the construct in the workplace. Research has not explicitly explored the potential negative role of spirituality for an employee. Considering the resistance from the perspective of the employee, research completed by Chandler and Holden (1992) presented a model of spiritual development proposing that individuals could be too spiritual. Within an

organisational context, a similar model might also apply. For example, the employee who postulates that his or her "spiritual path" is the only way, offending or alienating co-workers as a result; or, the employee who delivers poor business decisions as a consequence of adhering to his or her religious or spiritual beliefs (Milliman et al., 2003). Considering the resistance from the perspective of the organisation, it has been suggested that research into workplace spirituality risks turning one's personal spiritual experiences into another faddish variable that may be manipulated for organisational gain (Lund Dean, 2004; Milliman et al., 2003). Given that capitalism is an economic model grounded in self interest (Fry & Slocum, 2008), it is unsurprising that some purists consider spirituality unsuited to the domain of work.

Conversely, the potential benefits for the employee in exploring workplace specific spirituality are many. Popular press reports that increased work intensification has resulted in the employee experiencing a reduced sense of coherence in their work (Fallon, 2001). With the construct of sense of coherence considered pivotal to a person's capacity to find meaning in their work (Seligman, 2002) and cope with everyday stressors (Berry, 2005; Larsson & Kallenberg, 1999), there appears to be some benefit in exploring the role of spirituality in a workplace context. Seligman and Csikszentmihalyi, two founders of the positive psychology movement, have also promoted an employee's responsibility in moulding a personally meaningful career (Csikszentmihalyi, 1998; Seligman, 2002). A study completed by Milliman (2003) examining spirituality (as operationalised by the facets of meaningful work, community and alignment with organisational values) and a number of workplace attitude variables also found strong and positive relationships between workplace-based spirituality and organisational commitment, intention to stay, intrinsic work satisfaction, job involvement, and organisational based self-esteem. Significant Pearson's correlations were found for all variables of between $r = 0.45$ and 0.77 ($p < .01$; two tailed), with the exception of the association between community and intrinsic work satisfaction, which failed to achieve significance. Finally, at an organisation-wide level Mitroff and Denton (1999), authors of the book *A spiritual audit of corporate America: A hard look at spirituality, religion, and values in the workplace*, examined five models (and the relative strengths and weaknesses of each) for an enterprise-wide introduction of spirituality into the workplace (the five models examined included religion-based, evolutionary,

recovering, socially-responsible and values-based) and found support for the consideration of spirituality as a medium for enhancing organisational performance.

Of the research examining spirituality in the workplace, the ongoing work of Louis Fry in the domain of spiritual leadership shows strong promise. Fry's conceptualisation of spiritual leadership draws from motivational, path-goal, charismatic, transformational, ethical and values-based leadership models and consists of three factors, namely: Vision, Hope/Faith and Altruistic Love. These three facets in turn influence follower behaviour (operationalised as Calling and Membership) and individual and organisational outcomes, including: organisational commitment; organisational productivity; profit and sales growth; employee well-being; and corporate social responsibility (Fry, 2003; Fry & Slocum, 2008). A review of the research undertaken by Fry shows positive findings for her spiritual leadership model in a range of workplace environments, including the United States army (Fry, Vitucci, & Cedillo, 2005); and a large distributor of power-based products based in the south west of America (Fry & Matherly, 2008). In her exploration of spiritual leadership Fry also provides a number of principles and workplace competencies relevant to the development of spiritual leadership (Fry & Whittington, 2005); as well as robust business metrics (including suggested lead and lag indicators of organisational performance) for measuring the Return-On-Investment from developing spiritual leadership in the workplace (Fry & Matherly, 2006).

As with research examining the association and utility of spirituality to individual health and well-being, issues in the conceptualisation and measurement of spirituality in the workplace are present. Specifically: (1) research considering spirituality in the workplace is concurrently exploring religion in the workplace; (2) the confounding of constructs used to operationalise spirituality, for example Milliman's (2003) conceptualisation of spirituality as (in part) an alignment with an organisation's values; (3) the omission of spirituality as a variable worthy of consideration in much of the workplace-specific research undertaken, especially considering Seligman and Csikszentmihalyi's (Csikszentmihalyi, 1998; Seligman, 2002) strong argument that the finding of personal meaning in one's work is crucial to an employee's performance; and (4) a lack of clarity as to whether research exploring spirituality in the workplace has conceptualised spirituality as a set of beliefs or attitudes, or behaviours and practices.

2.4 Future directions in spirituality based research

The grounding of spirituality-focused research is required. First, for the construct of spirituality to progress, a universally accepted definition of spirituality is needed – and if this remains impossible, then a set of universal guiding principles or indicators of a broader latent spiritual construct must be identified (Helminiak, 2008). Secondly, a conceptual framework for considering the various operationalisations of spirituality must be established. Using the present review of recent research of spirituality in health and organisations as a case in point, it remains unclear to the present researcher if the cited authors considered a person's frame-of-reference (Hy & Loevinger, 1996) prior to interpreting his or her spirituality "score". A failure to do so might result in an individual being considered highly spiritual, when in fact, they may be considering spirituality from a somewhat self-centered or closed-minded perspective. It also remains unclear if the cited authors considered the operationalisation of spirituality as a belief-structure or a set of behaviours, practices and experiences (Thoresen & Harris, 2002). Further still, it could be argued that respondents who participated in the cited research may not have been consciously on a spiritual path (i.e., going to church does not necessarily mean the individual has made a conscious and personal choice to follow God). It remains unclear as to the erroneous effect a respondent's lack of conscious intent towards spirituality may have on the potential power of the research findings published. Addressing some of these methodological challenges for spirituality-focused research is likely to alleviate some of the concerns many protagonists have about the field of spirituality-based research (Milliman et al., 2003; Tsang & McCullough, 2003).

On a related matter, most research examining spirituality has sought to consider the construct within a specific context or domain; however, what remains missing is an exploration of spirituality from a perspective that is context or domain neutral. Given the various confounds possible in conceptualising and operationalising spirituality, the present researcher contends that it is more pertinent to consider the influence spirituality has on the 'whole-person' rather than within a narrower context or domain specific focus. Upon a review of existing research examining spirituality, at present no research has been undertaken to examine the specific processes whereby spirituality acts as a meaning making

process for individuals. An opportunity arises for the exploration of spirituality and its relationship to individual identity development.

2.5 Conclusion

The present chapter sought to highlight some of the endemic issues hampering the progress of research into spirituality within health and organisational contexts. As argued, the root cause of the issues highlighted is a lack of conceptualisation for spirituality in research. Traditionally, the conceptualisation of a construct has been grounded in a readily accepted definition. At present however, no 'universal' definition for spirituality has been identified with the research of Kenneth Pargament (see Pargament, 1999b)being one possible exception. The following chapter will seek to untangle the current 'fuzziness' that surrounds the construct of spirituality so as to provide a holistic conceptual framework for considering spirituality in future research.

Chapter 3

Reconceptualising spirituality

3.1. Chapter overview

Drawing upon the conclusion of Chapter 2, the present chapter will provide an overview of the major conceptualisations of spirituality and religion. A number of complementary and competing definitions of spirituality and religion will be presented and the relative merits of each will be surmised. The four overarching themes that emerge from the definitions provided will be outlined and the definition of spirituality adopted by the present dissertation will be provided. Finally, a holistic conceptual framework for considering spirituality in research will be provided and a definition of each component of the framework will be presented. The chapter will conclude with a research agenda for demonstrating the utility of adopting the proposed holistic framework for future research examining spirituality.

3.2. Introduction

Although there has been extensive research into spirituality, the robustness of the research has been hampered due to a lack of a uniform definition of the construct. Any researcher seeking to identify a common and universal definition of spiritually in which to operationalise the construct will likely find this an arduous task fraught with semantic blind-spots, construct confounds, conceptual inadequacies and cross-cultural nuances (Berry, 2005; Thoresen & Harris, 2002). As already argued in Chapter 2, five issues muddy the coherence of the construct: (1) the recent research agenda that entangles spirituality with religion; (2) the blurring of boundaries between spirituality and other related constructs; (3) the lack of clarity pertaining to spiritual experiences and those practices that seek to manifest a spiritual experience; (4) the frame-of-reference, that is, stage of conceptual complexity (e.g., cognitive, moral, faith or ego development, etc) through which an

individual interprets his or her spiritual experiences; and (5) the cultural and sub-cultural challenges related to the conceptualisation of spirituality.

3.3. Problems with how spirituality is currently conceptualised

The challenge of determining a uniform definition of spirituality relates to how spirituality is considered in relation to religiosity (Pargament, 1999b). For example, Pargament (1999b) describes spirituality as an element of religious practice, that is, spirituality sits within the broader domain of religion. Conversely, religion has been described as one element of an individual's more holistic pursuit of the spiritual (Stifoss-Hanssen, 1999). Religion and spirituality have also been considered as two distinct and unrelated constructs (Helminiak, 2008; Simpson, Newman, & Fuqua, 2007; Verno et al., 2007) and religiosity and spirituality have also been used inter-changeably, or synonymously, in psychological research (Mattis, 2002; Zinnbauer et al., 1997). According to Berry (2005), this latter issue (i.e., spirituality and religion used synonymously) is an increasing (and unfortunate) trend in published research in the field of psychology during the past 3-5 years. Finally, the direction of the relationship between spirituality and religion (i.e., does religion result in a person being spiritual, or visa-versa) remains unclear and is worthy of exploration.

A uniform definition of spirituality also remains elusive due to the blurring of boundaries in literature between spirituality and other related constructs, including: psychological well-being (Ryff, 1989); social and subjective well-being (Keyes, 1998; Keyes, Shmotkin, & Ryff, 2002); flow (Csikszentmihalyi, 1998); flourishing (Keyes, 2002); mindfulness (Brown & Ryan, 2003); personality (as conceptualised by the 'Big Five' factors) (McCrae & Costa, 1987); emotional intelligence (Salovey & Mayer, 1990); and consciousness (Rosado, 2000; Wilbur, 2006), just to name a few. At present, research into spirituality has not adequately teased out the convergent, discriminant and predictive associations between spirituality (however it is operationalised) and other contemporary constructs concurrently examined in psychological research.

Further, a uniform definition of spirituality remains elusive due to the various perspectives pertaining to the 'correct' path or practice for exploring spirituality, including: Monotheistic (e.g., Christianity, Judaism or Islam), Dharmic (e.g., Buddhism or Hinduism),

New Age (e.g., Crystal Healing or Astrology), Indigenous (e.g., Wicca, Celtic or Shamanism), agnostic, atheist, etc. Considering the many paths available for the exploration of spirituality it is likely that an individual's definition of spirituality will also be influenced by his or her practice or experience of the spiritual (Nasel, Haynes, & David, 2005; Stifoss-Hanssen, 1999).

A uniform definition of spirituality also remains elusive because researchers continue to debate whether all spiritual experiences can be considered equal (Chandler & Holden, 1992; Reich, 2003a). By way of example, can the spiritual experiences of historical figures such as Jesus, Buddha, Mohammed, Krishna and other notable spiritual leaders be considered the same as those the 'every-day' person experiences on his or her spiritual journey? Research suggests that all spiritual experiences cannot be considered equal with this premise based on varying depths of "consciousness" (Rosado, 2000). Various frameworks for considering a person's level of consciousness exist. Examples include: Grave's Spiral Dynamics (Beck & Cowan, 1995); Maslow's Hierarchy of Needs (Maslow, 1976); Loevinger's Ego States (Hy & Loevinger, 1996); Cook-Greuter's Levels of Leadership Maturity (Cook-Greuter, 2002); Kohlberg's Stages of Moral Development (Kohlberg, 1969); Fowler's Model of Faith Development (Fowler, 2004); and Wilbur's Spectrum of Consciousness (Keyes et al., 2002; Wilbur, 2000). For the purposes of the present dissertation, such models will be categorised as indicators of *conceptual complexity*[1] (i.e., a person's world-view, that is, a level of system or meta-schema *in* the person that is not permanent yet can be considered relatively stable across time and context) (Loevinger, 1998). Each example a framework for conceptualising consciousness has been considered in relation to spirituality (Fowler, 2004); however, the relationship between stage-trait[2] theories of individual development and spirituality remains incomplete. With researchers stating that spirituality develops across the lifespan (Hill et al., 2000) it remains to be seen if

[1] The term *conceptual complexity* was first utilised by Loevinger (1998) in reference to an antecedent measure to the Washington University Sentence Completion Test (WUSCT), called the Authoritarian Family Ideology (AFI). The AFI encompassed elements of moral development, interpersonal relations and ego development.

[2] Frameworks for considering individual development, such as ego development, are often referred to as stage-trait theories because: (1) all individuals must transition through sequential stages of developmental framework; and (2) an individual's ego is relatively stable, that is, it changes slowly which makes it 'trait-like' (Hy & Loevinger, 1996).

an individual's deeper stages of conceptual complexity translate into an experience of spirituality that is also more complex in nature (Reich, 2000).

Finally, for spirituality to be considered a universal phenomenon, does the construct need to be culture, socio-economic, gender, age or values neutral? Much research indicates that spirituality is none of these things (Mansfield et al., 2008; Shahabi et al., 2002). What remains unclear in current research are the measurement and methodological confounds of spirituality failing to be culture, socio-economic, gender, age or values neutral (Moberg, 2002). Therefore, a definition for operationalising spirituality must account for the subjective, individual and personal explanation of one's spiritual experiences. Given these five research methodological hurdles[3], it remains no surprise that the identification of an all encompassing and operational definition of spirituality has proven difficult (Miller, 2004; Pargament, 1999b).

3.4. Defining spirituality and religion: Seeking clarity from two fuzzy constructs

As stated, defining spirituality is problematic. Maher and Hunt (1993) suggests: "What has made the process of definition [of spirituality] so elusive as a matter of cognitive discourse is the nature of the term itself. It is value laden, and seemingly so cultural, religiously, and ethnically bound, that any meaningful definition appears to be an exercise in futility (p.22)." Spirituality is a term whose meaning everyone appears to know until they come to define it (Meehan, 2002). Yet, this has not stopped an explosion in the number of (supposed) spirituality measures from being developed. An extensive review of spirituality measures completed by Hill and Hood (1999) found over 120 definitions. With the sheer number of measures available, it begs the question: How are these researchers defining spirituality?

Another more recent review of literature related to spirituality and religiosity completed by Unruch, Versnel and Kerr (2002), identified seven themes for how spirituality is defined in health literature, namely: (1) relationship to God, a spiritual being, a higher

[3] To summarise, problems relating to the conceptualisation of spirituality exist because of a lack of clarity: (1) between the construct and religiosity; (2) between the construct and related constructs, such as personality and psychological wellbeing; (3) in the most appropriate 'path' or practice for exploring spirituality; (4) in how to determine the difference levels of spiritual experience; and (5) in how to establish a universal experience of the phenomenon across culture, socio-economic status, gender, etc.

power, or a reality greater than oneself; (2) not of the self; (3) transcendence or connectedness to a belief or higher being; (4) existential, not of the material world; (5) meaning and purpose in life; (6) a life force of the person, integrating aspect of the person; and (7) summative, including definitions that included many of the aforementioned themes, as well as a form of spirituality manifested as values and motivations. Given the exhaustive review of the various definitions given to spirituality completed by Unruch et al., it is therefore not pertinent for the present dissertation to also complete a further review of how spirituality is defined. For the purposes of this dissertation, three principles for considering a suitable definition of spirituality have been adopted. The three principles allow for an individual, multidimensional and subjective operationalisation of the construct and were originally identified by Spilka (1993). Hill et al. (2000) subsequently summarised these themes as: (1) S*pirituality as grounded in a belief in a Higher Being (i.e., God),* a conceptualisation of spirituality pertaining to the thoughts and practices that underpin theologies either broadly or narrowly defined; (2) *Spirituality as grounded in self-fulfilment*, a conceptualisation of spirituality focused on human achievement or potential; and (3) *Spirituality as grounded in the connecting of oneself to a larger 'system'*, a conceptualisation of spirituality that stresses one's relationship with a broader reference group, nature or ecology. Although not definitions of spirituality *per se*, each principle surmises a contemporary understanding of spirituality. The present dissertation identified a number of definitions of spirituality. These definitions were evaluated according to Spilka's (1993) three principles.

Considering the first principle, Pargament (1999a) defines spirituality as, "a search for the sacred (p. 12)". By way of contrast, religion is "a search for significance in ways related to the sacred (p. 11)". The 'sacred' is an entity (i.e., God or Ultimate Being), object, principle or concept that transcends the self (Hill et al, 2000) that is set apart from the ordinary and worthy of reverence. In operationalising this definition, Pargament proposes that the search for the sacred must transcend the self. The search for the sacred therefore, cannot include intermediate 'sacred' acts, such as: the pursuit of sporting mastery or academic excellence; the sanctification of some professions, such as medicine, law, or psychology, or the like as worthy of reverence; or, self-fulfilment and personal gratification (Pargament, 1999b). Pargament's definition of spirituality places the construct within the broader domain of religion (Pargament, 1999a).

If spirituality is placed within the broader purview of religion, it is influenced by the values, beliefs and doctrines of a specific religion. This is problematic to research into a universal spirituality given that there is no one universal religion practices throughout the world. Religious doctrines have adopted different and often competing religiosities which, therefore, render a universal definition of spirituality within this conceptual framework impossible (Moberg, 2002). Further, by defining spirituality as being within the domain of religion, research is restricted to a narrower, more traditional conceptualisation of God (Stifoss-Hanssen, 1999). Indeed Emmons and Crumpler (1999) suggest that it is the different images of God that may be at the root of the tension between religion and spirituality in psychological research. This perspective is supported by other researchers (Helminiak, 2008). Although the majority of Australia's population do align with more traditional anglo-celtic (e.g., Catholic, Anglican, etc) religious beliefs and practices (68% of the Australian population is reported as being Christian) (ABS, 2006), there are many who do not subscribe to a Western-based monotheistic religion. As such, Pargament's definition is less able to be generalised to peoples of a Dharmic (e.g., Buddhism or Hinduism) or Indigenous origin, for example. Finally, with a decline in church attendance continuing, both in Australia and internationally (Engebretson, 2003), the ongoing utility of Pargament's definition of spirituality could be argued to be finite.

Stiffoss-Hanssen (1999) provides an alternative definition of spirituality to Pargament, one more closely aligned with Spilka's (1993) second principle. In contrast to Pargament, Stiffoss-Hanssen suggests that spirituality also includes a range of characteristics that are unable to align with Pargament's definition of spirituality. Stiffoss-Hanssen offers characteristics such as existentialism, connectedness, authenticity, meaning in life, holism, and self and community, as being aspects of an individual's spirituality. Such characteristics suggest that spirituality must be considered a wider, not a narrower, concept to religion. Stiffoss-Hanssen proposes the following definition of spirituality: "Spirituality is people's search for meaning, in relation to the big existential questions (p. 28)".

In considering Stiffoss-Hanssen's definition of spirituality, it appears to have a broader application than Pargament's definition. It has utility beyond the potentially narrow confines of traditional religion. However, will the pursuit of the "big existential questions" result in one living a spiritual life? Pargament argues that it might, and it also might not (Pargament,

1999a). One definition of existentialism might be a deeper knowing of the Self, focused on the expansion of one's understanding of life's most important questions: meaning, death, isolation and, to know oneself (Yalom, 1980). However as argued by Pargament, one can find meaning in motorcycle riding, academic excellence, conquering the same or opposite sex, or interacting with nature (Pargament, 1999a). Such intermediatory pursuits are not, according to Pargament, spiritual in nature or complexity. Central to the pursuit of an existentialist spirituality is the appropriate defining of boundaries relating to what does and does not constitute a 'spiritual' pursuit. Criticism of New Age spiritual practices in psychological literature has, in part, been related to one's opportunity to pursue an individualistic and materialistic path towards self-insight (often mislabelled as self-transcendence) (Mears & Ellison, 2000; Roof, 2000).

As it relates to the perspective of Stiffoss-Hanssen, it is worth considering the length of time dedicated, or degree of complexity related to attaining the spiritual (existential) pursuit. Research suggests that the pursuit of spirituality is a life-choice (Mahoney & Pargament, 2004). Spirituality consists of a fundamental set of attitudes, beliefs or practices an individual adopts on a daily or moment-by-moment basis for his or her entire life (Hamel et al., 2003). As such, existentialist spirituality cannot be the obtainment of a university degree (or the like); the conquering of the same or opposite sex; or, the mastering of a skill, activity or process (such as the riding of a motorcycle). The absence of an existential spiritual pursuit that may require a lifetime to achieve or 'master' (if mastering the pursuit is, indeed, possible) results in what Victor Frankl refers to as an 'existential vacuum" or, the life absent of meaning (Frankl, 1984).

Considering Stiffoss-Hanssen's definition of spirituality even further, it may be appropriate to also consider a person's stage of conceptual complexity; noting that a person's stage of conceptual complexity is domain (e.g., work, personal or family) and context (e.g., situation or interaction) free. It could be argued that an existentialist orientation towards the spiritual is the pursuit of what Buber (1958) described as *I-Thou* integration (Cooper, 2003). In Dharmic spiritual practices (e.g., Buddhism) such a pursuit has been described as the de-construction or transcendence of the ego (the self with a lower case 's') towards a spiritual awareness free of the duality of subject and object (Barnes, 2003). Operationalising Stiffoss-Hanssen's existentialist spirituality in this way identifies a

spirituality that seeks to know the Self (the self with an upper case 'S'), free from a body of thoughts, belief, feelings, identities or labels based upon a fear of losing one's physical and psychological identity (Hamel et al., 2003; Ho & Ho, 2007). Seeking the Self (upper case 'S') has a high degree of complexity and is likely to require a lifetime of dedication and self-discipline (Hamel et al., 2003; Walsh & Vaughan, 1980).

Utilising Pargament's definition of spirituality as a foundation, Hill and his colleagues (Hill et al., 2000) offer a third definition, stating that spirituality is the "… feelings, thoughts, and behaviours that arise from a search for the sacred (p 66)." To more clearly define spirituality, Hill et al. (2000) developed a criterion for considering Pargament's definition of spirituality: "The term '*search'* refers to the attempts to identify, articulate, maintain, or transform. The term '*sacred'* refers to the divine being, divine object, Ultimate Reality, or Ultimate Truth as perceived by the individual [italics added] (p. 66)". Hill et al.'s (2000) definition of spirituality seems to denote spirituality as pertaining to action. However, contrary to Pargament, Hill and his colleagues suggest that although one's spirituality can be explored within religion, it does not necessarily need the institution of religion. This definition of spirituality seemingly crosses the divide between Spilka's (1993) first and second guiding principles for defining spirituality.

Similarly, Sinnott (2001) defined spirituality as, "one's personal relation to the sacred or transcendent, a relationship that then informs other relationships and the meaning of one's own life (pp. 199-200)". According to Sinnott, spirituality may or may not include worldviews, dogmas, and practices shared by any one sub-culture. By way of comparison, religion is viewed by Sinnott as the practices and beliefs related to a particular dogma system. In this way, spirituality is viewed as more expansive than religion (Sinnott, 2001). Further, Sinnott's definition of spirituality considers the 'transcendent'; the pursuit of the larger purpose or meaning in one's life (Frankl, 1984; Hodges, 2002).

Together, both Hill et al. (2000) and Sinnott's (2001) definition of spirituality consider the role of a Being, Entity or Purpose that is greater than the individual: namely, the Transcendent. Transcendent practices (i.e., behaviours, activities or specific actions focused on establishing an experience of the transcendent) may or may not involve God as the Higher Being. Further, one's Higher Being, Entity or Purpose may be 'positioned' within or beyond the individual. That is, one may perceive the transcendent to be an internal Spiritual

Centre, similar to what Jung described as the Inner Being or Self, or the higher unconscious (Hamel et al., 2003; van Dierendonck, Garssen, & Visser, 2005); or, the transcendent may be external to the individual, an acknowledgement of something greater than the individual (Mahoney & Pargament, 2004).

A final definition of spirituality, offered by Wheeler, Ampuda and Wangari (2002), provides a world-oriented perspective of the construct that is congruent with Spilka's third principle: *Spirituality as grounded in the connecting of oneself to a larger 'system'.* In research into African-centred views of spirituality completed by Wheeler and colleagues, the construct was defined as "… the vital life force that animates and connects us all to the rhythms of the universe, nature, the ancestors, and the community (p. 73)." Such a definition of spirituality is firmly centred in a collectivist orientation of spirituality, with an orientation towards interpersonal relationships and the community; where nature or the environment has a central role in one's experience of spirituality. Unlike some other definitions of spirituality offered, a world-oriented definition believes that one can only know who they are after they have achieved connectedness with others, not independence (Hamel et al., 2003; Tacey, 2003; Wheeler et al., 2002).

Such a definition of spirituality is, by its very nature, holistic. It is a view of spirituality that demonstrates an awareness of oneself as well as our relationship with everything that is not oneself (Meehan, 2002). Tangent to the transcendent, Wheeler et al.'s (2002) definition of spirituality recognises that an individual pursuing spirituality must identify, comprehend and appreciate the fundamental socio-spiritual fabric connecting him or herself with all others and nature (Fraser & Grootenboer, 2004). This holistic definition of spirituality recognises the synchronicity of all life and the conscious commitment one makes to others. It recognises that the individual cannot separate the human-and-mind based dimensions of the world from the physical dimension; that is, we are not apart from the world, but rather a part of it (Bloch, 2004). Such a definition of spirituality implicitly takes into account a level of consciousness that is post-conventional in orientation.

If spirituality is a universal phenomenon; a built aspect of the human mind relevant to all persons (Helminiak, 2008; Tuck & Thinganjana, 2007), then it is critical that research arrives at a universal definition of spirituality. However, should a universal definition of spirituality remain elusive, concrete indicators of a latent spirituality variable should be

identified in the interim (Berry, 2005). The identification of universal themes (i.e., indicators) pertaining to spirituality must be, "… without prejudice to religious claims about supernatural sources of information or human contact with metaphysical entities, a psychological treatment of meanings and values must rest with the human itself (p. 146)" (Helminiak, 2008). As such, a definition or set of concrete indicators of a latent spirituality construct must be devoid of any reference to metaphysical entities (e.g., God) as they are beyond empirical confirmation. It could be argued that a failure to do so places psychological research into spirituality within a potential methodological paradox (Helminiak, 2008; Johnson, Sheets, & Kristeller, 2008; Kohls et al., 2009). There are two reasons for this: first, individuals of latter stages of consciousness are less likely to project "God" as external to oneself, but rather become one with all things (Rosado, 2000; Wilbur, 2006); and second, the conceptualisation of an 'entity' central to spirituality is not a premise held by all (Moberg, 2002).

Given the diversity of perspectives pertaining to what spirituality "is", the present researcher proposes the following working definition of spirituality based on the definitions provided. The definition is complemented by a thematic conceptualisation of spirituality consisting of four indicators of spirituality that will be tested empirically in this dissertation. For the purposes of the present dissertation, spirituality is defined as:

> *an emergent and continual process of psychological integration towards latter stages of spiritual consciousness. The process is encapsulated by a continual process of integration, fragmentation and re-integration towards an ego-transcended awareness of Self (capital "S"). The ultimate concern of this process being an awakening towards an awareness of one's boundless connection with all other sentient beings; a return to one's true nature; a commitment to conduct oneself with authenticity; an acknowledgement and acceptance of that which can never be known; and the identification, pursuit and fulfillment of one's unique purpose in life.*

A review of each definition of spirituality presented thus far identifies the following four themes that could be argued to be central to spirituality, namely: an openness and embracing of the mysteries and unknowns that constitute life's experiences (Pargament, 1999b; Stifoss-Hanssen, 1999); an exploration and commitment to finding meaning and one's unique purpose for 'existing' (Hill et al., 2000); the embracing of one's interconnectedness with all life and the fostering of connections between all life, that is, a recognition of synchronicity and the development of a commitment to all (Coward, 1995; Emmons, 2003; Miovic, 2004; Piedmont, 1999); and, the process of self-discovery and the exploration of one's true nature towards an ego-transcended Self (with a capital 'S') (Barnes, 2003; Jung, 1933; Keyes et al., 2002; Miovic, 2004). The four identified themes have been confirmed – in part – previously by Rosado (2000) in his conceptualisation of a Holistic Spirituality. In Rosado's model, the four themes identified also took into account religiosity and quantum mechanics. Rosado's themes included: (1) an *outward* connection to nature and the world of non-human life forms; (2) a *vertical* connection with God; (3) a *horizontal* linking with all humankind; and (4) an *inward* sense of self, that is, a world of personal well-being. It could be argued that each element of Rosado's model align with the four themes identified by the present researcher (i.e., an openness to life's mysteries; life meaning and purpose; fostering one's interconnectedness with others; and, self-discovery and learning), with the notable exception being the second theme (a *vertical* connection with God) being incongruent with the present researcher's identified theme of a seeking of one's unique life purpose and a sense of personal meaning.

Given that it could be argued that although no one definition of spirituality is possible, the present researcher has provided a working definition of spirituality and has sought to identify four common themes (i.e., indicators of spirituality) that can be tested empirically. Given the confounding of spirituality and religiosity in research, what remains unclear is the relationship between the four themes identified and more traditional religious principles. Put another way, if the four identified principles can be found to be indicators of spirituality, what then is religiosity? Further research is required to clarify the fuzziness between spirituality and religiosity. The present dissertation proposes that a more holistic conceptualisation of the construct of spirituality is still required.

3.5. Considerations for the development of a holistic conceptual framework of spirituality

What remains unclear is how the four identified themes provide further clarity to how spirituality is presently conceptualised. Moberg (2002) provides three sets of guidelines for considering the conceptualisation (and operationalisation) of spirituality, namely: (1) substantive versus functional; (2) theocentric versus nontheocentric; and (3) universalism versus particularism. *Substantive* approaches to conceptualising spirituality consider the construct to be centred upon sacred components, such as one's beliefs and attitudes and their relationship to the divine and views of self and others, and the world. Conversely, *functional* approaches focus on conceptualising spirituality in relation to what it does, and how it objectively, subjectively and existentially impacts individuals or homogeneous groups. In operationalising each approach, the former has the potential to lead research towards the "methodological cul-de-sac (p. 146)" as warned by Helminiak (2008); whereby the latter potentially suffers from a lack of boundaries and construct distinctiveness that may lead to intermediatary pursuits being considered 'spiritual'. *Theocentric* approaches to conceptualising spirituality place the assumption of the existence of a higher power central to spirituality. This higher power (e.g., God) is a distinct and all-invasive life force that may or may not include the individual (Berry, 2005). The *nontheocentric* approach also considers an 'energy' or all-encompassing life force; however, it is not focused on a 'Thou' or transcendent 'Other'. In operationalising the theocentric and nontheocentric approaches, the former leaves open the possibility of being discriminatory towards individuals that hold a spiritual orientation not based upon an acknowledgement of a higher power; whereas, the alternative has the potential pitfall of not being anchored to a spiritual point-of-reference. Finally, the *universalistic* approach attempts to conceptualise spirituality in a way that is broad enough to encompass all peoples. In contrast, the *particularistic* approach conceptualises spirituality within a specific context; such as a homogeneous group of like-minded individuals that hold a particular expression of spirituality to be the ultimate truth (Berry, 2005). Due to a lack of conceptual framework, the operationalisation of a universalistic approach to measuring spirituality has the potential to yield undifferentiating models and measures of spirituality. Alternatively, a particularistic approach may result in narrow research findings that are unable to be generalised to a broader population. In

considering the three dichotomous continuums outlined, it could be argued that Pargament's (1999b) definition of spirituality (as "a search for the sacred (p. 12)") has adopted a substantive, theocentric and particularistic approach to the conceptualisation of spirituality. As an alternative, Wheeler, Ampuda and Wangari's (2002) definition has adopted a functional, nontheocentric and universalistic approach to the conceptualisation of spirituality.

3.6. A proposed holistic conceptual framework for considering spirituality

This dissertation proposes a holistic conceptual framework for considering spirituality. A framework that integrates Moberg's (2002) three guiding principles. The proposed holistic conceptual framework, consisting of four concentric and interdependent circles (refer to Figure 3.1). The model is hierarchical in structure, with the inner most circle having a "cause-effect" association with each subsequent outer circle.

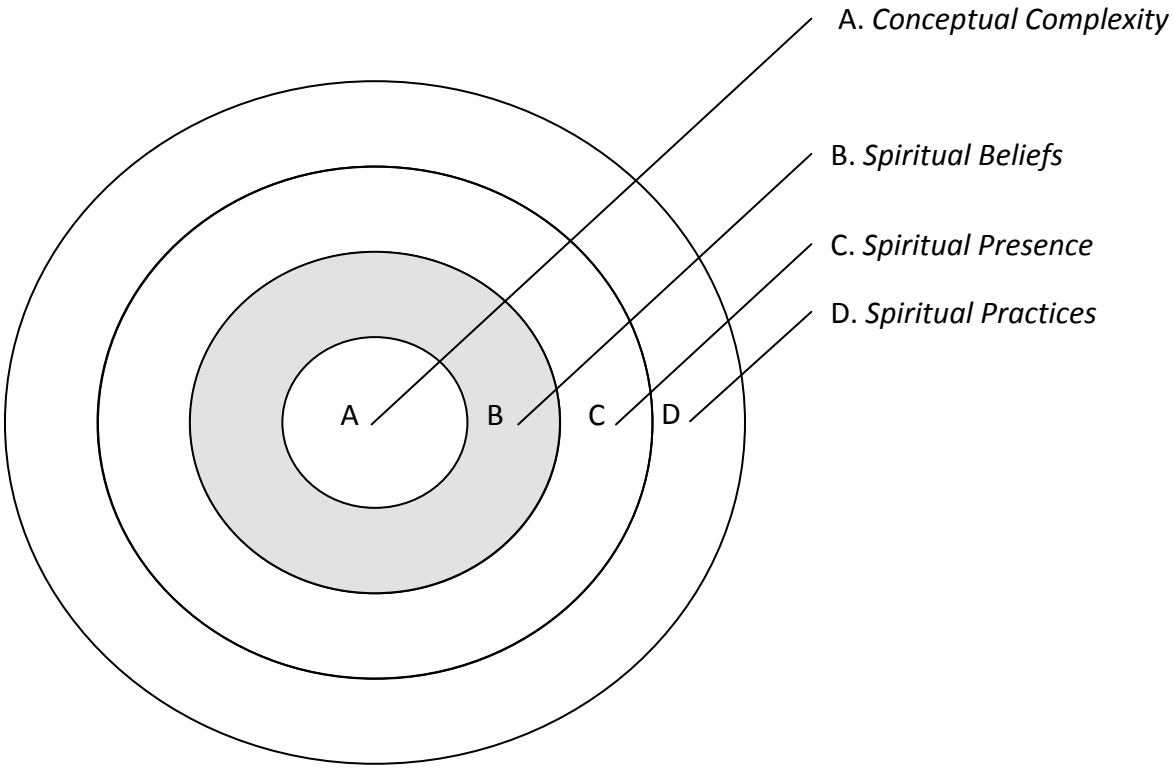

Figure 3.1: A holistic conceptual framework of spirituality

As presented in Figure 3.1, the proposed holistic conceptual model of spirituality consists of four concentric and interdependent circles. The inner most circle (designated A) is

conceptualised as pertaining to one's level of conceptual complexity, a pseudonym for consciousness that encompasses the range of stage-trait approaches currently utilised in research considering a person's subject-object relations (e.g., ego development, stages of faith, cognitive development, stages of moral development, spiral dynamics, etc). A person's stage of conceptual complexity sets the stage for how s/he forms and maintains spiritual beliefs and interprets unique spiritual experiences.

The second most inner circle (designated B) is conceptualised as representing one's spiritual beliefs towards spirituality. It could be argued that spiritual beliefs are universal principles relevant to all peoples and 'owned' by no one religious or quasi-religious doctrine. As conceptualised by the present researcher, spiritual beliefs provide commonality for considering all variants of religious and quasi-religious experiences. The third inner most circle (designated C) conceptualises an individual's presence related to the exploration of his or her unique spirituality. It is a person's presence as it relates to spirituality that acts as an interface between believing in spiritual principles and actually undertaking a spiritual path. Finally, the outer most circle (designated D) is conceptualised as representing the specific activities or practices undertaken by an individual or homogeneous group to explore spirituality.

The conceptualization of spirituality as consisting of several 'layers' is supported by previous research (Berry, 2005; Kohls et al., 2009). Berry proposed that the nature of spirituality is a highly abstract phenomenon that needs to be, "… represented by behavioural, cognitive, affective and volitional dimensions (p. 625)" (Berry, 2005). Tsang and McCullough (2003) also support the conceptualisaton of spirituality as hierarchical with an overarching general or dispositional element to spirituality that is likely to be universal to all, coupled with operational or functional sub-domains through which an individual manifests his or her personal spirituality.

3.6.1. The conceptualisation of Conceptual Complexity

Developmental psychologist Mihaly Csikszentmihalyi suggests that life is not simply a cycle, it is an ascending spiral with quantum steps (Csikszentmihalyi, 1993). The transcending to latter stages of consciousness allows the individual to concurrently consider different perspectives, and to integrate these differing perspectives and world-views without

judgement or recourse. Therefore, attaining latter stages of consciousness is not just understanding something new but, an entirely different way of knowing (Flier, 1995); it is not what the person thinks, but how they think (Ho & Ho, 2007; Page, 2005). The expansiveness of one's spiritual beliefs and practices therefore, is limited only by his or her present working knowledge of, and understanding of, spirituality, at their current level of consciousness (Beck & Cowan, 1995; Maher & Hunt, 1993; Wilbur, 2000). And with many theories of conceptual complexity stating that the level of development is boundless, an individual's potential for spiritual development is simultaneously limited and unlimited (Hill et al., 2000; Ho & Ho, 2007; Strohl, 1998; Wilbur, 2000).

Utilising Moberg's (2002) three guiding principles, conceptual complexity is conceptualised by the present researcher as substantive, nontheocentric and univeralistic in structure. Using ego development by way of example, one's ego is a "self-theory" (Loevinger, 1998). It is a personal filter, template or frame-of-reference for considering the interpersonal world. One's self-theory commences with a self-centred orientation and evolves towards an ego-transcended world-view of self (Loevinger, 1998). In this way, ego-development can be considered to be related to one's attitudes towards self and other that has the potential to be unencumbered by any one homogeneous group. Further, although this "self-theory" may at times be linked both consciously and unconsciously to a theocentric approach to considering spirituality, this is not essential. Therefore, ego-development can be considered to be nontheocentric in structure. Finally ego-development is universal, with all peoples, regardless of age, gender, race or cultural-societal context having to progress through a hierarchical, sequential, invariant, universal and open-ended self-theory towards an "ever-present Nondual awareness (p. 74)" (Wilbur, 2006).

3.6.2. The conceptualisation of Spiritual Beliefs

Spirituality has been operationalised quantitatively in various ways, including via specific measures of beliefs and attitudes towards self and transcendence as well as measures of spiritual practices, behaviours and activities (Sawatzky et al., 2005). Indeed, some researchers state that it is important for a measure of spirituality to encompass both aspects (Hill & Pargament, 2003). However, it could be argued to result in a methodological confound, particularly in relation to an examination of spirituality's predictive validity. Using just one example from recent research examining spirituality within a health related context

to illustrate this potential confound, is surviving cancer related to: (a) a person's beliefs about their spirituality (e.g., an openness to that which cannot be explained through rational science, etc); (b) the undertaking of specific spiritual practices (e.g., meditation, prayer, etc); or (c) a combination of both (a) and (b) (Edmondson, Park, Blank, Fenster, & Mills, 2008)?

Although an individual has a general belief system that is coloured by former experiences, the present dissertation is interested specifically in a person's *Spiritual Beliefs*; the 'filters' through which spiritual experiences are screened, interpreted, understood and integrated as aspects of one's broader identity. A 'belief' has been defined in literature as psychologically held understandings or propositions considered to be true (Hermans, van Braak, & Van Keer, 2008). Conversely, practices can be considered to be outwardly manifested activities (or an experience that occurs as a direct result of the undertaking of an activity). Beliefs are broad concepts that have relevance for a diverse group of people (Fraser, 2004). Practices however, are activities typically undertaken by a specific, homogeneous group (Berry, 2005). However, unlike conceptual complexity (which is considered stable across time and context), spiritual beliefs can be considered to be less stable and more permeable. Argued by the present author as having the potential to be universal, spiritual beliefs are dynamic structures that act as filters through which new experiences are screened and interpreted for meaning (Smith & Croom, 2000). Spiritual beliefs act as a personal guide for helping individuals and groups understand the world and themselves. One's daily activities (including spiritual practices) are influenced in part by his or her beliefs. Rosado (2000) states that launching out on a spiritual journey without a map (i.e., a set of spiritual beliefs) through which to chart and interpret the journey will result in the risk of getting lost.

It is unrealistic to assume that all universal spiritual beliefs will ever be identified; however, reductionism is inescapable in all research on spirituality (Moberg, 2002). Therefore, the present dissertation proposes four more prominent universal indicators of spiritual beliefs, namely: (1) openness to mystery; (2) search for meaning; (3) the exploration of one's interconnectedness; and (4) self-discovery and ego-transcendence. These four indicators of spirituality are considered present to some degree for all peoples. They are guiding life principles for all sentient beings.

Utilising Moberg's (2002) three guiding principles, spiritual beliefs are also conceptualised by the present researcher as substantive, nontheocentric and universalistic in structure. In so doing, spiritual beliefs provide a set of universal filters through which all individuals can undertake a personal spiritual journey and interpret their unique spiritual experiences.

3.6.3. The conceptualisation of Spiritual Presence

In response to Stiffoss-Hanssen's (1999) criticism of Pargament's (1999a) definition of spirituality, the latter researcher responded by stating that it is critical that spirituality be considered in relation to a search that transcends the self. A failure to consider spirituality in this light may result in the undertaking of intermediary pursuits being considered spiritual. Both Mahoney and Pargament (2004) and Hamel and her colleagues (2003) responded to Pargament's earlier comments suggesting that spirituality was a life-choice that an individual adopts on a moment-by-moment basis for his or her entire life. However, is a belief in spirituality enough or do one's spiritual beliefs – a way of being and interpreting one's life – need to be supplemented by a structured spiritual practice so as to truly be spiritual? Moberg (2002) made explicit this conundrum when he stated, "Just as feeling well physically can be an illusion, so can feeling well spiritually. People may be deceived into thinking or feeling that they are spiritually healthy when they in fact are rotten to the core … [people] can be deceptive because *feeling well* is not *being well* (pp. 54-55)." In a longitudinal study published by Wink and Dillon (2002), the findings suggest that what was critical to the depth of cognitive commitment (i.e., conceptual complexity) attained in late adulthood was a commitment to intentionally incorporating a spiritual practice into one's everyday life.

Although numerous researchers state that spirituality is a life path, research is yet to describe in detail the guiding principles of that path. The present researcher proposes that the spiritual belief-practice interface is based upon the premise of *Spiritual Presence*. The present researcher argues that this spiritual beliefs-practices interface is grounded via three primary tenets, namely: (1) i*ntentionality*, one's spiritual journey must be commenced and undertaken with intent and a conscious focus with an inherent knowledge of 'why' spirituality is important to the individual; (2) c*ommitment,* one's spiritual journey must be proactively integrated into all domains and roles of one's life (e.g., family, work, friends, etc), that is, spirituality is not considered 'taboo', unrelated or inappropriate in any one

aspect of one's life; and (3) *timelessness,* an acknowledgement that one's spiritual journey will take a lifetime. With respect to the third tenet, the present dissertation emphasises that intentionality and commitment is not enough. It is an understanding that the undertaking of one's spiritual practice is a never-ending exploration that sets it apart from nearly all other intermediary pursuits.

Utilising Moberg's (2002) three guiding principles, spiritual presence is conceptualised by the present researcher as both substantive and functional; theocentric and nontheocentric; and, universalistic and particularistic in structure. Such a structure is required at the spiritual beliefs-practices interface.

3.6.4. The conceptualisation of Spiritual Practice

It is the position of the present researcher and many others that latter stages of consciousness are more readily available as a result of intentional spiritual practice (for example Page, 2005; Rosado, 2000; Wilbur, 2006; Wink & Dillon, 2002). A *Spiritual Practice* can be defined as: The conscious and intentional commitment to the undertaking of acts (i.e., behaviour-based activities) or a series of acts over time for the purpose of improving one's functioning in domains beyond the practice field itself. One's spiritual practice provides the webbing that unifies the beliefs and teachings of spirituality into everyday life (Luskin, 2004). For example, mindfulness-based meditation is the practice of manifesting heightened awareness of oneself, within a somewhat contrived situation (e.g., sitting on one's meditation cushion), so as to manifest heightened awareness in one's 'every-day' activities (Kabat-Zinn, 2005a). A formal practice is an important aspect of one's spirituality. It is only through sustained practice – often with the guidance of a spiritual teacher – that one has the opportunity to delve deeper into and remain more present with increasingly expansive levels of consciousness (Wilbur, 2006).

A spiritual practice, according to King and Nicol (1999), serves the function of exploring the elements of one's unique spiritual 'journey'. King and Nicol (1999) defined a spiritual journey as, "… a process of focusing within, in order to gain an awareness of Self. Only through this awareness of Self can individuals become truly actualised and find meaning and purpose in their work and in their lives. This is the individuation process which produces both an interconnection with Self and a connection with others, fostering a sense

of order and balance in an otherwise chaotic life (p. 234)." The undertaking of a spiritual practice therefore, provides the mechanism for aligning one's inner and outer worlds.

There are countless spiritual practices available and undertaken within particular religious, quasi-religious or non-religious doctrines. For example, Moberg (2002) states that even within the religion of Christianity, there are innumerable nuances and variants for spiritual practice, "… [such as those undertaken by] (1) Evangelicals, Fundamentalists, Pentecostals, and theologically liberal Protestants; (2) traditional, loyal-to-the-Vatican, Vatican II reformist, charismatic, Maronite, and other Catholics; (3) adherents of Greek, Russian, Serbian, and other Eastern Orthodox patriarchates; (4) Latter-day Saints (LDSs), Reorganized LDSs, and other Mormons; and (5) Christian fringe groups like Jehovah's Witnesses, Christian Science, New Thought, and Unitarian–Universalists (p. 57)". Moberg states that similar variants in spiritual practice are also evident in Judaism, Islam, Hinduism, Buddhism, Shinto, Taoism, New Religious Movements, neo-Paganism, indigenous, as well as other religions, quasi-religions and non-religions. Given the potentiality of such a diverse range of practices, it could be argued that an examination of the utility of the construct of spirituality via an exploration of specific behaviours and activities (or an experience that occurs as a direct result of undertaking such activities) is incomprehensible. This is a view that is conflicting with Kohls et al. (2009) who states that it is possible that the exploration of spiritual practices rather than spiritual beliefs will yield more meaningful results, especially in the field of spirituality and health. The attempt to discover the dimensions, correlates and sources of association pertaining to the infinite number of spiritual practices is underway and poses an elusive and rich challenge to future research (Moberg, 2002).

As a bookend to the conceptualisation of spiritual beliefs, spiritual practices are conceptualised by the present researcher as functional, theocentric (predominantly) and particularistic in structure (Moberg, 2002). In so doing, spiritual practices provide a contextual framework (e.g., the values and doctrines of a specific religion or quasi-religion) for exploring and interpreting one's unique spiritual experiences, and to integrate those unique and personal experiences towards a deepening of one's consciousness (Rosado, 2000; Wilbur, 2001; Wink & Dillon, 2003).

3.7. The value of adopting the proposed holistic conceptual framework of spirituality

The present dissertation argues that the holistic conceptual framework for considering spirituality provides the scaffolding essential for a robust exploration of spirituality. The proposed holistic conceptual framework for considering spirituality also provides future researchers with the mechanism for conceptualising and operationalising spirituality. Further, the proposed holistic conceptual framework provides the opportunity to address the four methodological issues identified by the present researcher in a review of health and workplace related research (i.e., spirituality and religiosity used inter-changeably; spirituality muddled with other like-constructs; the detrimental omission of spirituality from research agendas; and, confusion between spirituality being operationalised as beliefs or practices). Further, the proposed holistic conceptual framework also provides an approach for considering the aspects of one's spiritual development. Finally, the proposed framework allows for the plotting of one's spiritual growth trajectory towards a theoretical apex, such as the experience of *turiya* (a Hindu term denoting pure consciousness, or the experience of ultimate reality and truth) (Wilbur, 2006). Turiya and other like experiences described by nearly all religious and quasi-religious contextual frameworks reflects, "… [a] meditative and mystical experience [where] the subject and object merge into oneness (p. 1)" (Barnes, 2003). It can be argued that spiritual 'oneness' could be theorised to manifest as a result of an alignment of all elements of the proposed holistic conceptual framework. It is an experience that is theorised to transcend a value laden, seemingly cultural, religious and ethnically bound construct of spirituality (Maher & Hunt, 1993).

3.8. Applying the holistic conceptual framework for spirituality to the construct of identity development: Spirituality as a meaning making process

As previously outlined, various confounds relating to the conceptualisation and operationalisation of spirituality within a narrower context or domain specific focus, exist. An exploration of spirituality that is context or domain neutral will help address some of these confounds. At present only minimal quantitative research has been undertaken to examine the specific processes whereby spirituality acts as a meaning making process for individuals (Pecchenino, 2009).

Grounded in the premise that an association between spirituality and a search for meaning exists (Stifoss-Hanssen, 1999), spirituality provides the mechanism whereby questions relating to one's individual general identity can be considered. Questions such as: *who* am I, *what* am I, *where* am I, and *why* am I (Pecchenino, 2009)? One's spirituality provides the mechanism by which s/he can integrate past and present sub-identities, make sense of the forces that have influenced one's life path, and come to understand what ultimately 'is'. Although the answers to these questions may never be fully resolved, a person's conceptual complexity, or "self-theory" (i.e., a personal filter, template or frame-of-reference for considering the interpersonal world), allows for the enormity of these life questions to remain contained as one evolves towards individuation and self-actualisation (Maslow, 1976). Further, one's spiritual beliefs – specifically the four proposed indicators of spiritual beliefs – provides the meta-processes for considering the experiences that manifest concurrently from one's spiritual practices; experiences that allow for the continual return to infinitely deeper levels of human consciousness (Barnes, 2001; Page, 2005; Strohl, 1998; Wilbur, 2006).

But how does the present dissertation's proposed holistic conceptual framework of spirituality: (1) relate to a person's identity development; and, (2) explain the machinations of one's identity development? These two questions remain untested and will be explored empirically by this dissertation.

3.9. The aims of this dissertation: Validating a future direction for the conceptualisation and operationalisation of spirituality

The objective of this dissertation is to explore the proposed holistic conceptual framework of spirituality and its utility in the conceptualisation and subsequent operationalisation of spirituality-focused research. More specifically, the primary focus of the present dissertation is an exploration of just one aspect of the proposed framework: Spiritual Beliefs (refer to Figure 1, designation B – Shaded). By operationalising this component of the framework, the present dissertation aims to demonstrate the actuality of the framework's remaining three components. Future research is tasked with further examining the remaining components of the proposed framework in more detail.

The aims of the present dissertation as it relates to the stated objective and more targeted focus are nine-fold.

First, the present dissertation aims to examine four existing and predominant conceptualisations, models and measures of spirituality. The aim of the review will be to evaluate each scale's capacity to discriminate between four relatively homogeneous groups that represent four dominant spiritual practice types within Australian contemporary society (ABS, 1996). Given that the exploration of spirituality within contemporary Australian society is more diverse and often considered less explicit than in many other countries (O'Connor, 1991) (particularly the United States of America; where the majority of spirituality based scales originate), it is deemed important to confirm or disconfirm that existing scales can: (1) discriminate between individuals who do and do not consider themselves to be spiritual; and (2) discriminate between the dominant spiritual practice types present within contemporary Australian society (e.g., Monotheistic, Dharmic, New Age and Indigenous).

Second, this dissertation aims to examine (via exploratory factor analysis; EFA) the inter-relationships and points of departure between four identified measures of spirituality. Further, the present dissertation will seek to identify if the hypothesised four universal indicators of spiritual beliefs (i.e., openness to mystery; search for meaning; exploration of one's interconnectedness; and, self-discovery and ego-transcendence) can be found from within the four identified measures of spirituality selected for analysis.

Third, should the four universal indicators of spiritual beliefs fail to be identified (as hypothesised by the present researcher) then this dissertation will seek to identify if the cause of this disconfirmation is due to the (intentional or unintentional) blending of spiritual belief and practice oriented items within each scale by each scale's author(s). Should a blending of spiritual belief and practice be deemed to have occurred, the spiritual beliefs oriented items will be identified and subjected to EFA to determine if the proposed four indicators of spiritual beliefs can subsequently be identified. A related and secondary aim upon confirming or disconfirming the four-factor model of spiritual beliefs from existing scales will be to examine the cultural sensitivity (i.e., with a predominantly Australian sample) of the newly confirmed measure of spirituality beliefs.

Fourth, this dissertation will aim to identify a model and measure of spiritual practice from amongst those items taken from the four identified measures of spirituality. The

identified model and measure of spiritual practice will then be examined to assess its capacity to discriminate between four relatively homogeneous groups that represent four dominant spiritual practice types explored within contemporary Australian society.

Fifth, to confirm the hierarchical relationship between spiritual beliefs (higher order) and spiritual practices (lower order) proposed by the holistic conceptual framework for considering spirituality, this dissertation will examine the identified spiritual beliefs and spiritual practices scale as each relates to an individual's general identity; more specifically, one's identity stage resolution. It is hypothesised that although both spiritual beliefs and spiritual practices will be associated with each other and with one's stage of identity resolution, only one's spiritual beliefs will predict statistically (i.e., via hierarchical regression analysis) unique variance in one's identity stage resolution.

Dependant on the findings of the present dissertation's fifth aim, the sixth aim of this dissertation is to confirm or disconfirm the existence of a relationship between spirituality beliefs and conceptual complexity. In order to identify the hypothesised association, the present dissertation will perform a non-linear function regression analysis between one's spiritual beliefs and identity stage resolution to confirm or disconfirm the existence of the hypothesised relationship. A confirmed association serves to: (1) further unpack the machination of spiritual beliefs as it relates to one's identity; and (2) demonstrate empirically the need to consider one's conceptual complexity in operationalising spirituality. If a non-linear association between spiritual beliefs and identity state resolution is found, and an age effect is also identified in this relationship, it provides support for the hypothesis that one's spiritual development is a dynamic and consciousness expanding process whereby one's level of conceptual complexity provides the self-theory for expanding one's spiritual consciousness.

Seventh, this dissertation will seek to confirm the construct distinctiveness of spirituality (specifically, spiritual beliefs) via a comparison to other related constructs (e.g., psychological well-being, social well-being, personality, etc) that are also examined by social and behavioural sciences researchers.

Eighth, to disconfirm that the identified model of spiritual beliefs is sample specific, this dissertation will seek to conduct Confirmatory Factor Analysis (CFA) on a second independent Australian sample.

Finally, an examination of the temporal stability of the identified model and measure of spiritual beliefs will be undertaken. As stated previously, unlike one's conceptual complexity, spiritual beliefs can be considered to be less stable, that is, more permeable. However, the four proposed indicators of one's spiritual beliefs (i.e., openness to mystery; search for meaning; exploration of one's interconnectedness; and self-discovery and ego-transcendence) are conceptualised as more universal, dynamic structures that act as filters through which new experiences are screened and interpreted for meaning (Smith & Croom, 2000). It is hypothesised therefore, that although one's understanding of his or her spiritual beliefs will evolve over the lifespan (Cloninger, Bayon, & Svrakic, 1998), one's spiritual beliefs will maintain a strong degree of temporal stability in the short to medium term (i.e., 12-24 months). A secondary focus of the present dissertation's final aim is an examination of the extent of a potential confound to one's self-reported depth of spiritual beliefs, pertaining to one's level (or lack thereof) of conceptual complexity. For example, individual's at earlier stages of ego development are more inclined to have a false sense of self and a faulty interpretation of the ultimate reality; as well as a reduced capacity for identity integration and differentiation (Cook-Greuter, 2002). The present dissertation will examine if there is a statistically significant association between one's spiritual beliefs and the constructs of Self-Deceptive Enhancement (SDE) and Impression Management (IM).

3.10. Conclusion

This chapter provides an examination of the current conceptualisation of spirituality in research. As a result of examining how spirituality is currently conceptualised, how spirituality is defined in the present dissertation was presented. Further, four predominant themes for considering spirituality were identified, namely: (1) an openness to life's mysteries; (2) an exploration towards finding one's meaning and unique purpose for 'existing'; (3) the embracing of one's interconnectedness with all life; and (4) the process of self-exploration towards self-transcendence. In identifying the four aforementioned themes, the issues with how spirituality is currently conceptualised were highlighted and recommendations for addressing the identified issues provided. Further, a holistic model for conceptualising spirituality consisting of four inter-related elements was provided and a definition and short overview of each element of the proposed framework was provided.

Finally, a research agenda for demonstrating the utility of adopting the proposed holistic framework for future research was proposed.

Chapter 4

Determining the utility of four predominant measures of spirituality using an Australian sample

4.1. Chapter overview

The present chapter examines the relative utility of a number of models and measures of spirituality as each relates to contemporary Australian society. In undertaking this task, the predominant spiritual practice types currently explored within contemporary Australian society are first identified. Subsequently, a number of models and measures of spirituality that align to the present dissertation's definition of spirituality are identified and each measure's history, construction and initial validation results are outlined. The factor structure, basic psychometric properties, and discriminate sensitivity of each selected measure are then analysed empirically utilising a predominantly Australian sample.

4.2. Introduction

A number of measures of spirituality exist in literature. The majority of instruments purported to measure spirituality have been developed by American-based researchers (Peterson & Seligman, 2004b). Given the proportion of the American population who designate their religion/spiritual (R/S) practice as 'Christian' or Christian variant – 80.3% (Census Bureau, 2007) – it could be argued that such measures are likely to be grounded within the beliefs, values, behaviours and historical context of this religious faith.

Australia is a spiritually diverse society with the exploration of one's spirituality less explicit than many other cultures (Nasel et al., 2005; K. O'Connor, 1991). Minimal research has been undertaken to determine if the plethora of instruments available for measuring spirituality apply within an Australian context. Such an extensive review is also outside the scope of this dissertation; however, it can commence this analysis. The aim of the present

review will be to evaluate the capacity of a small number of selected scales to discriminate between relatively homogeneous groups that represent the dominant spiritual practice types within Australian contemporary society. More specifically, the present chapter seeks to confirm or disconfirm if the selected scales can: (1) discriminate between individuals who do and do not consider themselves to be spiritual; and (2) discriminate between the dominant spiritual practices undertaken within contemporary Australian society.

4.2.1. Identifying the predominant spiritual practices present within contemporary Australian society

A spiritual practice, according to King and Nicol (1999), serves the function of exploring the elements of one's unique spiritual 'journey'. Within the context of the present dissertation, a *Spiritual Practice* is defined as: The conscious and intentional commitment to the undertaking of acts (i.e., behaviour-based activities) or a series of acts over time for the purpose of improving one's functioning in domains beyond the practice field itself. In this way, one's spiritual practice provides the webbing that unifies the beliefs and teachings of spirituality into everyday life (Luskin, 2004).

A review of the Australian Bureau of Statistics (ABS) report entitled, *Australian standard classification of religions groups* (ABS, 1996), identifies a total of seven 'broad' groups for categorising religion and spirituality in Australia. Religions are classified upon the basis of similarity in terms of religious beliefs, religious practices and the cultural heritage of its adherents (ABS, 1996). The seven dominant R/S groups in Australia include: Buddhism, Christian, Hinduism, Islam, Judaism, Other Religions, and No Religion. Each of these seven broad groups is subsequently broken down into a total of 115 more specific categories. For example, the 'Other Religions' group suggests religions such as Australian Aboriginal Traditional Religions, Druze, Nature religions (e.g., Druidism, Paganism, Wiccan), spiritualism, etc.

Given the classifications provided by the ABS, the following four dominant spiritual practice types were adopted for the present dissertation: Monotheistic (i.e., God-oriented), Dharmic (i.e., Eastern), New Age (or Secular), and Indigenous (or Tribal). A fifth spiritual practice category of No Spiritual Practice was also included. It will be noted that for the

purposes of the present dissertation, Indigenous spirituality is considered distinct from the 'Other Religions' (e.g., New Age Spirituality) designated by the ABS. One of the guiding premises of Indigenous (e.g., Australian Aborigine) spirituality is that it is grounded in one's physical proximity to or within a specific geographical location of the landscape (Tacey, 2003), which could be argued to be a function of this specific spirituality that sets it apart from the other spiritualities listed under the ABS's broader 'Other Religion' R/S category. A short description of the four spiritual practices to be explored in the present study follows.

4.2.1.1. Monotheistic Spiritual Practices

Monotheistic, that is, God-oriented religious practices consider the pursuit of spirituality to be a fundamental outcome of religious experience. Monotheistic spiritual practices encompass three of the seven broad R/S categories outlined within the ABS report, namely: Christian, Islam and Judaism. By participating in the ritual of organised religion, the follower utilises the Church (or its equivalent) and its mechanisms as a conduit to connecting with his or her transcendent being: God or Allah (Seifert, 2002). For those who follow God, s/he stands external to the Self; but central to a person's life (Mahoney & Pargament, 2004). The exploration of monotheistic spirituality involves practices such as: church attendance and structured prayer activities (Pargament, 1999b); the adherence to the beliefs, doctrines and symbolism of a specific religious ideological dogma (Pargament, 1999b); and, other like activities that conceptualise the spiritual experience (Maher & Hunt, 1993; Miller, 2004; Reich, 2003b). According to the 2001 National Census, nearly 70% of the Australian population indicated that it followed a Monotheistic spiritual practice (ABS, 2006).

4.2.1.2. Dharmic Spiritual Practices

Dharma can loosely be translated as pertaining to the teachings of the Buddha (Mahathera, 1914). Dharmic spiritual practices pursue a non-dualist perspective of spirituality. Dharmic spiritual practice and spiritual consciousness is a continuum in which the absolute transcendent spirit is at one end, and physical matter is at the other. The integration of both extremes constitutes an all-encompassing reality (Miovic, 2004). Dharmic spiritual practices are often associated with practices that arise from Eastern spiritual traditions, such as meditation. The two largest spiritual traditions in Eastern

spiritual practice are Buddhism and Hinduism (Miovic, 2004). The 2001 National Census indicates that 2.4% of the Australian population follow a Dharmic spiritual practice (ABS, 2006) compared with only 1.1% within the U.S. population (Census Bureau, 2007).

4.2.1.3. New Age Spiritual Practices

New Age spiritual practices encompass many beliefs, practices and movements that are not readily categorised (Mears & Ellison, 2000). Conceptually, New Age spiritual practices involve a shift from the divine or transcendent to the human (Meehan, 2002). New Age spiritual practices seek to, "… find meaning and purpose in the universal human experience rather than religious experience per se (p. 292)" (Meehan, 2002). As such, New Age spiritual practices may blend one or more traditional religious rituals, as well as more Eastern or secular practices. New Age spiritual practices have embraced a humanistic – realising one's ultimate potential – approach to the pursuit of a spiritual life (Mears & Ellison, 2000). Less than one percent (actual figure is 0.5%) of the Australian population indicated 'Other Religion' as part of the 2001 National Census, an increase of 34% from the earlier 1996 National Census (ABS, 2006).

4.2.1.4. Indigenous Spiritual Practices

Indigenous spiritual practices are those adopted by the world's earliest cultures, such as the Australian Aborigine and New Zealand Mouri, the American Indian and Canadian Inuit, the Irish and Scottish Celt, and many (if not all) African tribes. The spiritual practices of such groups adhere to a world-oriented practice of spirituality (Wheeler et al., 2002). Research into indigenous spiritual practices has been hindered due to a lack of access to such populations. Research is also lacking due to the specificity of practice of world-oriented tribal spirituality. For example, it is through appealing to supernatural forces (e.g., animal spirits), land formations (e.g., Uluru/Ayers Rock) and ancestors that positive self-concepts are reinforced and explored within Indigenous spirituality. Such experiences are phenomenological in nature. Empirically-grounded and reductionist-focused psychological research has been slow to adopt alternative research methodologies necessary to measure an individual's phenomenological experience of spirituality (Braud, 1998), hence the desire to make this spiritual practice type more explicit within the present dissertation. Only a small

percentage of the Australian population follow an indigenous spiritual path with less than 1% of Australia's Aborigine population indicating an adherence to an Australian Aboriginal Traditional Religion as part of the 2001 National Census (ABS, 2006).

As outlined, the values, behaviours and historical context pertaining to the four identified spiritual practice types fail to converge strongly. For example, Monotheistic spiritual practices are grounded in the premise of a 'God' that is conceptualised as separate to the Self; whereas, the majority of Dharmic spiritual practices are not grounded in a belief in a higher being. Similarly, Indigenous spirituality may consider many 'gods' compared to the one 'God' central to Monotheistic spiritual practices. It is therefore anticipated that there will be a difference between how an individual responds to a measure of spirituality, with these response differences born from one's spiritual practice type and its related beliefs, behaviours and cultural context.

4.2.2. Models and measures of spirituality selected for review

As stated previously, the operationalisation of spirituality continues to be problematic due to semantic confounds, conceptual inadequacies and cross-cultural nuances (Berry, 2005; Thoresen & Harris, 2002). However, given the returning popularity of spirituality in contemporary Australian society (as a result of those immigrating to Australia) (ABS, 2006) it is necessary to identify the relative predicative utility of a range of spirituality measures readily available in literature. In undertaking this necessary task, the present researcher is left with a quandary: What measures (of the many available) should be selected for a more detailed review? To alleviate this issue somewhat, Berry (2005) recommended that the researcher clearly define spirituality at a conceptual level at the commencement of each publication. Doing so provides a foundation for the selection of measures of spirituality that best operationalise the given definition. The present dissertation defines spirituality as:

> *an emergent and continual process of psychological integration towards latter stages of spiritual consciousness. The process is encapsulated by a continual process of integration, fragmentation and re-integration towards an ego-*

transcended awareness of Self (capital "S"). The ultimate concern of this process being an awakening towards an awareness of one's boundless connection with all other sentient beings; a return to one's true nature; a commitment to conduct oneself with authenticity; an acknowledgement and acceptance of that which can never be known; and the identification, pursuit and fulfillment of one's unique purpose in life.

Given this definition, spirituality is conceptualised as consisting of four themes, namely: openness to life's mysteries; an exploration of one's unique purpose for 'existing'; the embracing of one's interconnectedness with all life; and the process of self-discovery and self-exploration. The selection of existing measures for examination by the present dissertation therefore, is based upon each measure's degree of alignment with the aforementioned definition.

A review of literature identified a number of measures that tap some or all of the four themes that underpin the present dissertation's definition of spirituality. Four were selected for review. The measures selected for further analysis were chosen because each is based in sound research theory underpinning spirituality, can be categorised as concerned primarily with one's spiritual beliefs, are published (either by the scale's author or via a subsequent researcher), have been utilised in a number of research contexts, and the measure's psychometric details are readily available. The four measures selected for further analysis by the present dissertation are: the Adult Self-Transcendence Inventory (ASTI) (Levenson et al., 2005); the Miller Measure of Spirituality (MMS) (Miller, 2004); the Spiritual Assessment Scale (SAS) (Howden, 1993); and the Spiritual Transcendence Scale (STS) (Piedmont, 1999).

Following is a brief review of each scale and its theoretical underpinnings. Each scale's development, structure (i.e., number of items and factors), interpretation of (sub)scale scores, reliability and validity, and predictive utility is also outlined. Further, each model and measure of spirituality is categorised according to Moberg's (2002) three sets of guidelines for considering the conceptualisation (and operationalisation) of spirituality,

namely: substantive versus functional, theocentric versus nontheocentric and, universalism versus particularism. Finally, the conceptualisation of each model and measure selected within the present dissertation's holistic conceptual framework for considering spirituality (refer to Chapter 3; Figure 3.1) is provided.

4.2.2.1. The Adult Self-Transcendence Inventory

The Adult Self-Transcendence Inventory (ASTI) (Levenson et al., 2005) is an 18-item measure of spirituality consisting of two facets of spirituality: Self-Transcendence (10-items) and Alienation (8-items). Refer to Appendix A-3 for ASTI items. The ASTI was selected based upon its hypothesised alignment with two themes that underpin the present dissertation's conceptualisation of spirituality, namely: (1) an exploration towards finding one's meaning and unique purpose for 'existing'; and, (2) the process of self-exploration towards self-transcendence.

The ASTI was first published in 2005. It is based upon earlier research in the field of spirituality completed by Tornstam (1994), which focused on a specific element of spirituality: geotranscendence. The development of geotranscendence can be likened to one's development of wisdom. According to Tornstam, wisdom consists of four more specific elements, namely: (1) one's self-knowledge, including an awareness of one's sense of self; (2) detachment, encompassing an awareness of the transient nature of self within one's environment; (3) integration, involving the dissolution of one's separate 'inner selves'; and. (4) self-transcendence (Levenson et al., 2005). Levenson and his colleagues set about developing the ASTI because of suspect psychometric properties of Tornstam's earlier *Geotransendence Scale* (this scale consists of two facets: self-transcendence and cosmic transcendence), potential age biases within the earlier instrument towards older respondents (e.g., items ask respondents to consider their spirituality as it relates to 50 years ago), and awkward phrasing of scale items. The revision focused solely on clarifying and expanding upon the self-transcendence sub-scale as it was determined that there is inherent difficulty in operationalising cosmic-transcendence in ways understandable to most respondents of a scale.

Although other measures of self-transcendence do exist (see Peidmont, 2001) these other scales explicitly consider self-transcendence as a personality trait; whereas, Levinson et al. (2005) conceptualise self-transcendence as a developmental process that occurs across the lifespan. As such, the generation of items for the ASTI by the scale's authors was grounded in the premise that self-transcendence is a developmental phenomenon grounded in deepening one's wisdom.

The development of the ASTI was undertaken in two phases: (1) instrument development and refinement; and, (2) confirmation of the inventory's discriminant (utilising some sub-scales of the NEO-FFI) and convergent (utilising meditative practice and some sub-scales from the NEO-FFI) validity. In phase 1, a total of 18-items pertaining to self-transcendence and alienation were administered to 341 staff and students from a U.S. based university. An exploratory factor analysis indicated a total of two factors. Each factor aligned with those hypothesised by the scale's authors. Higher scores on the self-transcendence sub-scale are indicative of one's decreasing reliance on externals for a definition of the self. Conversely, higher scores on the alienation sub-scale are indicative of one's disengagement with life, and reduced connectedness with past and future generations. Only one sub-scale yielded acceptable internal consistency (α) with α = 0.75 and 0.64 for self-transcendence and alienation, respectively. No age or gender differences were found. Phase 2 demonstrated that the self-transcendence sub-scale correlates significantly yet only marginally (and in the appropriate directions) with the five sub-scales of the NEO-FFI of between *r*s = .01 and .28. The alienation sub-scale correlates significantly and moderately (and in the appropriate directions) with four sub-scales of the NEO-FFI of between *r*s = .15 and .50 (alienation failed to correlate significantly with the openness to experience sub-scale of the NEO-FFI). Finally, meditation practice was significantly correlated in the anticipated direction with self-transcendence (*r* = .30) and alienation (*r* = -.13).

A review of the item content of the ASTI according to the three guidelines outlined by Moberg (2002) suggests the scale seeks to be substantive (the scale has a focus on beliefs and values), nontheocentric (there is no mention of a Higher Being or an explicit reference to God), and universalistic (scale items are not focused on any one R/S practice) in structure. Finally, given the very nature of the sub-scales of the ASTI, it could be argued that the scale

can best be positioned as being within the Spiritual Beliefs component of the present dissertation's holistic framework for conceptualising spirituality (refer to Chapter 3 for a more detailed description). Further, the theoretical underpinnings of the scale, that is, the consideration of spirituality as it pertains to the development of wisdom, are hypothesised to support the existence of the conceptual complexity (refer to Chapter 32; Figure 3.1) element of the present dissertation's holistic conceptual model for considering spirituality.

4.2.2.2. Miller Measure of Spirituality

The Miller Measure of Spirituality (MMS) (Miller, 2004) is a 31-item measure of spirituality consisting of two facets of spirituality, namely: Pro-social Beliefs (19-items) and Importance of a Higher Being (12-items). Refer to Appendix A-4 for MMS items. The two sub-scales of the MMS are posited to most closely align to two of the themes that underpin the present dissertation's conceptualisation of spirituality, namely: (1) an openness to life's mysteries; and, (2) the embracing of one's interconnectedness with all life.

The MMS was first published in 2004 and was developed as a result of a review of existing measures of spirituality undertaken by the scale's author. As a result of the review, Miller's three primary concerns with existing measures of spirituality were: (1) items were ambiguous; (2) items were confusing to potential respondents; and (3) items were likely to be influenced by self-presentation factors (e.g., socially desirable responding). Miller also indicated that existing measures of spirituality may in fact, be examining traits that have already been assessed extensively in literature. The MMS seeks to address these issues by encompassing new items that are unambiguous in content and have demonstrated construct distinctiveness from other psychological constructs, such as personality and psychological well-being. Items of the MMS were generated based upon the teachings and spiritual writings of various spiritual leaders, including: Martin Luther King, Ghandi and Mother Teresa (Miller, 2004).

The MMS was developed in three phases: (1) instrument construction; (2) confirmation of the scale's convergent (utilising an altruism scale) and discriminant (utilising the NEO-FFI) validity; and (3) examination of the scale's predictive validity. In phase 1, a total of 73 generated items were administered to 309 students from a large American

Midwestern university. An exploratory factor analysis study was undertaken to identify the factor structure of the items with three factors emerging. However, the third factor (labelled General Psychological Well-Being) also yielded high correlations with sub-scales from the NEO-FFI. Items that loaded on this third factor were therefore dropped from further analysis. The final instrument measures two facets of spirituality: (1) Pro-social Beliefs, with a higher score on this sub-scale indicating more expansive beliefs about the world and one's higher being; and (2) Importance of a Higher Being, with higher scores on this sub-scale representing more liberal values by which one should ideally live. No gender or age differences are reported by the scale's author. The internal consistency (α) for each of the sub-scales is acceptable according to the guidelines for test construction (of $\alpha > 0.80$) outlined by Clark and Watson (1995). Phase 2 and 3 of Miller's (2004) validation study indicated that the MMS showed convergent validity with altruism (*r*s = .60 and .36 for Pro-social beliefs and Importance of a Higher Being, respectively) and discriminant validity with personality (*r*s < .46 for all sub-scales).

A review of the item content of the MMS according to the three guidelines outlined by Moberg (2002) suggests the scale seeks to be substantive, nontheocentric and universalistic in structure. Finally, given the very nature of the sub-scales of the MMS (both sub-scales pertain to attitudes and beliefs), it could be argued that the scale can best be positioned as being within the Spiritual Beliefs components of the present dissertation's holistic framework for conceptualising spirituality.

4.2.2.3. Spiritual Assessment Scale

The Spiritual Assessment Scale (SAS) (Howden, 1993) consists of 28-items measuring four facets of spirituality, namely: Purpose and Meaning in Life (4-items), Innerness and Inner Resources (9-items), Unifying Connectedness (9-items) and Transcendence (6-items). Refer to Appendix A-5 for SAS items. Although the original scale has not formerly been published (the scale was developed towards the completion of a PhD level dissertation), it has been cited and published in subsequent literature on a number of occasions. The scale was selected as the four sub-scales of the SAS are posited to closely align to three themes that underpin the present dissertation's conceptualisation of spirituality, namely: (1) an

exploration towards finding one's meaning and unique purpose for 'existing'; (2) the embracing of one's interconnectedness with all life; and (3) the process of self-exploration towards self-transcendence.

The SAS was first published as part of the scale author's PhD dissertation in 1993 making it the oldest model and measure of spirituality selected for analysis. The original purpose of the scale was to assess patient spiritual 'health' within hospital settings. Given the research trajectory of spirituality in the past ten years, it is unsurprising that the scale author did not have extensive theoretical underpinnings within the discipline of spirituality to draw upon in the development of the SAS. However, the scale was designed using various definitions of spirituality found in the philosophical, psychological, sociological, theological, and nursing literature available at the time. Further, an expert panel (consisting of six nursing practitioners who were also published in the field of spirituality) reviewed the conceptual and operational foundations of the instrument during its development.

The SAS was generated and refined via two separate data collection phases. The first phase utilised a 44-item version of the scale and was administered to 94 undergraduate and graduate nursing students. A second data collection phase administered a revised 36 item version of the scale to 189 adults. All respondents for the second data collection phase reported good to excellent levels of health. An exploratory factor analysis study was undertaken and the hypothesised four factor model of spirituality was identified utilising 28 of the original 36 items subjected to analysis. No gender or age differences are reported by the scale's author. The internal consistency (α) for the Purpose and Meaning, Innerness and Inner Resources, Unifying Connectedness and Transcendence sub-scales is .91, .79, .80 and .71, respectively. Further, the internal consistency coefficient for the Total Score is $\alpha = .91$, which exceeds the cut-off point for test construction (of $\alpha > 0.80$) outlined by Clark and Watson (1995).

A review of the item content of the SAS according to the three guidelines outlined by Moberg (2002) suggests the scale seeks to be substantive, nontheocentric and universalistic in structure. Finally, it could be argued that the SAS can best be positioned as being within the Spiritual Beliefs components of the present dissertation's holistic framework for

conceptualising spirituality with a small number of items (potentially) being more related to the Spiritual Practices aspects of the proposed framework.

4.2.2.4. Spiritual Transcendence Scale

The Spiritual Transcendence Scale (STS) (Piedmont, 1999) is a 24-item[1] measure of spirituality consisting of three facets of spirituality, namely: Universality (9-items), Prayer Fulfilment (9-items) and Connectedness (6-items). The three sub-scales of the STS are posited to most closely align to two of the themes that underpin the present dissertation's conceptualisation of spirituality, namely: (1) an openness to life's mysteries; and, (2) the embracing of one's interconnectedness with all life.

The STS was first published in 1999 making it the second oldest measure identified for analysis. It is also the most extensively researched of all selected instruments with the scale's author having published widely regarding the utility of the model and measure in a range of cultural contexts. The development of the scale arose in response to a call from researchers for greater psychometric rigour in the assessment of spirituality as a new and unique individual differences variable. Given the utilisation of personality (specifically the Five-Factor Model; FFM) as the most comprehensive organisation of individual differences available within psychological research, Peidmont grounded his conceptualisation of spirituality as a related yet unique construct providing incremental predictive validity beyond the FFM.

The STS is subject to an ongoing validation process. However, the scale's initial development and validation was completed via two separate data collection phases. Both phases included an examination of the convergent (via the Faith Maturity Scale) and discriminant (using analog measures of the FFM) validity of the STS. In phase 1, a total of 65 items were generated. Item generation by the scale author occurred as a result of a review of a large number of R/S texts as well as the convening of a series of focus groups with religious scholars from a range of R/S backgrounds, including: Christianity, Judaism,

[1] Revisions to the Spiritual Assessment Scale resulted in a 24-item version (Piedmont, 2001) ; however, the original 23-item version published by Piedmont (1999) was utilised in this dissertation.

Buddhist, and Hindu. Generated items were administered to 379 students from a large American Midwestern university. After a review of preliminary results, a sequence of exploratory factor analyses was performed utilising the Faith Maturity Scale and the Bipolar Adjective Scale (this scale produces sub-scale scores aligned to the FFM) to identify items that failed to load independently of personality. A total of 24-items remained and were refactored with three factors of Universality, Prayer Fulfilment and Connectedness emerging. Higher scores for the three sub-scales represent a belief in the unitive nature of life; feelings of joy and contentment that result from personal encounters with a transcendent reality; and, a belief that one is part of a larger whole creating life's continuing harmony for universality, prayer fulfilment and connectedness, respectively.

The 24-item STS was readministered to a second sample of 356 undergraduate students from a large American Midwestern university. The three factor model of spiritual transcendence was confirmed via both exploratory and confirmatory factor analysis. A gender difference is reported for the Connectedness sub-scale. Only two sub-scales yielded an acceptable internal consistency (of $\alpha > .80$) according to Clark and Watson's (1995) guidelines with coefficients of .83, .87 and .64 for universality, prayer fulfilment and connectedness, respectively. In the second sample, participants also completed the NEO-PI. Results indicate that the Universality sub-scale has a significant and positive correlation with the extraversion, openness and agreeableness sub-scales of the NEO-PI of .23, .33 and .17, respectively. The Prayer Fulfilment sub-scale is correlated positively and significantly with the extraversion and conscientiousness sub-scales of the NEO-PI (*r*s = .27 and .15, respectively). Finally, the Connectedness sub-scale has a significant and positive correlation with the extraversion, openness and agreeableness sub-scales of the NEO-PI of .24, .22 and .17, respectively.

A review of the item content of the STS according to the three guidelines outlined by Moberg (2002) suggests the scale seeks to be substantive in structure. However, given the explicit reference to prayer and/or meditation and 'God' in scale items, it remains debatable as to whether the scale is either nontheocentric or universalistic in structure. Finally, although sub-scales of the STS could be argued to best be positioned as being within the Spiritual Beliefs components of the present dissertation's holistic framework for

conceptualising spirituality, a number of items are potentially more related to the Spiritual Practices aspects of the proposed framework.

4.2.3. A summary of the models and measures of spirituality selected for review

Other models and measures of spirituality could also have been selected to replace or complement those identified. However, it is the position of the present author that those selected provide the best representation of the study's definition of spirituality. Specifically, the first identified theme of spirituality postulated by the present dissertation (an openness to life's mysteries) is hypothesised to be encompassed by the MMS and STS. The second identified theme (an exploration towards finding one's meaning and unique purpose for 'existing') is hypothesised to be encompassed by the ASTI and SAS. The third identified theme (the embracing of one's interconnectedness with all life) is hypothesised to be encompassed by the MMS, SAS and STS. Finally, the fourth identified theme (the process of self-exploration towards self-transcendence) is hypothesised to be encompassed by the ASTI and SAS.

Although it could be argued that there is potential redundancy between the four selected measures as each relates to the present dissertation's definition of spirituality, it could also be argued that each assessment selected has conceptualised spirituality differently. For example, the ASTI is grounded within a developmental perspective for operationalising spirituality (Levenson et al., 2005); the MMS has conceptualised spirituality based upon the teachings of spiritual leaders and is an indicator of one's psycho-social functioning as it relates to spirituality (Miller, 2004); the SAS provides a relational lens for considering spirituality (Delaney, 2005); and, the STS grounds spirituality firmly within the conceptual landscape of personality. The selected measures of spirituality have been taken from a diverse range of theoretical standpoints to provide the best opportunity to evaluate the utility of existing spirituality measures within a social context that could be argued to be unique to Australia.

Finally, it is the position of the present researcher that the theoretical underpinnings of each selected measure could be argued to be predominantly related to one's Spiritual Beliefs (as defined in Chapter 3). As already proposed, one's spiritual beliefs and attitudes

towards spirituality constitute a higher order process than one's behavioural manifestation of his or her spirituality through spiritual practice. Therefore, the objectives of the present study are to examine the nature of this symbiotic relationship between one's spiritual beliefs and practices as operationalised via the four models and measures of spirituality and five spiritual practice types previously outlined.

4.2.4. The objectives of the present study

Extensive research examining the theoretical underpinnings, structure, reliability, and convergent and discriminant validity of the four identified measures of spirituality has been undertaken. Previous research indicate that each measure is theoretically sound and provides predictive utility in differentiating between those that do and do not adhere to a form of R/S beliefs or practices. However, at this time no such research pertaining to these four measures has been undertaken on a predominantly Australian sample. Further, research is yet to be undertaken to examine the discriminate sensitivity of the identified scales. Specifically, the present study aims to further existing research by examining: (1) the factor structure of each selected measure on a predominantly Australian sample; (2) gender differences on each of the four scales; (3) the discriminant validity of each scale in differentiating between individuals who do and do not consider themselves to be spiritual; and (4) the discriminate sensitivity of each scale in differentiating between the dominant spiritual practices undertaken within contemporary Australian society.

4.2.4.1. Hypotheses

On the basis of the aims of the present study, the hypotheses explored were that the factor structure (as evaluated by Partial Confirmatory Factor Analysis) of each selected model and measure of spirituality would be found to be confirmed for a predominantly Australian sample. Further, female respondents would score higher on the ASTI, MMS, SAS and STS than male respondents. Respondents with a Monotheistic, Dharmic, New Age or Indigenous spiritual practice would score higher on the ASTI, MMS, SAS and STS than respondents with 'no spiritual practice'. Finally, respondents of different spiritual practice types (e.g., Monotheistic, Dharmic, New Age or Indigenous) would respond differently to the ASTI, MMS, SAS and STS, which would result in statistically meaningful sub-scale and Total

Score differences for each reported measure according to the four specified spiritual practice types.

4.3. Method

4.3.1. Participants

Participants were a convenient sample recruited via the Internet. A total of 331 respondents participated in the study. The sample contained 83 males (25.1%) and 248 females (74.9%). The mean age for males was 45.56 years (*SD* = 13.30; 20 – 71 years). The mean age for females was 41.11 years (*SD* = 11.49; 22 – 71 years). Three hundred and eight (93.1%) participants indicated Australia as their country of residence, 1.5% indicated a country of residence as the United States of America (USA), 1.2% indicated a country of residence as the United Kingdom (UK), and the remaining 4.2% listed their country of origin as 'other' (note: 'other' includes New Zealand, Singapore, Spain, Thailand, Cambodia, Canada, Fiji, Austria Italy, and Kuwait). A total of 63.8% of the sample indicated they were in an intimate relationship (i.e., coupled, married or de-facto) with the remaining 36.2% of the sample indicating they were single or 'other'. A total of 40.5% of the sample indicated an annual salary (in $AUD) of $0 – $40,000, 19.5% indicated an annual salary of between $40,001 – $60,000, 17.7% indicated an annual salary of between $60,001 – $80,000, 8.1% indicated an annual salary of between $80,001 – $100,000 and the remaining 12.3% of the sample indicated an annual income of more than $100,001. Levels of education within the sample were 13.7%, 21.0%, 12.3%, 2.1%, 28.7%, 4.2%, 4.8%, 5.7%, 3.9% and 3.6% for Doctoral Degree, Masters Degree, Graduate Diploma, Graduate Certificate, Bachelor Degree, Advanced Diploma, Diploma, Certificate, Senior Secondary (i.e., yr 12) and Year 10 or equivalent, respectively. Participants indicated their current spiritual practice as Monotheistic-oriented (24.6%), Dharmic-oriented (21.0%), New Age-oriented (30.5%), Indigenous-oriented (4.2%) and No Spiritual Practice (19.7%).

4.3.2. Instruments

The Adult Self-Transcendence Inventory (ASTI). The ASTI (Levenson et al., 2005) consists of 18-items measuring two factors, namely: Self-Transcendence and Alienation. Given that the scale authors report that three items load very poorly (i.e., less than |.30|), a shortened 15-item version of the ASTI was used in this dissertation[2]. The Self-Transcendence sub-scale consists of ten items and measures an individual's decreasing reliance on externals for definition of the self, increasing interiority of spirituality, and a greater sense of connectedness with past and future generations. An example item is, "I am more likely to engage in quiet contemplation". The Alienation sub-scale consists of five items and measures an individual's disengagement with life, and reduced connectedness with past and future generations. An example item for this sub-scale is, "I feel that my life has less meaning". The original seven-point response scale was modified for the present study to: 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Disagree More Than Agree*, 4 = *Agree More Than Disagree*, 5 = *Agree* and 6 = *Strongly Agree*. The scale author reports reliability coefficients (α) for each sub-scale of .75 and .64 for Self-Transcendence and Alienation, respectively. The Alienation sub-scale was reverse scored to allow for ease of interpretation (i.e., all items were transposed to produce a sub-scale score whereby higher scores indicate lower levels of Alienation by the respondent).

Miller Measure of Spirituality (MMS). The MMS developed by Miller (2004), is a 31 item measure that assesses two facets of spirituality, namely: Pro-social Beliefs and Importance of a Higher Being. The Pro-Social Beliefs subscale consists of 19 items and measures the core values by which one should live. A sample item is, "It is important for people to be at peace with themselves". The Importance of a Higher Being sub-scale measures an individual's beliefs about the world, humanity, nature, and one's Higher Being. An example item is, "I regularly seek inner strength and guidance from a higher being". The original 5-point response scale was modified for the present study to: 1 = *Strongly Disagree*,

[2] Items omitted included: "I take myself less seriously", "I am more focused on the present" and "I have less patience with other people".

2 = *Disagree*, 3 = *Disagree More Than Agree*, 4 = *Agree More Than Disagree*, 5 = *Agree* and 6 = *Strongly Agree*. The scale author reports good reliability for each sub-scale with a reliability coefficient (α) of .88 and .92 for Pro-social Beliefs and Importance of a Higher Being, respectively.

Spiritual Assessment Scale (SAS). The SAS developed by Howden (1993), is a 28-item measure of spirituality consisting of four facets: Purpose and Meaning in Life, Innerness or Inner Resources, Unifying Connectedness, and Transcendence. The Purpose and Meaning in Life sub-scale measures an individual's process of searching for discovering events or relationships that provide a sense of worth, hope and/or a reason for living/existence. The Innerness or Inner Resources sub-scale measures an individual's process for striving or discovering wholeness, identity and a sense of empowerment. The Unifying Connectedness sub-scale measures an individual's feelings of relatedness or attachment to others, a sense of relationship to all of life, a feeling of harmony with self and others, and a feeling of oneness with the universe and/or a universal element or Universal Being. Finally, the Transcendence sub-scale measures an individual's ability to reach or go beyond the limits of usual experience. The instrument utilises a six-point response scale; where 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Disagree More Than Agree*, 4 = *Agree More Than Disagree*, 5 = *Agree* and 6 = *Strongly Agree*. The scale author reports reliability coefficients (α) for each sub-scale of .91, .79, .80 and .71 for Purpose and Meaning in Life, Innerness or Inner Resources, Unifying Connectedness, and Transcendence, respectively.

Spiritual Transcendence Scale (STS). The STS is a 24-item measure consisting of three subscales: Universality, Prayer Fulfilment, and Connectedness, constructed by Piedmont (1999). The Universality sub-scale measures an individual's beliefs in the unitive nature of life. An example item from this sub-scale is, "life is interconnected". The Prayer Fulfilment sub-scale measures an individual's feelings of joy and contentment that result from personal encounters with a transcendent reality. An example item from this sub-scale is, "I meditate and/or pray so that I can reach a higher spiritual level". The Connectedness sub-scale measures an individual's belief that they are part of a larger human whole. An example item from the sub-scale is, "Death does not stop one's feelings of emotional closeness to another". The original 5-point response scale was modified for the present study to: 1 =

Strongly Disagree, 2 = *Disagree*, 3 = *Disagree More Than Agree*, 4 = *Agree More Than Disagree*, 5 = *Agree* and 6 = *Strongly Agree*. The scale author reports reliability coefficients (α) for each sub-scale of .83, .83 and .64 for Universality, Prayer Fulfilment, and Connectedness, respectively.

Dependent variables. Participants were asked to indicate their dominant spiritual practice type from five options provided, namely: Monotheistic, Dharmic, New Age, Indigenous and No Spiritual Practice.

4.3.3. Procedure

The questionnaire battery was administered via the Internet with participants responding anonymously. Participants were provided with the opportunity to supply a return email address should they want to be informed of the results of the study. Participants were recruited from various sources, including word of mouth of the researcher, online forums and online social networking websites. Participants were provided an overview of the study's purpose via an introductory statement and were informed that participation was voluntary and that they were free to withdraw from participating at any time.

4.3.4. Data analytic strategy

The mean (*M*), standard deviation (*SD*), reliability coefficients (α), skew and kurtosis for each measure of spirituality for males, females and combined is first examined. In accordance with the recommendation of Clark and Watson (1995), instrument sub-scales that failed to achieve a reliability coefficient (α) of < 0.80 were considered inadequately defined. Further, the skew and kurtosis of each scale was interpreted using Curran, West and Finch's (1996) guidelines; whereby, a scale's skew and kurtosis was considered excessively large if it exceeded |2.0| and |7.0|, respectively.

As each measure of spirituality evaluated in the present study has already been explored via exploratory factor analysis (EFA), it was deemed appropriate to seek to further confirm the factor structure via alternate means. Researchers often ascribe the completion of a confirmatory factor analysis (CFA) as a statistically valid approach to confirming the

factor structure of a model derived via EFA. In practice however, most CFAs are not strictly confirmatory as investigations generally incorporate one or more modifications to a model to achieve an acceptable level of model-fit (Nesselroade, 1994). Gignac (2009) advocates that EFA should be supplemented by Partial Confirmatory Factor Analysis (PCFA) to confirm the likelihood that a model would subsequently be confirmed via confirmatory factor analysis. Gignac described a PCFA as lying between conventional EFA and CFA on the spectrum of evaluating the plausibility of a model (Gignac, 2009). PCFA was therefore selected to evaluate the suitability of each measure of spirituality.

PCFA modelling utilises SPSS to derive the required statistics to calculate close-fit indices (rather than programs used explicitly for CFA analysis, such as AMOS or LISREL). By subjecting the data to be analysed to a Maximum Likelihood Estimate (MLE) analysis within SPSS's Data Reduction function, the relevant null (via Bartlett's Test of Sphericity) and implied (χ^2) statistics are generated and a number of absolute close-fit and incremental close-fit statistics can then be calculated, including: the Root Mean Square Error of Approximation (RMSEA), Standardised Root Mean Residual (SRMR), Normed Fit Index (NFI), the Tucker-Lewis Index (TLI) and the Comparative Fit Index (CFI) (Gignac, 2009) (for relevant statistical formulas refer to Appendix A-7).

All PCFA analyses were completed in SPSS 15.0 and were based on Maximum Likelihood Estimation (MLE). Given the statistically significant inter sub-scale correlations for each scale reported by each scale's author(s), non-orthogonal (via direct oblimin) factor rotation was selected. An evaluation of model-fit for each PCFA was determined based on four close-fit indices (calculated by hand). Each measure's stated number of factors was arbitrarily set to align with those reported by each scale's author(s) and alternative factor solutions to those reported by each scale's author(s) were not examined. In accordance with the recommendation of Hu and Bentler (1999), a combination of both absolute close-fit and incremental close-fit indexes were used to evaluate model close-fit for each measure of spirituality. Specifically, two absolute close-fit indexes (RMSEA and SRMR) and three incremental close-fit indexes (NFI, TLI and CFI) were selected to be used in the investigation. Models were deemed well fitting when absolute close-fit indices (RMSEA and SRMR) were <

.06 and incremental close-fit indices (NFI, TLI and CFI) were .95 or larger (Hu & Bentler, 1999).

Finally, each measure of spirituality is evaluated according to gender and the five spiritual practice types. More specifically, each measure was subjected to two-way Analysis of Variance (ANOVA) to determine if there were statistically significant differences between the main effects of gender and spiritual practice type, as well as an interaction effect between gender and spiritual practice type. If significant effects were found then further analyses were undertaken using Tukey post-hoc comparisons.

4.4. Results

Prior to analysis, the data were examined for multivariate outliers using an SPSS syntax program by DeCarlo (DeCarlo, 1997). Based on the examination of the Bonferroni corrected Mahalanobis distance value probabilities and the corresponding ordered square distance scatter plot, a total of five multivariate outliers were identified and removed from subsequent analysis.

Determining the means (M), standard deviations (SD), internal consistency reliabilities (α), skew, kurtosis and Standard Error of the Mean (SEM) results for males, females and combined for the four selected measures of spirituality.

Prior to examining the study's four hypotheses, the mean (*M*), standard deviations (*SD*), internal consistency reliabilities (α), skew and kurtosis for males, females and combined for the four selected measures of spirituality were examined. As presented in Table 4.1, the internal consistency reliabilities for the Adult Self-Transcendence Inventory (ASTI) (Panel 1) were found to be adequate for only one of the two sub-scales, with the Alienation sub-scale failing to achieve adequate internal consistency (α = .68). The skew and kurtosis for the ASTI (Total Composite) and its two sub-scales (Self-Transcendence and Alienation) was also found to be within an acceptable range (i.e., |2.0| and |7.0|, respectively). It can be seen from Table 4.1 (Panel 2) that the Miller Measure of Spirituality (MMS) Total Composite score and its two sub-scales, has good internal consistency reliability

with all coefficients (α) exceeding .80 with the skew and kurtosis for each sub-scale and the Total Composite score also being within an acceptable range. The results for the Spiritual Assessment Scale (SAS) are presented in Panel 3 of Table 4.1.

Table 4.1

Means (M), Standard Deviations (SD), internal consistency reliabilities (α), skew, kurtosis and SEM for males, females and combined for the four commonly used measures of spirituality and each scale's respective sub-scales (N = 331).

		Males (n=80)	Females (n=251)	Combined (N=331)				
	Number of items	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	Skew	Kurtosis	SEM	α
1. $ASTI_{S\text{-}TRANSCEND}$	10	4.57 (0.65)	4.66 (0.59)	4.63 (0.61)	-0.61	0.09	0.33	.82
$ASTI_{ALIENATION}$	5	4.49 (0.82)	4.49 (0.78)	4.49 (0.79)	-0.68	1.34	0.22	.68
$ASTI_{TOTAL}$	15	4.54 (0.63)	4.60 (0.54)	4.59 (0.56)	0.25	0.27	0.46	.82
2. $MMS_{P\text{-}S\ BELIEFS}$	19	4.85 (0.55)	5.12 (0.48)	5.06 (0.51)	-0.48	0.37	0.53	.89
$MMS_{IHBEING}$	12	3.93 (1.44)	4.36 (1.08)	4.26 (1.19)	-0.75	-0.09	1.19	.96
MMS_{TOTAL}	31	4.50 (0.82)	4.83 (0.62)	4.75 (0.69)	-0.67	0.38	1.18	.94

Table 4.1: *continued*

		Males (n=80)	Females (n=251)	*Combined (N=331)*				
	Number of items	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*Skew*	*Kurtosis*	*SEM*	α
3. $SAS_{PURPOSE}$	4	4.85 (0.77)	4.98 (0.67)	4.95 (0.70)	-0.67	0.66	0.15	.83
$SAS_{INNERNESS}$	9	4.59 (0.76)	4.81 (0.64)	4.76 (0.68)	-0.26	-0.25	0.33	.84
$SAS_{U\text{-}CONNECT}$	9	4.73 (0.59)	4.84 (0.51)	4.81 (0.53)	-0.42	0.50	0.26	.79
$SAS_{TRANSCENDENCE}$	6	4.42 (0.81)	4.60 (0.75)	4.55 (0.77)	-0.30	-0.16	0.25	.77
SAS_{TOTAL}	28	4.64 (0.65)	4.80 (0.54)	4.76 (0.57)	--0.20	-0.01	0.88	.93

Table 4.1: *continued*

		Males (n=80)	Females (n=251)	*Combined (N=331)*				
	Number of items	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*Skew*	*Kurtosis*	*SEM*	α
4. $STS_{P\text{-}FULFILLMENT}$	8	3.99 (1.54)	4.41 (1.16)	4.31 (1.27)	-0.95	0.27	0.56	.96
$STS_{UNIVERSALITY}$	9	4.42 (1.02)	4.74 (0.76)	4.66 (0.84)	-0.85	0.49	0.42	.87
$STS_{CONNECT}$	6	4.13 (0.70)	4.46 (0.72)	4.38 (0.72)	-0.54	0.27	0.24	.64
STS_{TOTAL}	23	4.19 (0.98)	4.55 (0.72)	4.46 (0.80)	-0.88	0.59	1.02	.93

Note: Means in bold text represent significant differences between males and females ($p < .05$). Note: $ASTI_{S\text{-}TRANSCEND}$ = Adult Self-Transcendence Inventory (ASTI) – Self-Transcendence; $ASTI_{ALIENATION}$ = ASTI – Alienation; $ASTI_{TOTAL}$ = ASTI – Composite Total; $MMS_{P\text{-}S\ BELIEFS}$ = Miller Measure of Spirituality (MMS) – Pro-Social Beliefs; $MMS_{IHBEING}$ = MMS – Importance of a Higher Being; MMS_{TOTAL} = MMS –Composite Total; $SAS_{PURPOSE}$ = Spiritual Assessment Scale (SAS) – Purpose and Meaning in Life; $SAS_{INNERNESS}$ = SAS – Innerness and Inner Resources; $SAS_{U\text{-}CONNECT}$ = SAS – Unifying Connectedness; $SAS_{TRANSCENDENCE}$ = SAS – Transcendence; SAS_{TOTAL} = SAS – Composite Total; $STS_{P\text{-}FULFILLMENT}$ = Spiritual Transcendence Scale (STS) – Prayer Fulfillment; $STS_{UNIVERSALITY}$ = STS – Universality; $STS_{CONNECT}$ = STS – Connectedness; STS_{TOTAL} = STS – Composite Total.

Using the guidelines for interpreting internal consistency coefficient (α) scores outlined by Clark and Watson (1995), adequate internal consistency reliability (α) was achieved for only two of the four sub-scales and the Total Composite score. The skew and kurtosis for the SAS and its four sub-scales are all within an acceptable range. Finally, as shown in Panel 4 of Table 4.1, the Connectedness sub-scale of the Spiritual Transcendence Scale (STS) failed to achieve adequate internal consistency (α = .64); however, the remaining sub-scales and STS_{TOTAL} all achieved internal consistency reliabilities above .80. The skew and kurtosis for the STS and its three sub-scales are all within an acceptable range (i.e., |2.0| and |7.0|, respectively).

Determining the degree of model fit of each measure of spirituality with the data set

To test the present study's first hypothesis, each measure was subjected to Partial Confirmatory Factor Analysis (PCFA). Specifically, each of the four spirituality measures selected for analysis were analysed via Exploratory Factor Analysis (EFA) using Maximum Likelihood Estimation (MLE) with direct oblimin rotation[1] and Kaiser normalization. Each measurement model's fit with the data set was completed via PCFA with the results of that analysis presented in Table 4.2 (refer to Appendix A-7 for equations used to calculate each close-fit index).

Based on a review of each scale's four model fit indices and in accordance with the interpretation of fit indices guidelines provided by Hu and Bentler (1999), the ASTI (RMSEA = .077, SRMR = .052, NFI = .848, TLI = .851 and CFI = .892), MMS (RMSEA = .082, SRMR - .055, NFI = .814, TLI = .842 and CFI = .863) and SAS (RMSEA = .073, SRMR = .038, NFI = .856, TLI = .862 and CFI = .901) were found to be an inadequate fit for the data. The STS was found to be poor fitting of the data (e.g., RMSEA = .081, SRMR = .037, NFI = .898, TLI = .902 and CFI = .928). The Spiritual Transcendence Scale (STS) was found to be the best fitting model of those examined; however, was only evaluated as poorly fitting according to Hu and Bentler's (1999) guidelines. These results suggest that none of the four models of spirituality

[1] Given that the respective sub-scales of each measure evaluated are reported by each scale's author(s) as correlating significantly, non-orthogonal (i.e., direct oblimin) rotation was deemed appropriate.

evaluated represent adequately the dimensions of spirituality prevalent within contemporary Australian society.

Table 4.2

Partial Confirmatory Factor Analysis (PCFA) analysis for four commonly used measures of spirituality (N=331)

	χ^2_{null}	df_{null}	$\chi^2_{implied}$	$df_{implied}$	RMSEA	SRMR	NFI	TLI	CFI
ASTI	1482.88	105	224.88	76	.077	.052	.848	.851	.892
MMS	7018.26	465	1303.59	404	.082	.055	.814	.842	.863
SAS	5197.80	378	750.88	272	.073	.038	.856	.862	.901
STS	5766.11	253	586.76	187	.081	.037	.898	.902	.928

Note: ASTI – Adult Self-Transcendence Inventory (2-factors); MMS = Miller measure of Spirituality (2-factors); SAS – Spiritual Assessment Scale (4-factors); STS = Spiritual Transcendence Scale (3-factors).

Evaluating the gender and spiritual practice type main and interaction effects

To examine the present study's second, third and fourth hypotheses, each measure selected for analysis was subjected to two-way Analysis of Variance (ANOVA) to identify the presence of any gender and spiritual practice type differences. For males and females combined, the predominant spiritual practice was New Age oriented (*n* = 102) followed by Monotheistic-oriented (*n* = 81), Dharmic-oriented (*n* = 67), no spiritual practice (*n* = 62) and indigenous-oriented (*n* = 14). It will be noted that only one male respondent indicated his spiritual practice type as Indigenous-oriented. Therefore, the Indigenous spiritual practice type (both males and females) was omitted from the two-way ANOVA performed for each measure of spirituality.

Adult Self-Transcendence Inventory. A two-way ANOVA was performed to determine the effect of gender and spiritual practice type on the Self-Transcendence sub-scale of the ASTI (i.e., $ASTI_{S\text{-}TRANSCEND}$). No significant main effect for gender was found. A significant main

effect between the four spiritual practice types and $ASTI_{S\text{-}TRANSCEND}$ was found ($F_{3, 316} = 13.73$, $p < .001$, $\eta^2 = .12$). No interaction effect between gender and spiritual practice type was found. An examination of the Alienation sub-scale (i.e., $ASTI_{ALIENATION}$) found no significant main effect for gender or spiritual practice type. No interaction effect was found. Finally, an examination of the Total Composite score for the ASTI (i.e., $ASTI_{TOTAL}$) found no significant main effect for gender. A significant main effect for spiritual practice type ($F_{3, 316} = 6.12$, $p < .001$, $\eta^2 = .06$) was found. No interaction effect between gender and spiritual practice type was found for $ASTI_{TOTAL}$. Utilising Hemphill's (2003) guidelines for interpreting effect sizes (η^2); where a small, medium, and large effect size corresponds to $\eta^2 = .04$, .06, and .09, respectively; it shall be noted that the spiritual practice difference effect size is large and small for $ASTI_{S\text{-}TRANSCEND}$ and $ASTI_{TOTAL}$, respectively.

Table 4.3

Post-hoc (Tukeys) analysis between the five spiritual practices and the ASTI and its two sub-scales for males and females combined (N=331)

	Spiritual Practice Type				
Factor	M-*o*[a]	D-*o*[b]	NA-*o*[c]	I-*o*[d]	No-P[e]
1. $ASTI_{S\text{-}TRANSCEND}$					
M	4.42 [bc]	4.89 [ae]	4.79 [ae]	4.71	4.37 [bc]
(*SD*)	(0.55)	(0.56)	(0.57)	(0.61)	(0.61)
2. $ASTI_{ALIENATION}$					
M	4.61	4.43	4.49	4.44	4.47
(*SD*)	(0.81)	(0.69)	(0.83)	(0.68)	(0.83)
3. $ASTI_{TOTAL}$					
M	4.49 [b]	4.73 [ae]	4.69 [e]	4.62	4.40 [bc]
(*SD*)	(0.55)	(0.48)	(0.56)	(0.56)	(0.57)

Note: Refer to Table 4.1 for definitions of sub-scale acronyms; MT-*o* = Monotheistic-oriented spiritual practices; D-*o* = Dharmic-oriented spiritual practice; NA-*o* = New Age-oriented spiritual practices; I-*o* = Indigenous-oriented spiritual practice; No-P = No spiritual practice; Groups that are significantly different (p <.05) share a superscript letter (a, b, c, d, or e).

Given the non-significant gender effect for the ASTI and its two sub-scales, a series of post-hoc (Tukeys) analyses were performed for all five spiritual practice types (i.e., including Indigenous-oriented spiritual practice) using combined males and females (using one-way ANOVA). An examination of the post-hoc results for the $ASTI_{S\text{-}TRANSCEND}$ sub-scale (refer to Table 4.3; Panel 1) suggests that respondents with a Dharmic (D-*o*) or New Age (NA-*o*) spiritual practice are likely to self-report higher levels of self-transcendence than respondents with a Monotheistic (M-*o*) or Indigenous (I-*o*) spiritual practice or no spiritual practice (No-P). These findings lend partial support for the present study's third hypothesis. This finding is replicated for $ASTI_{TOTAL}$; whereby, respondents with a Dharmic (D-*o*) spiritual practice type report higher levels of self-transcendence than Monotheistic or no spiritual practice. Respondents with a New Age (NA-*o*) spiritual practice report higher levels of self-transcendence than respondents with no spiritual practice for $ASTI_{TOTAL}$.

Miller Measure of Spirituality. A two-way ANOVA was performed to determine the effect of gender and spiritual practice type on the Pro-social Beliefs sub-scale of the MMS (i.e., $MMS_{P\text{-}S\ BELIEFS}$). A significant main effect for gender was found ($F_{1, 316} = 12.63$, $p < .001$, $\eta^2 = .04$) with females scoring higher than males. A significant main effect between the four spiritual practice types and $MMS_{P\text{-}S\ BELIEFS}$ was also found ($F_{3, 316} = 13.46$, $p < .001$, $\eta^2 = .12$). No interaction effect between gender and spiritual practice type was found. An examination of the Importance of a Higher Being sub-scale (i.e., $MMS_{IHBEING}$) found no significant main effect for gender ($F_{1, 316} = 3.73$, $p = .06$, $\eta^2 = .01$), although it was trending in the expected direction. A significant main effect for spiritual practice type was found ($F_{3, 316} = 59.85$, $p <$ .001, $\eta^2 = .37$). No interaction effect was found. Finally, an examination of the Total Composite score for the MMS (i.e., MMS_{TOTAL}) found a significant main effect for gender ($F_{1, 316} = 9.14$, $p < .001$, $\eta^2 = .03$) with females scoring higher than males. A significant main effect for spiritual practice type ($F_{3, 316} = 44.00$, p <001, $\eta^2 = .30$) was found. No interaction effect between gender and spiritual practice type was found for MMS_{TOTAL}.

Given the significant gender main effect for the MMSP-S BELIEFS sub-scale and MMS Total Composite score (i.e., MMS_{TOTAL}), a series of post-hoc (Tukeys) analyses omitting the Indigenous-oriented spiritual practice type were performed. An examination of the post-hoc results for the MMSP-S BELIEFS sub-scale (refer to Table 4.4; Panel 1) suggests that respondents with a spiritual practice (i.e., Monotheistic, Dharmic or New Age) are likely to self-report higher levels of self-transcendence that respondents with no spiritual practice. This finding supports the present study's third hypothesis. However, there is no significant difference between spiritual practice types. This finding is replicated for MMS_{TOTAL} (refer to Table 4.4; Panel 3).

Table 4.4

Post-hoc (Tukeys) analysis between the five spiritual practices and the MMS and its two sub-scales for males and females combined (N=331)

	Spiritual Practice Type				
Factor	M-*o*[a]	D-*o*[b]	NA-*o*[c]	I-*o*[d]	No-P[e]
1. MMS $_{P\text{-}S\ BELIEFS}$					
M	5.05 [e]	5.15 [e]	5.22 [e]	-	4.70 [abc]
(*SD*)	(0.46)	(0.46)	(0.42)	-	(0.58)
2. MMS $_{IHBEING}$					
M	4.84 [be]	4.39 [ae]	4.57 [e]	4.51 [e]	2.80 [abcd]
(*SD*)	(0.77)	(1.03)	(0.89)	(0.95)	(1.17)
3. MMS $_{TOTAL}$					
M	4.97 [e]	4.85 [e]	4.96 [e]	-	3.97 [abc]
(*SD*)	(0.51)	(0.60)	(0.53)	-	(0.71)

Note: Refer to Table 4.1 for definitions of sub-scale acronyms; Refer to Table 4.3 for definitions of spiritual practice type acronyms; Groups that are significantly different ($p < .05$) share a superscript letter (a, b, c, d, or e).

Given the non-significant gender effect for the MMS sub-scale of $MMS_{IHBEING}$ post-hoc (Tukeys) analyses were performed for all five spiritual practice types (i.e., including Indigenous-oriented spiritual practice) using combined males and females (using one-way ANOVA) for this sub-scale. An examination of the post-hoc results for the $MMS_{IHBEING}$ sub-scale (refer to Table 4.4; Panel 2) suggests that respondents with a spiritual practice (i.e., Monotheistic, Dharmic, New Age or Indigenous) are likely to self-report higher levels of $MMS_{IHBEING}$ than respondents with no spiritual practice. This finding supports the present study's third hypothesis. Further, respondents with a Monotheistic-oriented spiritual practice type report high levels of Importance in a Higher Being (i.e., $MMS_{IHBEING}$) than respondents reporting a Dharmic-oriented (D-*o*) spiritual practice. Finally, respondents with a formal spiritual practice report higher levels of MMS – Total Composite (i.e., MMS_{TOTAL}) than those without a formal spiritual practice.

Spiritual Assessment Scale. A two-way ANOVA was performed to determine the effect of gender and spiritual practice type on the Purpose and Meaning sub-scale of the SAS (i.e., $SAS_{PURPOSE}$). No significant gender or spiritual practice main effects were found and no interaction effect was found for this sub-scale. A significant main effect was found for the four spiritual practice types for the Innerness or Inner Resources sub-scale ($F_{3, 316} = 18.75$, $p < .001$, $\eta^2 = .15$); however, a non-significant main effect for gender was found and no interaction effect between gender and spiritual practice type was found for $SAS_{INNERNESS}$. A significant main effect for spiritual practice type was found for the Unifying Connectedness sub-scale ($SAS_{U\text{-}CONNECT}$) of the SAS ($F_{3, 316} = 4.59$, $p < .001$, $\eta^2 = .04$). However, no main effect for gender was found and no interaction effect between gender and spiritual practice effect was found for the $SAS_{U\text{-}CONNECT}$ sub-scale. A non-significant gender main effect was found for the Transcendence sub-scale (i.e., $SAS_{TRANSCENDENCE}$) of the SAS. However, a significant main effect for spiritual practice type was found ($F_{3, 316} = 14.19$, $p < .001$, $\eta^2 = .12$). No interaction effect was found between gender and spiritual practice type for the $SAS_{TRANSCENDENCE}$ sub-scale. Finally, a two-way ANOVA was performed to determine the effect of gender and spiritual practice type on the Total Composite score of the SAS (i.e., SAS_{TOTAL}). A non-significant gender main effect was found; however, a significant main effect for spiritual practice type was found ($F_{3, 316} = 12.77$, $p < .001$, $\eta^2 = .11$). A non-significant interaction

effect between gender and spiritual practice type was found for the Total Composite score of the SAS.

Given the non-significant gender effect for the SAS and its four sub-scales, a series of post-hoc (Tukeys) analyses were performed for all five spiritual practice types (i.e., including Indigenous-oriented spiritual practice) using combined males and females (using one-way ANOVA). An examination of the post-hoc results for the $SAS_{PURPOSE}$ sub-scale (refer to Table 4.5; Panel 1) reveals no significant differences between the five spiritual practice types. The $SAS_{INNERNESS}$ sub-scale reveals that respondents with a spiritual practice (i.e., Monotheistic, Dharmic, New Age or Indigenous) report higher levels of inner resources than respondents with no spiritual practice. This finding supports the present study's third hypothesis. However, no significant differences were found between the four spiritual practice types. The results indicate that respondents with a Dharmic (D-*o*) or New Age (NA-*o*) spiritual practice are likely to self-report higher levels of $SAS_{U\text{-}CONNECT}$ than respondents with a Monotheistic (M-*o*) or Indigenous (I-*o*) spiritual practice or no spiritual practice (No-P) (refer to Table 4.5; Panel 3). An examination of the post-hoc results for the $SAS_{TRANSCENDENCE}$ sub-scale reveals that respondents with a spiritual practice (i.e., Monotheistic, Dharmic, New Age or Indigenous) do report a greater ability to go beyond the reaches of usual experience than respondents with no spiritual practice (refer to Table 4.5; Panel 4). This finding is replicated for SAS_{TOTAL} (refer to Table 4.6; Panel 5) and provides support for the present study's third hypothesis. Finally, respondents with a New Age oriented spiritual practice type report higher levels of transcendence (i.e., $SAS_{TRANSCENDENCE}$) than respondents with a Monotheistic (MT-*o*) spiritual practice type (refer to Table 4.5; Panel 4).

Table 4.5

Post-hoc (Tukeys) analysis between the five spiritual practices and the SAS and its four sub-scales for males and females combined (N=331)

	Spiritual Practice Type				
Factor	M-*o*[a]	D-*o*[b]	NA-*o*[c]	I-*o*[d]	No-P[e]
1. $SAS_{PURPOSE}$					
M	4.98	4.98	5.01	5.16	4.72
(*SD*)	(0.68)	(0.68)	(0.63)	(0.65)	(0.81)
2. $SAS_{INNERNESS}$					
M	4.75 [e]	4.93 [e]	4.94 [e]	5.10 [e]	4.21 [abcd]
(*SD*)	(0.61)	(0.62)	(0.61)	(0.64)	(0.65)
3. $SAS_{U\text{-}CONNECT}$					
M	4.77	4.90 [e]	4.90 [e]	4.77	4.64 [bc]
(*SD*)	(0.50)	(0.48)	(0.52)	(0.69)	(0.59)
4. $SAS_{TRANSENDENCE}$					
M	4.43 [ce]	4.74 [e]	4.79 [ae]	4.86 [e]	4.05 [abcd]
(*SD*)	(0.70)	(0.70)	(0.67)	(0.93)	(0.79)
5. SAS_{TOTAL}					
M	4.72 [e]	4.88 [e]	4.91 [e]	4.95 [e]	4.39 [abcd]
(*SD*)	(0.54)	(0.53)	(0.51)	(0.58)	(0.58)

Note: Refer to Table 4.1 for definitions of sub-scale acronyms; Refer to Table 4.3 for definitions of spiritual practice type acronyms; Groups that are significantly different ($p < .05$) share a superscript letter (a, b, c, d, or e).

Spiritual Transcendence Scale. A two-way ANOVA was performed to determine the effect of gender and spiritual practice type on the Prayer Fulfilment sub-scale of the STS (i.e., $STS_{P\text{-}FULFILLMENT}$). No significant main effect for gender was found. A significant main effect between the four spiritual practice types and $STS_{P\text{-}FULFILLMENT}$ was found ($F_{3, 316} = 74.90$, $p < .001$, $\eta^2 = .42$). No interaction effect between gender and spiritual practice type was found for the $STS_{P\text{-}FULFILLMENT}$ sub-scale.

A significant gender main effect was found for the Universality sub-scale (i.e., $STS_{UNIVERSALITY}$) of $F_{1, 316} = 4.13$, $p < .05$, $\eta^2 = .01$, with females scoring higher than males. Further, a significant main effect for spiritual practice type was found ($F_{3, 316} = 46.64$, $p < .001$, $\eta^2 = .31$) for the Universality sub-scale. A non-significant interaction between gender and spiritual practice type was found for the $STS_{UNIVERSALITY}$ sub-scale. A significant gender main effect was found for the Connectedness sub-scale (i.e., $STS_{CONNECT}$) of $F_{1, 316} = 12.15$, $p < .01$, $\eta^2 = .04$, with males scoring lower than females. A non-significant main effect for spiritual practice type was found for the $STS_{CONNECT}$ sub-scale.

Further, a non-significant interaction between gender and spiritual practice type was found. Finally, a two-way ANOVA was performed to determine the effect of gender and spiritual practice type on the Total Composite score of the STS (i.e., STS_{TOTAL}). A significant main effect for gender was found ($F_{1, 316} = 6.46$, $p < .05$, $\eta^2 = .02$) with females scoring higher than males. A significant main effect for spiritual practice type was also found ($F_{3, 316} = 55.83$, $p < .001$, $\eta^2 = .35$). A non-significant interaction effect between gender and spiritual practice type was found. No differences between the four spiritual practice types (i.e., Monotheistic, Dharmic, New Age and Indigenous) were found.

Table 4.6

Post-hoc (Tukeys) analysis between the five spiritual practices and the STS and its three sub-scales for males and females combined (N=331)

	Spiritual Practice Type				
Factor	M-*o*[a]	D-*o*[b]	NA-*o*[c]	I-*o*[d]	No-P[e]
1. $STS_{P\text{-}FULFILLMENT}$					
M	4.67 [e]	4.85 [e]	4.67 [e]	4.46 [e]	2.63 [abcd]
(*SD*)	(0.71)	(0.78)	(0.91)	(1.21)	(1.28)
2. $STS_{UNIVERSALITY}$					
M	4.74 [e]	4.97 [e]	4.94 [e]	-	3.71 [abc]
(*SD*)	(0.60)	(0.65)	(0.63)	-	(0.94)
3. $STS_{CONNECT}$					
M	4.39	4.29	4.43	-	4.33
(*SD*)	(0.81)	(0.78)	(0.62)	-	(0.74)
4. STS_{TOTAL}					
M	4.62 [e]	4.75 [e]	4.71 [e]	-	3.49 [abc]
(*SD*)	(0.57)	(0.57)	(0.60)	-	(0.87)

Note: Refer to Table 4.1 for definitions of sub-scale acronyms; Refer to Table 4.3 for definitions of spiritual practice type acronyms; Groups that are significantly different ($p < .05$) share a superscript letter (a, b, c, d, or e).

Given the non-significant gender effect for the STS sub-scale of $STS_{P\text{-}FULFILLMENT}$, post-hoc (Tukeys) analyses were performed for all five spiritual practice types (i.e., including Indigenous-oriented spiritual practice) using combined males and females (using one-way ANOVA) for this sub-scale. An examination of the post-hoc results for the $STS_{P\text{-}FULFILLMENT}$ sub-scale (refer to Table 4.6; Panel 1) suggests that respondents with a spiritual practice (i.e.,

Monotheistic, Dharmic, New Age or Indigenous) are likely to self-report higher levels of prayer fulfillment than respondents with no spiritual practice.

Given the significant gender main effect for the Universality (i.e., $STS_{UNIVERSALITY}$) and Connectedness (i.e., $STS_{CONNECT}$) sub-scales and STS Total Composite score (i.e., STS_{TOTAL}), a series of post-hoc (Tukeys) analyses omitting the Indigenous-oriented spiritual practice type were performed. An examination of the post-hoc results for the $STS_{UNIVERSALITY}$ sub-scale (refer to Table 4.6; Panel 2) suggests that respondents with a spiritual practice (i.e., Monotheistic, Dharmic or New Age) self-report higher levels of $STS_{UNIVERSALITY}$ than respondents with no spiritual practice. This finding supports the study's third hypothesis. However, there is no significant difference between spiritual practice types. As presented in Table 4.6 (Panel 3), no significant differences were found between the four spiritual practice types (i.e., those with and without a spiritual practice) for the STS sub-scale of $STS_{CONNECT}$.

For STS_{TOTAL} (refer to Table 4.6; Panel 4), an examination of the post-hoc results for the Total Composite scale (refer to Table 4.6; Panel 4) suggests that respondents with a spiritual practice (i.e., Monotheistic, Dharmic or New Age) self-report higher levels of STS_{TOTAL} than respondents with no spiritual practice. This finding supports the present study's third hypothesis. No significant differences between the three spiritual practice types analysed (i.e., Monotheistic, Dharmic and New Age) were found.

4.5. Discussion

Although the sample used in the present study could be argued to reflect the religious/spiritual (R/S) breakdown of the broader Australian population, the findings should be interpreted with caution and future research should seek to validate the findings of the present study with a larger sample that represents the spiritual diversity currently found within the Australian population.

The present study sought to test four specific hypotheses, namely: the factor structure of each selected model and measure of spirituality (i.e., ASTI, MMS, SAS and STS) would be found to be confirmed via partial confirmatory factor analysis (PCFA) using a predominantly Australian sample; females would score higher on the ASTI, MMS, SAS and

STS than males; respondents with a Monotheistic, Dharmic, New Age or Indigenous spiritual practice would score higher on the ASTI, MMS, SAS and STS than respondents with 'no spiritual practice'; and, respondents of different spiritual practice types (e.g., Monotheistic, Dharmic, New Age or Indigenous) would respond differently to the ASTI, MMS, SAS and STS, which would result in statistically meaningful sub-scale and Total Score differences for each reported measure.

To test the study's first hypothesis, each measure of spirituality was subjected to PCFA. Using a predominantly Australian sample, the results for the ASTI failed to confirm the factor structure of the scale. Results indicate that although the absolute close-fit indexes (i.e., RMSEA and SRMR) were well-fitting of the data, the incremental close-fit indexes (i.e., NFI, TLI and CFI) suggest inadequate fit. Although no one fit index is deemed the best, Hu and Bentler (1999) promote the CFI as the index of choice. Bearing this in mind, the ASTI attained a CFI result of .892, well below the cut-off point designated for the present study. A similar finding was found for the MMS, with the results failing to confirm the factor structure of this measure using a predominantly Australian sample. As with the ASTI, the absolute close-fit indexes for the MMS indicate an adequately well-fitting model; however, the incremental close-fit indexes suggest inadequate model fit. Utilising the CFI by way of simple comparison, the MMS performed more poorly than the ASTI in the present study. The third model tested, the SAS, was also found to be mis-specified with the three selected incremental close-fit indexes suggesting a poorly fitting model (NFI = .856, TLI = .862 and CFI = .901). Finally, the STS was found to be adequately well-fitting from the perspective of the absolute close-fit indexes (i.e., RMSEA = .081 and SRMR = .037). It shall be noted that the RMSEA index for the STS of .081 is on the cusp of a poorly fitting model according to Hu and Benter's (1999) recommendation. Given that the RMSEA is sensitive to model complexity (Byrne, 2001), this may be an indication of model mis-specification due to the presence of a dominant general (i.e., global) factor in the scale. However, the incremental close-fit indexes for the STS present an alternative story, with the scale being considered to be poorly fitting of a predominantly Australian sample (i.e., CFI = .928). As with the RMSEA, the TLI imposes a penalty for model parsimony (i.e., model complexity) with the result attained for the STS (of TLI = .902) indicating that the number of estimated parameters in the model may be

unnecessarily high. Given the purpose of confirming a measure's factor structure is to determine how to best score the measure, these findings have significant consequences. The findings of the present study suggest that each measure may be mis-specified for a predominantly Australian resident sample and lends support for the suggestion that a more detailed review of what spirituality 'is' within contemporary Australian society is required. Given that each scale evaluated via PCFA in this study was found to be inadequately fitting, it could be argued that the remaining analyses performed in this study are unwarranted. The present researcher disputed this argument and alternatively argues that the remaining analyses performed aim to identify why the scales may mis-specify spirituality for a predominantly Australian resident sample. Therefore, the remaining three hypotheses of the present study were tested.

Existing research suggests that females tend to be more spiritual than males (Wink & Dillon, 2002). Research completed by the Australian Bureau of Statistics on Australian social trends suggests that females in Australia are more likely to be affiliated with a religion than males (ABS, 2004). It was therefore considered relevant to determine if the four measures selected for review showed discriminate power between males and females. Hypothesis two from this present study proposed that females would score higher on the ASTI, MMS, SAS and STS than males. This hypothesis failed to be confirmed for the ASTI with a non-significant main effect for gender being reported for the ASTI and its two sub-scales. The MMS however, demonstrated discriminate power between males and females with females scoring statistically significantly higher than males for the Pro-social Beliefs sub-scale as well as the Total Composite score of the MMS. Interestingly, the mean score for females (as with males and females combined) for the Pro-social Beliefs sub-scale of the MMS surpassed |5.0| for all three spiritual practice types analysed (i.e., M = 5.09, 5.20 and 5.25 for Monotheistic, Dharmic and New Age spiritual practice type, respectively). This finding suggests that females predominantly agreed (i.e., a response designated as 5 equates to 'Agree') with those items in the scale that focused on more liberal core values by which one should live. This specific result is highlighted within the present study, as the Pro-social Beliefs sub-scale was the only sub-scale mean of all sub-scales examined to surpass 5.0. The result may suggest that females are more likely to adopt more expansive, compassionate

and inclusive ways of thinking and believing about the world, humanity and nature. Research completed by Shahabi (2002) and her colleagues supports such a conclusion. In a study examining the self-perception of spirituality with an American sample, Shambali's findings suggest females' self-ratings of spirituality (after accounting for one's religiosity) is inversely related to cynical mistrust, political conservatism, and nihilism (e.g., female respondents in the study were more inclined to believe life has a purpose) (Shahabi et al., 2002). Also of note for the MMS is the standard deviation (for males and females combined) attained for the Importance of a Higher Being sub-scale of *SD* = 0.77, 1.03, 0.89 and 1.17 for Monotheistic, Dharmic, New Age and No Spiritual Practice, respectively. Such a result may indicate greater variability in attitudes and beliefs towards a higher power (e.g., God) for people of a Dharmic-oriented spiritual practice type and those with no spiritual practice.

As none of the Spiritual Assessment Scale (SAS) sub-scales were found to have a gender main effect, the study's second hypothesis failed to be supported by the SAS. The STS was found to have discriminate power between males and females for the Universality and Connectedness sub-scales of the STS, as well as the Total Composite score of the STS with females scoring higher than males. Of concern however, is the poor internal consistency demonstrated for the Connectedness sub-scale of the STS (of $\alpha = .64$). Although the result is equivalent to that reported by the scale's author, it does represent a result that could be argued to be well below that recommended for test construction (of $\alpha > .80$) (Clark & Watson, 1995). It shall be noted that the sub-scales of Prayer Fulfillment and Universality (as well as the Total Composite score) for the STS attained acceptable levels of internal consistency.

The study's third hypothesis (respondents with a Monotheistic, Dharmic, New Age or Indigenous spiritual practice would score higher on the ASTI, MMS, SAS and STS than respondents with 'no spiritual practice') and fourth hypothesis (respondents of the four different spiritual practice types would respond differently to the ASTI, MMS, SAS and STS) were also examined empirically (except for the Indigenous-oriented spiritual practice). Results for the ASTI partially confirmed hypothesis three of the present study. Statistically significant differences between respondents who did and did not have a formal spiritual practice were found for the Self-Transcendence sub-scale and Total Composite score;

however, the Alienation sub-scale of the ASTI failed to discriminate between those with and without a spiritual practice. It could be argued that the Alienation sub-scale of the MMS might in-fact be an indicator of general negative affectivity (consider items such as, "I feel that my life has less meaning" and "I feel more isolated and lonely") (Levenson et al., 2005), which is a trait experienced to some degree by all peoples. As it relates to the ASTI, the study's fourth hypothesis was also partially supported with the Self-Transcendence sub-scale of the ASTI (for males and females combined) indicating statistically meaningful mean score differences between the Monotheistic compared to the New Age and Dharmic spiritual practice types. In interpreting the findings, it could be stated that respondents that have a New Age or Dharmic spiritual practice self-report higher levels of self-transcendence. Further, respondents that self-report having a Monotheistic spiritual practice also report levels of self-transcendence akin to those that report having no spiritual practice. In validating the ASTI, the scale authors only examined the scale's discriminant validity of each sub-scale in differentiating between those with and without a formal meditation practice. The present study advances those findings by suggesting that the Self-Transcendence sub-scale of the ASTI has discriminate sensitivity between four predominate spiritual practice types using a predominantly Australian sample.

An examination of the results for the MMS finds support for the present study's third hypothesis. The scale's two sub-scales as well as Total Composite score all demonstrated statistically significant mean score differences between respondents that indicate they do and do not have a formal spiritual practice. An examination of the post-hoc analyses for the MMS sub-scale of Pro-social Beliefs and Total Composite score however, suggests that the scale does not have discriminate sensitivity between the four predominant spiritual practice types for males, females and males and females combined. Therefore, the study's fourth hypothesis failed to be fully supported for the Pro-social Beliefs sub-scale and Total Composite scale of the MMS. Results for combined males and females for the Importance of a Higher Being sub-scale of the MMS found support for the study's fourth hypothesis. An examination of the results indicated that respondents self-reporting having a Monotheistic spiritual practice are likely to score higher on the Importance of a Higher Being sub-scale of the MMS than respondents who self-reported having a Dharmic spiritual practice. The

present study advances the scale author's initial findings pertaining to the MMS. Although Miller (2004) found no relationship between the Pro-social Beliefs and a significant inverse relationship between the Importance of a Higher Being sub-scales of the MMS and religious behaviour and religious beliefs, the present study did find that those respondents with a Monotheistic spiritual practice (which could be argued to be synonymous with religious behaviour and religious beliefs) self-reported higher mean scores for both sub-scales.

Results for the SAS partially confirmed the study's third hypothesis. Statistically, no significant differences between those who did (for three spiritual practice types) and did not have a formal spiritual practice were found for the Purpose and Meaning sub-scale. However, a statistically significant main effect for spiritual practice type were found for the Innerness or Inner Resources, Unifying Connectedness and Transcendence sub-scales, as well as the Total Composite score. More specifically, only the Transcendence sub-scale of the SAS was found to support the present study's fourth hypothesis with those with a New Age-oriented spiritual practice scoring higher on this sub-scale than those with a Monotheistic spiritual practice type. A similar result was also found for the ASTI sub-scale of Self-Transcendence. Given the item content of both the Transcendence sub-scale of the SAS (e.g., "The boundaries of my universe extend beyond usual ideas of what space and time are thought to be") and the Self-Transcendence sub-scale of the ASTI (e.g., "I feel that my individual life is part of a greater whole"), the result could be interpreted to suggest that the item content for these two sub-scales may be being considered similarly by respondents.

An examination of the results for the STS finds support for the present study's third hypothesis for two of the scale's three sub-scales, as well as the Total Composite score. The two sub-scales of Prayer Fulfilment and Universality, as well as the Total Composite score of the STS, all demonstrated statistically significant mean score differences between respondents that indicated they did and did not have a formal spiritual practice. Therefore, the study's third hypothesis was partially supported for the STS, with only the Connectedness sub-scale failing to demonstrate discriminant validity. An examination of the post-hoc analyses for the STS sub-scales of Prayer Fulfilment and Universality indicates the scale does not have discriminate sensitivity between the four predominant spiritual practice types. The same result was also found for the scale's Total Composite score. Therefore, the

study's fourth and final hypothesis failed to be supported for the STS. Given that the STS is widely published by the scale's author as a valid and reliable measure of spirituality in a range of cultural contexts, the findings of the present study have a number of implications. First, given that the present study's third hypothesis was supported by the STS, the present study further supports the scale author's findings that the STS has a significant positive association with a range of R/S practices (e.g., reading The Bible, reading religious literature, frequency of prayer, self-reported relationship with God, etc) (Piedmont, 2001). Second however, the findings of the present study also indicates that the STS may not have adequate discriminate sensitivity with the Connectedness sub-scale unable to differentiate between those with and without a formal spiritual practice in the present study.

4.5.1. Conclusion

The present study tested a number of hypotheses pertaining to four predominant measures of spirituality available in literature, namely the ASTI, MMS, SAS and STS. First, the present study sought to confirm or disconfirm the factor structure of each measure utilising a predominantly Australian sample. The findings demonstrate that the factor structure reported by each scale's author may be inadequate for use in an Australian context. This finding has significant implications for future researchers utilising these scales for an Australian sample. Future research is required to replicate this finding and to examine the most appropriate factor structure for each scale that could be deemed suitable for Australian respondents. Second, the study sought to determine each scale's discriminate utility in identifying hypothesised gender differences in how males and females report their level of spirituality. The findings of the present study mostly supported this second hypothesis. The ASTI and its sub-scales and the SAS and its sub-scales failed to show statistically significant differences between male and female respondents. Further, the Importance of a Higher Being sub-scale of the MMS and the Prayer Fulfilment sub-scale of the STS failed to discriminate between male and female respondents. The study also sought to test empirically each scale's discriminate power to identify between those with and without a formal spiritual practice. The results only partially supported this third hypothesis. Not all scales were able to discriminate empirically between the two aforementioned

groups. The present author sought to find some explanation for the failure of some scales to differentiate between these two groups via an analysis of item content relevant to each sub-scale. The outcome of this analysis suggested that the Alienation sub-scale of the MMS might in fact be an indicator of negative affectivity rather than an indicator of one's propensity to disconnect from that which might be considered spiritual. Similarly, the Purpose sub-scale of the SAS could be argued to have failed to discriminate between those with and without a spiritual practice because, to varying degrees, all peoples have goals and aims in life. Finally, the Connectedness sub-scale of the STS may not have differentiated between those with and without a spiritual practice due to the specific nature of the sub-scales items (i.e., item level content for this sub-scale makes reference to people who have died, which may result in Australian respondents being unclear on how to interpret items from this sub-scale).

The present study also sought to examine the discriminate sensitivity of each scale in identifying statistically meaningful differences between the four predominant spiritual practice types present within contemporary Australian society. The findings of the present study suggest that some scales (e.g., the STS) are unable to discriminate between the predominant spiritual practice types found within contemporary Australian society with other scales being only partially successful.

Given the finding from the study's first hypothesis showing that the underlying factor structure of each of the four measures evaluated is likely to be mis-identified, the conclusions of the present study should be applied with caution. Further research is required to better identify the nature of the relationship between each of the four measures of spirituality analysed. The focus of this research would be to explore the nature and strength of association between each of the sub-scales of the four identified measures. Further, research examining the points of commonality and points of departure relevant to each scale's sub-scales is required. Finally, an exploration of how each of the sub-scales relates to the present dissertation's definition of spirituality is warranted.

Chapter 5

Clarifying the points of commonality and departure between four predominant measures of spirituality via higher-order exploratory factor analysis

5.1. Chapter overview

The present chapter seeks to establish a preliminary general taxonomy of spiritual beliefs by examining the points of commonality and departure between four measures of spirituality. Utilising the present dissertation's definition of spirituality, sub-scales from each measure are categorised according to four themes, namely: (1) an openness to life's mysteries; (2) an exploration towards finding one's meaning and unique purpose for 'existing'; (3) the embracing of one's interconnectedness with all life; and, (4) the process of self-exploration towards self-transcendence. The appropriateness of each sub-scale's categorisation was first explored via a review of the nature and strength of association utilising Pearson's correlation coefficients (one-tailed). Subsequently, higher-order factor analyses were performed to confirm empirically the points of commonality and points of departure relevant to each scale's sub-scales. The analyses performed confirm the proposed preliminary general taxonomy of spiritual beliefs. Finally, the present chapter discusses the implications of the findings as they relate to the present dissertation's holistic conceptual framework for considering spirituality.

5.2. Introduction

The development of taxonomies for better understanding related phenomenon could be considered common practice in the social sciences (Norenzayan & Heine, 2005). For example, the development of the Five-Factor Model (FFM) for conceptualising personality provides researchers with a comprehensive taxonomy for considering individual differences (McCrae & Costa, 1987). Indeed, it was this taxonomy that provided Peidmont the foundation for developing and differentiating his measure of spiritual transcendence (Piedmont, 1999). Technically, a language lexicon is the most systematic of approaches for developing a general taxonomy on any given construct. In utilising such an approach, the researcher seeks to identify major themes (i.e., adjectives and nouns) that recur in the domain of interest. This approach is based upon the premise that individual differences that are most salient to people's lives will become encoded in language. The more important the difference, the more likely that it will become expressed in a single word (Renner, 2003). Within spirituality literature for example, the word 'transcendent' can be considered to be a domain adjective for those experiences that surpass usual limits of human understanding. Stated another way, transcendence could be considered to typify all conceptualisations of spirituality. Therefore, the present researcher argues that 'transcendence' be considered an appropriate single word criterion (i.e., domain adjective) for conceptualising a general taxonomy of spirituality. Many definitions of spirituality already consider the 'transcendent' – defined as, beyond the limits of human experience with a focus on the pursuit of the larger purpose or meaning in one's life (Frankl, 1984; Ho & Ho, 2007; Hodges, 2002), as central to the conceptualisation of the construct (for example, Howden, 1993; Levenson et al., 2005; Peterson & Seligman, 2004b; Piedmont, 1999). Therefore, for a theme (i.e., dimension) to be considered common to spirituality (and more specifically, spiritual beliefs) and be included in a general taxonomy of the construct, the identified dimension should encompass the transcendent.

5.2.1. Providing a preliminary general taxonomy for considering spiritual beliefs

Within the field of spirituality research, it could be argued to be somewhat premature (and impossible) to develop a definitive taxonomy for spirituality. However, the present dissertation's focus on spiritual beliefs (i.e., the 'filters' through which spiritual experiences are screened, interpreted, understood and integrated as aspects of one's broader identity) has already proposed four common themes (or dimensions) through which spirituality models and measures might best be considered. The already identified themes could be considered foundational for the formation of a general taxonomy for spiritual beliefs.

One way to hypothesize the common dimensions of the construct of spirituality and spiritual beliefs might be to: (1) define a criterion for what constitutes a common dimension of a construct; (2) systematically compare the components (i.e., sub-scales) of various models and measures to the dimension(s) purported to underpin the construct; and (3) utilise the comparison to identify the common components amongst the evaluated models and measures according to the pre-determined criterion (Palmer, 2003). Considering the first aforementioned element, the present study proposed that a common dimension of spirituality be one that comprised variables shared by at least two of the main theoretical models and measures of the construct.

A total of four measures were considered in relation to the formulation of a preliminary general taxonomy of spirituality (more specifically, spiritual beliefs), namely: the Adult Self-Transcendence Inventory (ASTI) (Levenson et al., 2005), Miller Measure of Spirituality (MMS) (Miller, 2004), Spiritual Assessment Scale (SAS) (Howden, 1993) and Spiritual Transcendence Scale (STS) (Piedmont, 1999). It could be argued that the factor structure of each model and measure of spirituality is questionable based on a predominantly Australian sample (refer to Chapter 4 of this dissertation). Therefore, an examination of each scale's related sub-scales independently could be considered important to the advancement to the field of inquiry pertaining to these measures. Specifically, an examination of the definition and operationalisation intention of each selected measure's

sub-scales to determine its alignment with the proposed general taxonomy of spiritual beliefs was performed by the present researcher.

Utilising the present dissertation's definition of spirituality, as well as the findings of a systematic comparison of components of four measures of spirituality (already undertaken by the present author; refer to Chapter 4 of this dissertation), Table 5.1 proposes a four dimension general taxonomy of spiritual beliefs that represents the hypothesised communalities amongst four analysed measures of spirituality. Each of the four proposed dimensions of one's spiritual beliefs assimilates transcendence at its core. For example, an openness to life's mysteries (Dimension 1) has, as its essence, the exploration of spiritual 'phenomenon' (either intrinsic or extrinsic) beyond and outside the ordinary range of human experience and understanding, that is, an exploration of the transcendent.

Table 5.1

A hypothesised four-dimension general taxonomy of spiritual beliefs

General Spiritual Beliefs			
(1) an openness to life's mysteries	(2) an exploration towards finding one's meaning and unique purpose for 'existing'	(3) the embracing of one's interconnectedness with all life	(4) the process of self-exploration towards self-transcendence
Importance of a Higher Being (MMS)	Purpose and Meaning (SAS)	Connectedness (STS)	Innerness or Inner Resources (SAS)
Prayer Fulfilment (STS)	Alienation (ASTI)	Unifying connectedness (SAS)	Transcendence (SAS)
Universality (STS)		Pro-social Beliefs (MMS)	Self-Transcendence (ASTI)

Note: ASTI = Adult Self-Transcendence Inventory; MMS = Miller Measure of Spirituality; SAS = Spiritual Assessment Scale; STS = Spiritual Transcendence Scale.

As shown in Table 5.1, the first proposed element pertaining to the development of the present study's general taxonomy of spiritual beliefs – a common dimension of spirituality is one that comprised variables shared by at least two of the main theoretical models and measures of the construct – has been adhered to with each dimension of the proposed taxonomy represented by at least two of the selected models and measures.

The first hypothesised dimension (i.e., an openness to life's mysteries) has, at its core, a belief that there is an order to the universe that *transcends* human thinking. Of the four models and measures selected for evaluation by the present dissertation, both the MMS and STS include sub-scales hypothesised to represent this dimension. An examination of each sub-scale's definition (as proposed by each scale's author) supports this premise; for example: the values by which one should live (MMS – Importance of a Higher Being); feelings of joy that result from personal encounters with a transcendent reality (STS – Prayer Fulfilment); and a belief in the unitive nature of life (STS – Universality). Further, the items presented by each scale's author as loading the most strongly on each sub-scale have at their core an exploration of life's mystery, a higher plane of consciousness and an acknowledgement of a higher being.

The second hypothesised dimension (i.e., an exploration towards finding one's meaning and unique purpose for 'existing') is grounded upon the belief that there is a meaning and purpose to one's life that *transcends* life's intermediatory (e.g., riding a motorcycle, obtaining academic excellence, interacting with nature, etc) pursuits. Upon reviewing the four models and measures of spirituality selected for analysis, the SAS and ASTI include sub-scales hypothesised to be aligned to this dimension. An examination of each sub-scale's definition (as proposed by each scale's author) supports this proposition; for example: one's process for searching for and discovering events or relationships that provide a sense of worth, hope and/or a reason for living/existence (SAS – Purpose and Meaning); and one's disengagement with life (ASTI – Alienation). It will be noted that the relevant sub-scale of the SAS provides a positive indication of the dimension; whereas, the Alienation sub-scale of the ASTI provides a negative indication of the dimension.

The third hypothesised dimension (i.e., the embracing of one's interconnectedness with all life) is focused upon the belief that there is an interconnectedness and synchronicity to all life that *transcends* the individual. Upon reviewing the four models and measures of spirituality selected for analysis, the MMS, SAS and STS include sub-scales hypothesised to relate to this dimension. An examination of each sub-scale's definition (as proposed by each scale's author) further supports each sub-scale's alignment with this dimension; for example: one's beliefs about the world, humanity and nature (MMS – Pro-social Beliefs); one's feelings of relatedness or attachment to others (SAS – Unifying Connectedness); and a belief that one is part of a larger human reality (STS – Connectedness). Further, the items presented by each scale's author as loading the most strongly on each sub-scale could be considered indicators of the interconnectedness of all life (past, present and future).

The final hypothesised dimension (i.e., the process of self-exploration towards self-transcendence) is grounded upon the belief that all people are consciously (and unconsciously) undertaking a journey towards a *transcended* Self (upper case 'S'). Upon reviewing the four models and measures of spirituality selected for analysis, the ASTI and SAS include sub-scales hypothesised to relate to this dimension. An examination of each sub-scale's definition (as proposed by each scale's author) provides an indication of the existence of this fourth hypothesised dimension of the taxonomy; for example: one's decreasing reliance on externals for a definition of self (ASTI – Self-Transcendence); one's process for striving for a discovery of wholeness (SAS – Innerness or Inner Resources); and one's ability to reach or go beyond the limits of human experience (SAS – Transcendence). The highest loading items (according to each scale's author) for the sub-scales hypothesised to underpin this dimension of the taxonomy further support this premise.

It could be argued that at face value, the Pro-social Beliefs sub-scale of the MMS does not lend itself to definitive categorisation within the third dimension of the proposed general taxonomy of spiritual beliefs. An examination of the item content for this sub-scale reveals that it could be placed equally within any of the four hypothesised dimensions. By way of example, consider the following items taken from the sub-scale: "There is more to this world than what can be seen and physically studied", "The search for meaning allows

one to find inner peace", "It deeply saddens me when I perceive that another person has suffered some sort of injustice" and "The process of self-discovery is very important to me", further supports this conclusion. However, given the findings of the previous study (refer to Chapter 4; Discussion) concluded that respondents (i.e., a predominantly Australian sample) were likely to be considering the item content of the Unifying Connectedness sub-scale of the SAS and the Pro-social Beliefs sub-scale of the MMS similarly, it is the position of the present researcher that the Pro-social Beliefs sub-scale (of the MMS) is most likely best conceptualised as related to the third dimension of the proposed general taxonomy of spiritual beliefs. Based upon this conclusion, the first element for the selection of a general taxonomy of spiritual beliefs (i.e., a common dimension of spirituality is one that comprised variables shared by at least two of the main theoretical models and measures of the construct) has been satisfied.

Although it is most likely impossible to provide a comprehensive and exhaustive taxonomy for what constitutes spirituality (and more specifically, spiritual beliefs), the present author has provided the commencement of such a taxonomy, as well as criteria for considering the inclusion or exclusion of additional dimensions. The preliminary general taxonomy of spirituality consists of four transcendence grounded dimensions. Further, sub-scales (i.e., components) taken from four measures of spirituality have been hypothesised to be indicators of the presence of the four proposed dimensions.

5.2.2. Benefits resulting from the commencement of a general taxonomy for spiritual beliefs

Beliefs are argued to be broad concepts with relevance for a diverse group of people (Fraser, 2004). In this way, spiritual beliefs provide the 'map' through which peoples' many unique spiritual experiences can be charted and a common understanding reached. Given the diversity of spiritual and religious practices explored within contemporary Australian society, the development of a general taxonomy of spiritual beliefs provides several benefits. Within the context of the present dissertation, making explicit a general taxonomy for spiritual beliefs adds further validity to the proposed holistic conceptual framework for

considering spirituality. This conclusion is supported by the following more specific benefits, including: (1) making the 'map' for deepening one's conceptual complexity towards a transcended Self (self with an upper case 'S') explicit; (2) establishing more specific criteria through which one's spiritual presence can be manifested; and (3) providing a common mechanism for evaluating the efficacy of the diverse range of spiritual practices currently undertaken within contemporary Australian society. Beyond the current dissertation, the development of a general taxonomy for spiritual beliefs also allows researchers to implement faithfully to a comprehensive and common way of conceptualising spiritual beliefs. Further, a general taxonomy for spiritual beliefs allows religious and spiritual (R/S) groups to acknowledge and embrace the diversity of spiritual practices whilst also having a common framework for dialoguing individual differences in the experience of spirituality. Finally, a general taxonomy provides individuals with a supporting framework for connecting with and interpreting one's unique spiritual experiences. Obviously, there are a number of additional benefits beyond those outlined.

5.2.3. The objectives of the present study

The present dissertation proposes a holistic conceptual framework for considering spirituality. The specific component of this proposed framework under examination by the present author pertains to one's spiritual beliefs. As defined previously, spiritual beliefs are 'filters' through which spiritual experiences are screened, interpreted, understood and integrated as aspects of one's broader identity. In this way, spiritual beliefs have the potential to be universal 'truisms' that act as personal guides for helping all peoples (both individuals and groups) understand the world and themselves. The present study proposes a (preliminary) general taxonomy of spiritual beliefs consisting of four dimensions. The proposed taxonomy amalgamates the relevant sub-scales of four measures of spirituality into a broader and more comprehensive 'filter' for considering one's spiritual experiences. The existence of the proposed general taxonomy of spiritual beliefs within contemporary Australian society still needs to be confirmed empirically. Therefore, the present study aims to further existing research by examining: (1) the nature and strength of association between sub-scales from four models and measures of spirituality; and (2) confirming or

disconfirming empirically (via higher-order factor analyses) the proposed four dimension general taxonomy of spiritual beliefs.

5.2.3.1. Hypotheses

On the basis of the aims of the present study, the hypotheses explored were that there would be a positive strong correlation (i.e., of Pearson's *r* = .30 or greater) between the sub-scales of four models and measures of spirituality (i.e., ASTI, MMS, SAS and STS) for a predominantly Australian sample. Further, the strength of correlation would be higher still (i.e., of Pearson's *r* = .50 or greater) for those sub-scales identified as being taxonomically aligned[1]. Finally, the performing of factor analytic procedures on the various sub-scales for four measures of spirituality (i.e., ASTI, MMS, SAS and STS) would produce a four factor solution with sub-scales loading on their respective taxonomic dimensions.

5.3. Method

5.3.1. Participants

Participants were a convenient sample recruited via the Internet. A total of 331 respondents participated in the study. Additional details pertaining to the sample are presented in Chapter 4.

5.3.2. Instruments

The present study utilised the Adult Self-Transcendence Inventory (ASTI) (Levenson et al., 2005); Miller Measure of Spirituality (MMS) (Miller, 2004); Spiritual Assessment Scale (SAS) (Howden, 1993); and Spiritual Transcendence Scale (STS) (Piedmont, 2001). Further information pertaining to each measure is detailed in Chapter 4.

5.3.3. Procedure

[1] Refer to Table 5.1 for scale sub-scales identified as taxonomically aligned.

The questionnaire battery was administered via the Internet with participants responding anonymously. Participants were provided with the opportunity to supply a return email address should they want to be informed of the results of the study. Participants were recruited from various sources, including word of mouth of the researcher, online forums and online social networking websites. Participants were provided an overview of the study's purpose via an introductory statement and were informed that participation was voluntary and that they were free to withdraw from participating at any time.

5.3.4. Data analytic strategy

Pearson's correlations between the sub-scales (and Total Composite scores of each of the four measures of spirituality) were performed to examine the direction and strength of association between all sub-scales. Correlations were interpreted according to Hempill's (2003) guidelines where a small, moderate and large correlation (two-tailed) equates to Pearson's correlation coefficients (*r*s) of .20, .20 to .30 and greater than .30, respectively. Based upon the guidelines of Tabachnick and Fidell (2006), a Pearson's correlation coefficient of.70 or greater was considered an indication of possible multicollinearity between sub-scales.

To examine the higher-order factor structure of the four identified models and measures of spirituality, Principal Axis Analysis (PAA) was first performed. Given that a reliance upon eigen values can sometimes result in an overestimation or an underestimation of the number of identified factors in a model, the appropriate number of factors was determined using the parallel analysis procedure recommended by O'Connor (2000). As recommended by O'Connor (2000), the appropriate number of factors was determined by comparing the eigen value scree plot with the number of eigen values that correspond to the 95th percentile of the distribution of random data eigen values.

It could be argued that PAA or Principal Components Analysis (PCA) are the more appropriate data reduction methods for examining the higher-order factor structure of the four identified models and measures of spirituality. However, it remains debatable if the

present study is seeking strictly to only identify the common components between the sub-scales examined. The proposed general taxonomy of spiritual beliefs constitutes a previously grounded hypothesis relating to the defining and conceptualising of spirituality. That is, the present study is also exploring if the study's four hypothesised themes (e.g., an openness to life's mysteries; an exploration towards finding one's meaning and unique purpose for 'existing'; the embracing of one's interconnectedness with all life; and the process of self-exploration towards self-transcendence) can be verified utilising the sub-scales of the ASTI, MMS, SAS and STS. Given this outcome, EFA was selected *a priori* as the preferred factor extraction technique, once the identification of the most appropriate number of factors to extract has been determined. All sub-scales were subjected to Exploratory Factor Analysis (EFA) in SPSS 15.0 and were based on Maximum Likelihood Estimation (MLE). Given the expected positive, and significant correlations between dimensions, factor were rotated non-orthogonally (via direct oblimin). The number of factors extracted was predetermined based upon the results of the parallel analysis procedure performed. Specific sub-scales loading poorly (i.e., factor loadings <|.3|) on an identified factor were omitted from the reporting of the final factor solution.

The final factor solution was then subjected to Partial Confirmatory Factor Analysis (PCFA) (Gignac, 2009). An evaluation of model-fit was determined based on five close-fit indices (calculated by hand). As recommended by Hu and Bentler (1999), a combination of both absolute close-fit and incremental close-fit indexes were used to evaluate model close-fit for the final factor model identified. Specifically, two absolute close-fit indexes (RMSEA and SRMR) and three incremental close-fit indexes (NFI, TLI and CFI) were selected to be used in the investigation. In accordance with Hu and Bentler (1999), the final model was deemed well fitting if the selected absolute close-fit index (RMSEA and SRMR) were < .06 and incremental close-fit indices (NFI, TLI and CFI) were .95 or larger.

5.4. Results

Considering the present study's first hypothesis, an examination of the correlation matrix presenting each measure's sub-scales (Table 5.2) show that all sub-scales were significantly and positively correlated. The greatest association was found to be between the sub-scales of $MMS_{IHBEING}$ and $STS_{P\text{-}FULFILLMENT}$ sub-scales of $r = .85$ (one-tailed). The result suggests the two sub-scales share 72.3% in common variance. Such a result suggests that the item content between these two sub-scales could be considered potentially synonymous. The two sub-scales sharing the least amount of common variance was shown to be $STS_{CONNECT}$ and $ASTI_{ALIENATION}$ with a correlation coefficient of $r = .11$ (one-tailed). The average inter sub-scale correlation was calculated as $r = .47$ (one-tailed).

Considering the study's second hypothesis, an examination of the four expected groups of relationships identified *a priori* suggests that the $MMS_{IHBEING}$, $STS_{P\text{-}FULFILLMENT}$ and $STS_{UNIVERSALITY}$ sub-scales do share common variance of between 62.7% ($MMS_{IHBEING}$ and $STS_{UNIVERSALITY}$; $r = .79$) and 72.3% ($MMS_{IHBEING}$ and $STS_{P\text{-}FULFILLMENT}$; $r = .85$). Further, the expected association between the $SAS_{PURPOSE}$ and $ASTI_{ALIENATION}$ (as a negative indicator of one's pursuit of meaning and purpose in life) sub-scales was also found to be present ($SAS_{PURPOSE}$ and $ASTI_{ALIENATION}$; $r = .63$). However, the expected strong association between the sub-scales of $SAS_{U\text{-}CONNECT}$ and $STS_{CONNECT}$ was not found. The Pearson's correlation coefficient of .31 (one-tailed) suggests only 9.7% shared variance between these two sub-scales. The $MMS_{P\text{-}S\ BELIEFS}$ sub-scale was also only correlated .34 with $STS_{CONNECT}$. However, the expected strong correlation between $MMS_{P\text{-}S\ BELIEFS}$ and $SAS_{U\text{-}CONNECT}$ was found. Finally, the $ASTI_{S\text{-}TRANSCEND}$, $SAS_{INNERNESS}$ and $SAS_{TRANSCENDENCE}$ sub-scales do share common variance of between 39.3% ($ASTI_{S\text{-}TRANSCEND}$ and $SAS_{TRANSCENDENCE}$; $r = .63$) and 68.4% ($SAS_{INNERNESS}$ and $SAS_{TRANSCENDENCE}$; $r = .83$).

Table 5.2

Pearson's r correlation matrix between the four commonly used measures of spirituality and each scale's respective sub-scales (N=331)

	1	2	3	4	5	6	7	8	9
1. $ASTI_{S\text{-}TRANSCEND}$	1								
2. $ASTI_{ALIENATION}$[a]	.37	1							
3. $MMS_{P\text{-}S\ BELIEFS}$	.46	.15	1						
4. $MMS_{IHBEING}$	.38	.15	.57	1					
5. $SAS_{PURPOSE}$	.57	.63	.38	.31	1				
6. $SAS_{INNERNESS}$	.69	.45	.58	.64	.74	1			
7. $SAS_{U\text{-}CONNECT}$	.57	.51	.50	.36	.65	.64	1		
8. $SAS_{TRANSCENDENCE}$	.63	.28	.57	.57	.54	.83	.57	1	
9. $STS_{P\text{-}FULFILLMENT}$	.47	.18	.53	.85	.34	.67	.37	.60	1
10. $STS_{UNIVERSALITY}$	.48	.25	.61	.79	.41	.69	.51	.66	.82
11. $STS_{CONNECT}$	.11	.13	.34	.23	.15	.22	.31	.22	.20
12. $ASTI_{TOTAL}$	-	-	.40	.34	.71	.72	.66	.59	.42
13. MMS_{TOTAL}	.46	.17	-	-	.38	.69	.46	.64	.81
14. SAS_{TOTAL}	.72	.52	.60	.57	-	-	-	-	.60
15. STS_{TOTAL}	.48	.24	.62	.84	.39	.70	.48	.65	-

Table 5.2: *continued*

	10	11	12	13	14	15
10. $STS_{UNIVERSALITY}$	1					
11. $STS_{CONNECT}$	.28	1				
12. $ASTI_{TOTAL}$	.47	.14	1			
13. MMS_{TOTAL}	.81	.31	.41	1		
14. SAS_{TOTAL}	.68	.27	.76	.65	1	
15. STS_{TOTAL}	-	-	.46	.85	.67	1

Note: bolded correlations are failed to achieve statistical significant at $p < .05$ (1-tailed). Note: $ASTI_{S\text{-}TRANSCEND}$ = Adult Self-Transcendence Inventory (ASTI) – Self-Transcendence; $ASTI_{ALIENATION}$ = ASTI – Alienation; $ASTI_{TOTAL}$ = ASTI – Composite Total; $MMS_{P\text{-}S\ BELIEFS}$ = Miller Measure of Spirituality (MMS) – Pro-Social Beliefs; $MMS_{IHBEING}$ = MMS – Importance of a Higher Being; MMS_{TOTAL} = MMS – Composite Total; $SAS_{PURPOSE}$ = Spiritual Assessment Scale (SAS) – Purpose and Meaning in Life; $SAS_{INNERNESS}$ = SAS – Innerness and Inner Resources; $SAS_{U\text{-}CONNECT}$ = SAS – Unifying Connectedness; $SAS_{TRANSCENDENCE}$ = SAS – Transcendence; SAS_{TOTAL} = SAS – Composite Total; $STS_{P\text{-}FULFILLMENT}$ = Spiritual Transcendence Scale (STS) – Prayer Fulfillment; $STS_{UNIVERSALITY}$ = STS – Universality; $STS_{CONNECT}$ = STS – Connectedness; STS_{TOTAL} = STS – Composite Total. Note: [a] = $ASTI_{ALIENATION}$ has been reverse scored for ease of interpretation.

At a Total Composite level, each measure of spirituality demonstrated a high and positive correlation with all remaining measures, with the weakest association found to be between $ASTI_{TOTAL}$ and MMS_{TOTAL} ($r = .41$). Conversely, the strongest association was found to be between MMS_{TOTAL} and STS_{TOTAL} ($r = .85$) with these two scales sharing 71.6% common variance.

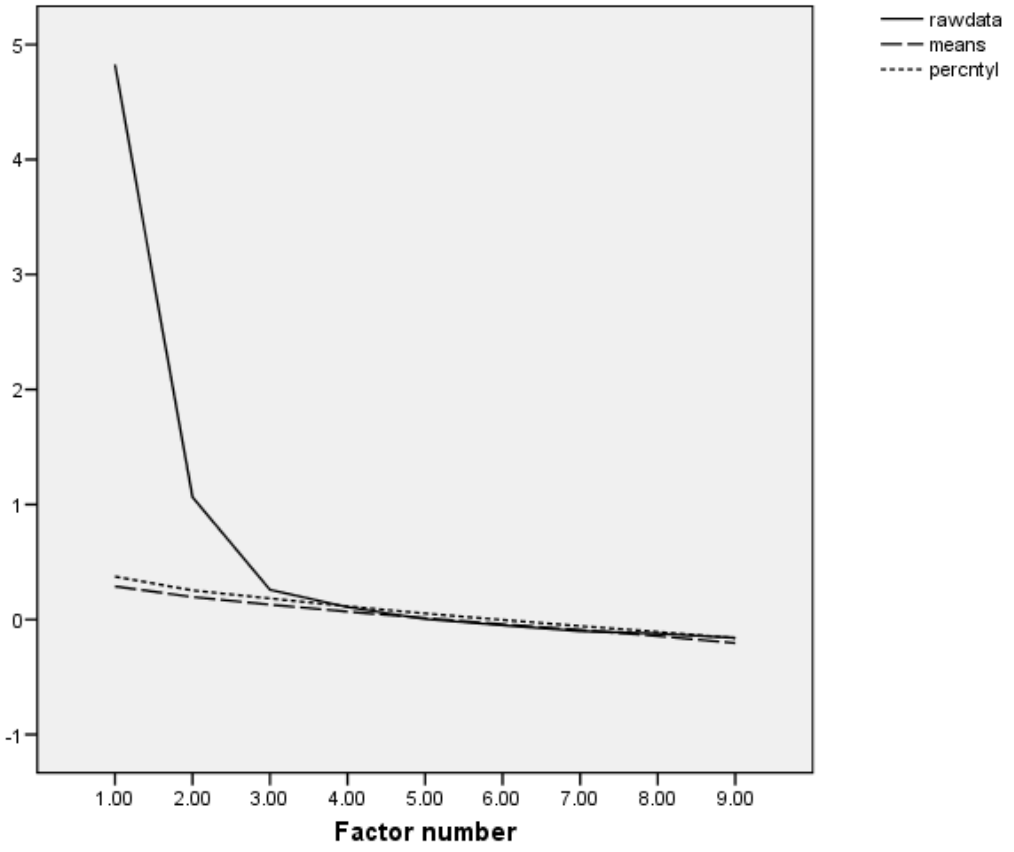

Figure 5.1: Scree plot of eigen values and parallel analysis results derived from the Principal Axis Analysis (PAA) for spirituality

To determine the correct number of factors to extract, a parallel analysis was performed using the procedure provided by O'Connor (2000). As presented in Figure 5.1, the eigen value scree plot and the plot representing the 95th percentile of the distribution of random data eigen values, intersects at the fourth factor. This result suggests four factors to be the most appropriate number to extract from the higher-order factor analysis. Therefore, subsequent analysis (utilising MLE) extracting four factors was performed.

Table 5.3

Factor loadings of Maximum Likelihood Estimation (MLE) analysis for the higher-order sub-scales of four measures of spirituality (N=331)

Sub-scale	Factor 1	Factor 2	Factor 3	Factor 4	Items explained variance (%)
$SAS_{INNERNESS}$	.86				9.7%
$SAS_{TRANSCENDENCE}$	.81				7.7%
$ASTI_{S\text{-}TRANSCEND}$	.60				5.3%
$STS_{P\text{-}FULFILLMENT}$		.96			8.8%
$MMS_{IHBEING}$		.90			8.2%
$STS_{UNIVERSALITY}$		.74			8.2%
$ASTI_{ALIENATION}$			.79		6.3%
$SAS_{PURPOSE}$	.51		.54		7.7%
$SAS_{U\text{-}CONNECT}$			.37	.49	7.2%
$MMS_{P\text{-}S\ BELIEFS}$				.44	5.7%
$STS_{CONNECT}$				.43	1.9%

Note: Factor loadings have been sorted ascending with factor loadings <|.3| suppressed. Refer to Table 2 (Chapter 5) for definitions of spiritual practice type acronyms.

The final four factor solution generated using EFA using MLE and a direct oblimin rotation with Kaiser normalization emerged after nine iterations. The Kaiser-Meyer-Oikin (KMO) measure of sampling adequacy was .88. The first factor (consisting of three sub-scales) yielded an eigen value of 5.90 and accounted for 53.66% of the variance. The second

factor consisted of three sub-scales, yielded an eigen value of 1.55 and accounted for an additional 11.15% of the variance. The third factor attained an eigen value of 0.99, consisted of two sub-scales and accounted for 4.79% in additional variance. The fourth and final factor (consisting of three sub-scales) yielded an eigen value of 0.68 and accounted for 3.82% in additional variance. The final four factor solution accounted for 69.82% of the variance in the analysed data. Each sub-scale's factor loadings and percentage of variance explained are presented in Table 5.3.

As shown in Table 5.3, the final four factor solution's first factor (Factor 1) consists of the two sub-scales from the Spiritual Assessment Scale (namely, $SAS_{INNERNESS}$ and $SAS_{TRANSCENDENCE}$) and one sub-scale from the Adult Self-Transcendence Inventory (namely, $ASTI_{S\text{-}TRANSCEND}$). It could be argued that Factor 1 most closely aligns with the fourth dimension of the present dissertation's proposed taxonomic model of spiritual beliefs. The second factor (Factor 2) consists of two sub-scales from the Spiritual Transcendence Scale (namely, $STS_{P\text{-}FULFILLMENT}$ and $STS_{UNIVERSALITY}$) and one sub-scale from the Miller Measure of Spirituality (namely, $MMS_{IHBEING}$). It could be argued that Factor 2 is aligned with the second dimension of the proposed taxonomy. The third factor (Factor 3) consists of one sub-scale from the Spiritual Assessment Scale (namely, $SAS_{PURPOSE}$) and one sub-scale from the Adult Self-Transcendence Inventory (namely, $ASTI_{\textit{ALIENATION}}$). Upon examination, the sub-scales loading on Factor 3 are aligned with the second dimension of the proposed general taxonomy for spiritual beliefs. The final factor (Factor 4) consists of one sub-scale from the Spiritual Assessment Scale (namely, $SAS_{U\text{-}CONNECT}$), one sub-scale from the Miller Measure of Spirituality (namely, $MMS_{P\text{-}S\ BELIEFS}$), and one sub-scale from the Spiritual Transcendence Scale (namely, $STS_{CONNECT}$). It could be argued that Factor 4 is most closely aligned to the third dimension of the proposed general taxonomy for spiritual beliefs.

It shall be noted that although the four hypothesized factors emerged from the analyses, two cross-loadings were observed. First, although $SAS_{PURPOSE}$ was found to load most strongly with Factor 3, it also shared a cross-loading with Factor 1. Second, although $SAS_{U\text{-}CONNECT}$ loaded most strongly on Factor 4, it also cross-loaded onto Factor 3.

Table 5.4

MLE factor correlation matrix between the four second-order factors (N=331)

	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1	1			
Factor 2	.64	1		
Factor 3	.49	.13	1	
Factor 4	.55	.51	.26	1

As presented in Table 5.4, Factor 1 (consisting of three sub-scales) shares high positive correlations with Factor 2, Factor 3 and Factor 4 of *r*s = .64, .49 and .55, respectively. Factor 2 (consisting of three sub-scales) has a low positive correlation with Factor 3 (*r* = .13) and a high correlation with Factor 4 (*r* = .51). Finally, Factor 3 has a moderate positive correlation with Factor 4 (of *r* = .26). Further, the factor correlation matrix (Table 5.4) suggests that although there is a significant positive between the four factors, the association could be considered only moderate between Factors 2 and 3 (*r* = .13) and Factors 3 and 4 (*r* = .26). Factors 2 and 3 could be argued to represent an openness to life's mysteries and the process of self-exploration towards self-transcendence, respectively; whereas, Factor 3 and 4 pertain to the process of self-exploration towards self-transcendence and the embracing of one's interconnectedness with all life, respectively.

Table 5.5

Partial Confirmatory Factor Analysis (PCFA) for the final four factor solution (N=331)

	χ^2_{null}	df_{null}	$\chi^2_{implied}$	$df_{implied}$	RMSEA	SRMR	NFI	TLI	CFI
4-factor solution	2705.72	55	48.23	17	.075	.055	.982	.962	.988

As presented in Table 5.5, the final four factor solution was subjected to Partial Confirmatory Factor Analysis (PCFA). The results indicate a well-fitting model from both an absolute (RMSEA and SRMR = .075 and .055, respectively) and incremental close-fit perspective (NFI = .982, TLI = .962 and CFI = .988) (refer to Appendix A-7 for equations used to calculate each close-fit index). The presented fit indexes are within the guidelines recommended by Hu and Bentler (1999) and provide support for the existence of the proposed (preliminary) four-dimension general taxonomy for spiritual beliefs.

5.5. Discussion

The present study examined the strength of association between four models and measures of spirituality as well as the points of commonality and departure between each scale's respective sub-scales. Specifically, three hypotheses were tested within the present study: first, there would be a positive strong correlation (i.e., of Pearson's *r* = .30 or greater) between the sub-scales of four models and measures of spirituality (i.e., ASTI, MMS, SAS and STS) for a predominantly Australian sample; second, the strength of correlation would be higher still (i.e., of Pearson's *r* = .50 or greater) for those sub-scales identified as being taxonomically aligned; and third, the performing of factor analytic procedures on the various sub-scales for the four measures of spirituality (i.e., ASTI, MMS, SAS and STS), would produce a four factor solution with sub-scales loading on their respective taxonomic dimensions.

The study's first hypothesis was partially supported. Certainly, each sub-scale was found to have a positive and significant association with the remaining sub-scales examined. However, the Alienation sub-scale of the ASTI had only a low (i.e., $r < .20$) correlation with four of the remaining ten sub-scales, namely the: $MMS_{P\text{-}S\ BELIEFS}$, $MMS_{IHBEING}$, $STS_{P\text{-}FULFILLMENT}$ and $STS_{CONNECT}$. There are two interpretations for this lower than anticipated finding. First, as previously identified the Alienation sub-scale of the ASTI may be an indicator of negative affectivity (Levenson et al., 2005). Emotional agitation and more cynical ways of thinking and perceiving events (van Dierendonck et al., 2005); reduced social functioning (Marques, 2006); and, reduced feelings of gratification towards others (McCullough, Emmons, & Tsang,

2002) are just some of the aspects of human functioning symptomatic of negative affectivity. Given these previous findings, one's level of negative affectively might adversely impact his or her exploration of spirituality. This finding is contrary to previous findings – that one's spirituality acts as a buffer to negative life experiences (Bryant & Astin, 2008; Gulick, 2004; Phillips III et al., 2004; Wink & Dillon, 2002), and warrants further exploration. An alternative explanation of the present finding relates to the premise that perhaps there is no clear opposite to the consideration of spirituality. In research examining personal values, Renner (2003) identified that for the most part, values are positive concepts and their opposites are often undefined. A similar phenomenon might also apply to spirituality, that is, one's consideration of spirituality as it pertains to $MMS_{P\text{-}S\ BELIEFS}$, $MMS_{IHBEING}$, $STS_{P\text{-}FULFILLMENT}$ and $STS_{CONNECT}$ (the sub-scales that correlated the least with $MMS_{ALIENATION}$) cannot be counterpointed with an opposite (more negative) perspective. The remaining correlations for the Alienation sub-scale of the MMS indicate moderate to high positive associations with the remaining sub-scales.

Examining the specific sub-scale associations identified *a priori* for the present study, suggests that the study's second hypothesis is mostly supported. The hypothesised strong association for three of the proposed dimensions of the general taxonomy for spirituality was found to be supported. However, the anticipated strong association (i.e., of Pearson's $r > .50$) between $SAS_{U\text{-}CONNECT}$ and $STS_{CONNECT}$ was not supported. Although the finding does suggest a high association ($r = .31$), it was below the predetermined threshold for the study's second hypothesis. Each sub-scale's item content may provide a suitable explanation for this finding. Whereas the Unifying connectedness sub-scale of the SAS focuses primarily on one's unifying connectedness with others and the environment within the 'here-and-now' (e.g., I feel a kinship to other people"), the Connectedness sub-scale of the STS focuses on one's connections with others who have died (e.g., " Death does not stop one's feelings of emotional closeness to another"). Given the $STS_{CONNECT}$ sub-scale's lower positive correlation with the remaining sub-scales (*r*s range from .11 to .34), it could be interpreted that respondents within the present study (i.e., a predominantly Australian sample) are unsure how to respond to items pertaining to connections with friends/family/relatives no longer

living. This interpretation is further supported by the less than adequate internal consistency coefficient for this sub-scale (α = .64), as well as a non-significant finding discriminant validity between spiritual practice types found for this sub-scale (refer to Table 4.6).

The final hypothesis from the present study can be answered more positively. The results of the higher-order factor analyses provide support for the proposed four dimension general taxonomy for spiritual beliefs. The first factor that emerged (i.e., Dimension 4 of the taxonomy) provided support for the hypothesised universal belief that all people are consciously (and unconsciously) undertaking a journey towards a *transcended* Self (upper case 'S'). The second factor that emerged (i.e., Dimension 1) provided support for the hypothesised universal belief that there is an order to the universe that *transcends* human thinking. The third factor that emerged (i.e., Dimension 2) provided support for the hypothesised universal belief that there is a meaning and purpose in life that *transcends* life's intermediatory pursuits. Finally, the fourth factor that emerged (i.e., Dimension 3) provided support for the hypothesised universal belief that there is an interconnectedness and synchronicity to life that *transcends* the individual. The study's absolute and incremental close-fit indices (determined via PCFA) found support for the final model extracted.

Although the final model's close-fit indices suggest a very well-fitting model, a note of caution should be provided. Two of the sub-scales loaded above |.30| on a second factor within the factor analyses. The results suggest that although the SAS sub-scale of 'Purpose and Meaning' does share the most common variance (MLE utilises common variance within the data to determine the most appropriate factor structure) with the Alienation sub-scale of the MMS, it also shares common variance with those sub-scales found to best represent a belief that all people are consciously (and unconsciously) undertaking a journey towards a transcended Self (upper case 'S') (i.e., Factor 1; Dimension 4). Such a finding may suggest that the search for meaning and purpose in life provides an opportunity for self-exploration and self-discovery. It may further suggest that the exploration of one's 'self' is the purpose of life. This conclusion is supported by previous research (see Emmons, 2005).

The second sub-scale found to cross-load was the SAS sub-scale of Unifying Connectedness. This sub-scale was found to share the most common variance with the MMS 'Pro-social Beliefs' and STS 'Connectedness' sub-scales. Combined, these sub-scales represent the hypothesised spiritual belief that there is an interconnectedness and synchronicity to life that *transcends* the individual. However, the 'Unifying Connectedness' sub-scale was also found to load onto Factor 3, the factor found to represent Dimension 2 of the proposed general taxonomy for spiritual beliefs. Such a finding suggests that an exploration of one's relatedness or attachment to others and one's sense of inter-relationship to all life, may be a foundational reason for being/existence. This interpretation is also supported by previous research completed by van-Dierendonck and his colleagues (2005). Utilising the therapeutic process of psychosynthesis, van-Dierendonck and his colleagues found a positive association between life meaning and purpose and a feeling of connectedness to all life.

5.5.1. Conclusion

The present study sought to establish a preliminary general taxonomy of spiritual beliefs by examining the points of commonality and departure between four measures of spirituality. The purpose of this specific aim was to add further validity to the present dissertation's proposed holistic conceptual framework for considering spirituality. The findings of the present study found support for the proposed general taxonomy for spiritual beliefs. The identified general taxonomy for spiritual beliefs might be utilised in conjunction with spiritual practices research to provide a common way of evaluating the efficacy of the diverse range of spiritual practices currently undertaken within contemporary Australian society. The findings of the present study can also be utilised to explore how to deepen one's conceptual complexity towards a transcended Self (self with an upper case 'S'). More specifically, future research examining the four identified dimensions of spiritual beliefs might provide insight into how to facilitate and support one's identity stage resolution towards latter stages of consciousness (Loevinger, 1998).

Given the findings of the present study, research is required to identify how the identified (preliminary) general taxonomy of spiritual beliefs relates to the predominant spiritual practices explored within contemporary Australian society. Unfortunately, it remains impractical to administer a test battery in excess of 100 items. Further, it is apparent from the findings of the present study that item redundancy is likely between the various sub-scales. Therefore, research to identify the most appropriate items from all scales to form a part of a short-form operationalisation of the taxonomic model is required. In doing so, a more rigorous review of each item's content should be performed to minimise likely conceptual and operational confounds related to the blending of spiritual beliefs and spiritual practice oriented items; specifically, the confounds apparent in the *Spiritual Assessment Scale* and *Spiritual Transcendence Scale* (refer to Chapter 4 for additional details).

Chapter 6

Establishing the hypothesised four factor model of spiritual beliefs and determining its properties

6.1. Chapter overview

The present chapter seeks to establish from existing measures of spirituality, a short-form inventory to assess the identified four-dimension general taxonomy of spiritual beliefs. In establishing the short-form measure of spiritual beliefs, items from four measures of spirituality (e.g., the Adult Self-Transcendence Inventory, ASTI; Miller Measure of Spirituality, MMS; Spiritual Assessment Scale, SAS; Spiritual Transcendence Scale, STS) will be evaluated according to four specific screening criteria, namely: (1) explicit reference to organised religion, religious concepts or religious figures; (2) reference to explicit religion-oriented practices and/or experiences; (3) item redundancy and/or duplication at face-value with an item within the same scale or in another scale; and (4) ambiguous item content, whereby the items intended meaning may be interpreted in alternative ways depending on the spiritual practice of the respondent. The final measure identified is evaluated according to established guidelines for evaluating model fit (i.e., absolute and incremental close fit index guidelines). Further, the established short-form inventory's predictive utility and discriminate sensitivity as each relates to the predominant spiritual practice types currently explored within contemporary Australian society is established. The findings of the present chapter are discussed in relation to models and measures of spirituality examined previously by this dissertation. Finally, how the findings of the present study support the present dissertation's proposed holistic conceptual framework for considering spirituality are also outlined.

6.2. Introduction

Scale construction is a vibrant industry within psychology (Clark & Watson, 1995) and the construction of spirituality focused inventories is no exception (Fornaciari, Sherlock, Ritchie, & Lund Dean, 2005a; Hill & Hood, 1999). However, some researchers have cautioned against the development of additional measures of spirituality prior to the exhaustive exploration of those measures currently available (see Gorsuch, 1990; Hill & Kilian, 2003; Pargament, 1999b). Pargament's (1999b) issue with the development of new measures of spirituality is based upon the premise that much theory and research into spirituality remains un-grounded, which reduced the efficacy of measures constructed. For example, do already developed measures of spirituality adequately differentiate between those who consider themselves to be: religious and spiritual; religious but not spiritual; spiritual but not religious; or, neither spiritual nor religious? Further, do existing measures of spirituality add incremental validity over and above existing knowledge already present within individual differences research? It is these two questions — and others that follow on from these two questions —the present dissertation seeks to clarify.

In considering the development of a revised (or new) measure of spirituality, Gorsuch (1990) proposes that the researcher must first answer the following three questions: (1) are existing measures psychometrically inadequate; (2) are measures for assessing the particular construct of interest unavailable; and (3) are there conceptual or theoretical issues related to existing measures that demand the modification of existing measures? As it relates to the exploration of one's spiritual beliefs (the primary focus for the present dissertation), it is the position of the present researcher that these three questions can all be answered in the affirmative. As already demonstrated (refer to Chapter 4), although each of the four models and measures selected for analysis by the present researcher do pertain to spirituality, all fail to adhere fully to established psychometric guidelines for evaluating a psychological measure (i.e., model fit and internal consistency guidelines). Therefore, Gorsuch's first criterion remains unsupported. Further, existing measures of spirituality fail to align adequately to the specific element of interest to the present dissertation, namely one's spiritual beliefs. Finally, there is some evidence that existing models and measures of spirituality may not be theoretically or conceptually grounded within the present

dissertation's holistic conceptual framework for considering spirituality. Stated another way, it remains unclear as to whether existing measures of spirituality — particularly the four identified for further analysis — examine one's conceptual complexity, spiritual beliefs, spiritual presence or spiritual practice, or aspects of some or all of these four elements of spirituality. What does remain clear is that none of the instruments examined within the present dissertation measure exclusively one's spiritual beliefs. Therefore, a new measure examining one's spiritual beliefs is required.

In heeding the warning of previous researchers (such as Pargament and Gorsuch), the present study seeks to develop a measure of spirituality to examine a specific aspect of spirituality namely, one's spiritual beliefs. More specifically, the present study aims to develop a measure of spirituality that evaluates the already identified four factor general taxonomy of spiritual beliefs.

There are many ways of developing a new measure, including: identifying items from existing measures that are theorised to align with a predetermined factor structure; identifying items empirically from interviews, discussions or written enquiries followed by an examination of their factor structure; and the generation of items theorised to align to the construct of interest followed by an examination of the factorial validity of the item pool (Renner, 2003; Roberts & Yeager, 2004). Of the three aforementioned methods for developing a new scale, approaches two and three are the most typical (Clark & Watson, 1995). The generation of scale items utilising these two approaches requires the researcher to undertake an exhaustive review of existing literature to identify what the construct in question is and is not; clearly define the construct in question related to its various levels of abstraction; conduct interviews and focus groups with those already considered to be experts in the construct in question; and review existing models and measures already assessing the construct in question (and related constructs) to determine if a new scale is actually needed and to ensure that the developed scale has incremental validity beyond existing constructs. It could be argued that three of the four models and measures of spirituality already examined by the present researcher (i.e., the MMS, SAS and STS) have been developed in accordance with these approaches to scale construction. For example, the MMS was developed after a review of existing spirituality literature and is based upon

the commentary of recognised spiritual leaders; the SAS was developed based upon a review of existing definitions of spirituality taken from a range of research disciplines; and the STS was developed based upon the findings of focus groups and is reviewed within the context of a 'personality' framework (Howden, 1993; Miller, 2004; Piedmont, 1999).

The adaptation of existing items already utilised by other measures is also considered a valid approach for the creation of a new scale. Indeed, a review of test construction completed by Clark and Watson (1995) indicated that approximately 10% of published instruments are derived from an existing instrument(s) theorised to already tap into the construct of interest. A more recent study examining only spirituality focused measures completed by Fornaciari et al. (2005b), suggests 34% (of 169) of scales examined used only items from pre-existing scales. It was this approach that the developers of the ASTI utilised when they reviewed and expanded upon the *Geotransendence Scale* first developed by Tornstam (Levenson et al., 2005). In utilising items from existing measures identified as examining the depth and breadth of the construct under evaluation, the researcher can (in part) make an assumption that the new measure's items are likely to already have adequate face, construct, content, substantive, structural and external validity. Within the domain of spirituality research, the adaptation of items from existing measures also serves another important role as identified by Pargament (1999b); namely, it furthers the exploration of those measures currently available to individual difference researchers.

6.2.1. Identifying suitable items from four existing scales to measure one's spiritual beliefs

A person's spiritual beliefs are defined by the present dissertation as 'filters' through which spiritual experiences are screened, interpreted, understood and integrated as aspects of one's broader identity. Spiritual beliefs act as a personal guide for helping individuals and groups understand the world and themselves. Therefore, those items from existing measures selected for analysis in the present study must have content validity related to beliefs, rather than have a focus on the practices or activities one undertakes to explore their spirituality.

Given that the four measures (i.e., ASTI, MMS, SAS and STS) already examined by the present dissertation have been found to align with the proposed four-factor general

taxonomy of spiritual beliefs (refer to Chapter 5), it was deemed appropriate to develop a short-form measure of an individual's spiritual beliefs utilising items taken from these four measures. Therefore, each item of the four selected scales was screened according to specific criteria. Items meeting one or more of the criteria are identified as not related explicitly to one's spiritual beliefs and were excluded. The four specific screening criteria used in the present study are as follows: (1) explicit reference to organised religion, religious concepts or religious figures; (2) reference to explicit religion-oriented practices and/or experiences; (3) item redundancy and/or duplication at face-value with an item within the same scale or in another scale; and (4) ambiguous item content, whereby the items intended meaning may be interpreted in alternative ways depending on the spiritual practice of the respondent. Screening criteria one and two seek to further clarify the difference between spirituality and religion. Screening criterion three seeks to both reduce the number of items in the final scale as well as mitigate the scale development issue of attenuation paradox (Loevinger, 1954). Finally, screening criterion four seeks to mitigate potential item ambiguity in the new measure so as to increase its face validity for respondents of varying social/cultural backgrounds and spiritual practice types.

Following is a description of the scale items (taken from the ASTI, MMS, SAS and STS) reviewed within the present study that meet one or more of the four aforementioned screening criteria.

Criteria 1: Explicit reference to organised religion, religious concepts or religious figures

Of the four measures examined, the following items were identified as meeting screening criteria 1: MMS18, MMS19, MMS20, MMS23, MMS25, MMS29, SAS27 and STS21. It can be observed that each item meeting screening criteria 1 asked the respondent to consider a specifically religious entity (e.g., a 'Higher Being' or 'Higher Power'), religious figure (e.g., 'religious leader') or explicitly religious concept (e.g., 'good triumphing over evil' or 'sacred rituals').

Criteria 2: Reference to explicit religion-oriented practices and/or experiences

Of the four measures examined, the following items were identified as meeting screening criteria 2: MMS21, MMS26, MMS27, MMS28, MMS30, STS1, STS2, STS4, STS8,

STS12, STS17, STS18 and STS19. It can be observed that each item meeting screening criteria 2 asked the respondent to consider an explicit religious practice (e.g., prayer and/or meditation).

Criteria 3: Item redundancy and/or duplication with an item within the same scale or in another scale

Items with high face validity with one or more other items from the same or another measure under investigation were subjected to a deeper review. The review sought to address potential item redundancy and to address possible attenuation paradox (Loevinger, 1954) in the final measure identified. Identified item pairs with high face validity were also evaluated statistically. According to item review guidelines specified by Clark and Watson (1995), item pairs should only be *moderately* correlated. According to Hempill's (2003) guidelines for interpreting correlations, a moderate inter-item correlation therefore is between .20 to .30 (two-tailed) with a strong correlation being .30 or greater (two-tailed). An arbitrary item pair correlation cut-off point of 0.30 (two-tailed) or greater was determined for the present study. Items surpassing the r = 0.30 (two-tailed) cut-off were deemed to share a large association, resulting in one item of the pair being omitted from further analysis. The item with the clearest interpretation was retained. Of the four measures examined, the following items were identified as meeting screening criteria 3: ASTI3 (item ASTI1 retained), ASTI7 (item SAS1 retained), ASTI8 (item SAS26 retained) and ASTI11 (item ASTI6 retained), MMS2 (item MMS19 retained), MMS9 (item MMS10 retained), MMS12 (item SAS6 retained), SAS4 (item SAS19 retained), SAS8 (item SAS10 retained), SAS16 (item ASTI6 retained), SAS21 (item MMS17 retained), SAS24 (item SAS14 retained), STS10 (item STS7 retained), STS13 (item ASTI14 retained), STS14 (item STS7 retained) and STS22 (item ASTI10 retained). It will be acknowledged that in some instances, items were removed from subsequent analysis due to overlapping content with another item in the same measure (e.g., MMS2, MMS9, SAS4, SAS8, SAS24, STS10 and STS14). Given that the nature of the present study is to examine items across multiple measures of spirituality, this was not considered detrimental.

Criteria 4: Ambiguous item content

To identify which specific items from the four measures examined meet screening criterion 4, a panel of three psychological test construction specialists[8] reviewed each item and provided guidance as to its inclusion or omission from subsequent analysis. Of the four measures examined, the following items were identified as meeting screening criteria 4: ASTI9 ("My sense of self has decreased as I have gotten older."), MMS13 ("I am always trying to find ways to express myself."), SAS3 ("I have the ability to rise above or go beyond a physical or psychological condition."), SAS5 ("I have experienced moments of peace in a devastating event."), SAS9 ("I enjoy being of service to others."), SAS11 ("I have the ability to rise above or go beyond a body change or body loss."), SAS13 ("I have the ability for self-healing."), SAS17 ("I have a sense of balance in my life."), SAS18 ("There is fulfilment in my life.") and STS23 ("I am not concerned about the expectations that loved ones have for me.").

It could be argued that some items retained for analysis in the present study may relate to one's actions, rather than being purely a belief *per se*. For example, "I am searching for the ultimate truths in everyday life (MMS item)" or "I have goals or aims in my life (SAS item)". However, the conceptualization of spiritual practices adopted by the present dissertation considers one's spiritual practice to be related to an explicit undertaking of acts (i.e., behaviour-based activities) or a series of acts over time. These behaviour-based acts are considered to be embedded within a specific contextual framework (e.g., a religious or quasi-religious orientation). Therefore, items that were neither explicitly behaviour-based nor embedded within a specific contextual framework were considered to be more related to one's spiritual beliefs. As a result of completing a review of the items from each of the four measures of individual spirituality, a total of 42 items were identified as potentially related to one's spiritual beliefs.

[8] Thanks must go to Dr Gilles Gignac, Dr Ben Palmer and Professor Barry Fallon for their guidance in this regard.

6.2.2. The objectives of the present study

The present dissertation has already found that existing models and measures of spirituality may not be appropriate for use within contemporary Australian society (refer to Chapter 4). Further, the present researcher has conceptualised spirituality within a framework of increasing levels of abstraction (refer to the holistic conceptual framework for considering spirituality presented in Chapter 3). Finally, the present dissertation has identified that spiritual beliefs can be defined in terms of a four-factor general taxonomy (refer to Chapter 5). Therefore, the present study's primary aim is to further existing research by confirming or disconfirming empirically (using a predominantly Australian sample) a four-factor measure of spiritual beliefs utilising identified items from four existing measures of spirituality. Should the four-factor model fail to be identified, the present study will then seek to determine the most psychometrically robust model and measure of spiritual beliefs from the data. Based upon the findings of this primary aim, the present study will then seek to: (1) ascertain any gender differences for the identified model and measure; (2) determine the discriminant validity of the identified model and measure in differentiating between individuals who do and do not consider themselves to be spiritual; and (3) examine the discriminate sensitivity of the identified model and measure in differentiating between the dominant spiritual practices undertaken within contemporary Australian society.

6.2.2.1. Hypotheses

On the basis of the aims of the present study, the hypotheses explored were that the structure of a four-factor model and resulting short-form measure of spiritual beliefs (as evaluated by Partial Confirmatory Factor Analysis) would be found to be confirmed for a predominantly Australian sample. Further, female respondents would score higher on the four-factor measure of spiritual beliefs than male respondents. Respondents with a Monotheistic, Dharmic, New Age or Indigenous spiritual practice would score higher on the four-factor measure of spiritual beliefs than respondents with 'no spiritual practice'. Finally, respondents of different spiritual practice types (e.g., Monotheistic, Dharmic, New Age or Indigenous) would respond differently to the four-factor measure of spiritual beliefs, which

would result in statistically meaningful sub-scale and Total Score differences according to the four specified spiritual practice types.

6.3. Method

6.3.1. Participants

Participants were a convenient sample recruited via the Internet. A total of 331 respondents participated in the study. Additional details pertaining to the sample are presented in Chapter 4.

6.3.2. Instruments

Items utilised in the present study were taken from four published measures of spirituality, namely the: Adult Self-Transcendence Inventory (ASTI) (Levenson et al., 2005); Miller Measure of Spirituality (MMS) (Miller, 2004); Spiritual Assessment Scale (SAS) (Howden, 1993), and; Spiritual Transcendence Scale (STS) (Piedmont, 2001). Additional information pertaining to each scale is detailed in Chapter 4.

6.3.3. Procedure

The questionnaire battery was administered via the Internet with participants responding anonymously. Participants were provided the opportunity to supply a return email address should they want to be informed of the results of the study. Participants were recruited from various sources, including word of mouth of the researcher, online forums and online social networking websites. Participants were provided an overview of the study's purpose via an introductory statement and were informed that participation was voluntary and that they were free to withdraw from participating at any time.

6.3.4. Data analytic strategy

Items selected for analysis (a total of 42) were subjected to Exploratory Factor Analysis (EFA) in SPSS 15.0 and were based on Maximum Likelihood Estimation (MLE). Given that the anticipated four factors have already been found to be positively and significantly

correlated (refer to Chapter 5), factors were rotated non-orthogonally (via direct oblimin). A two step approach to identifying the final factor solution was employed. In step 1, a single factor was extracted initially to establish the 'baseline' for evaluating any multi-factorial model extracted from the data. The initial single factor was also used to identify specific items that loaded poorly (i.e., factor loadings <|.3|) on a global ('g') factor of spiritual beliefs. Items that loaded poorly onto the global factor were eliminated from further analysis. Subsequent analysis (i.e., step 2) extracted factors based upon the identified factor having an eigen value of 1.0 or greater as well as an examination of the related eigen value scree test plot. Given previous findings (refer to Chapter 5), it was anticipated that four factors would also be identified in the present study. Specific items loading poorly (i.e., factor loadings <|.3|) on an identified factor were eliminated from further analysis.

Each factor model identified within the exploration was subjected to Partial Confirmatory Factor Analysis (PCFA) (Gignac, 2009) analyses and an evaluation of model-fit determined based on five close-fit indices (calculated by hand). As recommended by Hu and Bentler (1999), a combination of both absolute close-fit and incremental close-fit indexes were used to evaluate model close-fit for any factor model identified. Specifically, two absolute close-fit indexes (RMSEA and SRMR) and three incremental close-fit indexes (NFI, TLI and CFI) were selected to be used in the investigation. In accordance with Hu and Bentler (1999), models were deemed well fitting when both absolute close-fit indices (RMSEA and SRMR) were < .06 and incremental close-fit indices (NFI, TLI and CFI) were .95 or larger.

An examination of each identified factor's internal reliability coefficient (α) was also calculated. A factor was deemed adequately defined in accordance with the recommendation of Clark and Watson (1995); whereby an identified factor achieves a reliability coefficient (α) of > 0.80. Further, the skew and kurtosis of each scale was interpreted using Curran et al.'s (1996) guidelines; whereby, a scale's skew and kurtosis was considered excessively large if it exceeded |2.0| and |7.0|, respectively.

Finally, the final identified model and measure of spiritual *beliefs* was evaluated according to gender and the five spiritual practice types. More specifically, the measure was subjected to two-way Analysis of Variance (ANOVA) to determine if there were statistically

significant differences between gender and the five spiritual practice types. If differences were found, analyses were undertaken using Tukey post-hoc comparisons. The interpretation effect sizes (η^2) was performed according to (2003) guidelines; where a small, medium, and large effect size corresponds to η^2 = .04, .06, and .09, respectively.

6.4. Results

Establishing the hypothesised four factor model of spiritual beliefs

To test the present study's first hypothesis (that spiritual beliefs consists of four factors), a series of increasingly complex Exploratory Factor Analyses (EFA) using Maximum Likelihood Estimation (MLE) using direct oblimin rotation with Kaiser normalisation were performed. First, a single hypothesized global (i.e., 'g') factor of spirituality was performed using all 42 items taken from the four existing measures of spirituality. The Kaiser-Meyer-Oikin (KMO) measure of sampling adequacy for the single-factor solution was .94. The extracted factor accounted for 34.55% of the variance and emerged after six iterations. As presented in Table 6.1, only item SAS25 attained a factor loading <|.3| (absolute factor loading = .29) and was eliminated from subsequent analyses. An examination of the model's eigen value scree test plot (refer to Figure 6.1) indicated a multi-factorial model would better represent the data.

Table 6.1

Factor loadings of Maximum Likelihood Estimation (MLE) analysis for a single hypothesized global ('g') factor of spiritual beliefs (N=331)

Item		Factor 1
SAS	10	.78
SAS	15	.78
STS	6	.78
MMS	22	.77
STS	11	.77
STS	20	.76
ASTI	2	.75
MMS	6	.69
MMS	24	.69
STS	3	.67
STS	5	.66
MMS	5	.65
MMS	15	.64
STS	15	.64
SAS	7	.64
SAS	23	.62
MMS	14	.62
MMS	31	.60
SAS	14	.58
SAS	20	.57
SAS	12	.57

Table 6.1: *continued*

Item		Factor 1
MMS	17	.56
SAS	22	.54
STS	7	.51
MMS	10	.51
SAS	2	.49
MMS	11	.49
STS	16	.48
ASTI	1	.46
SAS	6	.46
ASTI	12	.46
ASTI	6	.44
MMS	8	.43
SAS	1	.43
MMS	7	.42
MMS	16	.41
SAS	28	.39
ASTI	13	.34
ASTI	4	.34
ASTI	5	.31
ASTI	14	.30
SAS	25	**.29**

Note: Factor loadings have been sorted ascending and factor loadings <|.3|are in bold text.
Note: ASTI = Adult Self-Transcendence Inventory; MMS = Miller Measure of Spirituality; SAS = Spirituality Assessment Scale; STS = Spiritual Transcendence Scale.

An examination of the eigen value scree plot (Figure 6.1) indicates either a four, five or six factor solution. An examination of both the five and six factor solution could not be interpreted (i.e., each factor was represented by either one or two items only). Therefore, a four factor solution was deemed to be the most appropriate 'fit' for the data.

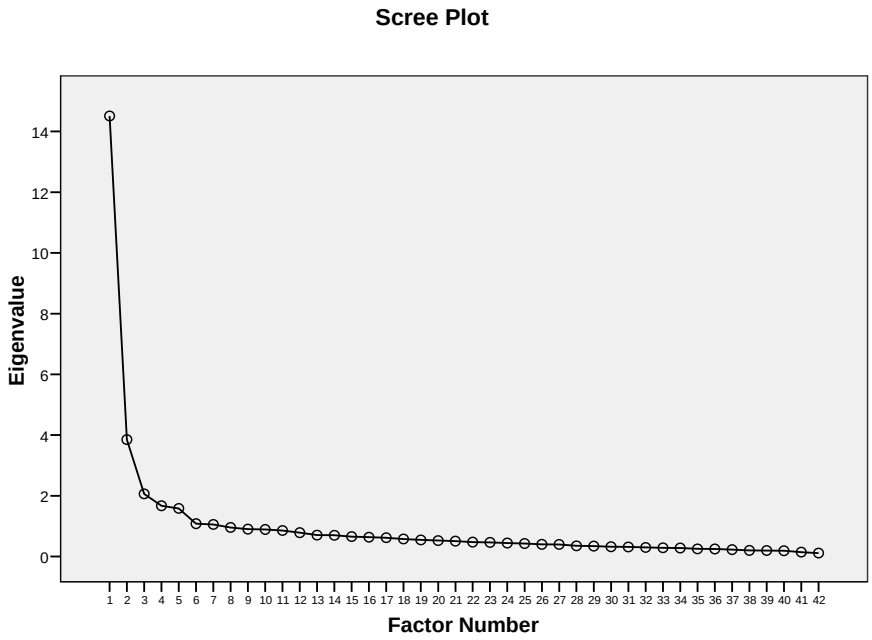

Figure 6.1: Scree plot of eigen values derived from the Maximum Likelihood Estimation (MLE) analysis for spiritual beliefs

As presented in Table 6.2, the hypothesized global ('g') factor of spiritual beliefs (consisting of 42 items) was subjected to Partial Confirmatory Factor Analysis (PCFA) with the findings indicating the single factor model of the data to be a poor fit with the following fit indices calculated: RMSEA = .099, SRMR = .099, NFI = .572, TLI = .615 and CFI = .634 (refer to Appendix A-7 for equations used to calculate each close-fit index).

Table 6.2

Partial Confirmatory Factor Analysis (PCFA) analysis for the 'g' factor of spiritual beliefs (N=331)

	χ_{null}	df_{null}	$\chi_{implied}$	$df_{implied}$	RMSEA	SRMR	NFI	TLI	CFI
'g' factor	8161.71	861	3494.63	819	.099	.099	.572	.615	.634

The Full version of the spiritual beliefs model and measure

The hypothesized four factor model of spiritual beliefs using all 41 items taken from the four existing measures of spirituality was subjected to EFA analysis using MLE with direct oblimin rotation using Kaiser normalisation. The Kaiser-Meyer-Oikin (KMO) measure of sampling adequacy for the four-factor solution was .94. The four factors emerged after four rotations and accounted for 53.55% of the variance in the data. As shown in Table 6.3, an examination of the pattern matrix revealed two items with factor loadings <|.3|; namely, SAS6 and ASTI5 (italicized and underlined). Both items were eliminated from subsequent analysis.

Table 6.3

Factor loadings of Maximum Likelihood Estimation (MLE) analysis with direct oblimin rotation with Kaiser normalization for the four hypothesized factors of spiritual beliefs (N=331)

Item		Factor 1	Factor 2	Factor 3	Factor 4
MMS	6	**.93**	-.02	-.29	.13
MMS	5	**.85**	.03	-.31	.15
STS	6	**.80**	.03	.06	.05
MMS	22	**.74**	.09	.22	-.11
SAS	15	**.73**	.06	.14	-.01
STS	11	**.73**	.06	.10	.06
STS	15	**.69**	-.02	.11	-.03
MMS	24	**.63**	.20	-.05	.05
SAS	10	**.54**	.17	.25	.07
STS	20	**.52**	.00	.42	.07
MMS	31	**.45**	-.16	.19	.28
STS	7	**.39**	.11	.32	.20
ASTI	2	**.39**	.07	.04	.14
SAS	22	.02	**.84**	-.07	.04
SAS	20	.06	**.78**	-.02	.05
SAS	1	.09	**.70**	-.07	-.10
SAS	12	-.03	**.68**	.10	.13
ASTI	4	.08	**.67**	-.03	-.22
ASTI	12	-.11	**.65**	.06	.14
ASTI	6	-.11	**.55**	.09	.19

Table 6.3: *continued*

Item		Factor 1	Factor 2	Factor 3	Factor 4
SAS	28	.10	**.51**	-.03	.00
SAS	14	.05	**.45**	.14	.23
SAS	23	.09	**.44**	.15	.27
SAS	2	.11	**.36**	.16	.09
ASTI	14	.12	**.35**	.13	-.17
ASTI	13	-.09	**.35**	.04	.24
SAS	6	.01	*.28*	.28	.15
ASTI	5	-.02	*.26*	.21	.04
STS	16	.00	.13	**.62**	.01
STS	5	.21	.05	**.59**	.13
STS	3	.36	.04	**.51**	.01
SAS	7	.05	.30	**.49**	.14
MMS	11	-.03	.08	.03	**.67**
MMS	10	.08	-.02	.04	**.64**
MMS	15	.20	-.02	.12	**.62**
MMS	7	.13	.12	-.21	**.54**
MMS	8	.04	.04	.07	**.48**
MMS	17	.00	.33	.06	**.46**
MMS	16	.93	-.12	.06	**.43**
MMS	14	.85	.06	.06	**.42**
ASTI	1	.80	.00	.16	**.31**

Note: Factor loadings have been sorted ascending and factor loadings >|.3|for each factor are in bold text. *Note*: ASTI = Adult Self-Transcendence Inventory; MMS = Miller Measure of Spirituality; SAS = Spirituality Assessment Scale; STS = Spiritual Transcendence Scale.

The final 39-item four factor solution (referred to as the Spiritual Beliefs Inventory: Full Version) was generated via EFA using MLE and a direct oblimin rotation with Kaiser normalization and emerged after 12 iterations. The Kaiser-Meyer-Oikin (KMO) measure of sampling adequacy was .94. The first factor (consisting of 13 items) yielded an eigenvalue of 14.06 and accounted for 36.05% of the variance. The second factor consisted of 13 items, yielded an eigenvalue of 3.73 and accounted for an additional 9.55% of the variance. The third factor attained an eigenvalue of 2.06, consisted of four items and accounted for 5.28% in additional variance. The final factor (factor 4) accounted for 4.1% in additional variance, yielded an eigenvalue of 1.60 and consisted of nine items. In total, the four factors accounted for a cumulative 54.98% of the variance in the dataset. The final four factor solution and each item's percentage of explained variance is presented in Table 6.4.

As shown in Table 6.4 the final Full version of the hypothesized four factor model utilised 13 items from the Miller Measure of Spirituality (MMS), 11 items from the Spiritual Assessment Scale (SAS), eight items from the Spiritual Transcendence Scale (STS), and seven items from the Adult Self-Transcendence Inventory (ASTI).

Table 6.4

Factor loadings of Maximum Likelihood Estimation (MLE) analysis with direct oblimin rotation with Kaiser normalization for the four hypothesised factors of spiritual beliefs (N=331)

Item		Factor 1	Factor 2	Factor 3	Factor 4	Items explained variance (%)
MMS	6	.94				7.6 %
MMS	5	.86				8.6%
STS	6	.78				7.3%
MMS	22	.71				6.7%
SAS	15	.71				6.9%
STS	11	.70				6.9%
STS	15	.67				5.1%
MMS	24	.62				5.3%
SAS	10	.51				6.3%
STS	20	.48		.43		6.5%
MMS	31	.42				4.6%
STS	7	.38				2.7%
ASTI	2	.356		.34		5.8%
SAS	22		.84			6.9%
SAS	20		.78			6.7%
SAS	1		.70			4.5%
SAS	12		.68			6.0%
ASTI	4		.67			4.2%

Table 6.4: *continued*

Item		Factor 1	Factor 2	Factor 3	Factor 4	Items explained variance (%)
ASTI	12		.65			5.0%
ASTI	6		.55			4.1%
SAS	28		.50			2.8%
SAS	14		.45			4.5%
SAS	23		.44			5.1%
SAS	2		.36			2.9%
ASTI	14		.35			1.9%
ASTI	13		.35			2.2%
STS	16			.61		4.5%
STS	5			.60		6.0%
STS	3	.32		.53		5.6%
SAS	7		.31	.48		5.6%
MMS	11				.66	4.8%
MMS	10				.64	4.7%
MMS	15				.62	6.0%
MMS	7				.54	3.7%
MMS	8				.48	2.9%
MMS	17		.32		.46	4.6%

Table 6.4: *continued*

Item		Factor 1	Factor 2	Factor 3	Factor 4	Items explained variance (%)
MMS	16				.43	2.8%
MMS	14				.42	4.5%
ASTI	1				.32	2.5%

Note: Factor loadings have been sorted ascending with factor loadings <|.3|suppressed.
Note: ASTI = Adult Self-Transcendence Inventory; MMS = Miller Measure of Spirituality; SAS = Spirituality Assessment Scale; STS = Spiritual Transcendence Scale.

As presented in Table 6.5, the four factors of the Full version of the spiritual beliefs model are positively related with the strongest correlation being between Factor 1 and Factors 4 and Factor 2 and Factor 3 with factor correlations of .465 and .417, respectively.

Table 6.5

MLE factor correlation matrix between the four sub-scales of the Full version of the four-factor model of spiritual beliefs (N=331)

	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1	1			
Factor 2	.32	1		
Factor 3	.39	.42	1	
Factor 4	.46	.32	.32	1

Table 6.6 presents each specific items loading upon its respective factor. Factor 1 involves items that at their core, could be considered to represent a belief that there is an order to the universe that *transcends* human thinking. Factor 2 involves items that could be argued to be grounded upon the belief that there is a meaning and purpose to one's life that

transcends life's intermediatory pursuits. Factor 3 involves items that could be considered to be focused upon the belief that there is an interconnectedness and synchronicity to all life that *transcends* the individual. Finally, Factor 4 involves items that could be argued to indicate a belief that all people are consciously (and unconsciously) undertaking a journey towards a *transcended* Self (upper case 'S').

Table 6.6

Specific items for each of the four factors of the spiritual beliefs measure

Scale and item number		Item
Factor 1		
MMS	6	There is more to this world than what can be seen and physically studied
MMS	5	There are some occurrences in the natural world that seem to be beyond scientific understanding
STS	6	There is an order to the universe that transcends human thinking
MMS	22	I consider myself to be a spiritual person
SAS	15	The boundaries of my universe extend beyond usual ideas of what space and time are thought to be
STS	11	Spirituality is not a central part of my life (R)
STS	15	There is no higher plane of consciousness to spirituality that binds all people (R)
MMS	24	I feel that each and every person has a unique mission to fulfill in life
SAS	10	I can go to a spiritual dimension within myself for guidance
STS	20	I feel that on a higher level all of us have a common bond
MMS	31	I am searching for the ultimate truths in everyday life
STS	7	Death does not stop one's feelings of emotional closeness to another
ASTI	2	I feel that my life is part of a greater whole

Table 6.6: *continued*

Scale and item number		Item
Factor 2		
SAS	22	My life has meaning and purpose
SAS	20	The meaning I have found for my life provides a sense of peace
SAS	1	I have a general sense of belonging
SAS	12	I have a sense of harmony or inner peace
ASTI	4	I feel that my life has less meaning (R)
ASTI	12	I find more joy in life
ASTI	6	My peace of mind is not so easily upset as it used to be
SAS	28	I have goals and aims in my life
SAS	14	I have an inner strength
SAS	23	My innerness or inner resource helps me deal with uncertainties in life
SAS	2	I am able to forgive people who have done wrong to me
ASTI	14	I am less optimistic about the future of humanity (R)
ASTI	13	Material things mean less to me
Factor 3		
STS	16	Although individual people may be difficult, I feel an emotional bond with all humanity
STS	5	All life is interconnected
STS	3	I do not believe that on some kind of level my life is intimately tied to all human kind (R)
SAS	7	I feel a connection to all of life

Table 6.6: *continued*

Scale and item number		Item
Factor 4		
MMS	11	Every experience allows a person to learn something new about themselves
MMS	10	Changing or growing as a person in a good way is one of the noblest endeavours that a person can undertake
MMS	15	The process of self discovery is very important to me
MMS	7	People need to frequently evaluate what should be cherished in their lives
MMS	8	I tend to reflect on the events that occur in my life
MMS	17	I try to turn painful experiences into something that allows me to grow as a person
MMS	16	People should enact their most idealistic beliefs
MMS	14	The search for meaning allows one to find inner peace
ASTI	1	I am more likely to engage in quiet contemplation

Note: ASTI = Adult Self-Transcendence Inventory; MMS = Miller Measure of Spirituality; SAS = Spirituality Assessment Scale; STS = Spiritual Transcendence Scale.

Based on the results generated via the EFA, Table 6.7 presents the factor descriptions and definitions, and an interpretation of low and high scores for each factor as well as the Total Composite score.

Table 6.7

Hypothesized four factor model of spirituality, and associated definitions and example self-report items

Facet	Definition	What high and low scores represent
Openness to Life's Mysteries (OLM)	A spiritual belief that there is an order to the universe that *transcends* human thinking	*High scorers:* Hold a belief that there is more to one's experience of his or her life than can be explained or physically studied *Low scorers:* Hold a belief that there is no higher plane of consciousness related to spirituality
Life Meaning, Purpose and Direction (LMPD)	A spiritual belief that there is a meaning and purpose to one's life that *transcends* life's intermediatory pursuits	*High scorers:* Hold a belief that one's life has meaning and purpose that relates to the exploration of life's existential questions *Low scorers:* Hold a belief that one's life has no purpose and that one simply reacts to the events around him/her
Fostering Wholeness and Inter-connectedness (FWI)	A spiritual belief that there is an interconnectedness and synchronicity to all life that *transcends* the individual	*High scorers:* Hold a belief that all life is interconnected and that it is one's bond to all humanity that provides a sense of wholeness *Low scorers:* Hold a belief that reconciling relationships with others is irrelevant and that one does not have or need a spiritual or emotional bond to others

Table 6.7: *continued*

Facet	Definition	What high and low scores represent
Self-Discovery and Inner Growth (SDIG)	A spiritual belief that all people are consciously (and unconsciously) undertaking a journey towards a *transcended* Self (upper case 'S')	*High scorers:* Hold a belief that an exploration of oneself that is focused on rising above an ego-driven existence is one of the most important tasks of one's life *Low scorers:* Hold a belief that there is no reason to undertake self-exploration and personal reflection
Spiritual Beliefs Inventory (SBI) (Total Composite)	Spiritual beliefs concerned with an awakening towards an awareness of one's boundless connection with all other sentient beings; a return to one's true nature; a commitment to conduct oneself with authenticity; an acknowledgement and acceptance of that which can never be known; and, the identification, pursuit and fulfillment of one's unique purpose in life.	- -

Creation of a Brief version of the Spiritual Beliefs measure

Given that the Full Version of the Spiritual Beliefs Inventory was deemed to be only moderately well fitting (refer to Table 6.10), it was considered important to also generate a short version of the final four factor solution (referred to as the Brief Version). The Brief Version needed to encapsulate the essence of the Full version, maintain acceptable levels of internal consistency (i.e., $\alpha > .70$) and attain levels of absolute and incremental close-fit superior to those attained by the Full Version.

An examination of the Full Version of the four factor solution revealed Factor 3 (FWI) to be made up of the lowest number of items, a total of four. As shown in Table 6.4, the item with the weakest loading for Factor 4 was SAS7 with an item loading of .48 (SAS7 item communality = .56). Therefore, an arbitrary item factor loading of greater than |.47| was determined for an item to be retained, with a cross-factor loading of > |.40| for any one item resulting in it being omitted from the subsequent analysis. The determined cut-off criteria resulted in the following items being omitted from subsequent analysis: ASTI1, ASTI2, ASTI13 and ASTI14, MMS14, MMS16, MMS17, MMS31, SAS2, SAS14, SAS23, STS7 and STS20.

The Brief Version was confirmed via EFA using MLE and direct oblimin rotation with Kaiser normalisation and the Brief Version emerged after six iterations. The Kaiser-Meyer-Oikin (KMO) measure of sampling adequacy of the subsequent Brief Version was .93. The Brief version of the spirituality measure consisted of 26 items; a total of 9, 8, 4 and 5 items for Factor 1, Factor 2, Factor 3 and Factor 4, respectively. The final Brief Version of the four-factor solution of spirituality is presented in Table 6.8. As shown in Table 6.8, the Brief Version of the hypothesized four factor model utilised three items from the ASTI; nine items from the MMS, which is the highest portion from any one scale used in the analysis; eight items from the SAS; and, six items from the STS.

The item factor loadings are presented in Table 6.8. The first factor yielded an eigen value of 9.98 and accounted for 38.34% of the variance. The second factor yielded an eigen value of 3.12 and accounted for an additional 12% of the variance. The third factor attained an eigen value of 1.73 and accounted for 6.65% in additional variance. The final factor accounted for 5.74% in additional variance and yielded an eigen value of 1.49. In total, the

four factors of the Brief Version accounted for a cumulative 62.79% of the variance in the dataset.

Table 6.8

Factor loadings of Maximum Likelihood Estimation (MLE) analysis with direct oblimin rotation for the Brief version of the four hypothesized factors of spiritual beliefs (N=331)

Item		OLM	LMPD	FWI	SDIG	Items explained variance (%)
MMS	6	.90				8.7%
MMS	5	.80		-.32		7.7%
STS	6	.79				7.2%
MMS	22	.78				6.9%
SAS	15	.78				6.9%
STS	11	.74				7.2%
STS	15	.69				5.1%
MMS	24	.60				5.2%
SAS	10	.60				6.4%

Table 6.8: *continued*

Item		OLM	LMPD	FWI	SDIG	Items explained variance (%)
SAS	22		.84			7.2%
SAS	20		.78			6.7%
SAS	1		.71			4.6%
SAS	12		.67			5.9%
ASTI	4		.67			4.1%
ASTI	12		.65			5.1%
ASTI	6		.54			3.9%
SAS	28		.50			2.9%
STS	16			.54		4.3%
STS	5	.40		.50		5.6%
STS	3			.49		5.7%
SAS	7			.45		5.6%
MMS	11				.72	5.2%
MMS	10				.68	4.9%
MMS	15				.57	5.5%
MMS	7				.56	3.8%
MMS	8				.47	3.0%

Note: Factor loadings have been sorted ascending and factor loadings <|.3|have been suppressed. *Note*: ASTI = Adult Self-Transcendence Inventory; MMS = Miller Measure of Spirituality; SAS = Spirituality Assessment Scale; STS = Spiritual Transcendence Scale.

Table 6.9

MLE factor correlation matrix between the four sub-scales of the Brief Version of the four-factor model of spiritual beliefs (N=331)

	OLM	LMPD	FWI	SDIG
OLM	1			
LMPD	.36	1		
FWI	.26	.356	1	
SDIG	.48	.35	.23	1

Note: Refer to Table 6.7 for definitions of sub-scale acronyms.

As presented in Table 6.9, the four factors of the Brief Version of the spiritual beliefs model are positively related, with the strongest correlation being between OLM and SDIG and OLM and LMPD with factor correlations of .484 and .364 respectively.

Table 6.10

Partial Confirmatory Factor Analysis (PCFA) analysis for the Full and Brief versions of the four-factor measure of spiritual beliefs (N=331)

	χ^2_{null}	df_{null}	$\chi^2_{implied}$	$df_{implied}$	RMSEA	SRMR	NFI	TLI	CFI
Full	7740.42	741	1182.56	591	.055	.036	.847	.894	.916
Brief	5205.158	325	497.368	227	.060	.029	.905	.921	.945

As presented in Table 6.10, the generated Full and Brief Versions of the four factor model of spiritual beliefs were subjected to Partial Confirmatory Factor Analysis (PCFA). With an improvement on the single 'g' factor model of spirituality (refer Table 6.2), the subsequent findings indicated that the Full version was moderately well fitting with fit indices of RMSEA = .055, SRMR = .036, NFI = .847, TLI = .894 and CFI = .916. The Brief Version

however, was adequately well fitting, with generated fit indices of RMSEA = .060, SRMR = .029, NFI = .905, TLI = .921 and CFI = .945 (refer to Appendix A-7 for equations used to calculate each close-fit index). The Brief Version also represents a significant improvement in the model fit over the Full Version of the spiritual beliefs measure.

Table 6.11

Pearson's r correlation matrix between the four sub-scales of the Full version (below the divide) and Brief Version (above the divide and italicised) and the correlation between the Full and Brief Versions of the spiritual beliefs measure (presented in bold text) (N=331)

	OLM	LMPD	FWI	SDIG	Brief version-Total
OLM	**.99**	*.42*	*.58*	*.54*	
LMPD	.50	**.96**	*.52*	*.36*	
FWI	.62	.58	1.00	*.46*	
SDIG	.68	.48	.52	**.92**	
SB-Total					**.99**

Note: all correlations statistically significant at $p < .001$ (2-tailed); Refer table 6.7 for definitions of sub-scale acronyms.

As presented in Table 6.11 (below the diagonal), the four factors of the Full version of the spirituality measure are positive and significantly correlated, with the highest correlations being between Openness to Life's Mysteries (OLM) and Self-Discovery and Inner Growth (SDIG) of $r = .68$ (45.6% in shared variance), and Openness to Life's Mysteries (OLM) and Fostering Wholeness and Interconnectedness (FWI) of $r = .62$ (38.9% in shared variance). The lowest inter-factor correlation of $r = .48$ (23.4% in shared variance) was found between the two sub-factors of Life Meaning, Purpose and Direction (LMPD) and SDIG.

Similarly, the four factors of the Brief Version of the spirituality measure (above the diagonal and italicised) are positive and significantly correlated. Finally, the correlation between the Full and Brief Versions of the four factor model and measure of spiritual beliefs

are all above *r* = .90 indicating that each factor of the Brief Version is tapping into the same essential elements of its corresponding factor from the Full Version.

Determining the psychometric properties of the Full and Brief versions of the spiritual beliefs measure and determining any gender differences for each scale version

Prior to testing the present study's remaining three hypotheses, the means (*M*), standard deviations (*SD*), internal consistency reliabilities (α), skew and kurtosis for males, females and combined for the Full (Panel 1) and Brief (Panel 2) versions of the four factor model of spiritual beliefs were examined. As presented in Panel 1 of Table 6.12, the internal consistency reliability of the Full version's four sub-scales are high with all coefficients (α) >.80. Further, the skew and kurtosis of the Full Version and its respective sub-scales are all within an acceptable range (i.e., |2.0| and |7.0|, respectively).

It can be seen from Table 6.12 (Panel 2) that the Brief Version also showed high internal consistency reliability with only SDIG showing a reliability coefficient < .80 (SDIG α = .79). Further, the skew and kurtosis of the Brief Version and its respective sub-scales are all within an acceptable range (i.e., |2.0| and |7.0|, respectively). Therefore, as a result of the Brief Version of the model being found to be a superior fit for the data set (refer to PCFA results presented in Table 6.10), the high inter-version factor correlations (refer to Table 6.11), the same gender differences between males and females for the Brief Version being replicated numerically, and only minimal deterioration in internal consistency (α) for each sub-scale, unless otherwise specified, the Brief Version of the hypothesised four factor model and measure of spiritual beliefs will be used for all subsequent analyses performed in this dissertation.

Table 6.12

Means, Standard Deviations (SD) and internal consistency reliabilities (α) for males, females and combined for the Full and Brief Versions of the four factors measure of spiritual beliefs (N=331)

		Males (n=80)	Females (n=251)	Combined (N=331)				
	Number of items	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	Skew	Kurtosis	SEM	α
1. Full								
OLM	13	4.53 (1.18)	4.94 (0.77)	4.84 (0.90)	-1.35	2.07	0.05	.94
LMPD	13	4.69 (0.67)	4.79 (0.56)	4.76 (0.59)	-0.37	0.42	0.03	.89
FWI	4	4.65 (1.00)	4.80 (0.79)	4.76 (0.85)	-0.66	0.49	0.05	.82
SDIG	9	4.88 (0.55)	5.05 (0.53)	5.01 (0.54)	-0.36	0.07	0.03	.83
SB-Total	39	4.69 (0.70)	4.89 (0.55)	4.84 (0.60)	-0.52	0.17	0.03	.95

Table 6.12: *continued*

		Males (n=80)	Females (n=251)	Combined (N=331)				
	Number of items	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	Skew	Kurtosis	SEM	α
2. Brief								
OLM	9	4.49 (1.36)	4.99 (0.82)	4.87 (1.00)	-1.57	2.81	0.06	.94
LMPD	8	4.74 (0.71)	4.86 (0.62)	4.83 (0.65)	-0.68	1.16	0.04	.88
FWI	4	4.65 (1.00)	4.80 (0.79)	4.76 (0.85)	-0.66	0.49	0.05	.82
SDIG	5	5.10 (0.57)	5.25 (0.53)	5.21 (0.55)	-0.45	-0.01	0.03	.79
SB-Total	26	4.75 (0.72)	4.97 (0.55)	4.92 (0.60)	-0.60	0.44	0.03	.93

Evaluating the utility of the Brief Version of the four-factor measure of spiritual beliefs for gender and the five different spiritual practice types

To examine the present study's second, third and fourth hypotheses the Brief Version of spiritual beliefs was subjected to two-way Analysis of Variance (ANOVA) to identify the presence of any gender and spiritual practice type differences. For males and females combined, the predominant spiritual practice was New Age oriented (*n* = 102), followed by Monotheistic-oriented (*n* = 81), Dharmic-oriented (*n* = 67), no spiritual practice (*n* = 62) and indigenous-oriented (*n* = 14). It will be noted that only one male respondent indicated his spiritual practice type as Indigenous-oriented. Therefore, the Indigenous spiritual practice type (both males and females) was omitted from the two-way ANOVA performed for the spiritual beliefs measure.

A two-way ANOVA was performed to determine the effect of gender and spiritual practice type on the Openness to Life's Mysteries sub-scale (i.e., OLM). A significant gender main effect was found ($F_{1, 316} = 9.41$, $p < .01$, $\eta^2 = .03$) with females scoring higher than males on this sub-scale. This finding supports the present study's second hypothesis. Further, a significant main effect for spiritual practice type was found ($F_{3, 316} = 65.11$, $p < .001$, $\eta^2 = .39$). Finally, a significant interaction effect between gender and spiritual practice type was found ($F_{3, 316} = 4.99$, $p < .01$, $\eta^2 = .05$). An examination of post-hoc (Tukeys) comparisons found a statistically significant difference between both males ($M = 3.26$) and females ($M = 4.05$) for the no spiritual practice type. As presented in Figure 6.2[9], males score statistically significantly lower than females on the OLM sub-scale for the no spiritual practice type ($F_{1, 61} = 10.20$, $p < .01$).

A significant main effect for spiritual practice type was found for the Life Meaning, Purpose and Direction sub-scale (LMPD)($F_{3, 316} = 3.85$, $p < .05$, $\eta^2 = .04$). However, no main effect for gender was found and no interaction effect between gender and spiritual practice effect was found for the LMPD sub-scale. A non-significant gender main effect was found for the Fostering Wholeness and Interconnectedness (FWI) sub-scale; however, a significant

[9] Technically, the most appropriate method of presenting non-continuous (i.e., discrete) data is via bar graph. However, for ease of interpretation a line graph rather than a bar graph will be utilised in the present dissertation unless otherwise specified.

main effect for spiritual practice type was found ($F_{3, 316}$ = 24.09, p < .001, η^2 = .19). No significant interaction effect between gender and spiritual practice type was found for the LMPD sub-scale.

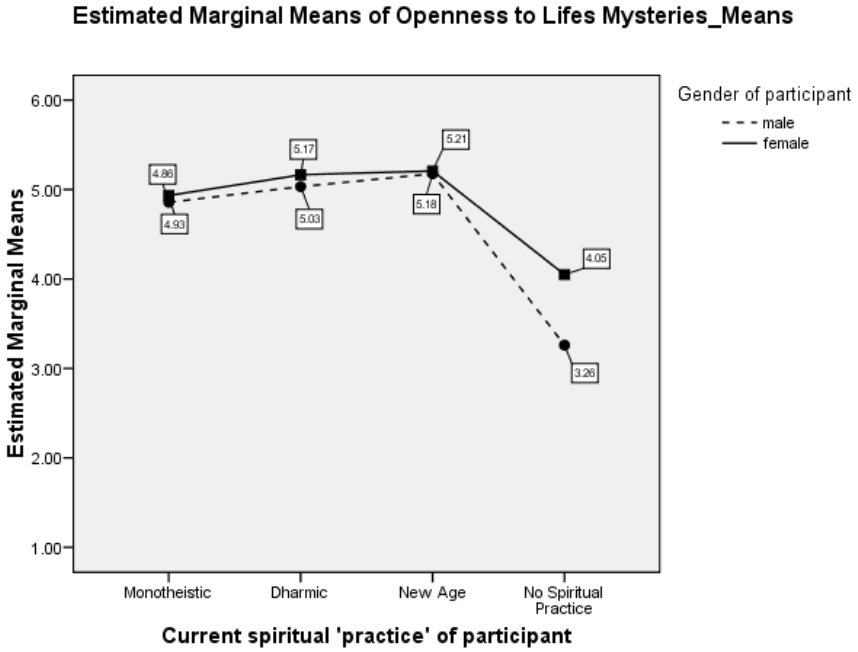

Figure 6.2: Means plot for the Openness to Life's Mysteries sub-scale showing the gender*spiritual practice type interaction effect

A non-significant gender main effect was found for the Self-Discovery and Inner Growth sub-scale (SDIG). However, a significant main effect for spiritual practice type was found ($F_{3, 316}$ = 9.87, p < .001, η^2 = .09). No interaction effect was found between gender and spiritual practice type for the SDIG sub-scale. Finally, a two-way ANOVA was performed to determine the effect of gender and spiritual practice type on the Total Composite score of the Brief Version of the spiritual beliefs measure. A significant gender main effect was found ($F_{1, 316}$ = 4.00, p < .05, η^2 = .01). This finding supports the present study's second hypothesis. Further, a significant main effect for spiritual practice type was found ($F_{3, 316}$ = 36.61, p < .001, η^2 = .26). Finally, a non-significant interaction effect between gender and spiritual practice type was found for the Total Composite score.

Table 6.13

Post-hoc (Tukeys) analysis between the five spiritual practices and the four factors of the Brief Version of spiritual beliefs for males and females combined (N=331)

	Spiritual Practice Type				
Factor	M-*o*[a]	D-*o*[b]	NA-*o*[c]	I-*o*[d]	No-P[e]
1. OLM					
M	5.01 [e]	5.17 [e]	5.25 [e]	-	3.62 [abc]
(*SD*)	(0.66)	(0.69)	(0.58)	-	(1.27)
2. LMPD					
M	4.80	4.94 [e]	4.91 [e]	4.98	4.60 [bc]
(*SD*)	(0.61)	(0.60)	(0.63)	(0.64)	(0.73)
3. FWI					
M	4.52 [bce]	5.18 [ae]	5.01 [ae]	5.10 [e]	4.15 [abcd]
(*SD*)	(0.76)	(0.66)	(0.67)	(0.93)	(0.96)
4. SDIG					
M	5.14 [b]	5.39 [ae]	5.33 [e]	5.33 [e]	4.91 [bcd]
(*SD*)	(0.54)	(0.49)	(0.47)	(0.60)	(0.60)
5. SBI_{TOTAL}					
M	4.87 [bce]	5.17 [ae]	5.12 [ae]	-	4.32 [abc]
(*SD*)	(0.50)	(0.48)	(0.47)	-	(0.60)

Note: refer to table 6.7 for descriptions of the four spiritual beliefs factors; MT-*o* = Monotheistic-oriented spiritual practices; D-*o* = Dharmic-oriented spiritual practice; NA-*o* = New Age-oriented spiritual practices; I-*o* = Indigenous-oriented spiritual practice; No-P = No spiritual practice; SBI_{TOTAL} = SBI –Total Composite Score. Note: Groups that are significantly different (p <.05) share a superscript letter (a, b, c, d, or e).

Given the significant gender main effect for the OLM sub-scale, a post-hoc (Tukeys) analysis omitting the Indigenous-oriented spiritual practice type was performed. An examination of the post-hoc results for the OLM sub-scale (refer to Table 6.13; Panel 1) suggests that respondents with a spiritual practice (i.e., Monotheistic, Dharmic or New Age) self-report higher levels of OLM than respondents with no spiritual practice. This finding supports the study's third hypothesis. However, there is no significant difference between spiritual practice types.

Given the non-significant gender effect for the LMPD, FWI and SDIG sub-scales, post-hoc (Tukeys) analyses were performed for all five spiritual practice types (i.e., including Indigenous-oriented spiritual practice) using combined males and females (using one-way ANOVA). An examination of the post-hoc results for the LMPD sub-scale (refer to Table 6.13; Panel 2) suggests that only respondents with a Dharmic-oriented (D-*o*) or New Age oriented (NA-*o*) spiritual practice are likely to self-report higher levels of prayer fulfillment than respondents with no spiritual practice. This finding partially supports the present study's third hypothesis, with respondents with a Monotheistic-oriented (MT-*o*) and Indigenous-oriented (I-*o*) spiritual practice failing to report higher levels of LMPD than respondents with no formal spiritual practice. An examination of the FWI sub-scale finds support for the present study's third hypothesis, whereby respondents with a spiritual practice (i.e., Monotheistic, Dharmic or New Age) self-report higher levels of FWI than respondents with no spiritual practice (refer to Table 6.13; Panel 3). Further, respondents with a Dharmic or New-Age spiritual practice report higher levels of FWI than respondents with a Monotheistic-oriented spiritual practice. This finding lends partial support to the present study's fourth hypothesis for the FWI sub-scale. The post-hoc results for the SDIG sub-scale indicate partial support for the study's third hypothesis with respondents with a Dharmic, New Age or Indigenous spiritual practice self-reporting higher levels of SDIG than respondents with a Monotheistic-oriented spiritual practice or no spiritual practice (refer to Table 6.13; Panel 4). Further, respondents with a Dharmic-oriented spiritual practice self-report higher levels of SDIG than respondents with a Monotheistic spiritual practice. This finding partially supports the study's fourth hypothesis.

Given the significant gender main effect for the Total Composite (i.e., SBI_{TOTAL}), score a post-hoc (Tukeys) analysis omitting the Indigenous-oriented spiritual practice type was performed. An examination of the post-hoc results for the Total Composite score (refer to Table 6.13; Panel 5) suggests that respondents with a spiritual practice (i.e., Monotheistic, Dharmic or New Age) self-report higher levels of SBI_{TOTAL} than respondents with no spiritual practice. This finding supports the study's third hypothesis. Further, SBI_{TOTAL} does demonstrate discriminate sensitivity between the three spiritual practice types analysed (i.e., Monotheistic, Dharmic and New Age), with respondents with a Dharmic or New Age spiritual practice self-reporting higher levels of spiritual beliefs overall.

6.5. Discussion

Although the sample used in the present study could be argued to reflect the Religion/Spirituality (R/S) breakdown of the broader Australian population, the findings should be interpreted with caution and future research should seek to validate the findings of the present study with a larger sample that represents the spiritual diversity currently found within the Australian population.

The present challenge within spirituality-focused research relates to the operationalisation of the construct. As already argued by the present researcher, spirituality is a multi-dimensional construct with varying degrees of abstraction. As such, the present dissertation conceptualises spirituality of consisting of four levels of abstraction, with the most concrete being one's spiritual practice (i.e., what a person *does* to be spiritual) and the most intangible being one's conceptual complexity (i.e., level of consciousness). As existing measures of spirituality have been found to be mis-specified for a predominantly Australian sample (refer to Chapter 4), it was deemed appropriate to identify specific items within existing scales (i.e., the Adult Self-Transcendence Inventory, ASTI; Miller Measure of Spirituality, MMS; Spiritual Assessment Scale, SAS; and Spiritual Transcendence Scale, STS) as candidates for a specific model and measure of spiritual *beliefs.* The hypothesised model is based upon the four dimension general taxonomy of spiritual beliefs identified in Chapter 5.

A total of 42 items taken from existing measures of spirituality (i.e., ASTI, MMS, SAS and STS) were identified utilising four specific screening criteria.

As it pertains to this broad intent, the present study sought to test four specific hypotheses, namely: the structure of a four-factor model and resulting short-form measure of spiritual beliefs (as evaluated by Partial Confirmatory Factor Analysis; PCFA) would be found to be confirmed for a predominantly Australian sample; females would score higher than males on the confirmed four factor model and measure of spiritual beliefs; respondents with a Monotheistic, Dharmic, New Age or Indigenous spiritual practice would score higher than respondents with 'no spiritual practice' for each of the four sub-scales and the Total Composite score of the confirmed four factor measure of spiritual beliefs; and respondents of different spiritual practice types (e.g., Monotheistic, Dharmic, New Age or Indigenous) would respond differently for each of the four sub-scales and the Total Composite score of the confirmed four factor measure of spiritual beliefs, which would result in statistically meaningful sub-scale and Total Score differences for the confirmed four factor model of spiritual beliefs.

To examine the present study's first hypothesis, a series of increasingly complex exploratory factor analyses (EFA) were performed with each resulting model's fit assessed via PCFA. The first model tested consisted of a single global (i.e., 'g') factor and was found to be a poor fit for the items analysed. The global factor model was utilised as the baseline for assessing any improvement in model fit resulting from the exploration of increasingly complex factorial models. The global factor model did identify one item (SAS25 – "Reconciling relationships is important to me.") as not loading strongly on a general spiritual beliefs factor. In relation to the present dissertation's proposed holistic conceptual framework for considering spirituality, it could be argued that a respondent's interpretation of this item may be somewhat dependent upon their level of conceptual complexity; whereby, an individual with lower levels of conceptual complexity are less likely to endorse this item. The resulting EFAs identified a four factor model of spiritual beliefs consisting of 39 items (two additional items failed to load strongly on the four factor model). The first factor to emerge aligned with the first dimension of the proposed general taxonomy of spiritual beliefs (Table 5.1), which hypothesised a universal belief that there is an order to the

universe that *transcends* human thinking. The second factor to emerge aligned with the second dimension of the proposed general taxonomy of spiritual beliefs, which hypothesised a universal belief that there is a meaning and purpose in life that *transcends* life's intermediatory pursuits. The third factor to emerge aligned with the third dimension of the proposed general taxonomy of spiritual beliefs, which hypothesised a universal belief that there is an interconnectedness and synchronicity to life that *transcends* the individual. The final factor to emerge aligned with the fourth dimension of the proposed general taxonomy of spiritual beliefs, which hypothesised a universal belief that all people are consciously (and unconsciously) undertaking a journey towards a *transcended* Self (upper case 'S'). The resulting partial confirmatory factor analysis for the identified Spiritual Beliefs Inventory: Full Version indicated a potential model misspecification issue with the model's incremental close-fit indexes suggesting only adequate fit. The resulting *Brief* Version consisting of 26 items was found to be well-fitting of the data, with excellent internal consistency coefficients. Further, the Brief Version retained the essence of the Full Version (i.e., sub-scale Pearson's *r*s between the sub-scale scores of the Full and Brief Version of >.90) and was therefore considered to best represent the universal spiritual beliefs of a predominantly Australian sample.

The confirmation of a four-factor model of spiritual beliefs utilising items taken from already published measures of spirituality could be considered to further support the present dissertation's four-factor general taxonomy of spiritual beliefs (identified in Chapter 5). Given that the retained items for the Full and Brief versions of the model and measure all pertain explicitly to one's spiritual beliefs, this finding also provides credence to a level of abstraction of spirituality (i.e., no explicit reference to religious content) likely to resonate with respondents regardless of their R/S background. Further, the model fit indices for both the Full and Brief versions were superior to those found for each model and measure of spirituality examined in Chapter 3. For example, the Comparative Fit Indexes (CFI) for the Full and Brief versions of the Spiritual Beliefs Inventory are .916 and .945, respectively, compared with .892, .863, .901 and .928 for the ASTI, MMS, SAS and STS, respectively. It could be argued that the identified four-factor model and measure of spiritual beliefs better represents the spiritual sentiment of contemporary Australian society. Further, the model was identified utilising only 26 items (for the Brief Version) of the 100 possible. This finding

suggests that the present study has addressed likely item redundancy between the four measures of spirituality evaluated as part of the present dissertation.

Also of note is the present study's segmentation of items pertaining to one's spiritual beliefs from those related to one's spiritual practices. The present study identified a total of 21 items that explicitly reference religious content. Given the diversity of R/S practices present within contemporary Australian society, it remains to be determined the impact of the removal of such items from analysis by the present study. As outlined in the present study's introduction, a total of 11 items were removed from the Miller Measure of Spirituality (35% of the scale), one item from the Spiritual Assessment Scale (4% of the scale), and seven items from the Spiritual Transcendence Scale (30% of the scale). It is likely that the removal of these items resulted in greater homogeny between items at the intended level of abstraction (i.e., one's beliefs). An examination of the Total Composite mean score for these three scales for the Dharmic-oriented spiritual practice types (refer to Tables 4.4, 4.5 and 4.6 for Total Composite mean scores for the MMS, SAS and STS, respectively) versus the Total Composite mean score for the present study's four-factor model of spiritual beliefs (refer to Table 6.13) may provide some support for the present researcher's conclusion. Numerically, respondents with a Dharmic-oriented spiritual practice attained a higher Total Composite mean score on the present study's four-factor measure of spiritual beliefs (i.e., M = 5.17) than for the MMS (i.e., M = 4.85), SAS (i.e., M = 4.88) or STS (i.e., M = 4.75). Although this finding needs to be explored empirically, anecdotally it could be inferred that some items related to these three instruments may discriminate against respondents not of a Monotheistic-oriented spiritual practice.

Existing research has shown meaningful differences in the experience and exploration of spirituality between males and females (Wink & Dillon, 2002), with females typically scoring higher on measures of spirituality. The present study's second hypothesis sought to determine the identified model and measure's capacity to differentiate between male and female respondents. The study's second hypothesis was partially supported with a statistically significant gender main effect found for the Openness to Life's Mysteries sub-scale as well as the Total Composite score. No gender main effect was found for the remaining three sub-scales of the Brief Version of the Spiritual Beliefs Inventory.

The study's third hypothesis (respondents with a Monotheistic, Dharmic, New Age or Indigenous spiritual practice would score higher on the identified four-factor model of spiritual beliefs than respondents with 'no spiritual practice') and fourth hypothesis (respondents of the four different spiritual practice types would respond differently to the identified four-factor model of spiritual beliefs) were also examined empirically (except for the Indigenous-oriented spiritual practice). The study's third hypothesis was mostly supported by the present study with all four sub-scales as well as the Total Composite score differentiating between those with and without a spiritual practice. Contrary to expectations was the non-significant difference for the Monotheistic-oriented spiritual practice type versus the no spiritual practice type for the Life Meaning, Direction and Purpose (LMPD) and Self-Discovery and Inner Growth (SDIG) sub-scales. This result suggests that in comparison to respondents with no spiritual practice, respondents with a Monotheistic spiritual practice: (1) do not believe more strongly that life has meaning and purpose related to the big existential questions; (2) do not believe more strongly that self-discovery and inner growth is one of the most important tasks of one's life. Paradoxically, this finding may be intuitively correct given that people of a Monotheistic spiritual practice type are more likely to externalise their sense of self towards an externalised Higher Being (Miovic, 2004). Although the four spiritual beliefs identified are conceptualised as being universal, there may be some individual differences in the intensity of these beliefs depending upon one's individual spiritual practice type.

Of greater significance to the present dissertation is the statistically significant interaction effect between gender and spiritual practice type (i.e., gender X spiritual practice type) for the Openness to Life's Mysteries sub-scale. The results of the present study suggest that although both males and females with no spiritual practice report significantly lower levels of OLM than those with a spiritual practice (i.e., Monotheistic, Dharmic or New Age), male respondents with no spiritual practice report more strongly a belief that there is no higher plane of consciousness related to spirituality (i.e., low levels of OLM). This finding warrants further exploration as it relates to how the OLM dimension impacts one's level of conceptual complexity and, more specifically, a male's identity stage resolution towards more expansive levels of consciousness.

The present study's fourth and final hypothesis was also partially supported with Fostering Wholeness and Interconnectedness (FWI), Self-Discovery and Inner Growth (SDIG) and SBI_{TOTAL} all showing discriminate sensitivity between the three spiritual practice types (i.e., Monotheistic, Dharmic and New Age). Specifically, for the FWI sub-scale respondents with a Dharmic and New Age spiritual practice type self-reported higher levels of belief that all life is interconnected than respondents with a Monotheistic spiritual practice. Further, respondents with a Dharmic-oriented spiritual practice also reported higher levels of SDIG than respondents with a Monotheistic-oriented spiritual practice. Coupled with the LMPD and SDIG finding for respondents with a Monotheistic-oriented spiritual practice found for hypothesis 3, this result may indicate that respondents self-reporting a Dharmic or New Age (which includes Paganism, Wicca and other earth/nature focused spiritual philosophies) spiritual practice type, are more focused on transcending self towards a non-dualist perspective (Meehan, 2002; Miovic, 2004). It remains to be determined if and why this is the case.

6.5.1. Conclusion

The present study sought to establish a short-form four-factor measure of spiritual beliefs utilising identified items from four existing measures of spirituality. The purpose of the present study is to add further weight to the present dissertation's proposed holistic conceptual framework for considering spirituality. Utilising a sub-set of items taken from four existing measures of spirituality, the present study confirmed a Full and Brief Version of a four-factor measure of spirituality (called the Spiritual Beliefs Inventory). Both versions were found to have good psychometric properties with the Brief Version (called the Spiritual Beliefs Inventory: Brief Version; SBI: Brief), consisting of 26 items, demonstrating superior model fit as determined via partial confirmatory factor analysis.

Second, the present study identified the discriminate utility of the SBI: Brief in differentiating between how males and females report their level of spiritual beliefs. The findings of the present study suggest that females self-report higher levels of openness to the mysteries of life than males, as well as a higher level of spiritual beliefs overall. Females do not however, self-report greater levels of LMDP, FWI and SDIG. The results also partially support the present study's third hypothesis. The SBI: Brief was able to distinguish between

those with and without a formal spiritual practice; however, this finding is dependent somewhat on the respondent's spiritual practice type. As it relates to gender and spiritual practice type, the present study found a statistically significant interaction effect between gender and spiritual practice for the OLM sub-scale. This finding suggests that males without a spiritual practice are even more likely than females to report a belief that there is no higher plane of consciousness related to spirituality. The implication of this finding requires further exploration, particularly as it relates to a male's conceptual complexity (i.e., level of consciousness) developmental trajectory.

The present study also sought to examine the discriminate sensitivity of each sub-scale in identifying statistically meaningful differences between the four predominant spiritual practice types undertaken within contemporary Australian society. The findings of the present study suggest that some sub-scales of the SBI: Brief are more sensitive than others. Specifically, the FWI and SDIG sub-scales appear to have greater discriminate sensitivity. The implication of this finding also requires further exploration.

An additional conclusion is also of importance to the present study. The confirmation of a scale's discriminant validity is an important element of any scale's validation process (Clark & Watson, 1995). The findings of the present study demonstrate known-group discriminant validity for the SBI: Brief as the inventory was able to differentiate between respondents with and without a formal spiritual practice. Further, the SBI: Brief was able to show discriminant validity between respondents of different spiritual practice types.

Although the present study successfully confirmed a four factor model and measure of spiritual beliefs utilising items from existing measures of spirituality, it remains to be determined how the measure performs against a competing model and measure of spiritual practices. The impetus for the creation of a model and measure of spiritual beliefs pertains to a hypothesis that spirituality is best conceptualised via varying levels of abstraction – from one's spiritual practice through to one's conceptual complexity. In this way, a person's spiritual beliefs are at a greater level of abstraction than one's spiritual practices, but not at a level of abstraction synonymous with one's conceptual complexity. This hierarchical association needs to be confirmed empirically. Further, the relationship of one's spiritual practice and spiritual beliefs to one's conceptual complexity needs to be explored.

Chapter 7

Establishing a competing model and measure of religiosity and determining its properties

7.1. Chapter overview

The present chapter seeks to establish from existing measures of spirituality a short-form inventory to assess spiritual practice. In establishing the short-form measure of spiritual practice, items from four measures of spirituality (e.g., the Adult Self-Transcendence Inventory, ASTI; Miller Measure of Spirituality, MMS; Spiritual Assessment Scale, SAS; Spiritual Transcendence Scale, STS) will be selected according to two specific screening criteria, namely: (1) an item's explicit reference to organised religion, religious concepts or religious figures; and (2) an item's explicit reference to religion-oriented practices and/or experiences. The identified measure is evaluated according to established guidelines for evaluating model fit (i.e., absolute and incremental close fit index guidelines). Further, the established short-form spiritual practices scale's predictive utility and discriminate sensitivity as it relates to the predominant spiritual practice types currently explored within contemporary Australian society is established. Further, a comparison between the Spiritual Beliefs Inventory: Brief Version (refer to Chapter 6) and the spiritual practices measure utilising two-way repeated measures Analysis of Variance (ANOVA) is performed. The findings of the present chapter are discussed in relation to the four factor measure of spiritual beliefs identified previously by the present dissertation. Finally, how the findings of the present study support the present dissertation's proposed holistic conceptual framework for considering spirituality are also outlined.

7.2. Introduction

The most concrete level of abstraction for any given construct is what a person *does*, that is, their behaviours (Watson, Clarke, & Harkness, 1994). Within the construct of

spirituality therefore, one's spiritual practice provides the most concrete medium for assessing if s/he is indeed 'spiritual'. A spiritual practice is defined within the present dissertation as: The conscious and intentional commitment to the undertaking of acts (i.e., behaviour-based activities) or a series of acts over time for the purpose of improving one's functioning in domains beyond the practice field itself. The purpose of undertaking a spiritual practice is to elicit spiritual experiences, which are reflected upon with the aim being to develop a broader 'world-view' of self (Kohls et al., 2009; Reich, 2001; Wink & Dillon, 2002). The integration of these spiritual experiences occurs via one's spiritual beliefs.

There is a potentially infinite number of spiritual practices a person could undertake in the pursuit of a more spiritual life (Moberg, 2002). Indeed, Kochls et al. (2009) states that it is the exploration of the diverse range of spiritual practices available that provides the richest opportunity for individual differences research, particularly in the field of spirituality and health. Although individual health is not the focus of the present dissertation, the examination of the role of spiritual practice remains relevant. It has been suggested by previous researchers that a formal spiritual practice could be considered to be a specific coping strategy for the distress caused by experiences of ego loss (Kohls et al., 2009). Given that the transcendence of one's ego remains a cornerstone to one's level of conceptual complexity attained, the aim of the present study is to conduct a more formal investigation of the predictive utility of spiritual practices.

As with one's spiritual beliefs, spiritual practices are multi-dimensional in nature (Kohls et al., 2009). Within the context of the five spiritual practice types identified by the present dissertation (refer to Chapter 4 for a summary) however, it could be argued that all five spiritual practice types believe (to varying degrees) in a higher power (either within or beyond the self). But, what is a person *doing* to connect with that higher power? According to Miller (2004), recognising the importance of a higher being is manifested physically via: asking for guidance from that higher being; seeking a connection with that higher being; and the undertaking of sacred rituals relevant to that higher being, etc. Although these practices may be undertaken by all spiritual practice types identified by the present dissertation (i.e., Monotheistic, Dharmic, New Age, Indigenous and No Spiritual Practice), they are more likely to be adopted by people with a Monotheistic-oriented spiritual practice because people with such an orientation externalise the experience of the transcendent (Mahoney & Pargament,

2004). For example, the attendance at Church allows for the undertaking of sacred rituals aimed at helping to connect with one's Higher Being (e.g., God). This is not to suggest that the externalisation of a higher power is only relevant to people with a Monotheistic-oriented spiritual practice. Those with a New Age spiritual practice type, such as Wicca, may also undertake sacred rituals for the purpose of connecting with Mother Earth or Gaia (Yardley, 2008). Conversely, people of a Dharmic-oriented spiritual practice are less likely to believe in an externalised Higher Power and therefore, are less likely to undertake spiritual practices aimed at seeking a connection with that higher being. Rather, people following a Dharmic-oriented spiritual path are more likely to believe in a higher self (e.g., in 'no-self') (Miovic, 2004) and undertake practices that focus on the deconstruction of one's sense of self as separate to the web of life (Barnes, 2003).

Regardless of the spiritual practice type, it could be argued that the purpose of undertaking a formal practice pertains to the attainment of its potential benefits. For example, the undertaking of a formal meditation practice has the potential benefit of taking the practiser to a higher spiritual level (e.g., Item 4 of the Spiritual Transcendence Scale) (Piedmont, 1999). Research examining the potential benefits of undertaking a formal spiritual practice is numerous, with some of the benefits including: greater resilience and reduced stress (Kabat-Zinn, 2005b); increased sense of coherence (Kohls et al., 2009); reduced psychopathology (Lynch et al., 2006); the examination of deeper levels of consciousness (Reich, 2003b; Rosado, 2000; Wilbur, 2006); the buffering from old age frailty (Kirby et al., 2004); the exploration of a more meaningful career (Csikszentmihalyi, 1998); improved organisational performance (Mitroff & Denton, 1999); and enhanced leadership effectiveness (Fry & Slocum, 2008). Although the present researcher has already argued the potential limitations pertaining to much of the research reporting the benefits of exploring spirituality – based on the grounds that the mis-conceptualisation of spirituality reduces the efficacy of research related to the construct – a strong case remains that the undertaking of a more spiritual life does have many tangible benefits.

7.2.1. Identifying suitable items from four existing scales to measure one's spiritual practices

Spiritual practices relate to: (1) activities and experiences that focus on connecting with a force greater than oneself; and (2) the realising of benefits as a result of that connection. Therefore, the operationalisation of spiritual practices has these two elements as its core. As outlined previously (refer to Chapter 6), the development of a measure to operationalise any construct can either be done via the development and validation of a new item pool, or via the adaptation of an existing item pool or pools (Renner, 2003; Roberts & Yeager, 2004). The present dissertation has already argued the merits of item adaptation as a valid and appropriate approach for furthering research into the domain of spirituality.

Paradoxical to the present researcher's development of a spiritual beliefs measure (refer to Chapter 6), the present study aims to utilise (rather than omit) items from four measures (i.e., the Adult Self-Transcendence Inventory, ASTI; Miller Measure of Spirituality, MMS; Spiritual Assessment Scale, SAS; and Spiritual Transcendence Scale, STS) relevant to religiosity and spiritual practices. In a previous study (refer to Chapter 6), each item of the four selected scales was screened according to specific criteria with items meeting one or more of the criteria omitted from subsequent analyses. The previous study's first two criteria, namely: (1) explicit reference to organised religion, religious concepts or religious figures; and (2) explicit reference to explicit religion-oriented practices and/or experience identified a total of 21 items from the four scales that met one or both of these criteria. These items were deemed to be explicitly religious in content and orientation, making them suitable as an initial item pool for the establishing of a model and measure of spiritual practices. The items identified as relevant to the present study's aims are presented in Appendix A-8. It can be observed that each item asks the respondent to consider a specifically religious entity (e.g., a 'Higher Being' or 'Higher Power'), religious practice (e.g., prayers and/or meditations), religious figures (e.g., 'religious leader') or explicitly religious concepts (e.g., 'good triumphing over evil' or 'sacred rituals').

A review of the items selected for analysis by the present study does raise two potential issues relevant to the generalisation of the proposed spiritual practices measure, namely: (1) the items do make reference to a Higher Being or God; and (2) the items make

explicit reference to prayer. Using the five spiritual practice types identified by the present dissertation as a filter, 47.6% of the aforementioned items relate predominantly to a Monotheistic-oriented spiritual practice type (e.g., STS21 – "I want to grow closer to the God of my understanding"); 33.3% of items relate predominantly to Monotheistic and Dharmic oriented spiritual practice types (e.g., STS4 – "I meditate and/or pray so that I can reach a higher level"); and 19.1% of items are more general in their reference to spiritual practice. Within the context of the present dissertation, it could be argued that the items identified for analysis are more relevant to respondents with a Monotheistic-oriented spiritual practice (81.2% of items involve content explicitly relevant to this spiritual practice type). Therefore, it is more likely that any measure within the present study that utilises the identified items is more likely to be an indicator of explicit religiosity, rather than a more 'universal' measure of spiritual practices *per se*. This finding is not unexpected as previous researchers have already argued that existing spirituality scales have a bias towards Christian spirituality (Kohls et al., 2009).

7.2.2. The objectives of the present study

The present dissertation reconceptualises spirituality as consisting of increasing levels of abstraction, from spiritual practice (the most concrete) to conceptual complexity (the most ethereal). To test empirically this dissertation's proposed holistic conceptual framework for considering spirituality, the development of a suitable analog for spiritual practice is required. The present study aims to utilise items from four existing measures of spirituality to develop a measure of spiritual practice; more specifically, a measure of explicit religiosity. Given the two item screening criteria used in the present study, it is anticipated that the identified measure will be multi-dimensional and consist of two factors, namely: (1) connecting with a Higher Being; and (2) getting fulfilment from one's spiritual practice. The purpose of developing the proposed measure is two-fold: (1) to provide a competing measure to the Spiritual Beliefs Inventory: Brief Version (refer to Chapter 6) so as to test the validity of the proposed holistic conceptual framework for considering spirituality; and (2) to determine if there are meaningful differences in what people who are and are not spiritual actually *do*. Considering the first aim, if there is a hierarchical difference between spiritual beliefs and practices (with spiritual beliefs being more universally held), people are more likely to endorse more positively a spiritual beliefs-oriented item than an explicit religious or

pseudo-religious practice or experience oriented item. Considering the second aim, identifying items indicating behaviour-based acts (i.e., spiritual practices) that differentiate between those with and without a self-reported formal spiritual practice provides further weight to the current researcher's position that in order to be truly spiritual a person must *experience* (i.e., do) their spirituality. Supplementary aims for the present study are to also examine if the developed measure of explicit religiosity can discriminate between male and female respondents; as well as show discriminate sensitivity between the four predominant spiritual practice types (i.e., Monotheistic, Dharmic, New Age and Indigenous) undertaken within contemporary Australian society.

7.2.2.1. Hypotheses

On the basis of the aims of the present study, the hypotheses explored were that the structure of a two-factor model and resulting short-form measure of explicit religiosity (as evaluated by Partial Confirmatory Factor Analysis) would be found to be confirmed for a predominantly Australian sample. Further, female respondents would score higher on the two-factor measure of explicit religiosity than male respondents. Respondents with a Monotheistic, Dharmic, New Age or Indigenous spiritual practice would score higher on the two-factor measure of explicit religiosity than respondents with 'no spiritual practice'. Respondents of different spiritual practice types (e.g., Monotheistic, Dharmic, New Age or Indigenous) would respond differently to the two-factor measure of explicit religiosity, which would result in statistically meaningful sub-scale and Total Score differences according to the four specified spiritual practice types. Finally, respondents of all spiritual practice types (i.e., Monotheistic, Dharmic, New Age, Indigenous and No Spiritual Practice) would endorse more positively the Spiritual Beliefs Inventory: Brief Version than the two-factor measure of explicit religiosity.

7.3. Method

7.3.1. Participants

Participants were a convenient sample recruited via the Internet. A total of 331 respondents participated in the study. Additional details pertaining to the sample are presented in Chapter 4.

7.3.2. Instruments

The present study utilised items from the Miller Measure of Spirituality (Miller, 2004), Spiritual Assessment Scale (Howden, 1993) and Spiritual Transcendence Scale (Piedmont, 2001). Additional information pertaining to each scale is detailed in Chapter 4.

Spiritual Beliefs Inventory: Brief Version (SBI: Brief). The SBI: Brief is a four factor model of an individual's spiritual beliefs. The inventory consists of 26 items and four sub-scales, namely: Openness to Life's Mysteries (OLM); Life Meaning, Purpose and Direction (LMPD); Fostering Wholeness and Interconnectedness (FWI); and, Self Discovery and Inner Growth (SDIG). Each sub-scale was identified by Exploratory Factor Analysis by the present researcher. The OLM sub-scale consists of nine items and measures a universal belief that there is an order to the universe that *transcends* human thinking. The LMPD sub-scale consists of eight items and measures a universal belief that there is a meaning and purpose in life that *transcends* life's intermediatory pursuits. The FWI sub-scale consists of four items and measures a universal belief that there is an interconnectedness and synchronicity to life that *transcends* the individual. The SDIG sub-scale consists of five items and measures a universal belief that all people are consciously (and unconsciously) undertaking a journey towards a *transcended* Self (upper case 'S'). Example items for each sub-scale can be found in Chapter 6. The instrument utilises a six-point response scale; where 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Disagree More Than Agree*, 4 = *Agree More Than Disagree*, 5 = *Agree* and 6 = *Strongly Agree*. The present researcher reports reliability coefficients (α) for each sub-scale of .94, .88, .82, and .79 for OLM, LMPD, FWI and SDIG, respectively. The Total Composite score of the SBI: Brief has a reliability coefficient (α) score of .93.

7.3.3. Procedure

The questionnaire battery was administered via the Internet with participants responding anonymously. Participants were provided the opportunity to supply a return email address should they want to be informed of the results of the study. Participants were recruited from various sources, including word of mouth of the researcher, online forums and online social networking websites. Participants were provided an overview of the study's purpose via an introductory statement and were informed that participation was voluntary and that they were free to withdraw from participating at any time.

7.3.4. Data analytic strategy

Items selected for analysis (a total of 21) were subjected to Exploratory Factor Analysis (EFA) in SPSS 15.0 and were based on Maximum Likelihood Estimation (MLE). Given the expected positive inter-relationships between dimensions of religiosity, factors were rotated non-orthogonally (via direct oblimin). A two step approach to identifying the final factor solution was employed. In step 1, a single factor was extracted initially to establish the 'baseline' for evaluating any multi-factorial model extracted from the data. The initial single factor was also used to identify specific items that loaded poorly (i.e., factor loadings <|.3|) on a global ('g') factor of explicit religiosity (i.e., spiritual practices). Items that loaded poorly onto the global factor were eliminated from further analysis. Subsequent analysis (i.e., step 2) extracted factors based upon the identified factor having an eigen value of 1.0 or greater, as well as an examination of the related eigen value scree test plot. Specific items loading poorly (i.e., factor loadings <|.3|) on an identified factor were eliminated from further analysis.

Each factor model identified within the exploration was subjected to Partial Confirmatory Factor Analysis (PCFA) (Gignac, 2009) analyses and an evaluation of model-fit determined based on five close-fit indices (calculated by hand). As recommended by Hu and Bentler (1999), a combination of both absolute close-fit and incremental close-fit indexes were used to evaluate model close-fit for any factor model identified. Specifically, two absolute close-fit indexes (RMSEA and SRMR) and three incremental close-fit indexes (NFI, TLI and CFI) were selected to be used in the investigation. In accordance with Hu and Bentler (1999), models were deemed well fitting when both absolute close-fit indices

(RMSEA and SRMR) were < .06 and incremental close-fit indices (NFI, TLI and CFI) were .95 or larger.

An examination of each identified factor's internal reliability coefficient (α) was also calculated. A factor was deemed adequately defined in accordance with the recommendation of Clark and Watson (1995); whereby an identified factor achieves a reliability coefficient (α) of > 0.80. Further, the skew and kurtosis of each scale was interpreted using Curran, West and Finch's (1996) guidelines; whereby, a scale's skew and kurtosis was considered excessively large if it exceeded |2.0| and |7.0|, respectively.

The final identified model and measure of explicit religiosity (i.e., spiritual practices) was then evaluated according to gender and the five spiritual practice types. More specifically, the measure was subjected to two-way Analysis of Variance (ANOVA) to determine if there were statistically significant differences between gender and the five spiritual practice types. If differences were found, analyses were undertaken using Tukey post-hoc comparisons. The interpretation effect sizes (η^2) was performed according to (2003) guidelines; where a small, medium, and large effect size corresponds to η^2 = .04, .06, and .09, respectively.

Finally, a two-way repeated measures ANOVA was performed to determine if there were any statistically significant differences between the already established Spiritual Beliefs Inventory: Brief Version (refer to Chapter 6) and the identified measure of explicit religiosity (i.e., spiritual practices). Specifically, the spiritual beliefs and explicit religiosity inventories were considered within group variables and both gender and spiritual practice type were considered between group variables. If statistically significant differences were found, further analyses were undertaken using Tukey post-hoc comparisons.

7.4. Results

To test the hypothesis that spiritual beliefs is a higher order construct than spiritual practices – the focus of a future study of the present dissertation, it was first required that a measure examining explicit religiosity be identified. It was deemed appropriate that items

omitted from a previous study of the present dissertation due to their explicit religious content be used for this purpose.

To identify a suitable measure of explicit religiosity, a series of increasingly complex Exploratory Factor Analyses (EFA) using Maximum Likelihood Estimation (MLE) using direct oblimin rotation with Kaiser normalisation were performed. First a single hypothesized global ('g') factor of religiosity was performed using all 21 items identified as being explicitly religious in orientation. The Kaiser-Meyer-Oikin (KMO) measure of sampling adequacy for the single-factor model was .97. The extracted factor accounted for 64.95% of the variance, and emerged after five iterations. As presented in Table 7.1, item MMS18 attained a factor loading <|.3| (absolute factor loading = .16). This item was removed from subsequent analysis.

Table 7.1

Factor loadings of Maximum Likelihood Estimation (MLE) analysis for a single hypothesized general ('g') factor of explicit religiosity (N = 331)

Item		Factor 1
MMS	29	.93
MMS	26	.92
SAS	27	92
MMS	21	.90
MMS	28	.88
MMS	27	.88
STS	21	.88
MMS	20	.87
STS	2	.86
STS	12	.85
STS	19	.84
MMS	25	.83
STS	8	.81
STS	17	.80
STS	18	.79
STS	4	.78
STS	1	.68
MMS	30	.63
MMS	23	.55
MMS	19	.49
MMS	18	**.16**

Note: Factor loadings have been sorted ascending and item factor loadings <|.3|are in bold text

As presented in Table 7.2, the hypothesized general ('g') factor of explicit religiosity (i.e., spiritual practices) (consisting of 20 items) was then subjected to Partial Confirmatory Factor Analysis (PCFA) with the resulting findings indicating the following fit indices: RMSEA = .166, SRMR = .070, NFI = .791, TLI = .785 and CFI = .808 (refer to Appendix A-7 for equations used to calculate each close-fit index). The model fit indices indicate that a single factor model of spiritual practices to be an inadequate fit for the data.

Table 7.2

Partial Confirmatory Factor Analysis (PCFA) analysis for the 'g' factor of explicit religiosity (N=331)

	χ_{null}	df_{null}	$\chi_{implied}$	$df_{implied}$	RMSEA	SRMR	NFI	TLI	CFI
'g' factor	8180.519	190	1706.616	170	.166	.070	.791	.785	.808

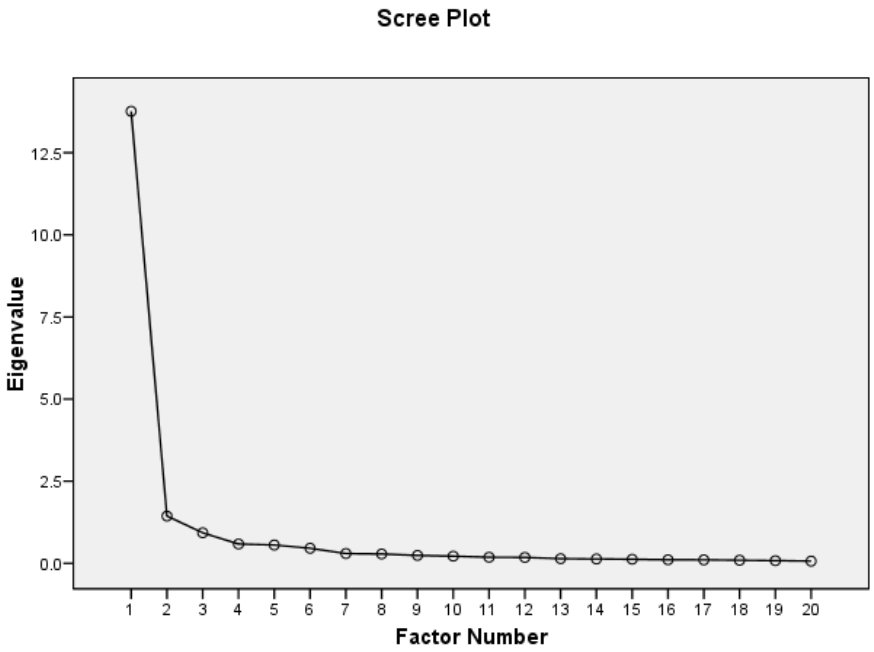

Figure 7.1: Scree plot of eigen values derived from the Maximum Likelihood Estimation (MLE) analysis of explicit religiosity

Establishing the model and measure of explicit religiosity

Due to item level content analysis performed by the present researcher, a two factor solution was hypothesized. An examination of the eigen value scree plot (Figure 7.1) supports two strong factors with eigen values of 1.0 or greater. Therefore, the remaining 20 identified items were subjected to EFA analysis using MLE with direct oblimin rotation using Kaiser normalization with a two factor solution modelled. The two-factor model emerged after six rotations and accounted for 76.00% of the variance in the data. The first factor (consisting of 12 items) yielded an eigen value of 13.72 and accounted for 68.81% of the variance. The second factor consisted of eight items, yielded an eigen value of 1.44 and accounted for an additional 7.19% of the variance. The final two factor solution and each item's percentage of variance explained are presented in Table 7.3. The two factors of the explicit religiosity (i.e., spiritual practices) model are positively related with a Pearson's correlation coefficient of r = .79, which suggests 58.2% shared variance between the two factors.

Table 7.3

Factor loadings of Maximum Likelihood Estimation (MLE) analysis with direct oblimin rotation and Kaiser normalization for the two hypothesized factors of explicit religiosity

Item		Factor 1	Factor 2	Items explained variance (%)
MMS	25	.98		7.6%
SAS	27	.98		8.9%
MMS	26	.95		8.9%
MMS	27	.92		8.1%
MMS	21	.89		8.4%
MMS	20	.89		7.9%
MMS	29	.87		8.7%
MMS	28	.86		7.9%
STS	21	.68		7.6%
STS	2	.55		7.4%
MMS	23	.33		3.0%
MMS	19	.36		2.4%
STS	17		.98	8.6%
STS	18		.98	8.5%
STS	4		.91	7.9%
STS	19		.87	8.5%
STS	12		.86	8.7%
STS	8		.86	8.1%
STS	1		.61	5.2%
MMS	30		.44	4.2%

Note: Factor loadings have been sorted ascending and item factor loadings <|.3|have been suppressed

As presented in Table 7.4, the identified two factor solution of explicit religiosity was then subjected to Partial Confirmatory Factor Analysis (PCFA) with the resulting findings indicating the two-factor model to be very well fitting of the data, with the following fit indices calculated: RMSEA = .087 ('g' factor = .166), SRMR = .027 ('g' factor = .070), NFI = .936 ('g' factor = .791), TLI = .941 ('g' factor = .785) and CFI = .953 ('g' factor = .808) (refer to Appendix A-7 for equations used to calculate each close-fit index).

Table 7.4

Partial Confirmatory Factor Analysis (PCFA) analysis for the two hypothesized factors of explicit religiosity (N=331)

	χ^2_{null}	df_{null}	$\chi^2_{implied}$	$df_{implied}$	RMSEA	SRMR	NFI	TLI	CFI
Two factors	7956.107	190	495.693	151	.083	.027	.938	.944	.956

Table 7.5 presents the factor labels for the two factor model of explicit religiosity, as well as each factor's associated definition and an example self-report item. As presented in Table 7.5, the first factor of the measure relates to a connection with a Higher Power. The second factor relates to the various benefits of undertaking a more structured spiritual practice. The factor correlation matrix suggests a strong association between the two factors of r = .793.

Table 7.5

Two factor model of religiosity, and associated definitions and example self-report items

Facet	Definition	Example item
Connecting with a Higher Power (CHP)	Spiritual practices related to connecting with and seeking guidance from a Higher Power, Being or Entity	*"I regularly seek inner strength and guidance from a Higher Being."*
Prayer / Meditation Fulfilment (PMF)	The experience of the transcendent via the undertaking of a formal spiritual practice, such as prayer or meditation	*"I meditate and/or pray so that I can grow as a person."*
Explicit Religiosity – Total (Rel_{TOTAL})	The connecting with and exploration of one's Higher Power via the undertaking of explicitly religious practices for the experience of bliss, wholeness and inner strength	-

Table 7.6

Means (M), Standard Deviations (SD) and internal consistency reliabilities (α) for males, females and combined for the two factor model of explicit religiosity (i.e., spiritual practices) (N=331)

		Males (n=80)	Females (n=251)	Combined (N=331)				
	Number of items	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	Skew	Kurtosis	SEM	α
CHP	12	3.83 (1.57)	4.33 (1.22)	4.21 (1.33)	-.73	-.34	.08	.97
PMF	8	3.94 (1.49)	4.34 (1.23)	4.24 (1.24)	-.94	.25	.07	.96
Rel_{TOTAL}	20	3.87 (1.48)	4.34 (1.12)	4.22 (1.23)	-.82	-.03	.07	.98

Note: Refer to Table 7.5 for definitions of sub-scale acronyms.

Determining the psychometric properties of the model and measure of spiritual practices (i.e., explicit religiosity measure)

Prior to testing the present study's remaining four hypotheses, the means (*M*), standard deviations (*SD*), internal consistency reliabilities (α), skew and kurtosis for males, females and combined for the two factor model of explicit religiosity (i.e., spiritual practices) was examined. As presented in Table 7.6, the internal consistency reliability of the identified scale are high with all coefficients (α) >.80. Further, the skew and kurtosis of the identified scale and its respective sub-scales are all within an acceptable range (i.e., |2.0| and |7.0|, respectively).

Evaluating the utility of the two-factor model and measure of explicit religiosity for gender and the five different spiritual practice types

To examine the present study's second, third and fourth hypotheses, the explicit religiosity (i.e., spiritual practices) scale was subjected to two-way Analysis of Variance (ANOVA) to identify the presence of any gender and spiritual practice type differences. For males and females combined, the predominant spiritual practice was New Age oriented (*n* = 102) followed by Monotheistic-oriented (*n* = 81), Dharmic-oriented (*n* = 67), no spiritual practice (*n* = 62) and indigenous-oriented (*n* = 14). It will be noted that only one male respondent indicated his spiritual practice type as Indigenous-oriented. Therefore, the Indigenous spiritual practice type (both males and females) was omitted from the two-way ANOVA performed for the measure explicit religiosity.

A two-way ANOVA was performed to determine the effect of gender and spiritual practice type on the Connecting to a Higher Being (i.e., CHB) sub-scale. A significant gender main effect was found ($F_{1, 316} = 4.62$, $p < .05$, $\eta^2 = .02$) with females scoring higher than males. This finding supports the present study's second hypothesis. Further, a significant main effect for spiritual practice type was found ($F_{3, 316} = 661.55$, $p < .001$, $\eta^2 = .38$). No significant interaction effect between gender and spiritual practice type was found for CHB. It shall be noted that the effect size (η^2) for gender and spiritual practices type is small and large, respectively.

A significant spiritual practice type main effect for Prayer/Meditation Fulfilment (PMF) was found ($F_{3, 316}$ =71.12, p < .001, η^2 = .41). No statistically significant main effect for gender was found. Further, no interaction effect between gender and spiritual practice type was found for the PMF sub-scale. Finally, a two-way ANOVA was performed to determine the effect of gender and spiritual practice type on the Total Composite score of the identified explicit religiosity measure (i.e., Rel_{TOTAL}). A statistically significant gender main effect was found ($F_{1, 316}$ =3.89, p = .05, η^2 = .01). Further, a significant main effect for spiritual practice was found ($F_{3, 316}$ =72.12, p < .001, η^2 = .41). No interaction effect was found between gender and spiritual practice type for Rel_{TOTAL}.

Given the significant gender main effect for the Connection with a Higher Being (CHB) sub-scale and Total Composite score, a post-hoc (Tukeys) analysis omitting the Indigenous-oriented spiritual practice type was performed. An examination of the post-hoc results for the CHB sub-scale score (refer to Table 7.7; Panel 1) suggests that respondents with a spiritual practice (i.e., Monotheistic, Dharmic or New Age) self-report higher levels of CHB than respondents with no spiritual practice. This finding supports the study's third hypothesis. However, no significant difference between the three spiritual practice types was found for the CHB sub-scale. Similarly, the explicit religiosity Total Composite score (i.e., Rel_{TOTAL}) does differentiate between respondents with and without a spiritual practice, with those with a spiritual practice self-reporting higher levels of spiritual practice (refer to Table 7.7; Panel 3). However, no significant difference between spiritual practice types for Rel_{TOTAL} was found.

Given the non-significant gender effect for the Prayer/Meditation Fulfillment (PMF) sub-scale, post-hoc (Tukeys) analyses were performed for all five spiritual practice types (i.e., including Indigenous-oriented spiritual practice) using combined males and females (using one-way ANOVA). An examination of the post-hoc results for the PMF sub-scale (refer to Table 7.7; Panel 2) suggests that respondents with a spiritual practice (i.e., Monotheistic, Dharmic, New Age and Indigenous) self-report higher levels of PMF than respondents with no spiritual practice. This finding supports the study's third hypothesis. However, no significant difference between the four spiritual practice types was found for the PMF sub-scale.

Table 7.7

Post-hoc (Tukeys) analysis between the five spiritual practices and the two factors of the identified explicit religiosity measure for males and females combined (N=331)

	Spiritual Practice Type				
Factor	M-*o*[a]	D-*o*[b]	NA-*o*[c]	I-*o*[d]	No-P[e]
1. CHB					
M (*SD*)	4.97[e] (0.78)	4.28[e] (1.21)	4.52[e] (0.94)	- -	2.62[abc] (1.25)
2. PMF					
M (*SD*)	4.56[e] (0.87)	4.80[e] (0.74)	4.59[e] (0.91)	4.48[e] (1.26)	2.65[abcd] (1.27)
3. Rel_{TOTAL}					
M (*SD*)	4.81[e] (0.79)	4.49[e] (0.95)	4.55[e] (0.89)	- -	2.63[abc] (1.18)

Note: refer to table 7.5 for descriptions of the sub-scale acronyms; MT-*o* = Monotheistic-oriented spiritual practices; D-*o* = Dharmic-oriented spiritual practice; NA-*o* = New Age-oriented spiritual practices; I-*o* = Indigenous-oriented spiritual practice; No-P = No spiritual practice. Note: Groups that are significantly different (p <.05) share a superscript letter (a, b, c, d, or e).

Evaluating the utility of the two-factor model and measure of explicit religiosity and the four-factor Spiritual Beliefs Inventory: Brief Version for gender and the five different spiritual practice types

To examine the present study's fifth hypothesis, the identified two-factor measure of explicit religiosity (i.e., spiritual practices) scale and the four-factor Spiritual Beliefs Inventory: Brief Version (i.e., SBI: Brief) were subjected to two-way repeated measures Analysis of Variance (ANOVA) to identify the presence of any gender and spiritual practice type differences, as well as any interaction effects between the two developed scales. As

the focus of the present study is an exploration of the identified measure of explicit religiosity, for brevity only the Total Composite score of the SBI: Brief and both sub-scales of the explicit religiosity measure (i.e., CHB and PMF) were analysed.

A two-way repeated measures ANOVA utilising the Connection with a Higher Being (i.e., CHB) sub-scale was performed. Given the significant gender main effect for the CHB sub-scale analysis omitting the Indigenous-oriented spiritual practice type was performed. The assumption of sphericity was violated and Greenhouse-Geisser adjusted results are reported for all analyses pertaining to the CHB sub-scale. The analysis found a significant main effect for the two within-subjects variables (i.e., Spiritual Beliefs Total Composite and the CHB sub-scale) of $F_{1, 308} = 222.51$, $p < .001$, $\eta^2 = .42$. A non-significant interaction effect between gender and Spiritual Beliefs/CHB scores (i.e., the within sub-subjects variable) was found. A statistically significant interaction effect between spiritual practice type and Spiritual Beliefs/CHB scores was found ($F_{3, 308} = 53.48$, $p < .001$, $\eta^2 = .34$). This finding supports the present study's fifth hypothesis. An examination of post-hoc (Tukeys) comparisons found a statistically significant difference between the SBI: Brief ($M = 4.22$) and CHB sub-scale of the explicit religiosity measure ($M = 2.56$) for the no spiritual practice type. As presented in Figure 6.2, respondents score statistically significantly higher on the Spiritual Beliefs Inventory than the CHB sub-scale of the explicit religiosity measure for the no spiritual practice type. Finally, a non-significant three-way interaction effect between gender, spiritual practice type and Spiritual Beliefs/CHB scores was found ($F_{3, 308} = 1.37$, $p = .253$ $\eta^2 = .01$).

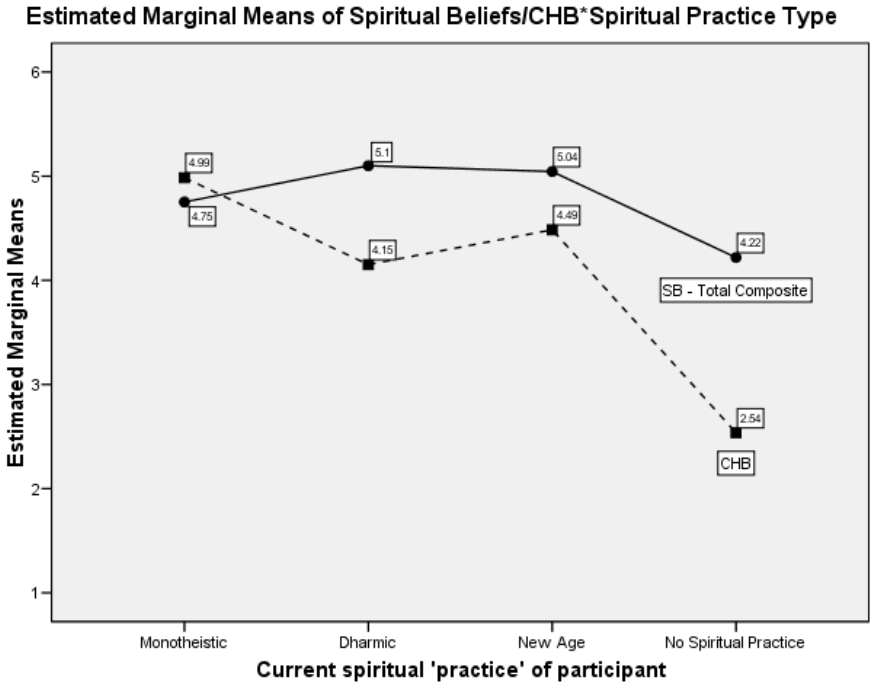

Figure 7.2: Means plot for the Spiritual Beliefs Total Composite score and Spiritual Practices Total Composite score showing the Spiritual Beliefs/CHB*spiritual practice type interaction effect

A two-way repeated measures ANOVA utilising the Prayer/Meditation Fulfilment (i.e., PMF) sub-scale was performed. To ensure the same analysis was performed between sub-scales of the explicit religiosity measure, the Indigenous-oriented spiritual practice type was omitted from the analysis of PMF. Results for males and females combined were used. The assumption of sphericity was not violated and sphericity-assumed results are reported for all analyses pertaining to the PMF sub-scale. The analysis found a significant main effect for the two within-subjects variables (i.e., Spiritual Beliefs Total Composite and the PMF sub-scale) of $F_{1, 308} = 247.38$, $p < .001$, $\eta^2 = .44$. A non-significant interaction effect between gender and Spiritual Beliefs/PMF scores (i.e., the within sub-subjects variable) was found. A statistically significant interaction effect between spiritual practice type and Spiritual Beliefs/PMF scores was found ($F_{3, 308} = 53.49$, $p < .001$, $\eta^2 = .34$). This finding supports the present study's fifth hypothesis. Finally, a non-significant three-way interaction effect between gender, spiritual practice type and Spiritual Beliefs/PMF scores was found. An examination of post-hoc (Tukeys) comparisons found a statistically significant difference

between both the SBI: Brief (*M* = 4.32) and PMF sub-scale of the explicit religiosity measure (*M* = 2.65) for the no spiritual practice type. As presented in Figure 6.3, respondents score statistically significantly higher on the SBI: Brief than the CHB sub-scale of the explicit religiosity measure for the no spiritual practice type.

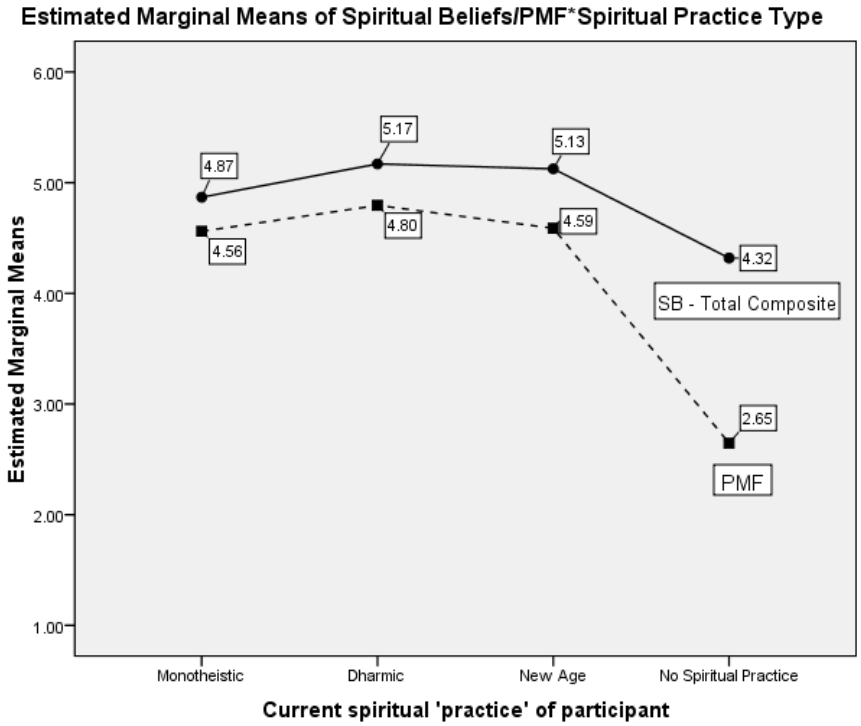

Figure 7.3: Means plot for the Spiritual Beliefs Total Composite score and Spiritual Practices Total Composite score showing the Spiritual Beliefs/PMF*spiritual practice type interaction effect

7.5. Discussion

Although the sample used in the present study could be argued to reflect the Religion/Spirituality (R/S) breakdown of the broader Australian population, the findings should be interpreted with caution and future research should seek to validate the findings of the present study with a larger sample that represents the spiritual diversity currently found within the Australian population.

The purpose of developing a measure of spiritual practices was two-fold: (1) to provide a competing measure to the Spiritual Beliefs Inventory: Brief Version (i.e., SBI: Brief) so as to test the validity of the proposed holistic conceptual framework for considering spirituality; and (2) to determine if there are meaningful differences in what people who are and are not spiritual actually *do*. In considering the first aim of the present study, it was anticipated that the competing measure of spiritual practices would be multi-dimensional and consists of two-factors, namely: (1) connecting with a Higher Being; and (2) getting fulfilment from one's spiritual practice. Given that the content of those items selected for adaptation by the present study consisted primarily of Monotheistic and Dharmic spiritual practice themes (81.2% of items involve content explicitly relevant to these two spiritual practice types), the present researcher re-conceptualised the desired measure of spiritual practices as more aligned to explicit religiosity. However, given the likely integration of religious-oriented principles within the remaining two spiritual practice types (e.g., some New Age spiritual practices typically include some traditional religious practices; Mears & Ellison, 2000), this was not considered detrimental.

The specific hypotheses examined in the present study were that the structure of a two-factor model and resulting short-form measure of explicit religiosity (as evaluated by Partial Confirmatory Factor Analysis) would be found to be confirmed for a predominantly Australian sample; female respondents would score higher on the two-factor measure of explicit religiosity than male respondents; respondents with a Monotheistic, Dharmic, New Age or Indigenous spiritual practice would score higher on the two-factor measure of explicit religiosity than respondents with 'no spiritual practice'; respondents of different spiritual practice types (e.g., Monotheistic, Dharmic, New Age or Indigenous) would respond differently to the two-factor measure of explicit religiosity, which would result in statistically meaningful sub-scale and Total Score differences according to the four specified spiritual practice types; and respondents of all spiritual practice types (i.e., Monotheistic, Dharmic, New Age, Indigenous and No Spiritual Practice) would endorse more positively the SBI: Brief than the two-factor measure of explicit religiosity.

To examine the present study's first hypothesis, a series of increasingly complex exploratory factor analyses (EFA) were performed with each resulting model's fit assessed

via partial confirmatory factor analysis. The first model tested consisted of a single global (i.e., 'g') factor and was found to be a poor fit for the items analysed. The global factor model was utilised as the baseline for assessing any improvement in model fit resulting from the exploration of increasingly complex factorial models. The global factor model did identify one item (MMS18 – "Religious leaders must always emphasise the importance of compassion and tolerance for all.") as not loading strongly on a general spiritual beliefs factor. Although the content of this item is explicitly religious in orientation (i.e., it invites the respondent to consider religious leaders), it is unsurprising that this item failed to load strongly on a measure grounded in the 'doing' of spirituality. First, spiritual practices can be considered highly personal and are often unique to an individual or homogeneous group of individuals (Moberg, 2002). In this way, spiritual practices must be experienced by the individual and cannot simply be a reflection of what others (i.e., third parties) are or should be doing to manifest their spirituality (Barnes, 2001). As argued in this dissertation, a person undertaking a spiritual practice needs to have *spiritual presence* (refer to Chapter 3 for a definition); more specifically, intentionality, commitment and a recognition that his/her spiritual journey is timeless. Second, given the current socio-political climate both in Australia and globally, a respondent in the present study may be somewhat cynical towards the intent of this item. For example, the present spiritual leader of the Catholic Church, Pope Benedict XVI, was recently quoted as speaking out against homosexuality and gay marriage (New York Times Online, 23 December 2008). Similarly, the present conflict in the Middle East, including tension between Israel (a population of predominantly Jewish faith) and Lebanon (a population of predominantly Muslim faith), provides a stark example of religious intolerance and a lack of compassion for others' perspectives.

The resulting EFAs identified a two-factor model of explicit religiosity consisting of 20 items. The two-factor model identified the following two aspects of explicit religiosity: (1) spiritual practices relate to connecting with and seeking guidance from a Higher Power, Being or Entity; and (2) spiritual practices (such as meditation and prayer) result in tangible (e.g., a sense of emotional support or the experience of growing as a person) and intangible (i.e., the experience of the transcendent) benefits. It could be argued that these two factors are complementary to the four-factors of the SBI: Brief, showing the inter-related nature of

the present dissertation's proposed holistic conceptual framework for considering spirituality. It remains to be determined the direction of this inter-relationship.

Existing research has shown that women self report higher levels of spirituality and spiritual experiences than males (Wink & Dillon, 2002). The present study's second hypothesis sought to determine the identified model and measure of explicit religiosity's capacity to differentiate between male and female respondents. The study's second hypothesis was partially supported with a statistically significant gender main effect found for the Connecting to a Higher Being (CHB) sub-scale as well as the Total Composite (Rel_{TOTAL}) score. This result supports the findings of a previous study of the present dissertation examining gender differences and spiritual beliefs (refer to Chapter 6); whereby the Openness to Life's Mysteries (OLM) was found to have a statistically significant gender main effect. It could be argued that a person's strong spiritual belief that there is an order to the universe that *transcends* human thinking, is likely to result in that person undertaking a practice to explore that mystery. Based upon the findings of the present study, females are more likely than males to both believe in and act upon an openness to the mysteries of life. No gender main effect was found for the Prayer/Meditation Fulfilment sub-scale of the explicit religiosity measure.

The study's third hypothesis (respondents with a Monotheistic, Dharmic, New Age or Indigenous spiritual practice would score higher on the identified two-factor model and measure of explicit religiosity than respondents with 'no spiritual practice') and fourth hypothesis (respondents of the four different spiritual practice types would respond differently to the identified two-factor measure of explicit religiosity) were also examined empirically (except for the Indigenous-oriented spiritual practice). The present study's third hypothesis was supported with respondents with a spiritual practice self-reporting higher levels of explicit religiosity (i.e., spiritual practices) than respondents without a formal spiritual practice. The present study's fourth hypothesis however, failed to be supported. Although there was a statistically significant difference between respondents with and without an explicit religious practice, there was no difference between the three spiritual practice types analysed for the CHB sub-scale and the four spiritual practices of the PMF sub-scale. These findings suggests that although there are documented differences between the

spiritual practice activities within and between spiritual practice types (see Moberg, 2002), there is also commonality. This finding is contrary to expectations. The present researcher has already argued that based upon existing research, there is likely to be meaningful differences in how people demonstrate their spirituality. These differences are likely to be based upon a respondent's religious beliefs, religious practices and cultural heritage. This assumption is widely held and is based upon a premise utilised by (arguably) Australia's largest research institution, the Australian Bureau of Statistics (ABS, 1996). An exploration of research examining the nature of psychological universals may provide an explanation for the rejection of the present study's fourth hypothesis. Norenzayan and Heine (2005) argue that universals and *near*-universals are thoughts, feelings and behaviours shared by most or all human beings across cultures. In their research, Norenzayan and Heine (2005) argue that the non-existence of a psychological universal is hard to prove conclusively given that the social-psychological context for any phenomenon is likely to be occurring at both a conscious and unconscious level. This is a premise shared by other researchers and philosophers working within the field of spirituality (see Rosado, 2000; Wilbur, 2000, 2006). Within the context of spiritual practices therefore, although a person may consciously reject an explicit religious practice (e.g., they decide to cease attending Church) this does not mean that they also cease to interpret their experiences through the same conceptual context (Wilbur, 2006). This is likely the reason those respondents who self-reported having no formal spiritual practice in the present study still attained a mean Total Composite score for the explicit religiosity measure of $M = 2.63$ (i.e., not a score of 1.0). A score of 2.6 out of a possible 6 indicates an average response of "Disagree more than agree" (where 1 = "Strongly Disagree"). One interpretation of this finding is that respondents with a formal spiritual practice (i.e., Monotheistic, Dharmic, New Age or Indigenous) in the present study are likely to integrate, both consciously and unconsciously, a range of possible spiritual practice activities when exploring his/her unique spirituality. As people at a latter stage are more likely to integrate rather than reject alternative paths towards deeper spiritual experiences (Wilbur, 2006), should this interpretation be found correct, it lends further support for the respondent's in the present study being at a latter stage of conceptual complexity. This finding warrants further exploration beyond the present dissertation.

The present study's fifth hypothesis was tested empirically via a two-way repeated measures ANOVA between spiritual beliefs (as operationalised by the Total Composite score of the SBI: Brief) and the two sub-scales of the explicit religiosity measure. The results indicate statistically meaningful differences between these two conceptualisations of spirituality as each pertains to respondents with no formal spiritual practice. For the CHB sub-scale, a statistically significant interaction effect between Spiritual Beliefs/CHB and spiritual practice type (i.e., spiritual practice type X Spiritual Beliefs/CHB) was found. This finding partially supports the study's final hypothesis and suggests that respondents with no spiritual practice are less likely to endorse an explicitly religion-oriented item than an item pertaining to spiritual beliefs. A similar result was found for the PMF sub-scale. This finding has significant implications for researchers developing spiritual practice oriented scales, and for researchers exploring individual differences within the context of spiritual practices. First, existing gender differences research grounded in the exploration of spiritual experience might in-fact be related to the specific item content rather than true gender differences. Further, this finding provides further weight to the present researcher's premise that the construct of spirituality needs to be reconceptualised as consisting of many layers of abstraction; with spiritual beliefs being more universally held than spiritual practices and experiences.

7.5.1. Conclusion

The present study sought to establish a competing measure of spiritual practices utilising 21 identified items from four existing measures of spirituality. The purpose of developing the measure was to demonstrate that there are meaningful differences between a respondent's beliefs as they relate to spirituality and the physical 'act' of exploring and experiencing their spirituality. Further, these differences demonstrate that one's spiritual beliefs are more universal than his/her spiritual practice. The purpose of undertaking this comparison between spiritual beliefs and practices is to add further weight to the present dissertation's proposed holistic conceptual framework for considering spirituality.

Utilising a sub-set of items taken from four existing measures of spirituality, the present study confirmed a model and measure of explicit religiosity. Given content level analysis of selected items, it was considered a misrepresentation to consider the identified

measure to be representative of an all inclusive measure of spiritual practices. The explicit religiosity measure identified consisted of two factors, namely: Connecting with a Higher Being and Prayer/Meditation Fulfilment. The measure was found to have good psychometric properties and suitable model fit as determined via partial confirmatory factor analysis.

Second, the present study identified the discriminate utility of the identified two-factor model of explicit religiosity in differentiating between how males and females report their level of spiritual beliefs. The findings of the present study suggest that females self-report higher levels of Connectedness to a Higher Being, as well as a higher level of overall explicit religiosity. Females do not however, self-report greater levels of Prayer/Meditation Fulfilment as determined by a two-way analysis of variance. The results also support the present study's third hypothesis. The identified two-factor model of explicit religiosity was also able to distinguish between those with and without a formal spiritual practice. The present study also sought to examine the discriminate sensitivity of each sub-scale in identifying statistically meaningful differences between the four predominant spiritual practice types undertaken within contemporary Australian society. The findings failed to support the present study's fourth hypothesis. The present study's fifth and final hypothesis was supported with statistically significant two-way interaction effects identified between spiritual practice type and spirituality measure for both sub-scales of the explicit religiosity measure. The implications of this finding for scale development and related research into spiritual practices are discussed.

Although the present study successfully confirmed an analog model and measure of spiritual practices (called the Explicit Religiosity Scale, ERS) utilising items from existing measures of spirituality, it remains to be determined how the model performs in predicting one's level of conceptual complexity. More specifically, research is required to examine the relationship between one's spiritual practice and spiritual beliefs, to one's conceptual complexity.

Chapter 8

Exploring the relationship between a four factor model of spiritual beliefs and religiosity in predicting identity issue resolution across the lifespan

8.1. Chapter overview

The present chapter seeks to establish the utility of two facets of a holistic conceptual framework for considering spirituality in predicting identity stage resolution. The two facets of spiritual beliefs and spiritual practices were operationalised via the Spiritual Beliefs Inventory: Brief Version (SBI: Brief) (refer to Chapter 6) and Explicit Religiosity measure (i.e., an analog measure of spiritual beliefs) (refer to Chapter 7). Identity stage resolution is proposed to be analogous to conceptual complexity and consist of two components, identity integration and identity differentiation. Each component is further considered in relation to three "core" self-identities, namely: ego/subjective, behavioural and social. A simple correlation comparison between spiritual beliefs, spiritual practices and identity stage resolution is first completed to determine the direction and strength of relationships between all variables analysed. Hierarchical regression analysis is then performed to determine the utility of each measure in predicting identity stage resolution. The findings of the present chapter are discussed in relation to spirituality being a meaning-making process aimed at developing one's identity. Finally, how the findings of the present study support the present dissertation's proposed holistic conceptual framework for considering spirituality are also outlined.

8.2. Introduction

Spirituality is often considered by researchers to be a meaning-making process, through which people make sense of life's experiences (for example, Hamel et al., 2003;

Park, 2005; Puchalski, 2004; Silberman, 2005; Tuck & Thinganjana, 2007). Some researchers even consider spirituality to be the cornerstone of personal meaning-making. For example, Stiffoss-Hanssen (1999) considers spirituality to be pivotal to one's search for meaning, "… in relation to the big existential questions (p. 28)." It could be argued therefore, that spirituality supports a person in the exploration of questions related to the who, what, where and why of oneself and everything that is not one's self (Ho & Ho, 2007; Meehan, 2002). In this way, spirituality is a process that gives one's life context (Pecchenino, 2009).

Within the present dissertation's conceptualisation of spirituality, one's context is dependent upon his or her level of conceptual complexity (refer to Chapter 3 for an overview of the concept). The capacity to explore the existential and transcendent questions of one's life (e.g., "Who am I?", "Why am I?" or "What am I?") is dependent upon one's current level of conceptual complexity. Although not synonymous, the present researcher has already outlined how one's level of ego-development (refer to Chapter 3) operates as a "self-theory" or a meta-cognitive process that allows a person to become aware of being aware … and to increase awareness towards infinitely higher degrees of self-construal (Ho & Ho, 2007). As such, one's level of self-construal can be indexed in terms of degrees of conceptual complexity. For example, a cognitive construal about an object (e.g., oneself) is a first-degree construal. A meta-cognitive construal (e.g., a cognition about oneself) is a second-order construal. A construal about a meta-cognitive construal (e.g., a cognition about the cognition about oneself) is a third-degree construal, and so on. As with one's level of conceptual complexity, degrees of meta-cognitive construal are infinite (Ho, Peng, Lai, & Chan, 2001); therefore, the context in which one can interpret life's experiences is also boundless.

But, spirituality may not be the only medium for making sense of life's experiences. Research suggests, for example, that one's capacity to make sense of life's experiences is related to one's locus of control (Bandura, 1997); personality (McCrae & Costa, 1987; Trouillet & Gana, 2009); personal and communal values (Peterson & Seligman, 2004b); socio-economic background, including level of education (Shahabi et al., 2002); cultural background (Wheeler et al., 2002); life experiences (Hodge, 2005); personal trauma (Cole, Hopkins, Tisak, Steel, & Carr, 2008); and, level of cognitive processing (Wink & Dillon, 2002),

to name a few. The present researcher does not dispute these varied perspectives; as they only further validate spirituality as a meta-construct for understanding self-in-context. As it relates to spirituality, one's conceptual complexity is a "master-trait" considered second only to intelligence (Hy & Loevinger, 1996). According to Hy and Loevinger (1996), behind intelligence one's level of ego-development (i.e., conceptual complexity) appears to be the next major determinant in measurable individual differences. Similarly, one's spiritual beliefs are the "filters" through which the aforementioned perspectives (e.g., locus of control, personality, etc) (and many others that, for brevity, the present researcher did not mention) are screened, interpreted, understood and integrated into a broader identity. In this way, the four spiritual beliefs identified as part of the present dissertation (i.e., an openness to life's mysteries; life meaning, purpose and direction; fostering wholeness and interconnectedness; and, self-discovery and inner growth) could be considered cornerstones to a person's exploration of the machinations of his or her mind and the "map" towards deeper levels of consciousnesses. Further, one's spiritual practice provides the medium through which one's consciousnesses is experienced, challenged and explored. It is the inter-relationship between spiritual beliefs and practices that allows for the expansion of one's meta-cognitive construal.

A consciousness of self and one's "ego representations" provides a grounding for a person's identity (Page, 2005). Developmental stage theorist, Robert Kegan, explained ego development in terms of an evolutionary movement towards increasing integration and differentiation, an "evolving" from the ultimate dependency of youth, to independence in adolescence, to an understanding of interdependence in mature adulthood (Kegan, 1999). Ego development (and therefore one's level of conceptual complexity) can be referred to as one's level of self-authorship, which incorporates the ideas of self-regulation, autonomy, individual and identity (Kegan, 1999). One's identity development therefore, could be considered analogous with personal meaning.

Given that spirituality could be considered to be at the foundation of one's meaning-making processes, one's spiritual beliefs provide the "map" for interpreting and integrating life's experiences into a united spiritual identity (Pecchenino, 2009). In other words, spiritual beliefs form the basis for exploring and making sense of one's transitions between each

stage of conceptual complexity towards a sense of self (i.e., self with a lower case 's') and ultimately, a transcendence of self (i.e., to a sense of self with an upper case 'S'). Although the present researcher hypothesises that it is one's spiritual practice that supports – in a physical sense – one's transition between stages of conceptual complexity development, it is one's spiritual beliefs that provide the "filters" through which spiritual experiences are integrated as aspects of one's broader identity. In this way, just as spiritual beliefs are a higher level of abstraction than spiritual practices, one's spiritual identity is posited by the present researcher as a higher level of abstraction than one's spiritual beliefs. It is the relationship between one's spiritual practices, spiritual beliefs and spiritual identity (specifically, its integration and differentiation) that is the focus of the present study.

Erikson (cited in Schwartz & Pantin, 2006) posited that identity development consists of two potentially paradoxical dynamics: identity synthesis and identity fragmentation. Identity synthesis represents one's ability to bring together and integrate the various elements of one's sense of self into a workable and internally congruent whole. Conversely, identity fragmentation represents a lack of integration of the various elements of self that results in an inability to integrate the parts of one's self into a whole consistent across time and context. The present study argues that this dynamic, of identity integration and fragmentation, occurs as a part of one's transition between stages of conceptual complexity development. It is this process of self exploration that explains why spirituality is a meaning-making process.

As already outlined, spirituality consists of several 'layers'. The present dissertation proposes a holistic conceptual framework for considering spirituality. At the core of the proposed framework is the concept of conceptual complexity (i.e., one's level of consciousness), which could be considered as an inner process unique to the individual. Due to its level of abstraction, its measurement is inherently difficult. Indeed, consciousness itself may be at a level of abstraction beyond measurement (Ho & Ho, 2007). However, measures of identity formation and identity stage resolution are available. Many of the measures examining identity stage resolution utilise the pioneering work of Erik Erikson and his eight stages of psycho-social development (see Adams, Bennion, & Huh, 1989; Cook-Greuter,

2002; Cote & Roberts, 2003; Cote & Schwartz, 2002)[1]. Erikson posited that all people transition through "life-stages" via a process of identity integration, fragmentation and reintegration. Similar to the assimilation of latter stages of conceptual complexity, each stage in Erikson's framework is not simply learning of something new about oneself but, a completely different way of knowing and thinking about oneself (Cote & Schwartz, Adams et al., 1989; Adams et al., 2000; Cote & Schwartz, 2002).

Of particular interest to the present dissertation is the development of one's "core" identity. From a psycho-social perspective, one's "core" identity formation relates to five identities that are inter-related but distinct in their manifestations, namely: (1) ego identity, the subjective and experiential sense of the mind; (2) personal/behavioural identity, the realm of the day-to-day interpersonal behaviour with others; (3) social identity, the social roles one holds in a society and the relative status of these roles; (4) ethnic identity, the exploration, validation and valuing of one's ethnicity; and (5) cultural identity, a more expansive aspect of social identity that pertains to the internalisation of the norms and ideals of the cultural group to which one belongs, as well as the adoption of those norms and ideals at a social-structural level (Schwartz & Pantin, 2006). Given the five elements of one's "core" identity, it could be argued that the first three relate more to an individual's inner processes (i.e., the individual has the opportunity to employ more 'control' over how they make meaning via their ego, behavioural and social identities) and the latter two identities are more reliant upon the broader macrocosm within which the individual navigates. Given that the focus of the present study is an examination of how spirituality (specifically, one's spiritual beliefs and practices) supports the individual in making sense of life's experiences, only the first three elements of one's "core" identity (i.e., ego identity, personal/behavioural identity and social identity) will be explored.

[1] The eight stages are: (1) basic trust versus basic mistrust; (2) autonomy versus shame/doubt; (3) initiative versus guilts; (4) industry versus inferiority; (5) identity versus role confusion; (6) intimacy versus isolation; (7) generativity versus stagnation; and (8) ego integrity versus despair (Erikson, 1994).

Chapter 8: Exploring the relationship between a four factor model of spiritual beliefs and religiosity in predicting identity issue resolution across the lifespan

In research examining identity stage resolution in emerging adulthood, Roberts (2007) conceptualises identity development and identity stage resolution as consisting of two tasks, namely: (1) self-identity tasks (i.e., tasks related to the integration and differentiation of the self); and (2) social-identity tasks (i.e., tasks related to work roles, worldview, and intimate associations). Tasks related to self-identity encompass the three core identities of interest to the present study, namely: ego identity (i.e., subjective/experiential sense of the mind), behavioural identity (i.e., the realm of the day-to-day interpersonal behaviour with others) and social identity (i.e., the perception of the social roles a person holds in a society and the relative status of these roles). Considering these three "core" identities of the individual, Roberts (2007) drew upon the earlier work of both Erikson and Marcia (cited in Cote & Roberts, 2003) in defining a process of identity integration and differentiation. Identity integration refers to a person's identity development towards a sense of wholeness, where one's life experiences are brought together in a unified way. Conversely, identity differentiation refers to a person's identity development towards *individualisation*[2], where an individual develops a sense of self as distinct from significant others (i.e., the development of basic ego boundaries) and capable of making decisions independent of social norms and guidance from significant others. Roberts (2007) theorised that identity stage resolution, specifically for those at emerging adulthood, is manifested when an individual has both integrated and differentiated their identity within the context of the three aforementioned identities. On operationalising this model of identity stage resolution, Cote and Roberts (2003) developed the *Identity Issues Inventory* (III) as a self-report measure of one's degree of integration and differentiation according to self- and social-identity tasks. The III shows utility across emerging adulthood (defined as a person between 18-29 years) and beyond emerging adulthood (validation study of the III included individuals to a maximum of 48 years) (Roberts, 2007).

[2] Within the context of the present dissertation, *individualisation* (as opposed to individuation) is defined as a process by which people are required to develop themselves as an 'individual', rather than as simply a member of a collective community (Roberts, 2007).

It could be argued that the identity development and identity stage resolution process proposed by Cote and Roberts (2003) and published as part of PhD level research by Roberts (2007), provides a framework for determining the extent to which a person is presently making sense from his or her life experiences. A person who is neither integrating nor differentiating their identity according to their ego, behavioural and social identities, is likely to be experiencing reduced levels of meaning in life (i.e., lower levels of identity stage resolution). However, an individual that is experiencing unity, harmony and appropriate autonomy within the three "core" identities (i.e., their ego, behavioural and social) is likely to be experiencing a higher degree of meaning in life (i.e., higher levels of identity stage resolution). Given that identity stage resolution could be argued to be an indicator of one's transition towards a latter stage of conceptual complexity, the present researcher posits that people that self-report higher levels of spiritual beliefs and practices will also report greater levels of identity stage resolution.

8.2.1. The objectives of the present study

The present dissertation reconceptualises spirituality as consisting of increasing levels of abstraction with one's level of conceptual complexity being the most ethereal. The present study has argued that one's level of conceptual complexity (i.e., level of consciousness) is an inner process that supports an individual in finding meaning from life events. The indexing of one's level of conceptual complexity is inherently difficult. However, identity formation and identity stage resolution provides a robust analog for one's conceptual complexity. Specifically, identity stage resolution consists of a dual process of identity integration (i.e., a sense of wholeness and unity) and differentiation (i.e., a sense of uniqueness and individuation) that could be likened to the process all individuals adopt when exploring his/her self-theory (i.e., conceptual complexity) at expanding degrees of self-construal. Within this same context, one's sense of wholeness and uniqueness is understood by three core identities; namely ego, behavioural and social identities. Given this framework, one's identity stage resolution could be said to consist of six inter-related but distinct processes that provides greater insight into how an individual makes sense of life's experiences.

Given that spirituality could be considered a meaning-making process (Tuck & Thinganjana, 2007), the aim of the present study is to explore how one's spiritual beliefs and spiritual practices (i.e., as operationalised via a measure of explicit religiosity) support one's identity stage resolution according to the three "core" identities identified. The aims of the present study are three-fold, namely: (1) to determine the nature and strength of relationship between one's spiritual practices (i.e., explicit religiosity) and identity stage resolution; (2) to determine the nature and strength of the relationship between one's spiritual beliefs and identity stage resolution; and (3) determine the incremental predictive validity of one's spiritual beliefs beyond one's spiritual practices in predicting one's progression towards identity stage resolution. Given the holistic conceptual framework for considering spirituality proposed by the present researcher, it is anticipated that a respondent's spiritual beliefs will have a stronger association with identity stage resolution than his or her explicit religiosity.

8.2.1.1. Hypotheses

On the basis of the aims of the present study, the hypotheses explored were that there would be a positive but weak correlation (i.e., of Pearson's *r* of less than .20) between the two sub-scales of the Explicit Religiosity Scale (as an analog for spiritual practice) and identity stage resolution. Further, that there would be a strong correlation (i.e., of Pearson's *r* of .30 or greater) between the sub-scales of the Spiritual Beliefs Inventory: Brief Version (i.e., SBI: Brief) and identity stage resolution. Further, the strength of correlation would be higher still (i.e., of Pearson's *r* of.50 or greater) for the Life Meaning, Purpose and Direction (LMPD) sub-scale of the SBI: Brief and identity stage resolution. Finally, it was predicted that spiritual beliefs would be associated with a respondent's identity stage resolution beyond that predicted by explicit religiosity.

8.3. Method

8.3.1. Participants

Participants were a convenient sample recruited via the Internet. A total of 331 respondents participated in the study. Additional details pertaining to the sample are presented in Chapter 4.

8.3.2. Instruments

Identity Issues Inventory (III). The III is a 90-item measure of identity stage resolution developed by Cote and Roberts (2003). The inventory consists of two third order factors, namely: Self-Identity Tasks and Social Identity Tasks. Only the Self-Identity Task sub-factors were used in the present study. The Self-Identity Task factor consists of two second order factors, namely: Integration, which refers to an individual's sense of wholeness, where the various spheres of experience are brought together in some unified way; and Differentiation, which refers to an individual's level of individuation, that is, capacity to make decisions independent of social norms and guidance from significant others. Each second order factor (i.e., Integration and Differentiation) consists of three first order factors, namely: Subjective, Behavioural and Social. The Integrated: Subjective, Behavioural and Social sub-scales measure an individual's: (1) sense of unity in his/her inner mental world (i.e., integrated-subjective); (2) unity in the immediate world of day-to-day behaviour (i.e., integrated-behavioural); and (3) unity in the more abstract arena of social functioning (concrete, remote, and imagined) (i.e., integrated-social). The Differentiated: Subjective, Behavioural and Social sub-scales measure an individual's: (1) sense of being their own person in terms of differentiating themselves from others in their lives (i.e., differentiated-subjective); (2) acceptance that their life has a uniqueness that is of their own choosing (i.e., differentiated-behavioural); and (3) recognition that they are self-sufficient and feel that they have found a unique, self-sustaining niche in their community (i.e., differentiated-social). The instrument utilises a six-point response scale; where 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Disagree More Than Agree*, 4 = *Agree More Than Disagree*, 5 = *Agree* and 6 = *Strongly Agree*. The inventory authors report reliability coefficients (α) for each sub-scale of .89, .72, .79, .80, .78

and .84 for Integrated: Subjective, Integrated: Behavioural, Integrated, Social, Differentiated: Subjective, Differentiated: Behavioural and Differentiated: Social, respectively. Reliability coefficient (α) scores for each second order factor can also be calculated with the inventory authors reporting them as .73 and .75 for Integrated: Total Composite and Differentiated: Total Composite, respectively. The present study utilised a shortened version of the III, consisting of 36 items (i.e., 6 items per first order factor).

Spiritual Beliefs Inventory: Brief Version (SBI: Brief). The SBI: Brief is a four factor model and measure of an individual's spiritual beliefs. Details of the inventory are presented in Chapter 6.

Explicit Religiosity Scale (ERS). The ERS is a two factor model of explicit religiosity. The scale consists of 20 items and two sub-scales, namely: Connection with a Higher Being (CHB) and Prayer/Meditation Fulfilment (PMF). Each sub-scale was identified by Exploratory Factor Analysis by the present researcher. The CHB sub-scale measures a respondent's spiritual practices related to connecting with and seeking guidance from a Higher Power, Being or Entity. The PMF sub-scale measures a respondent's experience of the transcendent via the undertaking of a formal spiritual practice, such as prayer or meditation. Example items are presented in Chapter 7. A Total Composite score can also be generated. The instrument utilises a six-point response scale; where 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Disagree More Than Agree*, 4 = *Agree More Than Disagree*, 5 = *Agree* and 6 = *Strongly Agree*. The two-sub-scales of the ERS have adequate internal consistency (α) of .97 and .96 for CHB and PMF, respectively. The Total Composite score of the ERS has an internal consistency coefficient (α) of .98.

8.3.3. Procedure

The questionnaire battery was administered via the Internet with participants responding anonymously. Participants were provided the opportunity to supply a return email address should they want to be informed of the results of the study. Participants were recruited from various sources, including word of mouth of the researcher, online forums and online social networking websites. Participants were provided an overview of the

study's purpose via an introductory statement and were informed that participation was voluntary and that they were free to withdraw from participating at any time.

8.3.4. Data analytic strategy

To test the present study's first and second hypotheses, Pearson's product correlations between the sub-scales (and Total Composite scores) of the Explicit Religiosity Scale (ERS) and the Spiritual Beliefs Inventory: Brief Version (SBI: Brief) and the six sub-scales of the Identity Issues Inventory (III) were performed to examine the direction and strength of association between all sub-scales. Correlations were interpreted according to Hempill's (2003) guidelines where a small, moderate and large correlation (two-tailed) equates to Pearson's correlation coefficients (*r*s) of .20, .20 to .30 and greater than .30, respectively.

To test the present study's third hypotheses, the linear associations between an individual's identity stage resolution (as measured by the III and related sub-scales), a two-factor model of explicit religiosity (i.e., ERS) and a four factor model and measure of spiritual beliefs (i.e., SBI: Brief) were examined using multiple regression. It was deemed appropriate to consider the associations between explicit religiosity (as represented by two sub-scales) and spiritual beliefs (as represented by four sub-scales) and each sub-scale of the III, namely: Integrated: Subjective, Integrated: Behavioural, Integrated, Social, Differentiated: Subjective, Differentiated: Behavioural and Differentiated: Social. Total Composite scores for the III were also examined. Specifically, III sub-scale and Total Composite scores were regressed onto the two sub-scales of the ERS at Step 1, and then regressed onto ERS and the four factors of SBI: Brief at Step 2. A statistically significant R^2 at Step 1 and again at Step 2 were deemed suitable indicators of a linear association between identity stage resolution, explicit religiosity and spiritual beliefs. An examination of each unique predictor's standardised beta weight (i.e., standardised β) was also conducted to determine the form of relationship taken by each predictor in the model and identity stage resolution.

8.4. Results

Prior to testing the present study's stated hypotheses, the means (*M*), standard deviations (*SD*) and internal consistency reliabilities (α) for males, females and combined for the Identity Issues Inventory (III) and its relevant sub-scales were examined. As presented in Table 8.1, the internal consistency reliability of each sub-scale of the III is in line with those reported by the scale's author and all exceed α = .70. Further, no gender differences were found for any sub-scale of the III, therefore combined males and females results will be used for all analyses performed in the present study.

Table 8.1

Means (M), Standard Deviations (SD) and internal consistency reliabilities (α) for males, females and combined for the study's III measure (N = 331)

		Males (n=80)	Females (n=251)	Combined (N=331)	
	Number of items	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	α
Panel 1					
III: $Integ_{SUBJECTIVE}$	6	4.44 (0.88)	4.45 (0.79)	4.45 (0.81)	.79
III: $Integ_{BEHAVIOURAL}$	6	4.65 (0.71)	4.70 (0.68)	4.68 (0.69)	.70
III: $Integ_{SOCIAL}$	6	4.45 (0.86)	4.40 (0.84)	4.41 (0.84)	.83
III: $Integ_{TOTAL}$	18	4.41 (0.73)	4.52 (0.63)	4.52 (0.65)	.89

Table 8.1: *continued*

		Males (n=80)	Females (n=251)	Combined (N=331)	
	Number of items	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	α
Panel 2					
III: Differ$_{SUBJECTIVE}$	6	4.48 (0.82)	4.45 (0.72)	4.46 (0.75)	.77
III: Differ$_{BEHAVIOURAL}$	6	4.42 (0.78)	4.50 (0.74)	4.48 (0.75)	.76
III: Differ$_{SOCIAL}$	6	4.44 (0.92)	4.47 (0.83)	4.46 (0.85)	.85
III: Differ$_{TOTAL}$	18	4.45 (0.73)	4.47 (0.66)	4.47 (0.68)	.90
Panel 3					
III$_{OVERALL\ TOTAL}$	36	4.48 (0.70)	4.50 (0.61)	4.49 (0.63)	.94

Note: Means in bold text represent significant differences between males and females ($p < .05$); III: Integ$_{SUBJECTIVE}$ = Identity Issues Inventory (III): Integrated - Subjective; III: Integ$_{BEHAVIOURAL}$ = III: Integrated - Behavioural; III: Integ$_{SOCIAL}$ = III: Integrated - Social; III: Integ$_{TOTAL}$ = III: Integrated – Total Composite; III: Differ$_{SUBJECTIVE}$ = III: Differentiated - Subjective; III: Differ$_{BEHAVIOURAL}$ = III: Differentiated - Behavioural; III: Differ$_{SOCIAL}$ = III: Differentiated - Social; III: Differ$_{TOTAL}$ = III: Differentiated – Total Composite; III$_{OVERALL\ TOTAL}$ = III: Overall Total Composite.

Examining the relationships between the III and its six sub-scales, the ERS and its two sub-scales and the SBI: Brief and its four sub-scales

To test the present study's first and second hypotheses, Pearson's correlations (two-tailed) were performed for each sub-scale. As presented in Table 8.2 (Panel 1), the sub-scales of the III are all positively correlated with *r*s ranging from .44 (III: Integ$_{SOCIAL}$ and III: Integ$_{SUBJECTIVE}$) to .74 (III: Integ$_{SUBJECTIVE}$ and III: Differ$_{SOCIAL}$). The mean correlation between the six sub-scales of the III was found to be $r = 0.59$. Using Hempill's (2003) guidelines for

interpreting correlation coefficients; where a small, medium and large association related to *r*s of less than.20, .20 to .30 and greater than .30, respectively; the mean correlation indicates a large association between the six sub-scales of the III.

Further, Table 8.2 (Panel 2) presents the Pearson's correlation coefficients between the Explicit Religiosity Scale (i.e., ERS) and its two sub-scales (namely, CHB and PMF) and the III and its six-sub-scales. The CHB sub-scale shares only a small association with the III with only the correlation between CHB and III: $Differ_{SOCIAL}$ sub-scales exceeding .20. Similarly, the PMF sub-scale was found to have a low to moderate association with the III and its sub-scales with *r*s ranging from .11 ($p = .051$) for the III: $Integ_{BEHAVIOURAL}$ sub-scale to .26 ($p < .001$) for the III: $Differ_{SOCIAL}$ sub-scale. The ERS_{TOTAL} and $III_{OVERALL\ TOTAL}$ correlation is $r = .18$, which suggests 3% shared variance between the two scales.

Finally, Table 8.2 (Panel 3) presents the Pearson's correlation coefficients between the Spiritual Beliefs Inventory: Brief Version (i.e., SBI: Brief) and its four sub-scales (namely, OLM, LMPD, FWI and SDIG) and the III and its six sub-scales. The OLM sub-scale of the SBI: Brief shares only a small association (i.e., *r*s < .20) with the III and its six sub-scales. The LMPD sub-scale shares a large association with the six sub-scales of the III with *r*s ranging from .464 (LMPD and III: $Integ_{SOCIAL}$) to .725 (LMPD and III: $Differ_{SOCIAL}$). Although the correlation between the LMPD sub-scale of the SBI: Brief and the III: $Differ_{SOCIAL}$ sub-scale of the III is high, it is not |1.0|; therefore indicating that although there is shared variance between these two variables, approximately 47% of the variability between LMPD and III: $Differ_{SOCIAL}$ scores remains unique and unexplained.

It shall be noted that the strength of association between the OLM sub-scale of the SBI: Brief and the two sub-scales of the ERS is large (average $r = .81$). Although, large the correlation coefficient is not |1.0|; therefore indicating that although there is shared variance between this spiritual beliefs sub-scale and the ERS, approximately 34% of the variability in OLM and ERS sub-scale scores remains unique and unexplained. Vasu (1978) suggests that potential Type II error due to highly correlated independent variables within multiple regression analysis is not an issue using large samples (i.e., N > 100), with her findings using multiple samples finding only minimal deterioration in standardised beta weights until $r = |.95|$ between independent variables. Therefore, although there is a strong

relationship between the OLM sub-scale of the SBI: Brief and the ERS, it was still considered appropriate to include all sub-scales of the ERS and SBI: Brief in further analyses. Further, given the possibility of finding a suppressor effect in a regression model due to high collinearity between independent variables (Ganzach, 1997), the present study will also report squared semi-partial correlations (i.e., sr^2).

Table 8.2

Pearson's r correlation matrix between the two factors of religiosity, the four factors of spirituality and the relevant sub-scales of the III (N=331)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Panel 1																	
1. III: $Integ_{SUBJECTIVE}$	1																
2. III: $Integ_{BEHAVIOURAL}$	.62	1															
3. III: $Integ_{SOCIAL}$	.44	.60	1														
4. III: $Integ_{TOTAL}$	-	-	-	1													
5. III: $Differ_{SUBJECTIVE}$	.67	.56	.39	.64	1												
6. III: $Differ_{BEHAVIOURAL}$	.70	.58	.36	.65	.68	1											
7. III: $Differ_{SOCIAL}$	.74	.63	.63	.80	.61	.58	1										
8. III: $Differ_{TOTAL}$	.82	.68	.54	.81	-	-	-	1									
9. $III_{OVERALL\ TOTAL}$	-	-	-	-	-	-	-	-	1								

Table 8.2: *continued*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Panel 2																	
10. CHB	.14	**.09**	.17	.16	**.03**	**.03**	.22	.16	.15	1							
11. PMF	.20	**.11**	.18	.18	.20	.13	.12	.26	.20	.21	1						
12. ERS_{TOTAL}	.18	**.10**	.18	.19	**.07**	**.07**	.24	.16	.18	-	-	1					
Panel 3																	
13. OLM	.17	.12	.11	.16	.12	.12	.22	.18	.18	.80	.82	.85	1				
14. LMPD	.66	.54	.46	.66	.59	.53	.72	.72	.73	.34	.42	.39	.42	1			
15. FWI	.28	.25	.22	.30	.22	.24	.33	.31	.32	.46	.59	.54	.58	.52	1		
16. SDIG	.14	.19	.17	.20	.18	.19	.19	.22	.22	.40	.46	.44	.54	.36	.46	1	
17. SBI: $Brief_{TOTAL}$	.38	.33	.29	.40	.33	.32	.45	.42	.43	.68	.76	.75	-	-	-	-	1

Note: bolded correlations are failed to achieve statistical significant at $p < .05$ (2-tailed); refer to Table 8.1 for definitions of sub-scale acronyms for the Identity Issues Inventory (III); CHB = Connection with a Higher Being; PMF = Prayer/Meditation Fulfilment; ERS_{TOTAL} = Explicit Religiosity Scale: Total Composite; OLM = Openness to Life's Mysteries; LMPD = Life Meaning Purpose and Direction; FWI = Fostering Wholeness and Interconnectedness; SDIG = Self Discover and Inner Growth; SBI: $Brief_{TOTAL}$ = Spiritual Beliefs Inventory: Brief Version (SBI: Brief) – Total Composite.

Establishing the nature of the relationship between spirituality and explicit religiosity as it relates to identity issue resolution

Table 8.3

Hierarchical regression analysis (Method: Enter) predicting III – Integrated: Subjective (N=331)

	Un-standardised		Standardised					
Predictor	*β*	*Std Err.*	*β*	sr^2	*t*	*R*	*R2*	ΔR^2
Step 1						.21	.04	**.04**
Constant	23.42	.96			24.39			
CHB	-1.96	.33	-.05	.00				
PMF	.97	.36	**.25**	.02				
Step 2						.68	.46	**.42**
Constant	6.12	2.15						
CHB	-.08	.28	-.02	.00	-.27			
PMF	.20	.32	.05	.00	.61			
OLM	-.53	.41	-.11	.00	-1.28			
LMPD	5.54	.37	**.74**	.38	15.05			
FWI	-.16	.32	-.03	.00	-.50			
SDIG	-.64	.45	-.07	.00	-1.44			

Note: refer to Table 8.2 for descriptions of the SBI: Brief and ERS acronyms. Note: Statistically significant β-weights and ΔR^2 designated in bold text ($p < .05$).

Table 8.3 examines the nature of the relationship between the two sub-scales of the Explicit Religiosity Scale (ERS) and the four sub-scales of the Spiritual Beliefs Inventory: Brief Version (SBI: Brief) as each relates to identity stage resolution within the Identity Issues

Inventory (III) sub-scale of Integrated: Subjective. The hierarchical regression model presented in Table 8.3 accounted for 4.2% of the variance in respondents' Integrative: Subjective experiences of identity at Step 1 ($F_{2, 328}$ = 7.23, p < .001) with Prayer/Meditation Fulfilment (PMF) being a significant predictor (β = .25, p = .007). With the four sub-scales of SBI: Brief entered at Step 2, 46.0% of the variance in Integrative: Subjective was accounted for ($F_{6, 324}$ = 45.93, p < .001, ΔR^2 = .42). The change in R^2 at Step 2 was statistically significant. At Step 2, PMF failed to be a significant predictor (β = -.02, p = .544), with the spirituality sub-scale of Life-Meaning, Purpose and Direction (LMPD) (β = .74, p < .001) being the only significant predictor. This result suggests that the LMPD sub-scale mediates the effect of PMF when predicting the variability in Integrative: Subjective scores. An examination of the semi-partial correlation result (i.e., sr^2) for the LMPD sub-scale indicates the sub-scale contributes 37.8% unique variance in the overall regression model.

Table 8.4 examines the nature of the relationship between the two sub-scales of the ERS and the four sub-scales of the SBI: Brief as each relates to identity stage resolution within the III sub-scale of Integrated: Behavioural. The hierarchical regression model presented in Table 8.4 was non-significant at Step 1. With the four sub-scales of the SBI: Brief entered at Step 2, 31.1% of the variance in Integrative: Behavioural was accounted for ($F_{6, 324}$ = 24.36, p < .001, ΔR^2 = .30). The change in R^2 at Step 2 was statistically significant. At Step 2, neither sub-scale of the ERS (namely, CHB and PMF) were significant predictors in the model with the SBI: Brief sub-scale of Life-Meaning, Purpose and Direction (β = .58, p < .001) being the only significant predictor. An examination of the semi-partial correlation result (i.e., sr^2) for the LMPD sub-scale indicates the sub-scale contributes 23.4% unique variance in the overall regression model.

Table 8.4

Hierarchical regression analysis (Method: Enter) predicting III – Integrated: Behavioural (N=331)

	Un-standardised		Standardised					
Predictor	*β*	*Std Err.*	*β*	sr^2	*t*	*R*	*R2*	ΔR^2
Step 1						.11	.01	.01
Constant	26.57	.82			32.27			
CHB	.05	26.56	.02	.00	.17			
PMF	.32	.30	.10	.00	1.03			
Step 2						.56	.31	**.30**
Constant	10.48	2.05			5.12			
CHB	.10	.27	.03	.00	.39			
PMF	-.49	.31	-.15	.00	-1.60			
OLM	-.33	.39	-.08	.00	-.83			
LMPD	3.68	.35	**.58**	.23	10.48			
FWI	.23	.31	.05	.00	.76			
SDIG	.38	.43	.05	.00	.90			

Note: refer to Table 8.2 for descriptions of the SBI: Brief and ERS acronyms. Note: Statistically significant β-weights and ΔR^2 designated in bold text ($p < .05$).

Table 8.5 examines the nature of the relationship between the two sub-scales of the ERS and the four sub-scales of the SBI: Brief as each relates to identity stage resolution within the III sub-scale of Integrated: Social. The hierarchical regression model accounted for 3.4% of the variance in respondents' Integrative: Social experiences of identity at Step 1 ($F_{2,}$

$_{328}$ = 5.81, *p* = .003); however, neither sub-scale of the ERS was a statistically significant contributor to the model.

Table 8.5

Hierarchical regression analysis (Method: Enter) predicting III – Integrated: Social (N=331)

	Un-standardised		Standardised					
Predictor	β	*Std Err.*	β	sr^2	*t*	*R*	*R2*	ΔR^2
Step 1						.19	.03	**.03**
Constant	23.21	1.00			23.26			
CHB	.29	.345	.08	.00	.84			
PMF	.48	.367	.12	.00	1.30			
Step 2						.49	.24	**.21**
Constant	8.84	2.63			3.36			
CHB	.74	.34	.19	.01	2.14			
PMF	.25	.40	.06	.00	.63			
OLM	-1.66	.51	**-.33**	.02	-3.29			
LMPD	3.78	.45	**.48**	.16	8.38			
FWI	-.01	.40	.00	.00	-.02			
SDIG	.65	.55	.07	.00	1.18			

Note: refer to Table 8.2 for descriptions of the SBI: Brief and ERS acronyms. Note: Statistically significant β-weights and ΔR^2 designated in bold text ($p < .05$).

With the four sub-scales of the SBI: Brief entered at Step 2, 24.3% of the variance in Integrative: Social was accounted for ($F_{6, 324}$ = 17.32, $p < .001$, ΔR^2 = .21). The change in R^2 at Step 2 was statistically significant. At Step 2, the spiritual beliefs sub-scales of OLM (β = -.33, $p < .001$) and LMDP (β = .49, $p < .001$) were significant predictors. The spirituality sub-scale

of LMPD provided the greatest single contribution to the regression model as indicated by its squared semi-partial correlation of sr^2 = .16 (i.e., 16.4% unique variance explained in the overall regression model). The OLM sub-scale contributed 2.5% unique variance to the regression model; however, its standardised beta-weight suggests a negative contribution to a respondent's Integrative: Social experiences of identity. Given the positive simple correlation between III: $Integ_{SOCIAL}$ and OLM of r = .14 (p = .038), the finding suggests a net (i.e., negative) suppressor effect from a third variable in the model (Conger, 1974). A review of the simple correlations between the variables and III: $Integ_{SOCIAL}$ identified two possible suppressor variables for OLM, namely: PMF and LMPD. Subsequent analysis systematically removing each possible suppressor variable from the regression model failed to identify a possible suppressor variable for OLM. In such cases, Tzelgov and Henik (1991) recommend that the effect be considered a suppression situation; whereby all variables in the model explain some variance in the criterion (i.e., OLM).

Table 8.6 examines the nature of the relationship between the two sub-scales of the ERS and the four sub-scales of the SBI: Brief as each relates to identity stage resolution within the III - Integrated: Total Composite (i.e., III: $Integ_{TOTAL}$). The hierarchical regression model accounted for 4.0% of the variance in respondents' III: $Integ_{TOTAL}$ scores at Step 1 ($F_{2, 328}$ = 6.77, p < .001) with the PMF sub-scale of the ERS being a significant predictor (β = .19, p = .041). With the four sub-scales of the spirituality measure entered at Step 2, 23.4% of the variance in III: $Integ_{TOTAL}$ was accounted for ($F_{6, 324}$ = 45.85, p < .001, ΔR^2 = .21). The change in R^2 at Step 2 was statistically significant. At Step 2, PMF failed to remain a significant predictor (β = .09, p = .952) with the spirituality sub-scales of OLM (β = -.22, p = .012) and LMDP (β = .72, p < .001) being significant predictors. The results indicate a negative and significant contribution of the spirituality sub-scale of OLM at Step 2, which suggests a possible net suppression effect for OLM by a third variable in the model (Conger, 1974). A review of the simple correlations between the variables and III: $Integ_{TOTAL}$ failed to identify a possible suppressor variable for OLM.

Table 8.6

Hierarchical regression analysis (Method: Enter) predicting III – Integrated: Total Composite (N=331)

	Un-standardised		Standardised					
Predictor	*β*	*Std Err.*	*β*	sr^2	*t*	*R*	*R2*	ΔR^2
Step 1						.20	.040	**04**
Constant	73.20	2.32			31.61			
CHB	.14	.80	.02	.01	.18			
PMF	1.76	.86	**.19**	.03	2.06			
Step 2						.68	.46	**.42**
Constant	25.44	5.18			4.91			
CHB	.76	.68	.09	.01	1.13			
PMF	-.05	.78	-.01	.00	-.06			
OLM	-2.52	1.00	**-.22**	.00	-2.53			
LMPD	12.99	.89	**.72**	.32	14.66			
FWI	.06	.78	.01	.00	.08			
SDIG	.39	1.08	.02	.00	.36			

Note: refer to Table 8.2 for descriptions of the SBI: Brief and ERS acronyms. Note: Statistically significant β-weights and ΔR^2 designated in bold text ($p < .05$).

Table 8.7 examines the nature of the relationship between the two sub-scales of the ERS and the four sub-scales of the SBI: Brief as each relates to identity stage resolution within the III sub-scale of Differentiated: Subjective (i.e., III: $Differ_{SUBJECTIVE}$). At Step 1, the hierarchical regression model was significant and accounted for 3.1% of the variance in respondents' Differentiation: Subjective experiences of identity ($F_{2, 328} = 5.21$, $p = .006$). Both

the CHB (β = -.20, p = .030) and PMF (β = .29, p = .002) sub-scales of the ERS contributed significantly to the model at Step 1, with the CHB sub-scale contributing negatively.

Table 8.7

Hierarchical regression analysis (Method: Enter) predicting III – Differentiated: Subjective (N=331)

	Un-standardised		Standardised					
Predictor	β	*Std Err.*	β	sr^2	*t*	*R*	*R2*	ΔR^2
Step 1						.18	.03	**.03**
Constant	25.16	.89			28.31			
CHB	-.67	.31	**-.20**	-.12	-2.18			
PMF	1.04	.33	**.29**	.17	3.17			
Step 2						.62	.39	**.36**
Constant	7.167	2.11			3.40			
CHB	-.75	.28	**-.22**	-.13	-2.72			
PMF	.191	.32	.05	.03	.60			
OLM	.02	.40	.00	.00	.05			
LMPD	4.65	.36	**.67**	.56	12.89			
FWI	-.41	.32	-.08	-.06	-1.28			
SDIG	.25	.44	.03	.02	.56			

Note: refer to Table 8.2 for descriptions of the SBI: Brief and ERS acronyms. Note: Statistically significant β-weights and ΔR^2 designated in bold text (p < .05).

With the four sub-scales of the SBI: Brief entered at Step 2, 38.6% of the variance in III: $Differ_{SUBJECTIVE}$ scores were accounted for ($F_{6, 324}$ = 33.93, p < .001, ΔR^2 = .36). The change in R^2 at Step 2 was statistically significant. As shown in Table 8.7, the ERS sub-scale of CHB

was a significant and negative predictor of III: $Differ_{SUBJECTIVE}$ scores (β = -.22, p = .007) at Step 2 with the spirituality sub-scale of LMDP (β = .67, p = .000) being a significant positive predictor of the Integrative: Subjective sub-scale of the Identity Issues Inventory (III). An examination of the semi-partial correlation coefficients (i.e., sr^2) shows the LMPD sub-scale having the greatest unique variance in the overall regression model (sr^2 = .56; 56.1% unique variance). A review of the simple correlations between the variables and III: $Differ_{SUBJECTIVE}$ identified the likely suppressor variable (Conger, 1974) for CHB as LMPD. Subsequent analysis systematically removing the possible suppressor variable failed to confirm LMPD as the suppressor variable for CHB.

Table 8.8 examines the nature of the relationship between the two sub-scales of the ERS and the four sub-scales of the SBI: Brief as each relates to identity stage resolution within the III sub-scale of Differentiated: Behavioural (i.e., III: $Differ_{BEHAVIOURAL}$). At Step 1, the hierarchical regression model was significant and accounted for 2.6% of the variance in respondents' Differentiated: Behavioural experiences of identity ($F_{2, 328}$ = 4.32, p = .014). Only the PMF sub-scale of the ERS contributed significantly at Step 1 (β = .26, p = .004). With the four sub-scales of the SBI: Brief entered at Step 2, 30.9% the variance in III: $Differ_{BEHAVIOURAL}$ scores were accounted for ($F_{6, 324}$ = 24.17, p < .001, ΔR^2 = .28). The change in R^2 at Step 2 was statistically significant. As shown in Table 8.8, the CHB sub-scale became a significant and negative predictor in the model (β = -.18, p = .04); however, the PMF sub-scale failed to remain a significant predictor in the model (β = .02, p = .797). The SBI: Brief sub-scale of LMDP (β = .58, p < .001) was also a significant and positive predictor of the III: $Differ_{BEHAVIOURAL}$ sub-scale of the Identity Issues Inventory (III) at Step 2. The results indicate a negative and significant contribution of the explicit religiosity sub-scale of CHB at Step 2. A review of the simple correlations between the variables and III: $Differ_{BEHAVIOURAL}$ identified the likely suppressor variable (Conger, 1974) for CHB as LMPD. Subsequent analysis systematically removing the possible suppressor variable failed to confirm LMPD as the suppressor variable for CHB.

Table 8.8

Hierarchical regression analysis (Method: Enter) predicting III – Differentiated: Behavioural (N=331)

	Un-standardised		Standardised					
Predictor	β	*Std Err.*	β	sr^2	*t*	*R*	*R2*	ΔR^2
Step 1						.16	.03	**.03**
Constant	25.37	.89			28.40			
CHB	-.60	.31	-.18	.01	-1.93			
PMF	.95	.33	**.26**	.02	2.87			
Step 2						.56	.31	**.28**
Constant	8.13	2.24			3.63			
CHB	-.61	.29	**-.18**	.01	-2.10			
PMF	.09	.34	.02	.00	.26			
OLM	-.14	.43	-.03	.00	-.32			
LMPD	3.99	.38	**.58**	.23	10.41			
FWI	.01	.34	.00	.00	.02			
SDIG	.44	.47	.05	.00	.95			

Note: refer to Table 8.2 for descriptions of the SBI: Brief and ERS acronyms. Note: Statistically significant β-weights and ΔR^2 designated in bold text ($p < .05$).

Table 8.9 examines the nature of the relationship between the two sub-scales of the ERS and the four sub-scales of the SBI: Brief as each relates to identity stage resolution within the III sub-scale of Differentiated: Social (i.e., III: $Differ_{SOCIAL}$). As shown, the hierarchical regression model accounted for 6.6% of the variance in respondents'

Differentiated: Social experiences of identity at Step 1 ($F_{2, 328}$ = 11.66, p < .001), with the PMF sub-scale of the ERS being a significant predictor (β = .23, p < .009).

Table 8.9

Hierarchical regression analysis (Method: Enter) predicting III – Differentiated: Social (N=331)

	Un-standardised		Standardised					
Predictor	β	*Std Err.*	β	sr^2	*t*	*R*	*R2*	ΔR^2
Step 1						.26	.07	**.07**
Constant	22.20	.99			22.39			
CHB	.12	.34	.03	.00	.34			
PMF	.96	.37	**.23**	.02	2.61			
Step 2						.73	.54	**.47**
Constant	1.73	2.08			.83			
CHB	.28	.27	.07	.00	1.02			
PMF	.06	.31	.02	.00	.20			
OLM	-.71	.40	-.14	.00	-1.77			
LMPD	6.08	.36	**.77**	.42	17.05			
FWI	-.07	.31	-.01	.00	-.22			
SDIG	-.39	.43	-.04	.00	-.89			

Note: refer to Table 8.2 for descriptions of the SBI: Brief and ERS acronyms. Note: Statistically significant β-weights and ΔR^2 designated in bold text (p < .05).

With the four sub-scales of the SBI: Brief entered at Step 2, 53.6% of the variance in III: $Differ_{SOCIAL}$ scores were accounted for ($F_{6, 324}$ = 62.41, p < .001, ΔR^2 = .47). The change in R^2 at Step 2 was statistically significant. At Step 2, the PMF sub-scale failed to remain a

significant predictor (β = .07, p = .842) with the SBI: Brief sub-scale of LMDP (β = .77, p < .001) being the only significant predictor. It shall be noted that the OLM sub-scale did approach significant (β = -.14, p = .079) in the regression model. The result suggests that the PMF sub-scale is mediated by LMPD in predicting III: $Differ_{SOCIAL}$ scores. An examination of the semi-partial correlation coefficients (i.e., sr^2) shows the LMPD sub-scale having the greatest unique variance in the overall regression model (sr^2 = .42; 41.6% unique variance in the overall regression model).

Table 8.10 examines the nature of the relationship between the two sub-scales of the ERS and the four sub-scales of the SBI: Brief as each relates to identity stage resolution within the III - Differentiated: Total Composite (i.e., III: $Differ_{TOTAL}$). As presented, the hierarchical regression model accounted for 4.5% of the variance in respondents' Differentiated – Composite Total scores at Step 1 ($F_{2, 328}$ = 7.81, p < .001) with the ERS sub-scale of PMF being a significant predictor (β = .30, p = .001). With the four sub-scales of the SBI: Brief entered at Step 2, 53.5% of the variance in III: $Differ_{TOTAL}$ scores were accounted for ($F_{6, 324}$ = 62.09, p < .01, ΔR^2 = .50). The change in R^2 at Step 2 was statistically significant. At Step 2, PMF fails to remain a significant predictor (β = .26, p = .651) of III: $Differ_{TOTAL}$ with the SBI: Brief sub-scale of LMDP (β = .79, p < .001) being the significant and positive predictor of III: $Differ_{TOTAL}$ scores. The result suggests that the PMF sub-scale is mediated by LMPD in predicting III: $Differ_{TOTAL}$ scores. An examination of the semi-partial correlation coefficients (i.e., sr^2) also shows the LMPD sub-scale having the greatest unique variance in the overall regression model (sr^2 = .43; 43.4% unique variance explained in the overall regression model).

Table 8.10

Hierarchical regression analysis (Method: Enter) predicting III – Differentiated: Total Composite (N=331)

	Un-standardised		Standardised					
Predictor	*β*	*Std Err.*	*β*	sr^2	*t*	*R*	*R2*	ΔR^2
Step 1						.21	.04	**.04**
Constant	72.74	2.40			30.35			
CHB	-1.16	.83	-.13	.00	-1.39			
PMF	2.95	.89	**.30**	.02	3.33			
Step 2						.73	.54	**.50**
Constant	17.04	4.98			3.42			
CHB	-1.08	.65	-.12	.00	-1.67			
PMF	.34	.75	.04	.00	.45			
OLM	-.82	.96	-.07	.01	-.86			
LMPD	14.72	.85	**.78**	.43	17.25			
FWI	-.47	.75	-.03	.00	-.63			
SDIG	.30	1.04	.01	.00	.29			

Note: refer to Table 8.2 for descriptions of the SBI: Brief and ERS acronyms. Note: Statistically significant β-weights and ΔR^2 designated in bold text ($p < .05$).

Table 8.11 examines the nature of the relationship between the two sub-scales of the ERS and the four sub-scales of the SBI: Brief as each relates to identity stage resolution within III – Overall Composite Total (i.e., $III_{OVERALL\ TOTAL}$). The hierarchical regression model accounted for 3.5% of the variance in III – Overall Composite Total scores at Step 1 ($F_{2, 328}$ = 7.74, p = .001) with the PMF sub-scale of the ERS being a significant predictor (β = .26, p = .005).

Table 8.11

Hierarchical regression analysis (Method: Enter) predicting III – Overall Composite Total (N=331)

	Un-standardised		Standardised					
Predictor	*β*	*Std Err.*	*β*	sr^2	*t*	*R*	*R2*	ΔR^2
Step 1						.21	.05	**.05**
Constant	145.93	4.48			32.58			
CHB	-1.02	1.56	-.06	.00	-.65			
PMF	4.72	1.66	**.26**	.02	2.84			
Step 2						.74	.55	**.50**
Constant	42.47	9.21			4.61			
CHB	-.32	1.20	-.02	.00	-.27			
PMF	.29	1.39	.02	.00	.21			
OLM	-3.34	1.77	-.15	.01	-1.89			
LMPD	27.72	1.58	**.79**	.43	17.57			
FWI	-.41	1.38	-.02	.00	-.29			
SDIG	.69	1.92	.02	.00	.36			

Note: refer to Table 8.2 for descriptions of the SBI: Brief and ERS acronyms. Note: Statistically significant β-weights and ΔR^2 designated in bold text ($p < .05$).

With the four sub-scales of the SBI: Brief entered at Step 2, 54.5% of the variance in $III_{OVERALL\ TOTAL}$ scores was accounted for ($F_{6, 324} = 64.69$, $p < .001$, $\Delta R^2 = .50$). The change in R^2 at Step 2 was statistically significant. At Step 2, PMF failed to remain significant ($\beta = .02$, $p = .833$) with the SBI: Brief sub-scale of LMDP ($\beta = .79$, $p < .001$) being the only significant and positive predictor of $III_{OVERALL\ TOTAL}$ scores. It shall be noted that the OLM sub-scale did

approach significant (β = -.15, p = .06) at Step 2. This result suggests that spiritual beliefs (and specifically the LMPD sub-scale of the SBI: Brief) mediates the effect of PMF when predicting the variability in $III_{OVERALL\ TOTAL}$ scores.

8.5. Discussion

The present study sought to establish the utility of the Explicit Religiosity measure (i.e., an analog measure of spiritual beliefs) and Spiritual Beliefs Inventory: Brief Version in predicting identity stage resolution. The aims of the present study were three-fold, namely: (1) to determine the nature and strength of relationship between one's spiritual practices (i.e., explicit religiosity) and identity stage resolution; (2) to determine the nature and strength of relationship between one's spiritual beliefs and identity stage resolution; and (3) determine the incremental predictive validity of one's spiritual beliefs beyond one's spiritual practices in predicting one's progression towards identity stage resolution. In undertaking these three aims, the study aimed to further validate the present dissertation's proposed holistic conceptual framework for considering spirituality.

The specific hypotheses explored were that there would be a positive but weak correlation (i.e., of Pearson's *r* of less than .20) between the two sub-scales of the Explicit Religiosity Scale (as an analog for spiritual practice) and identity stage resolution (as operationalised by the III); there would be a strong correlation (i.e., of Pearson's *r* = .30 or greater) between the sub-scales of the Spiritual Beliefs Inventory: Brief Version (i.e., SBI: Brief) and identity stage resolution; there would be an even stronger correlation (i.e., of Pearson's *r* = .50 or greater) for the Life Meaning, Purpose and Direction (LMPD) sub-scale of the SBI: Brief and identity stage resolution; and spiritual beliefs (as operationalised by the SBI: Brief) would be associated with a respondent's identity stage resolution beyond that predicted by explicit religiosity (as operationalised by the Explicit Religiosity Scale; ERS).

The study's first hypothesis was mostly supported. The Connecting with a Higher Being (CHB) sub-scale of the ERS was found to have a weak correlation (i.e., $r < .20$) for all sub-scales of the Identity Issues Inventory (III), except for the Differentiated-Social (i.e., III: $Differ_{SOCIAL}$) sub-scale which was *r* = .22 (a moderate correlation according to the guidelines

provided by Hemphill, 2003). Similarly, the Prayer/Meditation Fulfilment (PMF) sub-scale of the ERS was found to have a weak correlation for all sub-scales of the III with only the Integrated-Subjective (i.e., III: $Integ_{SUBJECTIVE}$) and III: $Differ_{SOCIAL}$ sub-scales demonstrating a moderate correlation of *r*s .20 and .26, respectively. The two-sub-scales of the ERS failed to predict however, the behaviour based sub-scales of the III (i.e., III: $Integ_{BEHAVIOURAL}$ and III: $Differ_{BEHAVIOURAL}$) which was contrary to expectations (i.e., spiritual practices relate to behaviour-based activities for exploring one's spirituality). A closer examination of the specific items of the III related to the behaviour-based sub-scales provides some insight. Specifically, the items of the behaviour "core" identity pertain primarily to how the respondent adjusts his/her behaviour based upon others' perspectives (e.g., "My friends think I behave maturely" and "I act like a different person, depending upon the social situation [negatively-keyed item]"). All items pertaining to the ERS relate to behaviours and resulting inner processes (e.g., "I pray/meditate so that I can grow as a person" and "I am moved by sacred rituals").

The present study's second hypothesis failed to be supported with the Openness to Life's Mysteries (OLM) and Self-Discovery and Inner Growth (SDIG) sub-scales of the SBI: Brief only correlating weakly (i.e., *r*s < .20) and positively with the six sub-scales of the III. Given the item content of the OLM sub-scale (e.g., "There is more to this world that can be physically studied" and "There is an order to the universe that transcends human thinking") relates to intangible concepts, upon closer consideration this finding may be somewhat expected. The III's "core" identities sub-scales pertain to a respondent's level of subjective, behavioural and social understanding based upon a sense of inner unity and autonomy in the "here-and-now", which may be considered paradoxical to the item content of the OLM. This finding has implications for how one's openness to life's mysteries (a core element of spirituality) pertains to the premise that spirituality is a meaning-making process that supports individuals in making sense of life's experiences. The finding for the SDIG sub-scale of the SBI: Brief is also contrary to expectations. The SDIG sub-scale is based upon a universal spiritual belief that all people are consciously (and unconsciously) undertaking a journey towards a *transcended* Self. Similarly, the III is focused upon a person's path towards inner wholeness and individuation (Cote & Roberts, 2003), which could be likened to a journey of self-discovery. This finding warrants further exploration.

The Fostering Wholeness and Interconnectedness (FWI) sub-scale of the SBI: Brief was found to have a moderate association (i.e., *r*s between .20 and .30) for five sub-scales of the III and a strong correlation (i.e., *r*s > .30) for the Differentiated-Social (i.e. III: $Differ_{SOCIAL}$) sub-scale of the III. The mean *r* was .26 suggesting 7% shared variance between the FWI sub-scale and the six sub-scales of the III. Although the strength of association was lower than anticipated, the results indicated that a respondent's belief that there is an interconnectedness and synchronicity to all life is related to a respondent's self-reported sense of uniqueness and sense of belonging (S. Roberts, 2007).

The present study's third hypothesis can be answered more positively with the Life Meaning, Purpose and Direction (LMPD) sub-scale of the SBI: Brief was found to have a strong association (i.e., *r*s > .30) with the sub-scales of the III. Given the present study's position that spirituality is a meaning-making process through which people make sense from life's experiences, this finding is anticipated. An examination of the strength of associations suggests that LMPD is most strongly correlated with the III: $Integ_{SUBJECTIVE}$ (r = .664) and III: $Differ_{SOCIAL}$ (r = .725) sub-scales. This result suggests LMPD is most strongly associated with a respondent's capacity to: (1) create a sense of wholeness in his/her inner world (an example item from the LMPD sub-scale related to this premise is, "I have a sense of harmony and inner peace"); and (2) develop a sense of autonomy and uniqueness with one's community (an example item from the LMPD sub-scale related to this premise is, "I have a general sense of belonging"). Given the confirmation of the present study's third hypothesis, it is anticipated that the LMPD sub-scale will be a dominant predictor of a respondent's level of identity stage resolution beyond explicit religiosity.

To test the present study's fourth hypothesis, a series of nine hierarchical regression analyses were performed with each sub-scale and Total Composite score of the III regressed onto both explicit religiosity and spiritual beliefs. For all regression analyses performed, the present study's fourth hypothesis was supported. An examination of the Integrated-Subjective (i.e., III: $Integ_{SUBJECTIVE}$) sub-scale results showed the ERS sub-scale of PMF to be a significant contributor prior to the introduction of SBI: Brief sub-scales into the model. Upon inclusion, a respondent's spiritual beliefs (specifically LMPD) mediated the relationship of PMF to III: $Integ_{SUBJECTIVE}$. The findings suggest that although prayers and meditations do

predict positively the integration of one's mind and subjective life experiences, the association is dependent upon a respondent also believing that one's life has meaning and purpose that relates to the exploration of life's existential questions. Put another way, the extent to which a respondent believes that life has a purpose beyond intermediatory pursuits will impact his/her undertaking of a formal spiritual practice (e.g., prayers and/or meditations), which will determine his/her level of identity stage resolution related to III: Integ$_{SUBJECTIVE}$.

As it relates to the III's second sub-scale, III: Integ$_{BEHAVIOURAL}$, the LMPD sub-scale of the SBI: Brief contributed significantly to the regression model. The finding suggests that a respondent's belief that his/her life has meaning and purpose results in a sense of unity in one's day-to-day interpersonal behaviour with others. The item level content of the III: Integ$_{BEHAVIOURAL}$ sub-scale is worthy of note within the context of the present dissertation. The six items selected as indicators of this specific sub-scale all share a common theme, one's consistent demonstration of behaviours to others (e.g., "My friends and family see me as a responsible person" and "I have a close set of accepting friends that will not change in the foreseeable future"). The present researcher's proposed holistic conceptual framework for considering spirituality consists of a 'layer' relevant to spiritual *presence*, that is, acting with intention, commitment and a sense of timelessness in exploring one's spiritual path. It could be argued that the items pertaining to the III: Integ$_{BEHAVIOURAL}$ sub-scale invites the respondent to self-report their level of consistency in demonstrating his/her behaviours so as to indicate their identity stage resolution. It could be argued therefore, that spiritual presence as it pertains to LMPD is likely to also support one's identity stage resolution.

The findings for the III: Integ$_{SOCIAL}$ sub-scale suggests that both the OLM and LMPD sub-scales of the SBI: Brief predict significantly a respondent's sense of unity in identifying his/her unique niche in society. The findings further suggest that the OLM predicts negatively one's III: Integ$_{SOCIAL}$ identity stage resolution. This finding indicates a net suppressor effect within the regression model. In explaining the relationship, the findings suggest that after accounting for LMPD (the only other statistically significant variable in the model) a respondent who also self-reports an openness to life's mysteries will experience lower levels of identity stage resolution. Given the positive product correlation between III:

Integ$_{SOCIAL}$ and OLM of r = .11, the finding could be interpreted in two ways. First, the findings may suggest that within the context of identity stage resolution (specific to integration-social) one's openness to life's mysteries may be a potential liability. Alternatively, the finding may suggest a potential non-linear relationship between these two variables that is suppressed by a third variable (likely, LMPD) in the regression model (Ganzach, 1997). This second interpretation requires further analysis.

A similar finding to that described for III: Integ$_{SOCIAL}$ was also found for III: Integ$_{TOTAL}$, suggesting that the SBI: Brief sub-scale of OLM predicts negatively one's sense of integration and wholeness in the three "core" identities examined in the present study. Conversely, LMPD is a strong positive predictor of identity stage resolution and provides an antidote to a respondent's experience of being mentally confused, fragmented in terms of one's day-to-day relationships, and alienated from organised community involvements (Roberts, 2007).

An examination of the three "core" identities for a respondent's differentiation self-task shows a significant prediction of the III sub-scale of Differentiated-Subjective (i.e., III: Differ$_{SUBJECTIVE}$) by the two ERS sub-scales of CHB and PMF. The result also indicates a net suppressor effect within the regression model for the CHB sub-scale at Step 1. An examination of the product correlation for PMF (of .13) versus its standardized β weight (of .29) confirms the interpretation. This finding (at Step 1) suggests that a respondent's sense of being their own person by differentiating themselves from others in their lives (Roberts, 2007), is an inner process (i.e., related to spiritual practices focused on finding strength from within) rather than an external process (i.e., a spiritual practice that focuses on relinquishing 'control' to a higher being). This finding provides support for the premise that spiritual development towards latter stages of conceptual complexity is an inner process unique to each individual (Ho & Ho, 2007). With the introduction of the four sub-scales of the SBI: Brief at Step 2, the suppression effect on CHB remains with the LMPD sub-scale being the only other significant (and positive) predictor of III: Differ$_{SUBJECTIVE}$. This finding indicates that one's life meaning and purpose strongly predicts a respondent's sense of being their own person; whereas, connecting with a higher being (i.e., CHB sub-scale) diminishes this aspect of one's identity stage resolution.

A similar result was found for the III sub-scale of Differentiation-Behavioural (i.e., III: Differ$_{BEHAVIOURAL}$) which indicates that a respondent's sense that his/her life as unique and of their own choosing is predicated upon by a belief that one's life has meaning and purpose. Further, this belief is coupled with a reduced spiritual practice towards connecting with a higher being (i.e., the ERS sub-scale of CHB predicts negatively III: Differ$_{BEHAVIOURAL}$ in the regression model). This finding is not unsurprising given that the individualisation process (i.e., identity differentiation) results in greater self-authorship as opposed to relying on others (including a higher being) to frame problems or to determine if things in one's life are progressing well (Kegan, 1999). Further, this finding is supported by previous research examining the *Geotranscendence Scale* and religious involvement completed by Braam et al. (2006). Braam and his colleagues found that people self reporting higher levels of meaning in life report lower levels of explicit involvement in religiousness-oriented activities.

The regression model for the III sub-scale of Differentiated-Social (i.e., III: Differ$_{SOCIAL}$) shows PMF to be a significant predictor of this aspect of a respondent's identity stage resolution at Step 1. Upon inclusion in the regression model at Step 2, a respondent's spiritual beliefs (specifically LMPD) mediated the relationship of PMF to III: Differ$_{SOCIAL}$. The findings suggest that although prayers and meditations do predict positively a respondent's feelings that s/he has found a unique and self-sustaining niche in their community, the association is dependent upon a respondent also believing that one's life has a larger purpose and meaning beyond intermediatory pursuits. The extent to which a respondent believes that life has a purpose will impact his/her undertaking of a formal spiritual practice (e.g., prayers and/or meditations), which will determine his/her level of identity stage resolution related to III: Differ$_{SOCIAL}$.

A similar finding to that described for III: Differ$_{SOCIAL}$ was also found for III: Differ$_{TOTAL}$, suggesting that the SBI: Brief sub-scale of LMPD mediates PMF in predicting a respondent's sense of differentiation and individuation in the three "core" identities examined in the present study. LMPD is a strong positive predictor of identity stage resolution and could be argued to provide the antidote to a respondent's feelings of being overwhelmed and engulfed by certain others in one's immediate life, having a lack of behavioural control over

one's life, and being excessively dependent upon one's community or society (Cote & Roberts, 2003).

Finally, an examination of the regression model for the III Overall Total Composite (i.e., $III_{OVERALL\ TOTAL}$) suggests that the SBI: Brief sub-scale of LMPD mediates PMF in predicting a respondent's sense of integration and differentiation in the three "core" identities examined in the present study. Although not significant, of note is the finding for the OLM sub-scale in this model (β = -.15, p = .060). This non-significant finding suggests a possible trend related to LMPD whereby a respondent's openness to life's mysteries may contribute negatively to his/her identity stage resolution. This finding warrants further exploration.

8.5.1. Conclusion

The aim of the present study was to establish the utility of two facets of a holistic conceptual framework for considering spirituality in predicting identity stage resolution. The two facets of spiritual beliefs and spiritual practices were examined in relation to identity stage resolution and each facet's predictive validity tested.

Overall, the findings of the present study confirm previous research suggesting that spirituality is a meaning-making process through which an individual seeks to understand life's experiences. The study's first hypothesis was confirmed with explicit religiosity (an analog for spiritual practices) being weakly and positively correlated with a respondent's identity stage resolution. The findings suggest however, that explicit religiosity accounts for only 3% in shared variance with identity stage resolution. Given the extensive research promoting the beneficial role of formal religious practice upon Quality of Life (QoL) (Sawatzky et al., 2005) and sense of coherence (SoC) (George et al., 2002) – two constructs closely linked to identity stage resolution (Adams et al., 1989) – this finding requires further exploration. The present study's second hypothesis failed to be confirmed with three sub-scales of the SBI: Brief (namely, OLM, FWI and SDIG) failing to show a strong association with the six sub-scales of the III. Given the outcomes of the present study's first hypothesis, this finding was not totally unexpected. Previous findings of the present dissertation (refer to Chapter 7) also failed to find a statistically significant difference between ERS and SBI: Brief across four spiritual practice types (i.e., Monotheistic, Dharmic, New Age and Indigenous).

Further, the level of correlation between the ERS and SBI: Brief could be said to be very large (i.e., > .70) suggesting the two aspects of spirituality are inter-related, yet distinct. Given that ERS failed to correlate significantly with the III, it would follow that the SBI: Brief sub-scales with a strong association with ERS would also correlate poorly with the III and its six sub-scales. The strong correlation between the LMPD sub-scale and the six sub-scales of the III provides support for spirituality being a meaning-making process.

Considering the present study's fourth and final hypothesis, a respondent's self-reported explicit religiosity and spiritual beliefs both made significant contributions to the six sub-scales of the III (except for the Integrated-Behavioural sub-scale which failed to find a significant contribution for explicit religiosity). In all models performed for the six-sub-scales of the III, a respondent's spiritual beliefs was found to be the strongest predictor (i.e., mean ΔR^2 = .34). This demonstrates that spiritual beliefs accounted for (on average) 34% additional variance in III beyond explicit religiosity (i.e., mean R^2 for explicit religiosity = .040). The strongest single contributor across all regression models tested for the six-sub-scales of the III was the SBI: Brief sub-scale of LMPD (i.e., mean sr^2 = .33; 33.0% unique variance overall in the regression models tested).

Two additional conclusions are also of importance to the present study. First, an important element of any scale's validation process is an examination of its convergent and incremental predictive validity (Clark & Watson, 1995). This finding lends weight to both the convergent and incremental predicative validity of the SBI: Brief. First, the SBI: Brief shared 55.7% common variance with the present study's explicit religiosity measure (i.e., r = .75 between ERS_{TOTAL} and $Brief_{TOTAL}$). This finding suggests that there is a strong association between each scale without either scale being redundant. Second, the SBI: Brief demonstrated incremental predictive validity beyond explicit religiosity in predicting identity stage resolution. Of equal importance to the confirmation of the SBI: Brief's convergent and incremental predictive validity is the present study's findings that in several instances, the CHB sub-scale of the ERS and OLM sub-scale of the SBI: Brief predicted negatively identity stage resolution. The findings suggest that a respondent's practices pertaining to connection with a higher being and/or a universal belief that there is more to one's experience of his or her life than can be explained or physically studied is a potential liability in the resolution of

identity stages. Although an apparent conceptual paradox, one explanation might be that a person who believes they have meaning and purpose in life may be less likely to be open to the search for an even deeper purpose (i.e., why would one search for something they already have?). The *Meaning in Life Questionnaire* (MLQ) developed by Steger, Frazier and Oishi and Kaler (2006) assesses this paradox with two orthogonal sub-scales assessing Search for Meaning and Presence of Meaning. Their findings suggest these two elements are distinct with a non-significant correlation (i.e., $r = -.09$, $p = ns$) between the sub-scales. Although the items in the MLQ do relate directly to a life-meaning (similar to the LMPD sub-scale of the SBI: Brief), the Search for Meaning sub-scale does encourage the respondent to look beyond what is presently experienced (e.g., "I am always searching for something that makes my life feel significant"). A second explanation for the negative prediction of the CHB and OLM sub-scales in the present study may relate to the theorised non-linear developmental path for spirituality (Rosado, 2000). For example, it might also be interpreted that CHB and OLM both share a curvilinear relationship with identity stage resolution. The lower than expected product correlation between the spiritual beliefs sub-scale of OLM and the six sub-scales of the III, could be argued to be evidence of this explanation, as a non-linear relationship between two variables is likely to adversely impact their respective product correlation coefficient (Ganzach, 1997).

Although the present study successfully confirmed an association between spiritual practices, spiritual beliefs and identity stage resolution, a significant anomaly emerged. The results suggest that although one's spiritual beliefs are a stronger predictor of identity stage resolution (i.e., conceptual complexity stage transition), the relationship may not be linear. Further research is required to examine a potential non-linear relationship between spiritual beliefs and identity stage resolution.

Chapter 9

Examining the linear and non-linear (I.e., quadratic) relationship between the four factor model of spiritual beliefs and identity issue resolution across the lifespan

9.1. Chapter overview

The present chapter seeks to explore an age-related effect for spirituality and identity stage resolution. Using a cross-sectional study design, the present chapter seeks to confirm or disconfirm the linear and non-linear (i.e., quadratic) relationship between spiritual beliefs in predicting identity stage resolution across the lifespan. The findings of a previous study (refer to Chapter 8) indicated an anomaly in the Openness to Life's Mysteries (OLM) sub-scale of the Spiritual Beliefs Inventory: Brief Version (i.e., SBI: Brief) in predicting identity stage resolution, whereby OLM predicted negatively aspects of identity stage resolution in hierarchical regression analysis. Although non-significant, two of the remaining sub-scales of the SBI: Brief also reverted to a negative standardised beta-weight in the hierarchical regression analyses performed. As identity stage resolution is proposed to be analogous to conceptual complexity, the anomalous finding has significant implications for the development of an individual's stage of conceptual complexity (i.e., level of consciousness). A series of curve estimation and hierarchical regression analyses are performed to determine the relative predictive power of a linear and non-linear (i.e., quadratic) function of each sub-scale of the SBI: Brief in predicting components of identity stage resolution, namely: identity integration and identity differentiation. The findings of the present chapter are discussed in relation to previous research suggesting an age effect for spirituality. Finally, how the findings of the present study support the present dissertation's proposed holistic conceptual framework for considering spirituality are also outlined.

9.2. Introduction

The exploration of spiritualty across the lifespan is an ongoing focus for individual difference researchers (see Trouillet & Gana, 2009; Verno et al., 2007; Wink & Dillon, 2002). Research promotes that one's experience and practice of spirituality and religiosity (as rated by self and others) increases with age (Hickson, Housley, & Wages, 2000; Takahashi & Ide, 2003; Wink, Dillon, & Fay, 2005); however, findings both confirm and disconfirm the presence of age-effects related to spirituality. For example, in a study of Australian twins (*M* = 61.5 $\pm$ 8.7 years; range = 50-94 years), Kirk and her colleagues (1999) found support for an age-effect in spirituality. The study examined the phenomenon of self-transcendence as it relates to inheritability and found a positive association between age and self-reported self-transcendence. However, the finding was only confirmed for male respondents. In another study completed by Wink and Dillon (2002) examining age and spirituality from a developmental perspective, also found support for an age effect. Utilising a longitudinal study design consisting of three cohorts, Wink and Dillon (2002) report higher levels of spirituality in later life; however, the level of spirituality reported was dependent upon gender and the presence of a significant life event in younger life (for women only).

Other studies have even found a reverse age-effect. In one of the first studies to examine "softer" religious/spiritual (R/S) experiences[1], Levin (1993) found that younger respondents are more likely to experience R/S phenomenon such as *déjà-vu* or clairvoyance, than older respondents. In another study finding a similar result, Brennan (2004) examined the role of spirituality in predicting adaptation to vision loss in middle-aged and older adults and found that middle-aged respondents (*M* = 55.5 years; *SD* = 5.8 years) reported higher levels of spirituality (as measured by the *Spiritual Assessment Scale;* Howden, 1993) than older respondents (*M* = 78.5 years; *SD* = 7.4 years). As already argued, if spirituality supports an individual to make meaning from life's experiences, then these findings seem to suggest that people experience less meaning in life as they get older.

[1] "Soft" R/S experiences consist of indicators pertaining to beliefs and belief systems. Conversely, "hard" R/S experiences consist of indicators such as frequency of prayer and/or church attendance, etc.

Other studies still have found inconsistent results for age and spirituality. For example, in a study examining the role of age in facilitating spiritual well-being in adolescents with cancer, Hendricks-Ferguson (2006) found an age main-effect. However, the effect was found for adolescents aged between 15-17 years; whereby, younger (11-14 years) and older (18-20 years) adolescents reported lower levels of spiritual well-being than middle (15-17 years) adolescents. Given the high likelihood for ego development level transitions during adolescence (Hennighausen, Hauser, Billings, Schultz, & Allen, 2004), this finding is not unexpected.

Further, constructors of spirituality-based instruments have also reported mixed findings with respect to age and self-reported spirituality and religiosity. For example, the *Spiritual Transcendence Scale* (STS) developed by Piedmont (1999) shows age effects with older respondents scoring higher than younger respondents for two of its sub-scales (namely, Universality and Connectedness) as well as its Total Composite score. However, these findings are somewhat questionable as the mean age in the cited validation study was 18.5 years (*SD* = 2.1; range 17 to 40 years) with the number of respondents over the age of 30 years in the study only equalling 13. Indeed, a second study completed by Piedmont also utilising a young India-based sample (i.e., *M* = 21 years; range = 17-27 years) failed to find the theorised factor structure of the STS (Piedmont & Leach, 2002). In this study, respondents failed to endorse consistently items pertaining to the Connectedness sub-scale. This finding not only suggests that younger people experience self-transcendence inconsistently, it also raises the potential statistical artefact issue of cohort replacement as it relates to age and spirituality (Argue, Johnson, & White, 1999). Similarly, the *Meaning in Life Questionnaire* (MLQ) developed by Steger et al. (2006) shows that older respondents do score higher than younger respondents on the scale's Presence of Meaning sub-scale. However, as with the STS, the mean age in the scale's validation study was 21.1 years (*SD* = 5.2) and is not likely to be a true reflection of the broader population. A third scale validation study examining the utility of the *Geotranscendence Scale* and *Framework of Meaning in Life Scale* in The Netherlands, completed by Braam et al. (2006), failed to find an age-effect related to spirituality. Utilising an older sample (*M* = 73.1 years; *SD* = 2.9 years; range = 67-82 years), Braam et al. (2006) failed to identify significant associations between age and both the *Geotranscendence Scale* (*r* = .04, *p = ns*) and Framework of Meaning in Life

Scale (r = -.01, p = *ns*). As with the STS and MLQ, the age range used for Braam et al.'s (2006) sample (of 67-82 years) is not likely to be a true reflection of the broader population. Conversely, in validating the *Adult Self-Transcendence Inventory* (ASTI) Levenson (2005) utilised a more age representative sample consisting of respondents aged from 18 to 73 years (M = 34 years; SD = 12 years). In this validation study, Levinson failed to find an age effect for both the Self-Transcendence (r = .06, p = *ns*) and Alienation (r = -.02, p = *ns*) sub-scales of the instrument. Subsequent analysis examining a potential non-linear age effect (i.e., quadratic) was also performed and failed to identify an age effect for the scale (Levenson et al., 2005).

Of particular note to the examination of age effects and spirituality measurement, is the large number of scale validation studies that fail to explore age related effects (e.g., Genia, 1997; Gomez & Fisher, 2005; Hall, Reise, & Haviland, 2007; Mascaro, Rosen, & Morey, 2004; Nasel et al., 2005). The reasons for this could be argued to be many. For example: (1) age effects were not the focus of the study; (2) inadequate 'space' provided by journal editors (e.g., a pre-specified word limit for a submitted article) to report on age effects in the article; (3) reporting on age effects may have been an extraneous confound to reported findings; (4) findings pertaining to age were inconclusive; or (5) no age effect was found and therefore the author(s) deemed it irrelevant to report upon it. Given the lack of consistency in the affect of age effects in spirituality based research (although they are heralded as present by many; see Takahashi & Ide, 2003, for example), the question emerges: Is there a third unaccounted for variable that is influencing the association between age and level of spirituality? And if this first question can be answered in the affirmative, the follow up question is: What might the third unaccounted variable be?

Argue, Johnson and White (1999) set out to answer these two questions empirically in a study applying a pooled time-series technique and utilising multi-wave panel data. Argue et al. (1999) hypothesised that relationships between age and R/S can generally be explained by one of three theoretical processes, namely: (1) changes in self-reported R/S occur as a result of developmental processes related to age (e.g., a respondent's level of ego-development); (2) correlated changes between self-reported R/S and age are not related to one's developmental process but to one's social role (e.g., role within the family, life stage

factors, etc); or (3) observed differences between self-reported R/S and age are a statistical artefact related to either cohort replacement or period effects (e.g., an older person self-reporting higher levels of religiosity as a result of religion being more explicitly endorsed within society when s/he was younger). In their study examining over 1,000 respondents in the U.S., Argue et al. (1999) confirmed that changes in self-reported R/S occur as a result of developmental processes related to age. Further, Argue and her colleagues (1999) identified that the developmental process is likely to be curvilinear (e.g., quadratic), with the acceleration of the curve being in the younger ages[2]. This finding provides further support to the present dissertation's findings from an earlier study (refer to Chapter 8) suggesting a non-linear relationship between spirituality and identity stage resolution[3].

Argue et al.'s (1999) finding confirms that the development of one's spirituality is more likely to be related to his/her stage of development (for example, identity formation) than other factors assessed in their study. However, most research examining spirituality fails to take into account one's stage of psycho-social development (i.e., ego development). As previously shown by the present researcher, one's spiritual beliefs (as measured by the Spiritual Beliefs Inventory: Brief version; SBI: Brief) do share common variance with identity formation and identity stage resolution (refer to Chapter 8). More specifically, one's spiritual beliefs were found to predict identity stage resolution beyond explicit religiosity[4]. This finding is supported by previous research suggesting that religiousness is relatively stable throughout adulthood (with patterns pertaining to one's religious *practice* being established in early adulthood and maintained throughout life); whereas, spirituality appears to be a post mid-life phenomenon (Brennan, 2002; Wink & Dillon, 2003).

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[2] This finding suggests a *convex* curve between R/S and age.

[3] Contrary to the findings of Argue et al. (1999), the findings of the present dissertation (refer to Chapter 8) suggest a *concave* curvilinear relationship between spirituality (i.e., one's spiritual beliefs) and identity stage resolution.

[4] Spiritual beliefs accounted for (on average) 34% additional variance in identity stage resolution (as measured by the *Identity Issues Inventory*; III) beyond explicit religiosity (i.e., mean R^2 for explicit religiosity = .040).

Chapter 9: Examining the linear and non-linear (i.e., quadratic) relationship between the four factor model of spiritual beliefs and identity issue resolution across the lifespan

The present dissertation argues that the capacity to ask oneself existential and transcendental-oriented questions is dependent upon one's level of conceptual complexity (refer to Chapter 3 for a summary of the concept). Although not synonymous, the present researcher has already outlined how one's level of ego-development operates as a "self-theory" or a meta-cognitive process that allows a person to become aware of being aware … and to increase awareness towards infinitely higher degrees of construal of self and environment (Ho & Ho, 2007). As such, one's level of construal of self-in-context can be indexed in terms of degrees of conceptual complexity with one's identity stage transition being a more concrete indicator of his/her development towards more expansive levels of conceptual complexity.

One's identity formation, according to Erikson (1994), is an ongoing process involving the synthesis of an individual's adult identifications (i.e., multiple identities), values and behaviours into a coherent sense of self as both separate and related to a larger community. In developing his theories of psycho-social development, Erikson proposed that one's ego development was the most important of subjective tasks as it pertains to the development of selfsameness and continuity. In this way, "… ego identity concerns more than the mere fact of existence, as conveyed by personal identity; it is the ego quality of this existence (p. 22)" (Erikson, 1994). One's development of ego is a dynamic process that is influenced via dialectic-like mechanisms that involves distress, incompatibility and incompleteness, coupled with synthesis and/or resolution towards an enhanced experience of self (Adams et al., 1989). In relation to stages of ego-development, Erikson used the term *epigenesis* to denote the concept that the successful resolution of latter identity stages requires the re-experiencing of earlier stages, and that people also anticipate upcoming stages and tensions (Steger et al., 2006). In this way, identity stage tension and resolution is an ongoing process that occurs throughout the lifespan (Jones & Meredith, 2000). Further, identity development is non-linear because one's level of conceptual complexity pertains to increasing degrees of meta-cognitive construal that, theoretically, can result in an 'acceleration' of identity development in middle and latter life. This theory was examined empirically by Jones and Meredith (2000) in a longitudinal study examining ego development (as operationalised by the *Psychological Health Index*; PHI). Jones and Meredith (2000) examined the psychological health of three separate cohorts at six time points (14, 18, 30, 40, 50 and 62 years) using

latent curve analysis and found PHI results remained stable in early adulthood (i.e., less than 30 years) and increased steadily from 30 years to 62 years of age. As a result of these findings, it could be argued that each identity stage resolution results in an expanded sense of self (Wink & Dillon, 2002). In this way, identity development could be depicted visually via an (infinitely) expanding spiral (Rosado, 2000; Wilbur, 2006).

9.2.1. The objectives of the present study

The present dissertation reconceptualises spirituality as consisting of increasing levels of abstraction with one's spiritual beliefs and level of conceptual complexity being the more ethereal. Previous findings of the present dissertation have indicated a potential non-linear relationship between one's spiritual beliefs (primarily one's openness to life's mysteries) and identity stage resolution. The present study seeks to confirm or disconfirm the linear and non-linear (i.e., quadratic) relationship between spiritual beliefs in predicting identity stage resolution.

Identity stage resolution is theorised to consist of a dual process of identity integration (i.e., a sense of wholeness and unity) and differentiation (i.e., a sense of uniqueness and individualisation). According to identity theorist Erik Erikson, this process occurs more than once (Erikson, 1994). One's identity stage resolution is characterised by the way the individual resolves a developmental period that results in the individual gaining a long term commitment to his or her adult roles (Roberts, 2007). During a stage transition, an individual is likely to experience incompatibility and incompleteness with one's current identity stage, followed by a synthesis and/or resolution towards an enhanced identity stage. The present researcher argues that it is this ongoing life process of identity integration-fragmentation-reintegration that is the cornerstone of conceptual complexity development.

Given that spiritual beliefs are the 'filters' through which spiritual experiences are screened, interpreted, understood and integrated as aspects of one's broader identity, the aim of the present study is to explore how one's spiritual beliefs predict one's identity stage resolutions. The specific aims of the present study are four-fold, namely: (1) to determine the predictive nature of spiritual beliefs (i.e., linear versus non-linear) in predicting one's

progression towards identity stage resolution; (2) to determine the effect of age upon one's self-reported spiritual beliefs; (3) to determine the effect of age upon one's self-reported identity stage resolution; and (4) to determine the predictive nature of spiritual beliefs (i.e., linear versus non-linear) in predicting one's progression towards identity stage resolution for five pre-determined age groups. Given the findings of a previous study (refer to Chapter 8), it is anticipated that a respondent's spiritual beliefs will have a non-linear association with identity stage resolution across the lifespan.

9.2.1.1. Hypotheses

The specific hypotheses explored were that there would be a linear and non-linear (i.e., quadratic) association between the Spiritual Beliefs Inventory: Brief Version (SBI: Brief) and its four sub-scales and III: Integration – Total Composite scores, with III: Integration – Total Composite scores regressed onto the SBI: Brief scores. There would be a linear and non-linear (i.e., quadratic) association between SBI: Brief and its four sub-scales and III: Differentiation – Total Composite scores, with III: Differentiation – Total Composite scores regressed onto the SBI: Brief scores. There would be a linear and non-linear (i.e., quadratic) association between SBI: Brief – Total Composite and III – Overall Total Composite scores, with III – Overall Total Composite scores regressed onto the SBI: Brief scores. There would be a non-significant difference between five age groups (namely: 30 years or less; 31 to 40 years; 41 to 50 years; 51 to 60 years; and 61 years or greater[5]) for SBI: Brief – Total Composite. Further, older respondents would score higher on the III – Overall Total Composite than younger respondents according to the five age group demarcations. There would be a linear and non-linear (i.e., quadratic) association between SBI: Brief – Total Composite and III – Overall Total Composite scores for respondents aged 30 years or less. There would be a linear and non-linear (i.e., quadratic) association between SBI: Brief – Total Composite and III – Overall Total Composite scores for respondents aged between 31 and 40 years. There would be a linear and non-linear (i.e., quadratic) association between SBI: Brief – Total Composite and III – Overall Total Composite scores for respondents aged between 41

[5] Age groupings were selected somewhat arbitrarily; however, were based upon the age groupings of previous longitudinally-designed research studies (for example, Jones & Meredith, 2000; Wink & Dillon, 2002)

and 50 years. There would be a linear and non-linear (i.e., quadratic) association between SBI: Brief – Total Composite and III – Overall Total Composite scores for respondents aged between 51 and 60 years. Finally, there would be a linear and non-linear (i.e., quadratic) association between SBI: Brief – Total Composite and III – Overall Total Composite scores for respondents aged 61 years or greater.

9.3. Method

9.3.1. Participants

Participants were a convenient sample recruited via the Internet. A total of 331 respondents participated in the study. Additional details pertaining to the sample are presented in Chapter 4.

9.3.2. Instruments

Identity Issues Inventory (III). The present study utilised a shortened (36 item) version of the III developed by Cote and Roberts (2003). Additional detail pertaining to the III is presented in Chapter 8.

Spiritual Beliefs Inventory: Brief Version (SBI: Brief). The SBI: Brief is a four factor model and measure of an individual's spiritual beliefs. Additional detail pertaining to the SBI: Brief is presented in Chapter 6.

9.3.3. Procedure

The questionnaire battery was administered via the Internet with participants responding anonymously. Participants were provided the opportunity to supply a return email address should they want to be informed of the results of the study. Participants were recruited from various sources, including word of mouth of the researcher, online forums and online social networking websites. Participants were provided an overview of the study's purpose via an introductory statement and were informed that participation was voluntary and that they were free to withdraw from participating at any time.

9.3.4. Data analytic strategy

An examination of the linear and non-linear (i.e., quadratic[6]) relationship between the four sub-scales of the Spiritual Beliefs Inventory: Brief Version (i.e., SBI: Brief) and the composite scores of the Identity Issues Inventory (III) was undertaken. The linear and non-linear associations between an individual's identity stage resolution (as measured by the III) and the four sub-scales of the SBI: Brief were examined using multiple regression, as described in Pedhazur (1997, pp. 541–547). Pedhazur (1997) states the importance of only submitting variables to non-linear analysis with high reliability. Therefore, in accordance with the recommendation of Clark and Watson (1995), a minimum threshold for inclusion in the analysis of α |0.80| was set. Given the nature of the present study, the only exception to this demarcation was the α = 0.79 for the SDIG sub-scale of the SBI: Brief.

To examine the present study's first, second and third hypotheses, III composite scores (i.e., Integrated – Total Composite, III: $Integ_{TOTAL}$; Differentiated – Total Composite, III: $Differ_{TOTAL}$; and III – Overall Total Composite, $III_{OVERALL\ TOTAL}$)[7] were regressed onto the linear scores of each sub-scale (i.e., OLM, LMPD, FWI and SDIG) of the SBI: Brief at Step 1, and then regressed onto both the linear and the non-linear (i.e., OLM^2, $LMPD^2$, FWI^2 and $SDIG^2$) scores at Step 2. A statistically significant R^2 at Step 2 was deemed a suitable indicator of a non-linear (i.e., quadratic) association between identity stage resolution and spiritual beliefs. Such a result would be evidence of the unique predictive validity of transformed (i.e., quadratic) SBI: Brief sub-scales scored for identity stage resolution.

To examine the present study's fourth and fifth hypotheses, the study's sample was categorised by age according to five arbitrary demarcations, namely: less than 30 years, 31 to 40 years, 41 to 50 years, 51 to 60 years and 61 years or greater. A one-way Analysis of Variance (ANOVA) was performed between the four sub-scales and Total Composite score of the SBI: Brief and the five age categories to examine the study's fourth hypothesis. A one-

[6] Given that the vast majority of meaningful non-linear associations in psychology tend to be quadratic, that is, one bend in the regression line (Pedhazur, 1997), only a quadratic function will be tested.

[7] For ease of interpretation of regression scatter plots, III composite scores were converted to mean scores; whereby, scores range from 1 ('*Strongly disagree*') to 6 ('*Strongly agree*').

way ANOVA was also performed between III: $Integ_{TOTAL}$, III: $Differ_{TOTAL}$ and $III_{OVERALL\ TOTAL}$ and the five age categories to examine the study's fifth hypothesis.

To examine the present study's sixth, seventh, eighth, ninth and tenth hypotheses, according to the five age groups, $III_{OVERALL\ TOTAL}$ scores were regressed onto the linear scores of SBI: Brief – Total Composite (i.e., SBI: $Brief_{TOTAL}$) at Step 1, and then regressed onto both the linear and the non-linear (i.e., SBI: $Brief_{TOTAL}^2$) scores at Step 2. A statistically significant R^2 at Step 2 was deemed a suitable indicator of a non-linear (i.e., quadratic) association between identity stage resolution and spiritual beliefs for each age group.

9.4. Results

How the SBI: Brief and its four sub-scales are associated with identity stage resolution

To test hypothesis one, a series of five curve estimation and hierarchical regression analyses were performed. As presented in Table 9.1, both linear and quadratic relationships between OLM and III Integrative: Total Composite (i.e., III: $Integ_{TOTAL}$) scores were analysed to determine the line of best fit. At Step 1, the linear function was found to be significant, R^2 = .03, b_1 = .11, $F_{1, 329}$ = 8.81, p =.003. At Step 2, the quadratic function was also found to be significant, R^2 = .14, b_1 = -1.07, b_2 = .14, $F_{2, 328}$ = 26.51, p < .001 and accounted for 13.9% of the variance in III: $Integ_{TOTAL}$ scores, with the unique predictive validity of the non-linear association being R^2 = .11. The change in R^2 was also statistically significant at Step 2. It can be seen from Figure 9.1 that the quadratic relationship between OLM and III: $Integ_{TOTAL}$ scores from the lowest OLM range to an approximate level of 4 (out of a possible 6) was found to be negative; however, after an OLM level of 4, the negative association largely disappears with some suggestion of a positive association between OLM and III: $Integ_{TOTAL}$ at the highest range of OLM scores.

Table 9.1

Hierarchical regression analysis (Method: Enter) regressing III Integrated: Composite Total onto OLM and OLM^2 (N=331)

Variables entered	Model 1	Model 2
OLM (Std β)	.16	-1.65
OLM^2 (Std β)		1.84
R	.16	.37
R^2	.03	.14
ΔR^2		.11

Note: Std β = Standardised beta (β) weight; R^2 and ΔR^2 results in bolded text failed to achieve statistical significance ($p < .05$).

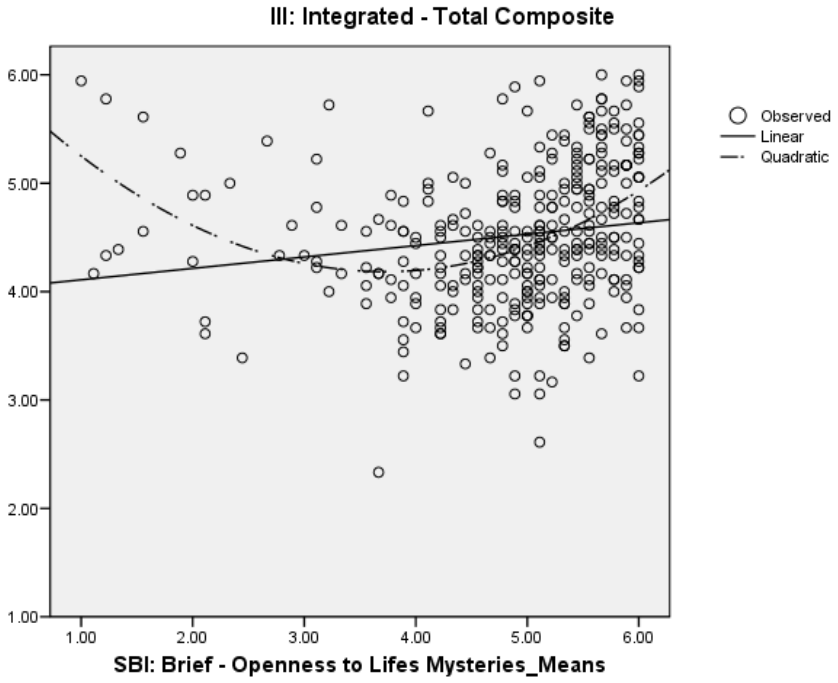

Figure 9.1: Scatter plot depicting the linear and non-linear (quadratic) associations between OLM and III: Integ$_{TOTAL}$. Circles represent data points.

As presented in Table 9.2, both linear and quadratic relationships between LMPD and III: $Integ_{TOTAL}$ scores were analysed to determine the line of best fit. At Step 1, the linear function was found to be significant, R^2 = .44, b_1 = .67, $F_{1, 329}$ = 258.92, p < .001. At Step 2, the quadratic function was also found to be significant, R^2 = .45, b_1 = -.07, b_2 = .080, $F_{2, 328}$ = 132.80, p < .001 and accounted for 44.7% of the variance in III: $Integ_{TOTAL}$ scores, with the unique predictive validity of the non-linear association being R^2 = .01. The change in R^2 was also statistically significant at Step 2.

Table 9.2

Hierarchical regression analysis (Method: Enter) regression III Integrated: Composite Total onto LMPD and LMPD^2 (N=331)

Variables entered	Model 1	Model 2
LMPD (Std β)	.66	-.07
LMPD^2 (Std β)		.74
R	.66	.67
R^2	.44	.45
ΔR^2		.01

Note: Std β = Standardised beta (β) weight; R^2 and ΔR^2 results in bolded text failed to achieve statistical significance (p < .05).

It can be seen from Figure 9.2 that the linear relationship between LMPD and III: $Integ_{TOTAL}$ scores from the lowest LMPD range to an approximate level of 3.5, which is where the non-linear and linear lines intercept, was found to be non-existent; however, after an LMPD level of 3.5, the linear association largely appears with some suggestion of an emergent non-linear and positive association between LMPD and III: $Integ_{TOTAL}$ at the highest range of LMPD scores (i.e., LMPD scores > 5).

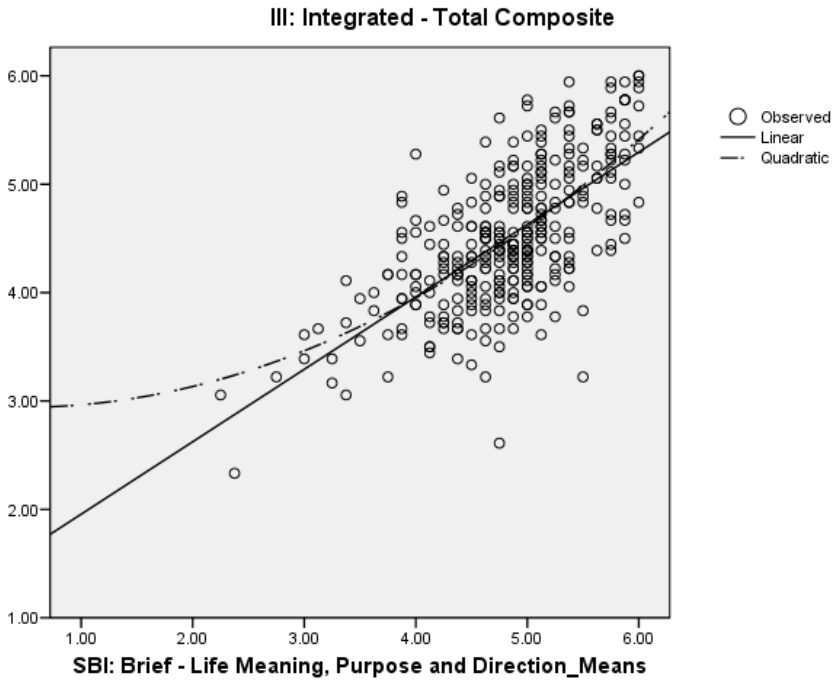

Figure 9.2: Scatter plot depicting the linear and non-linear (quadratic) associations between LMPD and III: $Integ_{TOTAL}$. Circles represent data points.

As presented in Table 9.3, both linear and quadratic relationships between FWI and III: $Integ_{TOTAL}$ scores were analysed to determine the line of best fit. The linear function was found to be significant, $R^2 = .09$, $b_1 = .23$, $F_{1, 329} = 32.07$, $p < .001$. The quadratic function however, was found to be non-significant in predicting any additional unique variance, $R^2 = .09$, $b_1 = -.04$, $b_2 = .03$, $F_{2, 328} = 16.42$, $p < .001$. The change is R^2 score (i.e., ΔR^2) was also found to be non-significant. A visual review of the scatter plot (Figure 9.3) supports this interpretation with both the linear and non-linear fitting lines appearing to be both positive and represent in unison that as a respondent's scores for FWI increase so do his/her integrative sense of inner unity and wholeness.

Table 9.3

Hierarchical regression analysis (Method: Enter) regression III Integrated: Composite Total onto FWI and FWI^2 (N=331)

Variables entered	Model 1	Model 2
FWI (Std β)	.30	-.05
FWI^2 (Std β)		.35
R	.30	.30
R^2	.09	**.09**
ΔR^2		**.00**

Note: Std β = Standardised beta (β) weight; R^2 and ΔR^2 results in bolded text failed to achieve statistical significance ($p < .05$).

Figure 9.3: Scatter plot depicting the linear and non-linear (quadratic) associations between FWI and III: Integ$_{TOTAL}$. Circles represent data points.

As presented in Table 9.4, both linear and quadratic relationships between SDIG and III: $Integ_{TOTAL}$ scores were analysed to determine the line of best fit. The linear function was found to be significant, R^2 = .04, b_1 = .23, $F_{1, 329}$ = 13.10, p < .001. The quadratic function however, was found to be non-significant in predicting any additional unique variance, R^2 = .04, b_1 = -1.07, b_2 = .13, $F_{2, 328}$ = 7.62, p = .001. The change is R^2 score (i.e., ΔR^2) was also found to be non-significant.

Table 9.4

Hierarchical regression analysis (Method: Enter) regression III Integrated: Composite Total onto SDIG and SDIG^2 (N=331)

Variables entered	Model 1	Model 2
SDIG (Std β)	.20	-.90
SDIG^2 (Std β)		1.10
R	.20	.21
R^2	.04	**.04**
ΔR^2		**.01**

Note: Std β = Standardised beta (β) weight; R^2 and ΔR^2 results in bolded text failed to achieve statistical significance (p < .05).

The scatter plot depicting the linear and non-linear association between SDIG and III: $Integ_{TOTAL}$ is presented in Figure 9.4.

Figure 9.4: Scatter plot depicting the linear and non-linear (quadratic) associations between SDIG and III: $Integ_{TOTAL}$. Circles represent data points.

Table 9.5

Hierarchical regression analysis (Method: Enter) regression III Integrated: Composite Total onto SBI: Composite Total and SBI: Composite Total^2 (N=331)

Variables entered	Model 1	Model 2
SBI: $Brief_{TOTAL}$ (Std β)	.40	-.51
SBI: $Brief_{TOTAL}^2$ (Std β)		.92
R	.40	.42
R^2	.16	.18
ΔR^2		.02

Note: Std β = Standardised beta (β) weight; R^2 and ΔR^2 results in bolded text failed to achieve statistical significance ($p < .05$).

As presented in Table 9.5, both linear and quadratic relationships between SBI: Brief$_{TOTAL}$ and III: Integ$_{TOTAL}$ scores were analysed to determine the line of best fit. The linear function was found to be significant, R^2 = .16, b_1 = .43, $F_{1, 329}$ = 60.68, p < .001. The quadratic function was found to be significant in predicting additional unique variance at Step 2, R^2 = .18, b_1 = -1.07, b_2 = .16, $F_{2, 328}$ = 34.69, p = .001. The change in R^2 at Step 2 was statistically significant (i.e., ΔR^2 = .02; p = .006). It can be seen from Figure 9.5 that the quadratic relationship between SBI: Brief$_{TOTAL}$ and III: Integ$_{TOTAL}$ from the lowest SBI: Brief$_{TOTAL}$ range to an approximate level of 4 was found to be negative; however, after an SBI: Brief$_{TOTAL}$ level of 4, the negative association largely disappears with some suggestion of a positive association between SBI: Brief$_{TOTAL}$ and III: Integ$_{TOTAL}$ at the highest range of SBI: Brief$_{TOTAL}$.

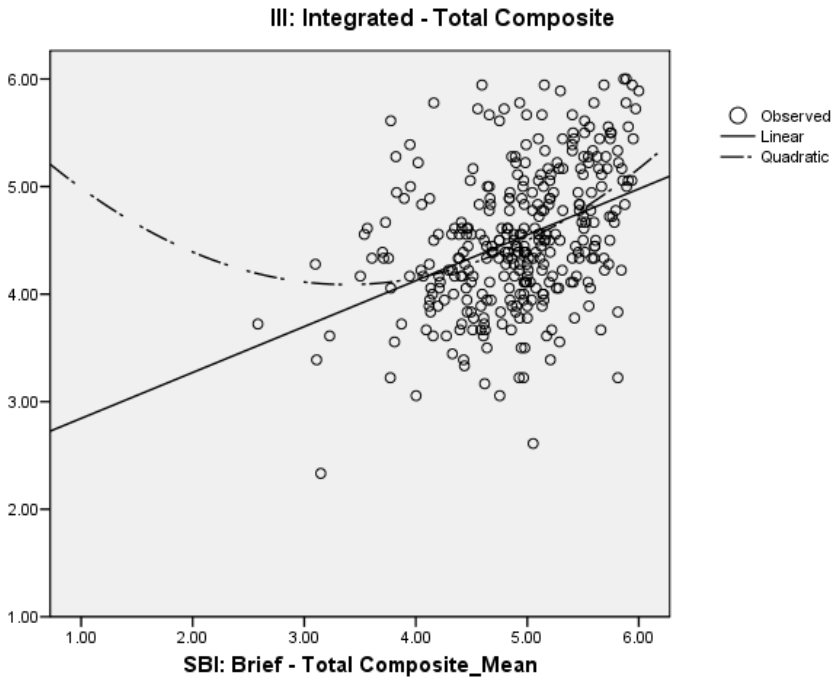

Figure 9.5: Scatter plot depicting the linear and non-linear (quadratic) associations between SBI: Brief$_{TOTAL}$ and III: Integ$_{TOTAL}$. Circles represent data points.

To test hypothesis two, a series of five curve estimation and hierarchical regression analyses were performed. As presented in Table 9.6, both linear and quadratic relationships between OLM and III: Differ$_{TOTAL}$ scores were analysed to determine the line of best fit. The linear function was found to be significant, R^2 = .03, b_1 = .12, $F_{1, 329}$ = 11.25, p = .001. The

quadratic function was also found to be significant, R^2 = .20, b_1 = -1.37, b_2 = 18, $F_{2, 328}$ = 41.68, p < .001 and accounted for 20.3% of the variance in III: $Differ_{TOTAL}$ scores, with the unique predictive validity of the non-linear association being $R^{2 =}$ .17. The change in R^2 was statistically significant at Step 2.

Table 9.6

Hierarchical regression analysis (Method: Enter) regression III Differentiated: Composite Total onto OLM and OLM^2 (N=331)

Variables entered	Model 1	Model 2
OLM (Std β)	.18	-2.03
OLM^2 (Std β)		2.25
R	.18	.45
R^2	.03	.20
ΔR^2		.17

Note: Std β = Standardised beta (β) weight; R^2 and ΔR^2 results in bolded text failed to achieve statistical significance (p < .05).

It can be seen from Figure 9.6 that the quadratic relationship between OLM and III: $Differ_{TOTAL}$ scores from the lowest OLM range to an approximate level of 4 was found to be negative; however, after an OLM level of 4, the negative association largely disappears with some suggestion of a positive and non-linear association between OLM and III: $Differ_{TOTAL}$ at the highest range of OLM scores.

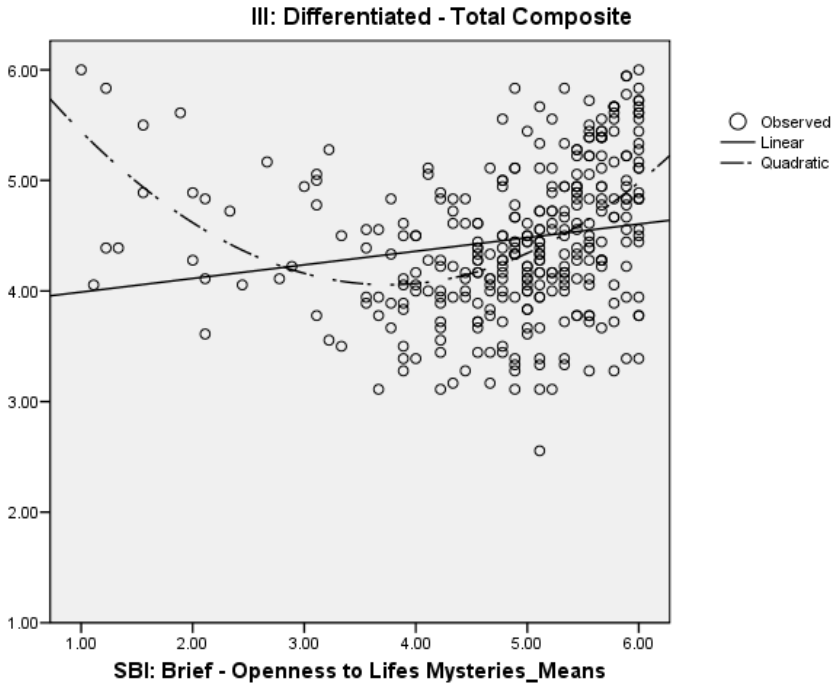

Figure 9.6: Scatter plot depicting the linear and non-linear (quadratic) associations between OLM and III: $Differ_{TOTAL}$. Circles represent data points.

As presented in Table 9.7, both linear and quadratic relationships between LMPD and III: $Differ_{TOTAL}$ scores were analysed to determine the line of best fit. The linear function was found to be significant, $R^2 = .51$, $b_1 = .75$, $F_{1, 329} = 347.26$, $p < .001$. The quadratic function was also found to be significant, $R^2 = .54$, $b_1 = -.69$, $b_2 = .16$, $F_{2, 328} = 191.19$, $p < .001$ and accounted for 53.8% of the variance in III: $Differ_{TOTAL}$ scores, with the unique predictive validity of the non-linear association being $R^{2\,=} .02$. The change in R^2 was statistically significant at Step 2.

Table 9.7

Hierarchical regression analysis (Method: Enter) regression III Differentiated: Composite Total onto LMPD and LMPD^2 (N=331)

Variables entered	Model 1	Model 2
LMPD (Std β)	.72	-.66
LMPD^2 (Std β)		1.39
R	.72	.73
R^2	.51	.54
ΔR^2		.02

Note: Std β = Standardised beta (β) weight; R^2 and ΔR^2 results in bolded text failed to achieve statistical significance ($p < .05$).

It can be seen from Figure 9.7 that the linear relationship between LMPD and III: Differ$_{TOTAL}$ scores from the lowest LMPD range to an approximate level of 3.7, which is where the non-linear and linear lines intercept, was found to be non-existent. However, after an LMPD level of 3.7, the linear association largely appears with some suggestion of an emergent non-linear and positive association between LMPD and III: Differ$_{TOTAL}$ at the highest range of LMPD scores (i.e., LMPD scores > 5).

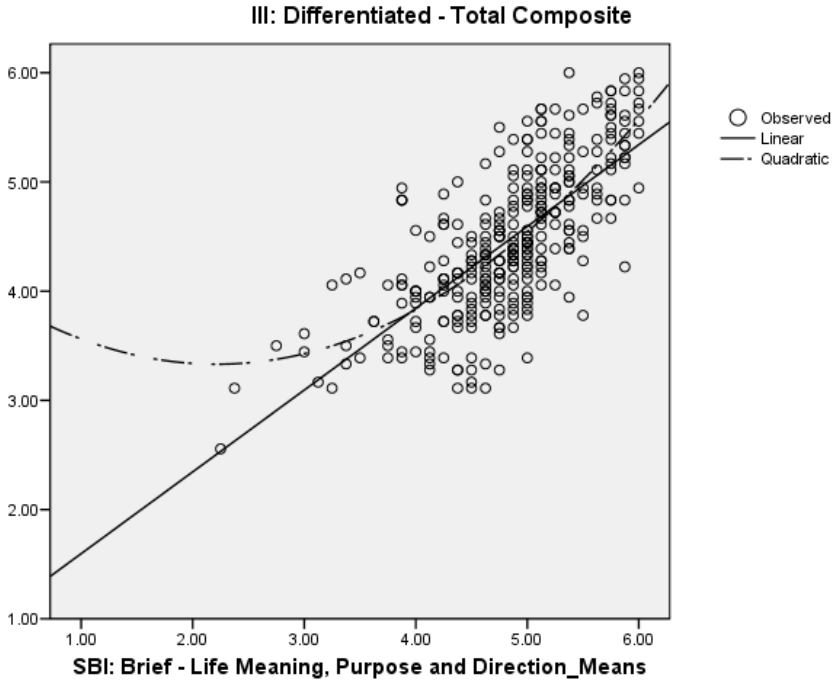

Figure 9.7: Scatter plot depicting the linear and non-linear (quadratic) associations between LMPD and III: $Differ_{TOTAL}$. Circles represent data points.

As presented in Table 9.8, both linear and quadratic relationships between FWI and III: $Differ_{TOTAL}$ scores were analysed to determine the line of best fit. The linear function was found to be significant, R^2 = .10, b_1 = .24, $F_{1, 329}$ = 34.54, p < .001. The quadratic function was also found to be significant in predicting additional unique variance, R^2 = .11, b_1 = -.57, b_2 = .09, $F_{2, 328}$ = 21.14, p < .001, in III: $Differ_{TOTAL}$ scores with the unique predictive validity of the non-linear association being $R^{2 =}$ .02. The change in R^2 was statistically significant at Step 2.

Table 9.8

Hierarchical regression analysis (Method: Enter) regression III Differentiated: Composite Total onto FWI and FWI^2 (N=331)

Variables entered	Model 1	Model 2
FWI (Std β)	.31	-.72
FWI^2 (Std β)		1.04
R	.31	.34
R^2	.10	.11
ΔR^2		.02

Note: Std β = Standardised beta (β) weight; R^2 and ΔR^2 results in bolded text failed to achieve statistical significance ($p < .05$).

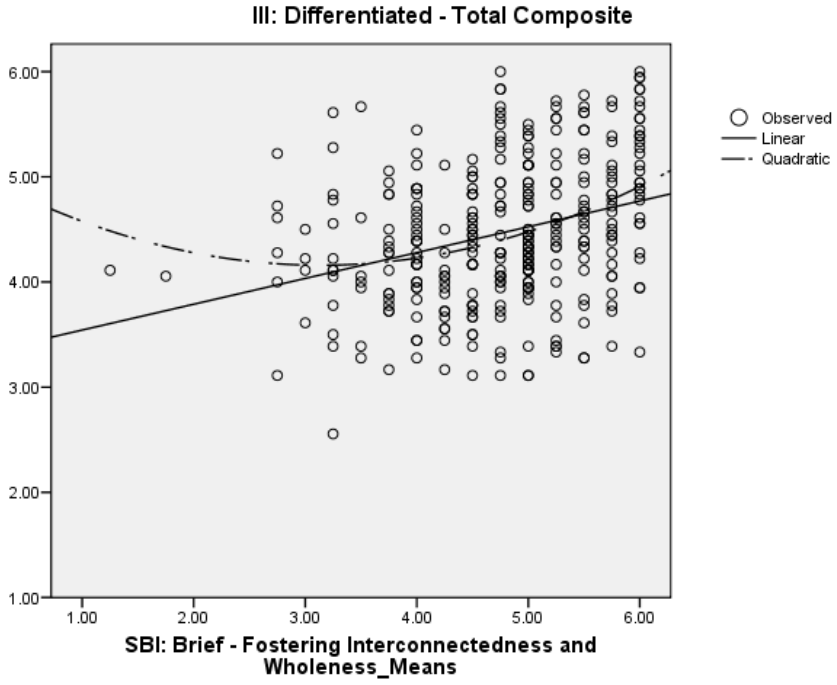

Figure 9.8: Scatter plot depicting the linear and non-linear (quadratic) associations between FWI and III: Differ$_{TOTAL}$. Circles represent data points.

It can be seen from Figure 9.8 that the quadratic relationship between FWI and III: $Differ_{TOTAL}$ from the lowest FWI range to an approximate level of 3.5 was found to be negative and non-linear. However, when the non-linear and linear lines intersect, the negative association largely disappears with some suggestion of a positive association between FWI and III: $Differ_{TOTAL}$ at the highest range of FWI scores.

As presented in Table 9.9, both linear and quadratic relationships between SDIG and III: $Differ_{TOTAL}$ scores were analysed to determine the line of best fit. The linear function was found to be significant, R^2 = .05, b_1 = .27, $F_{1, 329}$ = 16.12, p < .001. The quadratic function was also found to be significant in predicting additional unique variance, R^2 = .07, b_1 = -2.47, b_2 = .27, $F_{2, 328}$ = 12.66, p < .001, in III: $Differ_{TOTAL}$ scores with the unique predictive validity of the non-linear association being $R^{2 =}$ .02. The change in R^2 was statistically significant at Step 2.

Table 9.9

Hierarchical regression analysis (Method: Enter) regression III Differentiated: Composite Total onto SDIG and SDIG^2 (N=331)

Variables entered	Model 1	Model 2
SDIG (Std β)	.22	-2.00
SDIG^2 (Std β)		2.22
R	.22	.27
R^2	.05	.07
ΔR^2		.02

Note: Std β = Standardised beta (β) weight; R^2 and ΔR^2 results in bolded text failed to achieve statistical significance (p < .05).

It can be seen from the scatter plot presented in Figure 9.9 that there are a large number of respondents with high scores for SDIG with no respondents scoring below approximately 3.5 (out of a possible 6). As show in Figure 8, the intersection of the linear

and non-linear fitting lines at a SDIG score of approximately 4.2 indicated a strong positive and non-linear (quadratic) association between SDIG and III: Differ$_{TOTAL}$ at the highest range of SDIG scores.

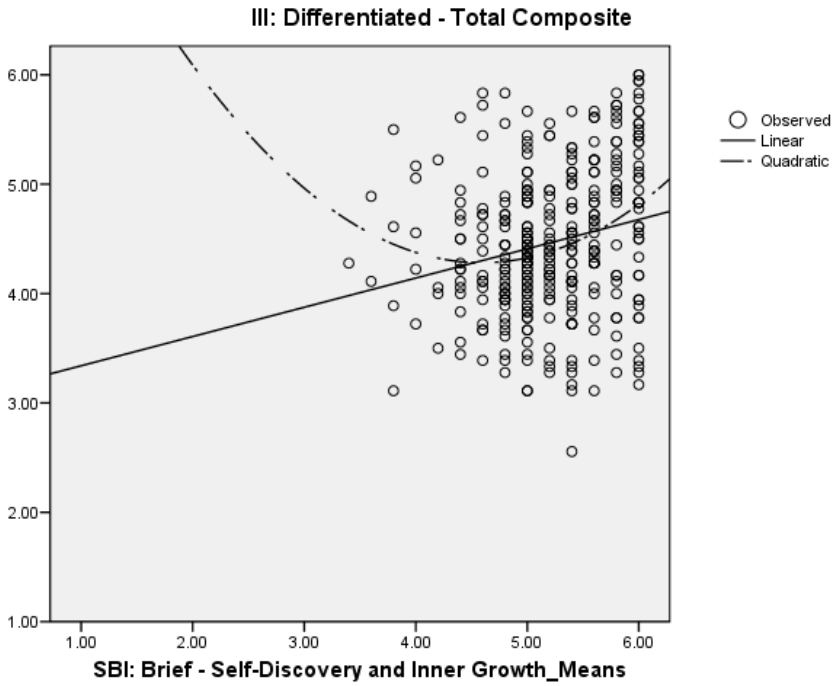

Figure 9.9: Scatter plot depicting the linear and non-linear (quadratic) associations between SDIG and III: Differ$_{TOTAL}$. Circles represent data points.

As presented in Table 9.10, both linear and quadratic relationships between SBI: Brief$_{TOTAL}$ and III: Differ$_{TOTAL}$ scores were analysed to determine the line of best fit. The linear function was found to be significant, R^2 = .18, b_1 = .48, $F_{1, 329}$ = 72.73, p < .001. The quadratic function was also found to be significant, R^2 = .23, b_1 = -2.35, b_2 = .30, $F_{2, 328}$ = 50.02, p < .001 and accounted for 23.1% of the variance in III: Differ$_{TOTAL}$ scores, with the unique predictive validity of the non-linear association being $R^{2 =}$ .05. The change in R^2 was statistically significant at Step 2.

Table 9.10

Hierarchical regression analysis (Method: Enter) regression III Differentiated: Composite Total onto SBI: Composite Total and SBI: Composite Total^2 (N=331)

Variables entered	Model 1	Model 2
SBI: Brief$_{TOTAL}$ (Std β)	.42	-1.04
SBI: Brief$_{TOTAL}^2$ (Std β)		1.48
R	.42	.48
R^2	.18	.23
ΔR^2		.05

Note: Std β = Standardised beta (β) weight; R^2 and ΔR^2 results in bolded text failed to achieve statistical significance ($p < .05$).

It can be seen from the scatter plot presented in Figure 9.10 that there are a large number of respondents with scores for SBI: Brief$_{TOTAL}$ above 3.5 (only n = 5 scored below this point) with no respondents scoring below approximately 2.3 (out of a possible 6). The scatter plot indicates a quadratic relationship between SBI: Brief$_{TOTAL}$ and III: Differ$_{TOTAL}$ from the lowest SBI: Brief$_{TOTAL}$ range to an approximate level of 4. Further, the quadratic relationship is negative. However, after an SBI: Brief$_{TOTAL}$ level of 4, the negative association largely disappears with some suggestion of a positive association between SBI: Brief$_{TOTAL}$ and III: Differ$_{TOTAL}$ at the highest range of SBI: Brief$_{TOTAL}$.

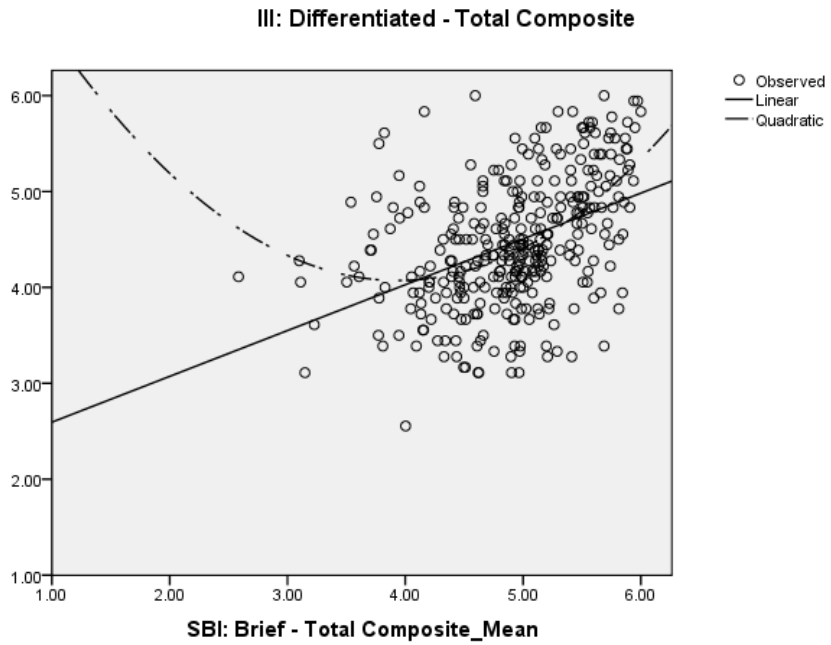

Figure 9.10: Scatter plot depicting the linear and non-linear (quadratic) associations between SBI: $Brief_{TOTAL}$ and III: $Differ_{TOTAL}$. Circles represent data points.

To test hypothesis three, curve estimation and hierarchical regression analyses were performed. As presented in Table 9.11, both linear and quadratic relationships between SBI: $Brief_{TOTAL}$ and $III_{OVERALL\ TOTAL}$ scores were analysed to determine the line of best fit. The linear function was found to be significant, $R^2 = .19$, $b_1 = .45$, $F_{1, 329} = 75.12$, $p < .001$. The quadratic function was also found to be significant, $R^2 = .22$, $b_1 = -1.71$, $b_2 = .23$, $F_{2, 328} = 46.58$, $p < .001$ and accounted for 22.2% of the variance in $III_{OVERALL\ TOTAL}$ scores, with the unique predictive validity of the non-linear association being $R^{2\ =} .04$. The change in R^2 was statistically significant at Step 2.

Table 9.11

Hierarchical regression analysis (Method: Enter) regression III - Overall Total Composite onto SBI: Composite Total and SBI: Composite Total^2 (N=331)

Variables entered	Model 1	Model 2
SBI: Brief$_{TOTAL}$ (Std β)	.43	-.82
SBI: Brief$_{TOTAL}^2$ (Std β)		1.27
R	.43	.47
R^2	.19	.22
ΔR^2		.04

Note: Std β = Standardised beta (β) weight; R^2 and ΔR^2 results in bolded text failed to achieve statistical significance ($p < .05$).

It can be seen from Figure 9.11 that the quadratic relationship between SBI: Brief$_{TOTAL}$ and III$_{OVERALL\ TOTAL}$ scores from the lowest SBI: Brief$_{TOTAL}$ range to an approximate level of 4, which is where the linear and non-linear fit lines intersect, was found to be negative; however, after an SBI: Brief$_{TOTAL}$ level of 4, the negative association largely disappears with some suggestion of a positive association between SBI: Brief$_{TOTAL}$ and III$_{OVERALL\ TOTAL}$ at the highest range of SBI: Brief$_{TOTAL}$ scores.

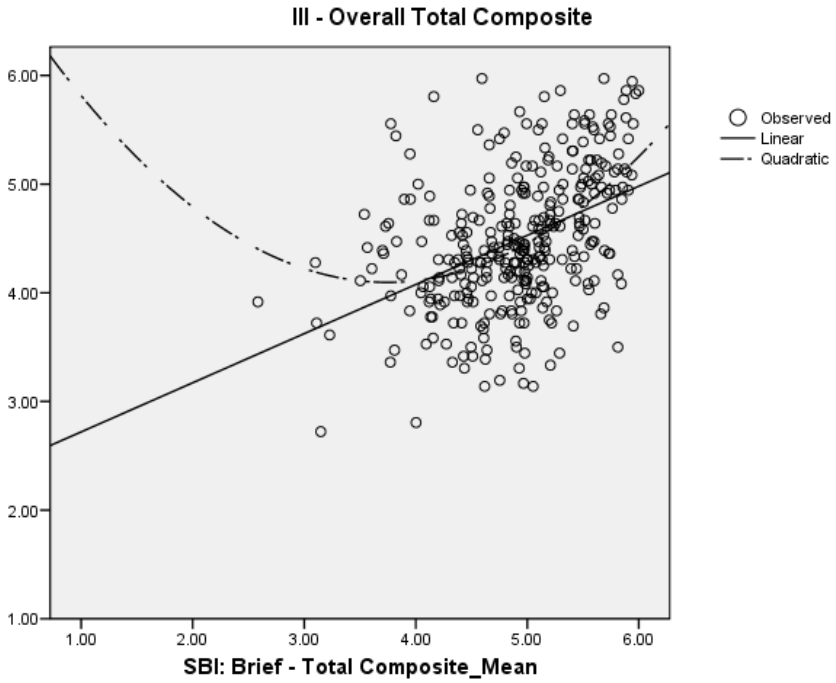

Figure 9.11: Scatter plot depicting the linear and non-linear (quadratic) associations between SBI: $Brief_{TOTAL}$ and $III_{OVERALL\ TOTAL}$. Circles represent data points.

Assessing the predictive relationship of SBI: $Brief_{TOTAL}$ for $III_{OVERALL\ TOTAL}$ according to five pre-determined age brackets

As presented in Table 9.12, 68 respondents designated their age as 30 years or less (*M* = 26.54 yrs, *SD* = 2.53 yrs); 90 respondents designated their age as between 31 and 40 years (*M* = 35.34 yrs, *SD* = 2.65 yrs); 83 respondents designated their age as between 41 and 50 years (*M* = 45.58 yrs, *SD* = 2.86); 59 respondents designated their age as between 51 and 60 years (*M* = 55.75 yrs, *SD* = 2.64); and 27 respondents designated their age as between 61 years or greater (*M* = 63.63 yrs, *SD* = 2.95). Each age group is adequately represented (i.e., number of cases) to perform the planned analyses to test the present study's fourth through tenth hypotheses.

Table 9.12

Frequency, means (M) and standard deviations (SD) for males, females and combined for each age groups (N=331)

	Males		Females		Combined	
Age category	#	*M* (*SD*)	#	*M* (*SD*)	#	*M* (*SD*)
< 30 years	12	24.92 (3.03)	56	26.89 (2.94)	68	26.54 (2.53)
31 to 40 years	17	35.00 (2.50)	73	35.42 (2.73)	90	35.34 (2.68)
41 to 50 years	22	45.91 (2.56)	61	45.46 (2.97)	83	45.58 (2.86)
51 to 60 years	16	56.13 (2.68)	43	55.60 (2.64)	59	55.75 (2.64)
> 61 years	13	64.46 (2.76)	14	62.96 (3.01)	27	63.63 (2.95)
Overall	80	45.50 (13.30)	247	41.04 (11.45)	331	42.13 (12.06)

Note: # = number of respondents within an age category.

To test hypotheses four and five of the present study, one-way Analysis of Variance (ANOVA) between the five age groups and spirituality and identity were performed. Further, the effect size (i.e., statistical power) was also calculated for SBI: Brief$_{TOTAL}$ and is interpreted according to the guidelines specified by Hemphill (2003); where a small, medium, and large effect size corresponds to η^2 = .04, .06, and .09, respectively.

As presented in Table 9.13, the results indicate that 1% of the difference in SBI: Brief$_{TOTAL}$ for spirituality can be explained by a person's age. Further, the Average Probability of Replication (APR) was recorded and the present result would be expected to be replicated with 95.2% probability for SBI: Brief$_{TOTAL}$. Conversely, significant differences were found for III$_{OVERALL\ TOTAL}$. The results indicate that 6% of the difference in III$_{OVERALL\ TOTAL}$, which is a

medium effect size, can be explained by a person's age. The APR was also recorded and the present result would be expected to be replicated with 64.7% probability for $III_{OVERALL\ TOTAL}$. Subsequent post-hoc analyses (Tukeys) between the five age groupings and $III_{OVERALL\ TOTAL}$ found statistically significant differences between respondents 30 years and less (M = 26.54 years; SD = 2.53 years) compared with 51-60 years (M = 55.75 years; SD = 2.64 years) (p = .002); and 30 years and less compared with 61 years or greater (M =63.63; SD = 2.95) (p = .013). No other age groupings were found to be statistically significantly different.

Table 9.13

One-way Analysis of Variance (ANOVA) between the five age categories and SBI: Total Composite and III – Overall Composite Total (N=331)

		Sum of Squares	*df*	Mean Square	F	Sig	η^2	*APR*
SBI: $Brief_{TOTAL}$	Between Groups	1.24	4	.31	.86	.49	.01	.95
	Within Groups	118.50	326	.36				
	Total	119.75	330					
$III_{OVERALL\ TOTAL}$	Between Groups	9678.78	4	2419.69	4.90	.001	.06	.65
	Within Groups	160925.00	326	493.64				
	Total	170603.78	330					

Note: *APR* = Average Probability of Replication (p = .01) (see Posavac, 2002)

Although the sub-scales of the SBI: Brief will not be examined in further analyses, given that the present dissertation is validating the new measure of spiritual beliefs (i.e., the SBI: Brief), it was deemed important to report any age effects for the inventory's sub-scales.

Therefore, Table 9.14 also presents a one-way ANOVA between the five age groups and the four sub-scales of the SBI: Brief was performed. No significant differences were found for the four sub-scales of the SBI: Brief. Further, the results indicate that 1% of the difference in OLM, 1% in LMPD, 2% in FWI and 1% in SDIG, respectively, can be explained by a person's age. Finally, the APR was also recorded and the present results would be expected to be replicated with 95.4%, 89.7%, 94.4% and 94.3% probability for OLM, LMPD, FWI and SDIG, respectively.

Table 9.14

One-way Analysis of Variance (ANOVA) between the five age categories and the four sub-scales of the SBI: Brief (N=331)

		Sum of Squares	*df*	Mean Square	F	Sig	η^2	*APR*
OLM	Between Groups	3.24	4	.81	.81	.52	.01	.95
	Within Groups	326.60	326	1.00				
	Total	329.85	330					
LMPD	Between Groups	2.91	4	.73	1.75	.148	.02	.90
	Within Groups	135.20	326	.42				
	Total	138.11	330					

Table 9.14: *continued*

		Sum of Squares	*df*	Mean Square	F	Sig	η^2	*APR*
FWI	Between Groups	2.88	4	.72	1.00	.41	.01	.94
	Within Groups	235.15	326	.72				
	Total	238.03	330					
SDIG	Between Groups	1.31	4	.33	1.10	.36	.01	.94
	Within Groups	97.25	326	.30				
	Total	98.56	330					

Note: *APR* = Average Probability of Replication (p = .01) (see Posavac, 2002)

To test the present study's fifth through tenth hypotheses, a series of five curve estimation and hierarchical regression analyses were performed. SBI: Brief$_{TOTAL}$ was selected as an overall measure of spiritual beliefs and III$_{OVERALL\ TOTAL}$ was selected as an overall measure of identity stage resolution. It was anticipated that a non-linear (quadratic) association between spirituality (i.e., SBI: Brief$_{TOTAL}$) and identity issue resolution (i.e., III$_{OVERALL\ TOTAL}$) would emerge within each of the five designated age groups, which would provide support for the spiral development nature of spirituality across the lifespan.

Table 9.15

Hierarchical regression analysis (Method: Enter) regression III – Overall Composite Total onto SBI: Composite Total and SBI: Composite Total^2 for the age category of 30 years or less (N=331)

Variables entered	Model 1	Model 2
SBI: Brief$_{TOTAL}$ (Std β)	.35	-1.21
SBI: Brief$_{TOTAL}{}^2$ (Std β)		1.57
R	.35	.43
R^2	.12	.18
ΔR^2		.06

Note: Std β = Standardised beta (β) weight; R^2 and ΔR^2 results in bolded text failed to achieve statistical significance ($p < .05$).

As demonstrated in Table 9.15, both linear and quadratic relationships between SBI: Brief$_{TOTAL}$ and III$_{OVERALL\ TOTAL}$ scores were analysed for the age category of 30 years or less to determine the line of best fit. The linear function was found to be significant, $R^2 = .120$, $b_1 = .34$, $F_{1, 66} = 9.00$, $p = .004$. The quadratic function was also found to be significant, $R^2 = .18$, $b_1 = -1.79$, $b_2 = .22$, $F_{2, 65} = 5.85$, $p = .001$ and accounted for 18.3% of the variance in III$_{OVERALL\ TOTAL}$ scores, with the unique predictive validity of the non-linear association being $R^2 = .06$. The change in R^2 was statistically significant at Step 2. Using the procedure for calculating R^2 confidence intervals recommended by Soper (2009), the 95% confidence interval of the model's R^2 at Step 2 is .08 to .22.

It can be seen from Figure 9.12 that the quadratic relationship (for the 30 years or less age group) between SBI: Brief$_{TOTAL}$ and III$_{OVERALL\ TOTAL}$ scores from the lowest SBI: Brief$_{TOTAL}$ range to an approximate level of 4, which is where the linear and non-linear fit lines intersect, was found to be negative; however, after an SBI: Brief$_{TOTAL}$ level of 4, the negative association largely disappears with some suggestion of a positive association between SBI: Brief$_{TOTAL}$ and III$_{OVERALL\ TOTAL}$ at the highest range of SBI: Brief$_{TOTAL}$ scores.

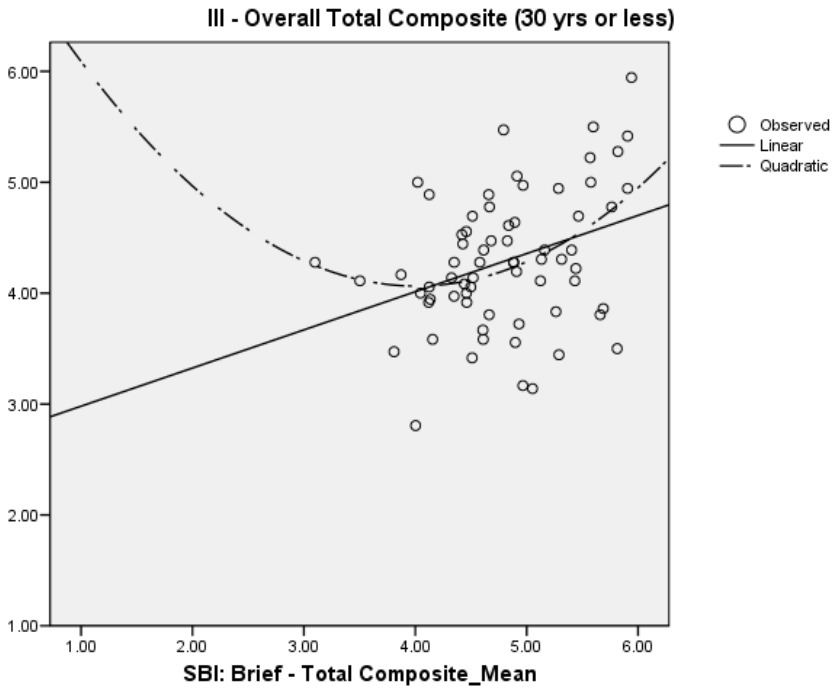

Figure 9.12: Scatter plot depicting the linear and non-linear (quadratic) associations between SBI: Brief$_{TOTAL}$ and III$_{OVERALL\ TOTAL}$ for the age category of 30 years or less. Circles represent data points.

As presented in Table 9.16, both linear and quadratic relationships between SBI: Brief$_{TOTAL}$ and III$_{OVERALL\ TOTAL}$ scores were analysed for the age category of 31 to 40 years to determine the line of best fit. The linear function was found to be significant, R^2 = .13, b_1 = .37, $F_{1, 88}$ = 13.34, p < .001. The quadratic function was also found to be significant, R^2 = .17, b_1 = -2.60, b_2 = .31, $F_{2, 87}$ = 10.02, p < .001 and accounted for 17% of the variance in III$_{OVERALL\ TOTAL}$ scores, with the unique predictive validity of the non-linear association being $R^{2\ =}$ .04. The change in R^2 was statistically significant at Step 2. Using the procedure for calculating R^2 confidence intervals recommended by Soper (2009), the 95% confidence interval of the model's R^2 at Step 2 is .10 to .24.

Table 9.16

Hierarchical regression analysis (Method: Enter) regression III – Overall Composite Total onto SBI: Composite Total and SBI: Composite Total^2 for the age category of 31 to 40 years (N=331)

Variables entered	Model 1	Model 2
SBI: Brief$_{TOTAL}$ (Std β)	.36	-1.15
SBI: Brief$_{TOTAL}^2$ (Std β)		1.52
R	.36	.41
R^2	.13	.17
ΔR^2		.04

Note: Std β = Standardised beta (β) weight; R^2 and ΔR^2 results in bolded text failed to achieve statistical significance ($p < .05$).

A visual review of the scatter plot (Figure 9.13) suggests that the quadratic relationship (for the 31 to 40 years age group) between SBI: Brief$_{TOTAL}$ and III$_{OVERALL\ TOTAL}$ scores from the lowest SBI: Brief$_{TOTAL}$ range to an approximate level of 4, which is where the linear and non-linear fit lines intersect, is negative; however, after an SBI: Brief$_{TOTAL}$ level of 4, the negative association largely disappears with some suggestion of a positive association between SBI: Brief$_{TOTAL}$ and III$_{OVERALL\ TOTAL}$ at the highest range of SBI: Brief$_{TOTAL}$ scores.

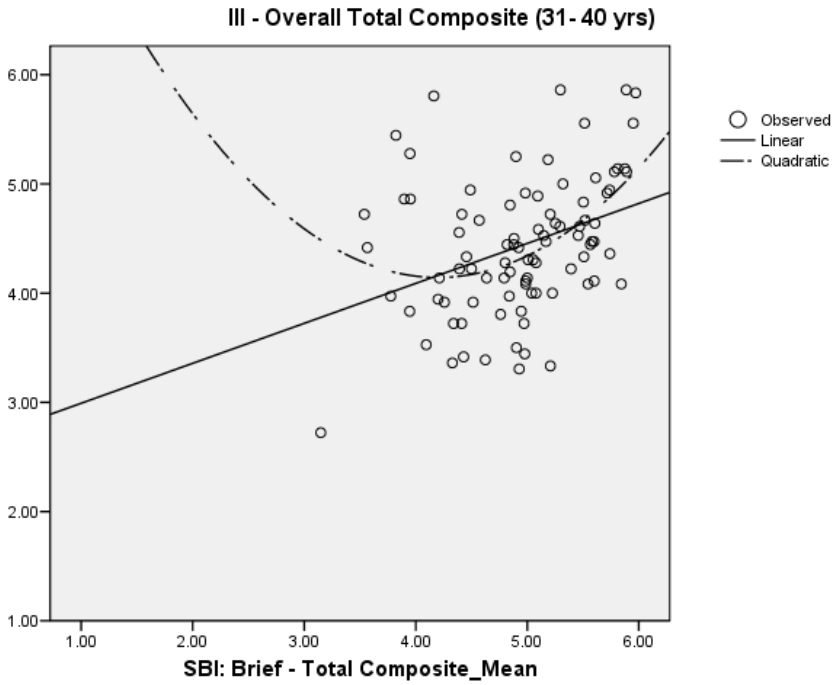

Figure 9.13: Scatter plot depicting the linear and non-linear (quadratic) associations between SBI: $Brief_{TOTAL}$ and $III_{OVERALL\ TOTAL}$ for the age category of 31 to 40 years.

As shown in Table 9.17, both linear and quadratic relationships between SBI: $Brief_{TOTAL}$ and $III_{OVERALL\ TOTAL}$ scores were analysed for the age category of 41 to 50 years to determine the line of best fit. The linear function was found to be significant, $R^2 = .21$, $b_1 = .50$, $F_{1, 80} = 21.20$, $p < .001$. The quadratic function was also found to be significant, $R^2 = .25$, $b_1 = -1.92$, $b_2 = .26$, $F_{2, 81} = 14.59$, $p < .001$ and accounted for 25% of the variance in $III_{OVERALL\ TOTAL}$ scores, with the unique predictive validity of the non-linear association being $R^{2\ =} .04$. The change in R^2 was statistically significant at Step 2. Using the procedure for calculating R^2 confidence intervals recommended by Soper (2009), the 95% confidence interval of the model's R^2 at Step 2 is .19 to .35.

Table 9.17

Hierarchical regression analysis (Method: Enter) regression III – Overall Composite Total onto SBI: Composite Total and SBI: Composite Total^2 for the age category of 41 to 50 years (N=331)

Variables entered	Model 1	Model 2
SBI: Brief$_{TOTAL}$ (Std β)	.46	-.87
SBI: Brief$_{TOTAL}^2$ (Std β)		1.34
R	.46	.50
R^2	.21	.25
ΔR^2		.04

Note: Std β = Standardised beta (β) weight; R^2 and ΔR^2 results in bolded text failed to achieve statistical significance ($p < .05$).

It can be seen from Figure 9.14 that the quadratic relationship (for the 41 to 50 years age group) between SBI: Brief$_{TOTAL}$ and III$_{OVERALL\ TOTAL}$ scores from the lowest SBI: Brief$_{TOTAL}$ range to an approximate level of 4, which is where the linear and non-linear fit lines intersect, was found to be negative; however, after an SBI: Brief$_{TOTAL}$ level of 4, the negative association largely disappears with some suggestion of a positive association between SBI: Brief$_{TOTAL}$ and III$_{OVERALL\ TOTAL}$ at the highest range of SBI: Brief$_{TOTAL}$ scores.

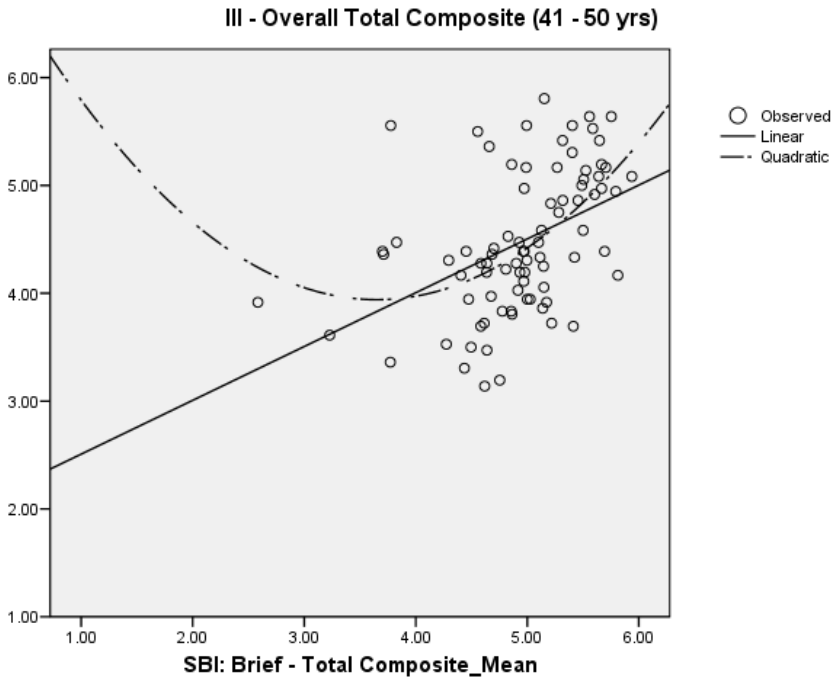

Figure 9.14: Scatter plot depicting the linear and non-linear (quadratic) associations between SBI: $Brief_{TOTAL}$ and $III_{OVERALL\ TOTAL}$ for the age category of 41 to 50 years. Circles represent data points.

As presented in Table 9.18, both linear and quadratic relationships between SBI: $Brief_{TOTAL}$ and $III_{OVERALL\ TOTAL}$ scores were analysed for the age category of 51 to 60 years to determine the line of best fit. The linear function was found to be significant, R^2 = .42, b_1 = .62, F $F_{1, 57}$ = 41.40, p < .001. The quadratic function was also found to be significant, R^2 = .60, b_1 = -2.49, b_2 = .33, $F_{2, 56}$ = 28.12, p < .001 and accounted for 60.3% of the variance in $III_{OVERALL\ TOTAL}$ scores, with the unique predictive validity of the non-linear association being $R^{2\ =}$ .18. The change in R^2 was statistically significant at Step 2. Using the procedure for calculating R^2 confidence intervals recommended by Soper (2009), the 95% confidence interval of the model's R^2 at Step 2 is .54 to .67.

Table 9.18

Hierarchical regression analysis (Method: Enter) regression III – Overall Composite Total onto SBI: Composite Total and SBI: Composite Total^2 for the age category of 51 to 60 years (N=331)

Variables entered	Model 1	Model 2
SBI: Brief$_{TOTAL}$ (Std β)	.65	-2.33
SBI: Brief$_{TOTAL}{}^2$ (Std β)		3.01
R	.65	.78
R^2	.42	.60
ΔR^2		.18

Note: Std β = Standardised beta (β) weight; R^2 and ΔR^2 results in bolded text failed to achieve statistical significance ($p < .05$).

It can be seen from Figure 9.15 that the quadratic relationship (for the 51 to 60 years age group) between SBI: Brief$_{TOTAL}$ and III$_{OVERALL\ TOTAL}$ scores from the lowest SBI: Brief$_{TOTAL}$ range to an approximate level of 4, which is where the linear and non-linear fit lines intersect, was found to be negative; however, after an SBI: Brief$_{TOTAL}$ level of 4, the negative association largely disappears with some suggestion of a positive association between SBI: Brief$_{TOTAL}$ and III$_{OVERALL\ TOTAL}$ at the highest range of SBI: Brief$_{TOTAL}$ scores.

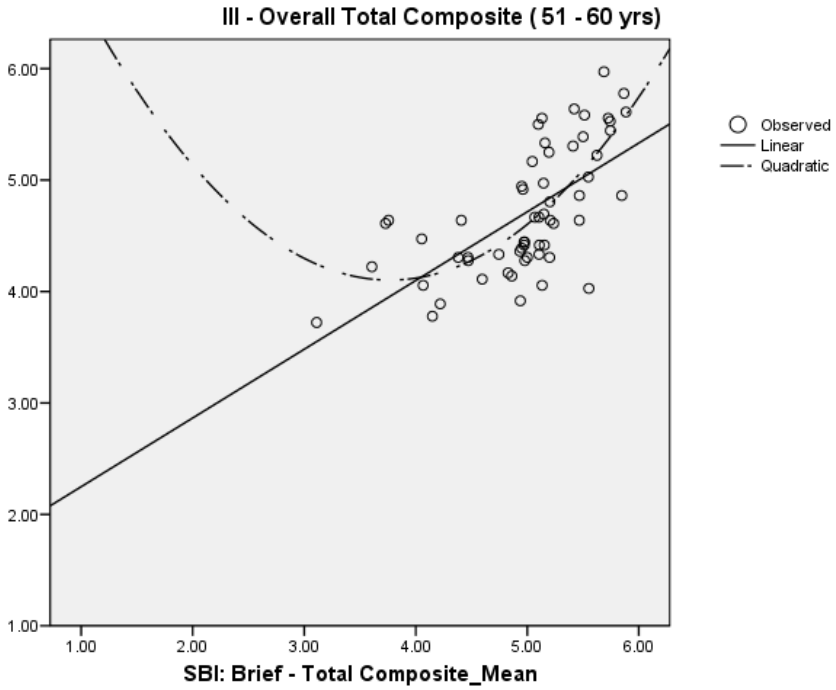

Figure 9.15: Scatter plot depicting the linear and non-linear (quadratic) associations between SBI: $Brief_{TOTAL}$ and $III_{OVERALL\ TOTAL}$ for the age category of 51 to 60 years. Circles represent data points.

As displayed in Table 9.19, both linear and quadratic relationships between SBI: $Brief_{TOTAL}$ and $III_{OVERALL\ TOTAL}$ scores were analysed for the age category of 61 years or greater to determine the line of best fit. The linear function was found to be significant, R^2 = .14, b_1 = .40, $F_{1, 29}$ = 4.55, p = .041. The quadratic function was also found to be significant, R^2 = .25, b_1 = .50, b_2 = -.01, $F_{2, 28}$ = 4.70, p = .017 and accounted for 25.1% of the variance in $III_{OVERALL\ TOTAL}$ scores, with the unique predictive validity of the non-linear association being $R^{2\ =}$ .12. The change in R^2 was statistically significant at Step 2. A subsequent visual review of the scatter plot (Figure 9.16) between SBI: $Brief_{TOTAL}$ and $III_{OVERALL\ TOTAL}$ suggests a somewhat more convex, non-linear fitting line, for SBI: $Brief_{TOTAL}{}^2$. It must be noted however, that the line of best fit established by SPSS does not strongly support (visually) the quadratic function. As such, the present researcher is reliant upon the results of the corresponding hierarchical regression analysis which indicates a non-linear relationship at Step 2 (i.e., $R^{2\ =}$ .12; p = .047). Using the procedure for calculating R^2 confidence intervals recommended by Soper (2009), the 95% confidence interval of the model's R^2 at Step 2 is .17 to .33.

Table 9.19

Hierarchical regression analysis (Method: Enter) regression III – Overall Composite Total onto SBI: Composite Total and SBI: Composite Total^2 for the age category of 61 years or greater (N=331)

Variables entered	Model 1	Model 2
SBI: Brief$_{TOTAL}$ (Std β)	.37	2.17
SBI: Brief$_{TOTAL}^2$ (Std β)		-1.83
R	.37	.50
R^2	.14	.25
ΔR^2		.12

Note: Std β = Standardised beta (β) weight; R^2 and ΔR^2 results in bolded text failed to achieve statistical significance ($p < .05$).

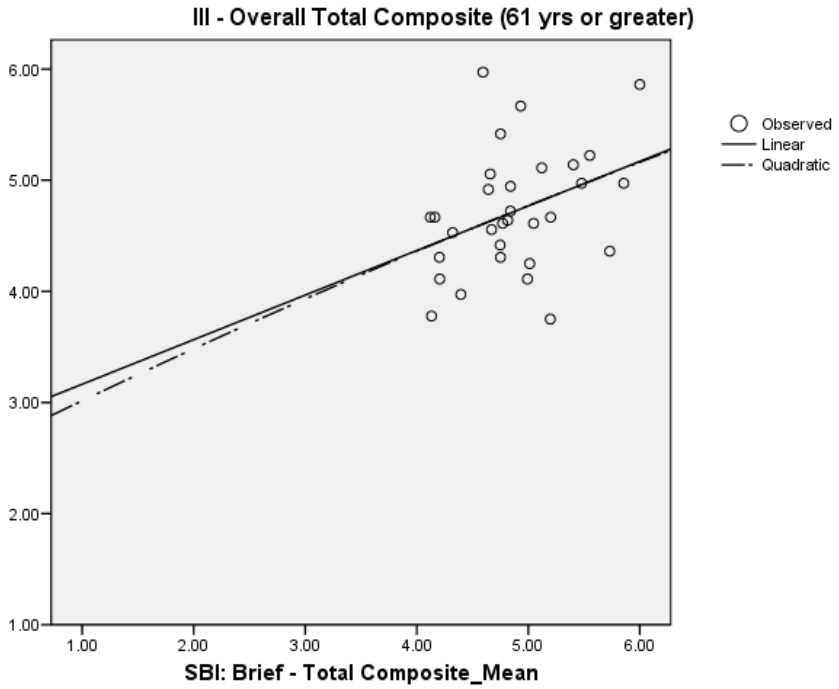

Figure 9.16: Scatter plot depicting the linear and non-linear (quadratic) associations between SBI: Brief$_{TOTAL}$ and III$_{OVERALL\ TOTAL}$ for the age category of greater than 61 years. Circles represent data points.

9.5. Discussion

The present chapter sought to confirm or disconfirm the linear and non-linear (i.e., quadratic) relationship between spiritual beliefs in predicting identity stage resolution across the lifespan. The specific aims of the present study were four-fold, namely: (1) to determine the predictive nature of spiritual beliefs (i.e., linear versus non-linear) in predicting one's progression towards identity stage resolution; (2) to determine the effect of age upon one's self-reported spiritual beliefs; (3) to determine the effect of age upon one's self-reported identity stage resolution; and (4) to determine the predictive nature of spiritual beliefs (i.e., linear versus non-linear) in predicting one's progression towards identity stage resolution for five pre-determined age groupings. In undertaking these four aims, the study aimed to further validate the present dissertation's proposed holistic conceptual framework for considering spirituality.

On the basis of the aims of the present study, the hypotheses explored were that there would be a linear and non-linear (i.e., quadratic) association between the Spiritual Beliefs Inventory: Brief Version (SBI: Brief) and its four sub-scales, and the Identity Issues Inventory (III) and its Integration, Differentiation and Overall Total Composite scores; there would be a non-significant difference between five age groups (namely: 30 years or less; 31 to 40 years; 41 to 50 years; 51 to 60 years; and 61 years or greater) for SBI: Brief – Total Composite; older respondents would score higher on the III – Overall Total Composite than younger respondents; and, there would be a linear and non-linear (i.e., quadratic) association between SBI: Brief – Total Composite and III – Overall Total Composite scores for five predetermined age groups.

To test the present study's first hypothesis, a series of five curve estimation regression analyses were performed. The findings partially support the study's first hypothesis. As expected, there was a linear and strong non-linear association between the SBI: Brief sub-scale of Openness to Life's Mysteries (OLM) and III: Integration – Total Composite (III: $Integ_{TOTAL}$). The results indicate that only 2.6% of the variance in III: $Integ_{TOTAL}$ was accounted for by the linear model. However, the non-linear (i.e., quadratic) function of OLM (i.e., OLM^2) accounted for an additional 11.3% of the variance in III: $Integ_{TOTAL}$ (R^2 for the overall model at Step 2 = .14). Further, the results of the investigation suggest that an

openness to life's mysteries negatively predicts a respondent's sense of inner unity and wholeness up until an OLM score of approximately 4 (out of a possible 6). Above the 4 OLM level, the association appears to be positive, indicating that the association between OLM and III: Integ$_{TOTAL}$ interacts with the level of OLM, which is technically referred to as a non-linear association. This finding supports the present researcher's interpretation of the anomalous finding relating to OLM presented in Chapter 8. Given that research suggests that one's spirituality is an outgrowth of identity formation and level of ego strength (i.e., autonomy) (Wink et al., 2005), the findings suggest that individuals who may be transitioning between identity stages (e.g., they are experiencing identity stage tension) are less likely to remain open to life's mysteries. Although research does suggest that the experience of 'crisis' may result in the commencement of spiritual exploration (e.g., Wink & Dillon, 2002), this finding suggests the opposite for respondents who only moderately endorse OLM items. Put another way, a person who is unable to reconcile their encounters with adversity with an appreciation of life's mysteries and an acceptance that there is always a reason for those things that might not be explainable, may turn away from being open to such ambiguity (Peterson & Seligman, 2004b).

The study's first hypothesis was also supported for the Life Meaning, Purpose and Direction (LMPD) sub-scale of the SBI: Brief with the non-linear function of LMPD accounting for a small but statistically significant increase in variance in III: Integ$_{TOTAL}$ scores. The findings of the investigation suggest that the overall regression model (including both LMPD and LMPD^2) accounted for 44.7% of the variance in III: Integ$_{TOTAL}$ scores.

The study's first hypothesis failed to be fully supported for both the Fostering Wholeness and Interconnectedness (FWI) and Self-Discovery and Inner Growth (SDIG) sub-scales of the SBI: Brief. First, although the linear function of FWI was found to account for 8.9% of the variance in III: Integ$_{TOTAL}$ scores, the non-linear (i.e., quadratic) function was non-significant. Second, the linear function of SDIG accounted for a statistically significant portion of the variance in III: Integ$_{TOTAL}$ (i.e., R^2 = .04); whereas, the non-linear function of the SDIG sub-scale (i.e., SDIG^2) failed to account for any additional unique variance in III: Integ$_{TOTAL}$ scores. The finding for the FWI sub-scale of the SBI: Brief is not surprising and indicates that a respondent's capacity to bring together life's inner experiences in a unified way (i.e.,

identity integration) is not strongly associated with fostering a wholeness and interconnectedness to all humanity. Of surprise is the finding for the SDIG sub-scale of the SBI: Brief as it relates to one's identity integration. The results of the present study suggest that only 3.8% of the variance in III: $Integ_{TOTAL}$ scores can be accounted for by SDIG (i.e., the non-quadratic function). Given that respondent's scoring high on SDIG hold a belief that an exploration of oneself (to transcend ego) is one of the most important tasks of one's life, the findings suggests that this may not be relevant to one's identity stage resolution specific to identity integration. One interpretation for this finding relates to the operationalisation of identity integration by the present study. The development of ego strength (rather than ego transcendence) is the core premise of the III: Integration sub-scale, which may be at odds to the guiding premise of the SDIG sub-scale. This interpretation warrants further exploration in a future study.

The study's first hypothesis was supported for the Total Composite of the SBI: Brief (i.e., SBI: $Brief_{TOTAL}$). As expected, there was a linear and non-linear association between the SBI: $Brief_{TOTAL}$ and III: $Integ_{TOTAL}$. The results indicate that 16.6% of the variance in III: $Integ_{TOTAL}$ was accounted for by the linear model, with an additional 1.9% unique variance accounted for by the non-linear (i.e., quadratic) function of SBI: $Brief_{TOTAL}$ (i.e., SBI: $Brief_{TOTAL}^2$).

To test the present study's second hypothesis, a series of five curve estimation regression analyses were performed. The study's second hypothesis was fully supported with the linear and non-linear functions of the SBI: Brief and its four sub-scales accounting for statistically significant variance in III: $Differ_{TOTAL}$ scores. The first curve estimation regression analysis performed (by regressing III: $Differ_{TOTAL}$ onto OLM) found an R^2 for OLM of .03 and an R^2 for OLM^2 of .20 (i.e., $\Delta R^2 = .17$). The results of this investigation of OLM suggests that an openness to life's mysteries negatively predicts a respondent's sense of him/herself as distinct from significant others up until an OLM score of approximately 4 (out of a possible 6). Above the 4 OLM level, the association appears to be positive, with a respondent's belief that there is more to one's life than can be explained or physically studied having a positive association with III: $Differ_{TOTAL}$. The concave (i.e., U-shape) curvilinear association for OLM and III: $Differ_{TOTAL}$ suggests a story of extremes, whereby a

respondent who either does or does not hold (at the extreme) a belief that there is no higher plane of consciousness related to spirituality is also likely to feel a sense of being able to make decisions independent of social norms and guidance from significant others (i.e., higher III: $Differ_{TOTAL}$ scores).

As it relates to the present study's second hypothesis, the investigation of the LMPD sub-scale suggests that both the linear and non-linear function of LMPD account for unique variance in III: $Differ_{TOTAL}$ scores. Specifically, the present study found an R^2 for LMPD of .51 (i.e., 51.3 % of the variance) and an R^2 for $LMPD^2$ of .54 (i.e., ΔR^2 = .03). Further, contrary to the findings for III: $Integ_{TOTAL}$, the investigation of FWI and SDIG found support for a non-linear association for III: $Differ_{TOTAL}$. Specifically, the results for the FWI sub-scale indicate that 9.5% of the variance in III: $Differ_{TOTAL}$ was accounted for by the linear model, with an additional 1.9% unique variance accounted for by the non-linear (i.e., quadratic) function of FWI (i.e., FWI^2). The finding suggests that the FWI sub-scale predicts negatively III: $Differ_{TOTAL}$ up until an FWI score of approximately 3.5 (out of a possible 6). Above the 3.5 FWI level, the association appears to be positive (R^2 for the FWI^2 model = .114). The investigation of SDIG also found support for a non-linear association for III: $Differ_{TOTAL}$ with the SDIG sub-scale. The results for the SDIG sub-scale indicate that 4.7% of the variance in III: $Differ_{TOTAL}$ was accounted for by the linear model, with an additional 2.5% unique variance accounted for by the non-linear (i.e., quadratic) function of SDIG (i.e., $SDIG^2$).

Finally, the study's second hypothesis was supported for SBI: $Brief_{TOTAL}$. As expected, there was a linear and non-linear association between the SBI: $Brief_{TOTAL}$ and III: $Differ_{TOTAL}$. The results indicate that 18.1% of the variance in III: $Differ_{TOTAL}$ was accounted for by the linear model, with an additional 4.9% unique variance accounted for by the non-linear (i.e., quadratic) function of SBI: $Brief_{TOTAL}$ (i.e., SBI: $Brief_{TOTAL}^2$). Numerically, the linear and non-linear (i.e., quadratic) model of SBI: $Brief_{TOTAL}$ predicts more variance in identity differentiation compared with integration (i.e., R^2 of .18 versus .23 for III: $Integ_{TOTAL}$ and II: $Differ_{TOTAL}$, respectively). However, an examination of the 95% confidence interval for the R^2 for III: $Integ_{TOTAL}$ versus III: $Differ_{TOTAL}$ using the procedure for calculating R^2 confidence intervals recommended by Soper (2009), suggests the difference is likely to be non-significant.

Chapter 9: Examining the linear and non-linear (i.e., quadratic) relationship between the four factor model of spiritual beliefs and identity issue resolution across the lifespan

To test the present study's third hypothesis, a curve estimation regression analysis was performed. The study's third hypothesis was supported for SBI: $Brief_{TOTAL}$. As expected, there was a linear and non-linear association between the SBI: $Brief_{TOTAL}$ and $III_{OVERALL\ TOTAL}$. The results indicate that 18.6% of the variance in $III_{OVERALL\ TOTAL}$ was accounted for by the linear model, with an additional 3.6% unique variance accounted for by the non-linear (i.e., quadratic) function of SBI: $Brief_{TOTAL}$ (i.e., SBI: $Brief_{TOTAL}^2$). As argued in previous research, identity formation is a process of integration-fragmentation-reintegration and the findings of the present study provides credence to the role of one's spiritual beliefs in this process (i.e., 22.2% of the variance in overall identity stage resolution can be accounted for by spiritual beliefs). This position is also held by other researchers, including Erik Erikson who is considered the forefather of identity theory as it pertains to the formation of life meaning and purpose (Adams et al., 1989). Of greater interest to the present study is the non-linear association between identity stage resolution and spiritual beliefs. The present dissertation argued that the expanding of one's level of conceptual complexity occurs when the facets of one's self are examined, appreciated, accepted, integrated and ultimately, let go of. This process is likely to operate in a curvilinear manner (Jones & Meredith, 2000). The findings of the present study support this proposition and further suggest that one's spiritual beliefs act in an all-or-nothing manner when it comes to supporting the resolution of identity stage tension.

To test the present study's fourth hypothesis that one's spiritual beliefs would fail to be susceptible to an age-effect, a one-way ANOVA was performed. The hypothesis was supported. Research examining beliefs within an education context completed by Smith and Croom (2000), found beliefs to be dynamic structures through which new experiences are screened and interpreted for meaning. The present researcher has already argued (refer to Chapter 3) that although one's spiritual beliefs can be considered to be less stable and more permeable than one's level of conceptual complexity, they can also be considered universal (refer to Chapter 5). In this way, one's spiritual beliefs must remain relatively stable to support one's transitions between identity stages. Research completed by Peterson and Seligman (2004b) in the construction of the *Values In Action Inventory* (VIA) also found R/S beliefs to be persuasive, pervasive, and stable from early adulthood. The findings of the

present study provide support for the premise that the degree of commitment to one's spiritual beliefs remains uniform across time.

The findings for the present study's fifth hypothesis suggest that one's identity is not stable across the lifespan. Previous research has found that one's physical health decreases with age; whereas, an individual's psychological health (a concept analogous with identity stability) increases with age (see Jones & Meredith, 2000). More specifically, research examining the developmental path of psychological health from early adolescence to later adulthood completed by Jones and Meredith (2000), suggests an acceleration of positive psychological health from approximately 30 years of age through to 60-plus years. The findings of the present study using an alternative indicator of psychological health (i.e., the Identity Issues Inventory) support these findings.

Given the confirmation of the present study's fifth hypothesis, a series of five curve estimation regression analyses were performed to examine the study's remaining hypotheses. The study's sixth, seventh, eighth, ninth and tenth hypotheses were confirmed for each of the five age groupings with a linear and non-linear (i.e., quadratic) predictive relationship between SBI: Brief$_{TOTAL}$ and III$_{OVERALL\ TOTAL}$, with III$_{OVERALL\ TOTAL}$ scores regressed onto the SBI: Brief$_{TOTAL}$ scores. More specifically, a *concave* (i.e., "U-shaped") relationship was found for the first four age groups and a *convex* (i.e., inverted "U-shape") predictive relationship was found for respondents 61 years or greater. The findings of the present study suggests that for respondents aged 30 years or less, 18.3% of the variance in III$_{OVERALL\ TOTAL}$ scores can be accounted for by one's spiritual beliefs, with 6.3% of the variance accounted for by the non-linear function of SBI: Brief$_{TOTAL}$ (i.e., SBI: Brief$_{TOTAL}^2$). Similarly, 17% of the variance in III$_{OVERALL\ TOTAL}$ scores can be accounted for by one's spiritual beliefs for respondents aged between 31 and 40 years. Further, 25% of the variance in III$_{OVERALL\ TOTAL}$ scores can be accounted for by one's spiritual beliefs for respondents aged between 41 and 50 years. However, an examination of the confidence interval (95% - CI) for the 41-50 age group indicates that the amount of variance accounted for by one's spiritual beliefs for this age group is statistically significantly more than the previous age group (i.e., 31 and 40 years). Given previous research suggesting that spirituality is a phenomenon undertaken from mid-life (Brennan, 2002; Wink & Dillon, 2002), this result was anticipated.

An examination of the results for respondents aged between 51 and 60 years suggests a further acceleration in the role of one's spiritual beliefs in accounting for variance in $III_{OVERALL\ TOTAL}$ scores. The results suggest that 60.3% of the variance in $III_{OVERALL\ TOTAL}$ scores is accounted for by SBI: $Brief_{TOTAL}$ with the non-linear function (i.e., SBI: $Brief_{TOTAL}^2$) accounting for 18.3% unique variance. An examination of the confidence interval (95% - CI) for the 51-60 age group indicates that the amount of variance accounted for by one's spiritual beliefs for this age group is also statistically significantly more than the previous age group (i.e., 41 and 50 years). Gerontology literature supports the premise of heightened spirituality for older adults, which is likely to be a response to the existential dilemmas raised by this stage of life (Peterson & Seligman, 2004b; Trouillet & Gana, 2009). For example, a study completed by Eggers (2000) examined spirituality versus religiosity in middle and older adults and found that middle-aged respondents tended to endorse items related to hope about the future; whereas older respondents were more likely to endorse items related to satisfaction about the past. Given the strong beta-weights of the SBI: Brief's LMPD sub-scale in predicting variance in III: $Integ_{TOTAL}$ (R^2 = .447 for Model 2) and III: $Differ_{TOTAL}$ (R^2 = .538 for Model 2) in this study, the present results could be interpreted to represent a strong focus towards spirituality-grounded meaning and purpose by respondents within this age group. This interpretation warrants further exploration in a future study.

Finally, the results confirming the present study's tenth and final hypothesis suggest that 25.1% of the variance in $III_{OVERALL\ TOTAL}$ scores is accounted for by SBI: $Brief_{TOTAL}$ for respondents aged between 61 years or greater. More specifically, the non-linear function (i.e., SBI: $Brief_{TOTAL}^2$) accounted for 11.6% unique variance in the relationship. However, unlike earlier age groups, the findings of the present study suggest a 'deceleration' of the role of one's spiritual beliefs in accounting for variance in $III_{OVERALL\ TOTAL}$ scores, with the non-linear function resulting in a convex curve. An examination of the confidence interval (95% - CI) for the 61 or greater age group indicates that the amount of variance accounted for by one's spiritual beliefs for this age group is also statistically significantly less than the previous age group (i.e., 41 and 50 years). Research completed by Brennan (2002) may support the interpretation of this finding. In a study examining vision loss in middle and latter adulthood, Brennan (2002) concluded than middle-adulthood participants experiencing physical

impairment (i.e., vision loss) were likely to experience greater psycho-social functioning than their older counterparts. The reasons for this finding require further exploration.

9.5.1. Conclusion

The aim of the present chapter was to explore the relationship between spiritual beliefs, identity stage resolution and age. Much of the research examining spirituality and age suggests a positive relationship, whereby one's age is considered to impact positively one's exploration of spirituality. An alternative theory however, suggests that one's spirituality is an outgrowth of identity formation and level of ego strength (Wink et al., 2005). The present study sought to examine this alternative theory and demonstrate the non-linear relationship between one's spiritual beliefs and identity stage resolution across the lifespan. The existence of a non-linear relationship between spiritual beliefs and identity stage resolution was taken as evidence in support of the present dissertation's proposed holistic conceptual framework for considering spirituality. Complimentary to this initial premise is an assertion that there would not be an age-effect for spiritual beliefs. A non-significant age-effect suggests that one's spiritual beliefs are universal 'filters' through which spiritual experiences are screened, interpreted, understood and integrated as aspect of one's broader identity. Conversely, a significant age-effect for the present study's identity stage resolution construct (namely the III) in concert with a non-linear relationship between spiritual beliefs and identity stage resolution provides preliminary evidence for the plausibility of a spiral development orientation for spirituality.

Overall, the majority of the present study's hypotheses were supported. A respondent's spiritual beliefs were found to have a non-linear association with identity stage integration and differentiation. This finding lends further support to the predictive validity of the SBI: Brief. The only two sub-scales that failed to find a non-linear association were FWI and SDIG with identity stage *integration*. A number of explanations for these two somewhat unexpected findings were provided and future research to explore the reasons behind these two non-significant curvilinear relationships is recommended. Further, spiritual beliefs were found to not have an age-effect. However, identity stage resolution was found to have a statistically significant age effect, with older respondents self-reporting greater levels of identity integration and differentiation. Although the present study was successful in

confirming a linear and non-linear relationship between a respondent's spiritual beliefs and identity stage resolution, two unexpected findings emerged, namely the absence of a non-linear association between identity integration and FWI and SDIG. Further, the amount of linear variance in identity stage integration accounted for by FWI and SDIG was 8.9% and 3.8%, respectively. Although statistically significant, this finding is problematic given the present researcher's assertion that the four identified spiritual beliefs are cornerstones to identity stage resolution. Given the history of the SBI: Brief's development (i.e., items were taken from existing scales), a potential content validity confound for the SBI: Brief may exist. This hypothesis needs to be tested empirically.

Chapter 10

Examining the content validity of the four-factor model and measure of spiritual beliefs

10.1. Chapter overview

The present dissertation has already examined the criterion validity of the Spiritual Beliefs Inventory: Brief Version (SBI: Brief) via an examination of its concurrent, predictive and incremental predictive validity. The present chapter seeks to examine the content validity of the SBI: Brief via the completion of a higher-order exploratory factor analysis that includes constructs argued to be aligned yet conceptually distinct from spiritual beliefs. Within the context of the present dissertation, content validity can be considered to be whether or not the SBI: Brief effectively samples one's spiritual beliefs independently of other theorised constructs the present researcher is not trying to assess. For example, previous research has shown spirituality to overlap conceptually with a number of related constructs, such as: psychological well-being and a sense of coherence. However, spirituality is argued by the present researcher to be theoretically and conceptually distinct from such constructs. Further, it has been argued that spirituality is unique from constructs such as personality; however, past research has shown some association between spirituality and facets of personality, such as one's openness to experience. Finally, the relationship between spirituality and constructs such as social well-being, Emotional Intelligence (EI), mindfulness and ego-resilience remain unexamined. The present study will perform a second order exploratory factor analysis incorporating the four sub-scales of the SBI: Brief and selected constructs considered to share common variance with spiritual beliefs. The aims of the present study are two-fold: (1) to demonstrate that the construct of spiritual beliefs is adequately unique so as not to be redundant with other individual difference constructs;

and (2) to demonstrate the *incremental coherence*[1] (Gignac et al., 2009) of the spiritual beliefs construct as independent of already existing constructs that could be considered synonymous with spirituality. The findings of the present chapter are discussed in relation to the incremental coherence of spiritual beliefs as a new and unique individual differences variable in social science research.

10.2. Introduction

Mayer (2000) states, the challenge of introducing a new construct into individual differences research is that it must be "… similar enough to existing [concepts] to be recognisable, but different enough to be worth studying (p. 49)." The construct of spirituality is not new to social science research; however, the examination of spiritual beliefs is. The present dissertation has already demonstrated the predictive validity of spiritual beliefs (as assessed via the Spiritual Beliefs Inventory: Brief version; SBI: Brief) in determining meaningful differences between those with and without a formal spiritual practice (refer to Chapter 4). Further, discriminate sensitivity has been demonstrated by the SBI: Brief in identifying differences between the four predominant spiritual practice types undertaken within contemporary Australian society. The present researcher has also demonstrated the incremental predictive validity of the SBI: Brief beyond explicit religiosity in predicting identity stage resolution (refer to Chapter 8). However, it remains to be determined if the reconceptualisation of spirituality as consisting of several distinct 'layers' – of which one layer pertains to spiritual beliefs – provides greater clarity to the overarching spirituality construct in relation to competing constructs.

It could be argued that much of the criticism levelled at spirituality relates to its positioning in social sciences research. For example, some researchers consider spirituality to be a new form of intelligence (Emmons, 2000). This claim has led to criticism from some researchers (for example Gardner, 2000) who states that spirituality fails to meet some of

[1] Incremental coherence can be defined as having occurred, "when a newly introduced construct has more clearly specified construct boundaries than the construct with which it is putatively redundant (p. 83)" (Gignac, Jang, & Bates, 2009).

the more basic criteria for being considered an intelligence. Other researchers remain open to the premise and challenge 'spiritual intelligence' researchers to demonstrate that spirituality is truly autonomous from other forms of intelligence, such as verbal, spatial and even social intelligence (Edwards, 2003).

Spirituality has also been positioned as a medium for addressing life's challenging events via the construct of resilience (Garssen & Visser, 2005). For example, spirituality has been shown to enhance one's resilience in challenging situations, such as dealing with vision loss (Brennan, 2002) or the onset of cancer (Cole et al., 2008). However, Block and Kremen (1996) argue that a person's level of resilience (more specifically, ego-resilience) may be somewhat dependent upon his/her level of IQ and personality, making it a more stable trait. For example, research completed by Block and Kremen (1996) examining the relationship between ego resilience and IQ (as assessed by the *WAIS-R*) in young adults found a significant positive correlation for males (only) at age 18 years ($r = .31$, $p < .05$). In the same study, the correlation between ego-resilience and IQ failed to be statistically significant for females aged 18 years ($r = .10$, $p = ns$). In a second study examining ego-resilience in post-graduate level students completed by Letzring, Block and Dunder (2005), these earlier findings failed to be replicated. Letzring et al. (2005) examined associations between ego-resilience, IQ (as assessed by the *Wonderlic Personnel Test*; WPT) and scores on the *Scholastic Assessment Test* (SAT)[2] and found no relationship between ego-resilience and either measure of intelligence for both males and females. Indeed for both indexes of intelligence (i.e., WPT and SAT), a slight negative trend for female respondents was found (rs = -.12 and -.07, ps = *ns*, respectively). This second study suggests that ego-resilience may be theoretically distinct from intelligence. A similar finding has been found for spirituality. An examination of the relationship between IQ (as measured by the *WAIS*) and spiritual development in later adulthood completed by Wink and Dillon (2002), found no relationship between the two constructs. Given that resilience (specifically, ego-resilience) and spirituality may be somewhat aligned, the association appears to be distinct from traditional

[2] The SAT is a pseudo measure of verbal and mathematical reasoning often used as an entrance requirement to U.S. universities.

intelligence. Perhaps spirituality is a new form of intelligence? Although this research question is worthy of further exploration, it remains outside the scope of the present study.

One explanation for the relationship between resilience and spirituality relates specifically to one's ego development. The former is grounded in enhancing ego-strength; however, as already argued by the present researcher, the latter construct is grounded in ego-transcendence. This discrepancy raises the question: Does resilience relate to the strengthening or transcending of one's ego? Research completed by Parameshwar (2005) undertaken via within- and across-autobiographical analysis of 504 events taken from leaders'[3] autobiographies, suggests the latter. In her study examining ego-transcendence in ten human-rights leaders, Parameshwar (2005) found that ego-transcendence processes (e.g., non-violence, spiritual engagement, etc) resulted in meaningful differences in how leaders responded in challenging situations. For example: "In responding to challenging circumstances, the leaders defuse ego threats by transcending their ego and by enlarging their commitment to their higher purpose rather than by protecting their ego and short changing their higher purpose (p. 703)" (Parameshwar, 2005). Parameshwar's (2005) findings also suggest a relationship between resilience and a higher purpose. Similar findings are reported by Viktor Frankl (1984) in his account of surviving the concentration camps of World War 2. Maddi (2004), in his ongoing research examining the construct of hardiness as it relates to purpose, also supports the symbiotic relationship between the two concepts of resilience and life meaning and purpose. The present researcher argues that spirituality relates to the transcendence of ego; however, this hypothesis needs to be tested empirically via an examination of the relationship between the construct of ego-resilience and the construct of spiritual beliefs.

The research examining ego-resilience completed by Letzring et al. (2005) does suggest a second potential relationship with spirituality. The findings of Letzring et al.'s (2005) study confirm that greater levels of ego-resiliency relates to enhanced social skills. Specifically, resilient individuals were described by others as assertive, socially poised and

[3] Leader biographies reviewed by Parameshwar (2005) included: Nawal el Saadawi, Viktor Frankl, Paulo Freire, Mahatma Gandhi, Helen Keller, Karl Marx, Rigoberta Menchu, Kwame Nkrumah, Aung San Suu Kyi and Mother Teresa.

skilled, and cheerful. Conversely, low resilience people were described as self-defeating, emotionally bland, and lacking personal meaning in life (Letzring et al., 2005). These descriptors have often been used in association with another form of intelligence: Emotional Intelligence (EI). Perhaps, spirituality is synonymous with one's EI? The present researcher has argued elsewhere that although there is likely commonality between EI and spirituality, the two constructs remain distinct (Harmer & Fallon, 2007). Page (2005) also argues that an individual's level of emotional capability is likely to form only one aspect of his/her spiritual development. That is, an individual with deeper levels of emotional awareness is likely to have more expansive spiritual beliefs (especially those related to fostering wholeness and interconnectedness and self-discovery and inner growth). The present researcher argues that emotional awareness and intelligence is an important sub-set of an individual's broader psychological experience of spirituality. Integral spirituality philosopher Ken Wilber (2006) argues a similar perspective when he suggests that one's lines[4] of development (i.e., emotional/affective, etc) can be considered hierarchical, with one's spiritual growth inter-dependent upon all lines of development.

With EI an emerging field of psychological inquiry argued to have incremental coherence beyond related constructs such as personality (Gignac et al., 2009), it is important that the construct of spiritual beliefs be distinguished as a unique construct separate to EI. Many models and measures of EI exist, with each conceptualising and operationalising EI differently (Palmer, 2003; Schutte et al., 1998). It is beyond the scope of the present study to articulate these many differences. The present study simply seeks a coherent model and measure of EI that conceptualises the construct in terms of one's moods and mindsets to do with emotions (i.e., not behaviours to do with emotions). The present researcher argues that it is one's attitudes to do with emotions that are likely to bear the closest resemblance to his/her beliefs related to spirituality. Considering this focus, two models and measures of EI emerge from literature, namely: the *Schutte Emotional Intelligence Scale* (SEIS) (Schutte et

[4] Like the concept of multiple intelligences (Gardner, 2000), *lines* of development refers to "relatively independent" aspects of one's holistic development (e.g., moral, cognitive, emotional/effective, psycho-sexual, values, etc). The distinction between multiple intelligences and lines of development, according to Wilbur, is the individual's level of conceptual complexity pertaining to that line of development, that is, lines of development are dependent upon the individual's *stage* of [psycho-social] development (Wilbur, 2006).

al., 1998) and the *Emotional Quotient Inventory* (EQ-i) (Bar-On, 1997). Both could be considered mixed-models of EI that operationalise the construct of EI via self-report (Palmer, 2003). As the EQ-i has been found to lack structural validity using a predominantly Australian sample (Palmer, Manocha, Gignac, & Stough, 2002), the SEIS was deemed as the most appropriate for the present study. The SEIS assesses both a global dimension of EI (Schutte et al., 1998) as well as four more specific facets, namely: appraisal of emotions in self, appraisal of emotions of others, emotional regulation of self and using emotions in problem solving (Gignac, Palmer, Manocha, & Stough, 2005).

It shall be noted that a comparison between the constructs of EI (as operationalised using the four factors identified by Gignac et al., 2005) and spiritual beliefs does provide a challenge to the construct of spiritual beliefs. It is possible that the four dimensions of one's spiritual beliefs (i.e., remaining open to life's mysteries, developing life meaning and purpose, fostering wholeness and connectedness, and pursuing self-discovery and inner growth) is likely to be somewhat dependent upon his/her level of emotional development. Therefore, the correlation between EI and dimensions of the spiritual beliefs construct may be high. However, the present researcher would argue that simply having a higher level of EI is no guarantee of an openness to, and an adoption of, spiritual beliefs. This hypothesis needs to be tested empirically.

Research examining ego-resilience also suggests a third potential relationship with spirituality. Specifically, the construct of ego-development has been found to also share common variance with personality (Letzring et al., 2005). Research completed by Letzring, Block and Funder (2005) utilising the *California Q-Sort*, found a strong association between personality and ego-resilience (*r*s between .37 and .82). Although there is no published study examining ego-resilience and the FFM of personality, ego-resiliency is also likely to share commonality with this model, most notably neuroticism (negatively) and both openness to experience and conscientiousness. Given that spirituality is considered to be trait-like by some researchers (for example Luthens, Youssef, & Avolio, 2007), it could be argued that the construct of spiritual beliefs is likely to share common variance with personality. The present researcher has stated previously that although one's spiritual beliefs are relatively stable across time, they are also inter-dependent upon one's stage of psycho-social (i.e., level of

conceptual complexity) development. This perspective was demonstrated empirically in this dissertation via an examination of spiritual beliefs and identity stage resolution across the lifespan (refer to Chapter 9).

Conversely, Piedmont positions spirituality strongly as the sixth factor of personality (Piedmont, 1999). Piedmont argues that positioning spirituality (i.e., not the more specific spiritual *beliefs* construct) as aligned to personality assists the construct in two significant ways. First, it expands the realm of individual differences research in relation to what constitutes personality. Second, it provides a new paradigm for integrating religious/spiritual research into mainstream psychological thinking, which sets the stage for both fields of inquiry to expand their conceptualisation of human behaviour (Piedmont, 1999). The challenge of positioning spirituality within the domain of personality pertains to the lack of incremental coherence of personality (Gignac et al., 2009). Put another way, Gignac et al. (2009) argue that personality is considered so expansive to be boundless. As a result, it could be argued that the likelihood of finding spiritual beliefs to be conceptually redundant with personality is high. This potential issue is highlighted upon an examination of the relationship between Piedmont's *Spiritual Transcendence Scale* (STS; Piedmont, 1999) and the NEO-PI-R. Specifically, two of the three sub-scales of the STS do correlate moderately-to-strongly with facets of personality[5]. The strongest relationship (of r = .33) was found to be between the Universality sub-scale of the STS and the Openness to Experience sub-scale of the NEO-PI-R (Slater, Hall, & Edwards, 2001). However, it should be acknowledge that the Prayer/Meditation Fulfilment sub-scale of the STS does show discriminant validity with personality (self-report *r*s range from -.08 to .27).

In another study examining spirituality and personality, Simpson et al. (2007) found an overlap between 11 scales purported to assess spirituality and sub-scales of the FFM-FFI. Using principal components analysis (PCA) to identify second order factors between the 11 religion/spirituality scales, the strongest relationship found was between the personality sub-scale of Extraversion and measures examining positive experiences of God (r = .41). The

[5] The strength of the cited correlation coefficients is interpreted according to the guidelines recommended by Hemphill (2003).

same study found a positive correlation between the personality facet of Neuroticism and measures examining negative relationship experiences of God (r = .44) (Simpson et al., 2007). Given this finding, it is possible that the SBI: Brief (given that the inventory utilises items from the STS and other instruments already shown to share some conceptual overlap with the FFM) will demonstrate some shared variance with personality. However, it could be argued that this outcome is a result of the FFM of personality being too expansive (Gignac, Bates, & Jang, 2007; McGrath, 2005), rather than the construct of spiritual beliefs being redundant *per se*. Independent of this perspective, Mayer (2000) argues for the difference between personality and spirituality: "I would have some reservations about labeling people with happy, easy-going temperaments as spiritually intelligent, because they inherited a temperament that makes it easy for them to forgive others (pp. 53-54)." Therefore, although an openness to experience (a dimension of the FFM) is likely to relate to the spiritual beliefs dimension of openness to life's mysteries, one's propensity for the former is no guarantee that the individual will proactively explore spirituality. This hypothesis needs to be tested empirically.

As already argued in the present dissertation (refer to Chapter 2), the majority of research examining spirituality has been in the field of health. Unlike the domains of intelligence (intellectual and emotional) and personality, where spirituality is considered a distinct construct, within the field of health, spirituality is positioned as 'spiritual well-being' (i.e., as a sub-set of the broader well-being construct). As a dimension of well-being, spirituality is often described as an experience of being in harmony in one's inner and outer worlds (van Dierendonck, 2004)[6]. The predominant measure of spiritual well-being published in literature is the *Spiritual Well-Being Scale* (SWS), developed by Ellison (1983). The SWS consists of two sub-scales: (1) the Religious Well-Being sub-scale, which measures a respondent's perception of God and the perceived involvement of God in their life; and (2) the Existential Well-Being sub-scale, which measures one's sense of meaning in life and satisfaction with life's present direction. The present researcher highlights three challenges with the SWS. First, the blending of religiousness-oriented items with spirituality-oriented

[6] The present researcher would argue that this definition of spiritual well-being is more aligned with the outcome of identity stage resolution (refer to Chapter 9) than spirituality *per se*.

items is problematic. As already demonstrated by the present dissertation (refer to Chapter 7), explicitly religious-oriented items fail to demonstrate discriminate sensitivity between the four dominant spiritual practices explored within contemporary Australian society. Second, explicit religiosity fails to provide predictive validity in determining unique variance in identity stage resolution (refer to Chapter 8), which the present researcher argues is foundational to the deepening of one's spiritual consciousness. Third, the degree of overlap between the SWS's Existential Well-Being sub-scale and sub-scales of Ryff's (1989) *Psychological Well-Being Scales* (PWBS) could be considered large. For example, a recent study examining the relationship between one's existential well-being (as measured by the SWS) and psychological well-being (as measured by the PWBS) found a strong relationship (according to the guidelines of Hemphill, 2003) between the two constructs of $r = .32$ (Existential Well-Being with PWBS: Autonomy) and $r = .49$ (Existential Well-Being with PWBS: Environmental Mastery) (Ramirez, Lumadue, & Wooten, 2007).

Psychological well-being is a well researched construct and the PWBS is its most readily accepted measure (Springer & Hauser, 2006). Therefore, it could be argued that a strong correlation between spiritual beliefs and the PWBS calls into question the value of the spiritual beliefs construct in predicting additional and meaningful individual differences in human behaviour. Alternatively, the present researcher argues that the examination of spirituality within the context of psychological well-being highlights conceptual issues with how psychological well-being is currently operationalised. In one study examining the content validity of the PWBS, van Dierendonck (2004) utilised the Inner Resources sub-scale of the *Spiritual Assessment Scale* (SAS) (Howden, 1993) and the Religious Well-Being sub-scale of the SWS (Ellison, 1983). Using higher-order exploratory factor analysis (varimax rotation), van Dierendonck's (2004) findings suggest that the Purpose in Life and Personal Growth sub-scales of the PWBS loaded with both spirituality sub-scales. Although considered a poor item loading according to Abdel-Gaid et al.'s (1986) recommendations, it shall be noted that the Inner Resources sub-scale (a sub-scale of the SAS) also cross-loaded onto a second factor containing the remaining sub-scales of the PWBS (van Dierendonck, 2004). Given these findings, it could be claimed that spirituality does share some construct redundancy with psychological well-being as operationalised by the PWBS. However, this same study found Ryff's (1989) Psychological Well-Being Scales to be mis-specified utilising

confirmatory factor analysis (CFA). Given that CFA could be considered a more rigorous approach (compared with exploratory factor analysis) to evaluating the structure of a construct as the researcher imposes some restrictions on the estimated values of the model (Gignac, 2007), this result highlights a potential lack of coherence in how psychological well-being is being operationalised by the PWBS. This interpretation is further supported by the strong negative cross-loading (i.e., -0.64) of the Neuroticism dimension of the FFM with four of the six sub-scales of the PWBS (namely self-acceptance, positive relations with others, autonomy and environmental mastery) in van Dierendonck's study (2004).

Indeed, the structural validity of the PWBS is increasingly questioned by researchers with the factor structure of the PWBS having been disconfirmed via both exploratory and confirmatory factor analyses (Kafka & Kozma, 2002; Springer & Hauser, 2006; Springer, Hauser, & Freese, 2006). Research findings provide adequate evidence to suggest psychometric issues with the construct of psychological well-being (as operationalised by the PWBS), which suggest that its validity is limited to face-validity only. Perhaps as with personality, the conceptualisation of psychological well-being is too expansive. For example, both psychological well-being and spiritual beliefs constructs include a dimension related to purpose in life. However, research completed by van Dierendonck (2004) indicates that purpose in life and personal growth (two dimensions of psychological well-being) both relate more strongly to spirituality than to the remaining dimensions of psychological well-being. The present researcher suggests that the Purpose in Life and Personal Growth dimensions of Ryff's (1989) PWBS may be better ascribed to spiritual beliefs. This hypothesis needs to be tested empirically.

Just as psychological well-being relates to one's inner experiences, the construct of social well-being relates to one's outer experiences (Keyes, 1998). Given the focus on psychological well-being and quality of life in existing literature, Keyes (2002) argues that one's functioning in life involves more than just these constructs. Keyes proposes that individuals also evaluate their functioning in life via five social criteria, namely: integration, contribution, coherence, actualisation and acceptance (Keyes, 1998). To assess an individual's current level of functioning according to these five dimensions, Keyes developed the *Social Well-Being Scale* (SWS) (Keyes, 1998). The SWS has been shown to correlate

negatively with psycho-social impairment (e.g., depressive episodes) and positively with global life satisfaction (Keyes, 1998, 2002). Spirituality has also been shown to relate to enhanced life satisfaction (Eggers, 2000) and reduced depression for individuals who consider their spirituality as a source of strength (Trouillet & Gana, 2009). Although no research has directly examined the relationship between spirituality (more specifically, spiritual beliefs) and the SWS, it is possible that the two constructs will share common variance. For example, the universal spiritual belief that all life is interconnected (i.e., the Fostering Wholeness and Interconnectedness dimension of the spiritual beliefs construct) is likely to relate to the construct of social well-being. Although the SWS will be included in the present study, of concern to the present researcher is the inconsistent finding relating to the structural validity of the SWS. In his first validation study, Keyes (1998) reports a Goodness-of-Fit (GFI) for the SWS of .86 (*N* = 373), which suggests a poor fitting model according to Hu and Bentler's (1999) guidelines. In his follow-up validation study, Keyes reports a GFI of .95 (*N* = 2887), which could be interpreted as an indication of a well-fitting model. However, given that the GFI is influenced upwards by larger sample sizes, this second result is questionable. Perhaps social well-being as operationalised by Keyes is also too expansive. This hypothesis as it pertains to the construct of spiritual beliefs needs to be tested empirically.

Given the potential structural incoherence of the PWBS and SWS, the present researcher sought to identify two final constructs for inclusion in the present study that could be argued to have greater parsimony. First, the construct of a Sense of Coherence (SOC) (Antanovsty, 1993) was identified. Second, the related construct of Mindfulness (Kabat-Zinn, 2005a) was also identified. Previous research has examined the construct of SOC in relation to spirituality, with the results being inconclusive (George et al., 2002). For example, Pallant and Lae (2002) failed to find a significant association between SOC and the religiosity sub-scale of the *COPE Inventory*, a measure of dispositional coping. Conversely, Kohls, Walach and Wirtz (2009) found that the construct of SOC predicts unique variance in levels of mental distress beyond transpersonal trust and social support for those with and without a formal spiritual practice. The findings of the study suggest that one's SOC was enhanced for those respondents with a formal spiritual practice. In interpreting these findings, Kohls and his colleagues (2009) suggest that individuals with a formal spiritual

practice were better able to integrate both positive and negative spiritual experiences; whereas, individuals without a formal spiritual practice benefit from positive spiritual experiences only. Given the present dissertation's distinction between spiritual beliefs and spiritual practices, it remains to be examined if there is construct redundancy between SOC and spiritual beliefs.

It could be argued that mindfulness provides an individual with enhanced SOC (Kohls et al., 2009). Prior to detailing the potential association between spiritual beliefs and mindfulness, the present researcher wishes to make a distinction between *being* mindful and the practice of mindfulness. The former refers to a state of conscious awareness that can be described as a sense of clarity and vividness of current experience and functioning (Brown & Ryan, 2003); whereas, the latter refers to the process of focusing conscious awareness and the cultivation of mindfulness through a formal practice, such as the practice of mindfulness *meditation* (Kabat-Zinn, 2005a). The present study is focusing on the outcome of being mindful (e.g., greater present-moment-awareness), rather than its practice. The benefits of being mindful are well established within the field of health-related research. For example, mindfulness has been shown to relate to positive self-regulation, which in turn assists individuals to disconnect from automatic thoughts, habits and unhealthy behaviours (Avants & Margolin, 2004; Brown & Ryan, 2003). Mindfulness is also another important element shown to facilitate self-acceptance and the adoption of a non-judgmental attitude towards one's mind (Walach, Buchheld, Buttenmuller, Kleinknecht, & Schmidt, 2006). Although the direction of the relationship has not been tested, it is likely that these two processes (i.e., self-regulation and self-acceptance/non-judgement) underpin the enhancement of one's SOC. It could also be argued that mindfulness is an important component of an individual sustaining a sense of clarity in the four dimensions of the spiritual beliefs construct; however, it remains to be tested empirically if this is actually the case.

10.2.1. The objectives of the present study

As stated, the aim of the present study is to demonstrate that the construct of spiritual beliefs is a unique individual difference construct to other individual difference constructs. In examining the content validity of the present dissertation's Spiritual Beliefs

Inventory: Brief Version (SBI: Brief), it was deemed important to identify constructs already argued as aligned (to varying degrees) to spiritual beliefs; for example, personality, psychological well-being and a sense of coherence. Further, it was deemed important to identify constructs not yet considered in relation to one's spiritual beliefs; for example, ego-resilience, Emotional Intelligence (EI), social well-being and mindfulness. Given the positive psychology movement and emerging research examining concepts such as psychological capital (Luthens et al., 2007) and signature strengths (Peterson & Seligman, 2004a), the aforementioned constructs (e.g., mindfulness, EI, etc) are increasingly considered important components of psychological inquiry and societal discourse. The spiritual beliefs construct is also an important new construct to positive psychology. Therefore, determining its distinctiveness from the aforementioned constructs is critical.

The present study aims to establish the content validity of the SBI: Brief as a new and unique individual differences construct. The specific aims of the present study are two-fold, namely: (1) to demonstrate that the construct of spiritual beliefs has unique variance independent of other individual difference constructs; and (2) to demonstrate the incremental coherence of spiritual beliefs as independent of existing individual difference constructs. Given that previous research has suggested that spirituality is hierarchically aligned to all lines of development (for example Wilbur, 2006), the present study's first aim should be considered in terms of degrees. That is, it is expected that one's spiritual beliefs will have a degree of association with all constructs selected for examination in the present study. However, it is the degree of alignment that is of interest (i.e., it is anticipated that the degree of alignment will not be too large). With respect to the present study's second aim, it is anticipated that the four sub-scales of the SBI: Brief will load on a factor independent of all remaining constructs examined.

10.2.1.1.Hypotheses

On the basis of the aims of the present study, the hypotheses explored were that there would be statistically significant correlations (in the expected direction) between the SBI: Brief and its four sub-scales and each of the remaining scales examined; however, the correlations would not be excessively large (i.e., Pearson's r = .50 or less). Further, using

higher-order exploratory factor analysis, the four sub-scales of the SBI: Brief would load on a factor independent of the remaining scales analysed.

10.3. Method

10.3.1. Participants

Participants were a convenient sample recruited via the Internet. A total of 331 respondents participated in the study. Additional details pertaining to the sample are presented in Chapter 4.

10.3.2. Instruments

Spiritual Beliefs Inventory: Brief Version (SBI: Brief). The SBI: Brief is a four factor model and measure of an individual's spiritual beliefs. Additional detail pertaining to the SBI: Brief is presented in Chapter 6.

Ego Resilience Scale (ERS). The ERS developed by Block and Kreman (1996) is a uni-dimensional model measuring an individual's central personality constructs for understanding motivation, emotion, and behaviour. More specifically, the ERS is a measure of an individual's dynamic capacity to contextually modify his/her own level of control in response to situational demands and affordances, such as frustrating or stressful encounters. The scale consists of 14 items. Example items include, "I quickly get over and recover from being startled," and "I enjoy dealing with new and unusual situations." The instrument utilises a four-point response scale; where 1 = *Does not apply at all* and 4 = *Applies very strongly*. The scale authors report reliability coefficients (α) for the ERS of .76.

Five Factor Model: Brief Adjective Checklist (FFM – BAC). The FFM-BAC developed by McLennan (1998) is a 30-item measure of the 'Big-Five' model of personality that utilises word adjectives known to represent positively and negatively the five factors of the FFM. The five-factors of the model include Agreeableness, Openness, Neuroticism, Conscientiousness and Extraversion with sample word adjectives relating to each dimension being *cooperative, creative, fearful, efficient*, and *sociable* representing each sub-scale,

respectively. The checklist utilises a seven-point response scale; where 1 = "*never* or *almost never* characteristic of me", 2 = *"rarely* characteristic of me", 3 = "*seldom* characteristic of me", 4 = "*sometimes* characteristic of me", 5 = "*often* characteristic of me", 6 = "*usually* characteristic of me'" and 7 = "*always* or *almost always* characteristic of me". The inventory author reports reliability coefficients (α) for each sub-scale of .70 and .71, .76, .71 and .85 for Agreeableness, Openness, Neuroticism, Conscientiousness and Extraversion, respectively.

Mindfulness Awareness Attention Scale (MAAS). The MAAS is a 15-item global measure of mindfulness developed by Brown and Ryan (2003). The measure assesses an individual's receptive awareness of and attention to present-moment events and experience. The scale uses a six-point response scale; where 1 = *Almost Always*, 2 = *Very Frequently*, 3 = *Somewhat Frequently*, 4 = *Somewhat Infrequently*, 5 = *Very Infrequently* and 6 = *Almost Never*. Example items include, "I find myself preoccupied with the future or the past" and "I find it difficult to stay focused on what's happening in the present". The scale authors report a reliability coefficient (α) for the total score of 0.87. For ease of interpretation, all items on the scale were reverse scored so that a higher score represents greater mindfulness.

Psychological Well-Being Scale (PWBS). The PWBS is a measure of positive functioning developed by Ryff (1989). The scale consists of six sub-scales (20 items per sub-scale), namely: Autonomy, Environmental Mastery, Personal Growth, Positive Relations with Others, Purpose in Life, and Self-Acceptance. The Autonomy sub-scale measures an individual's level of self-determination, independence, and capacity to regulate behaviour from within. The Environmental Mastery sub-scale measures an individual's ability to choose or create environments suitable to his or her psychic conditions. The Personal Growth sub-scale measures an individual's capacity to continue to develop one's potential, to grow and expand as a person. The Positive Relations with Others sub-scale measures an individual's capacity to develop warm, trusting interpersonal relations. The Purpose in Life sub-scale measures an individual's belief that there is purpose in and meaning to life. Finally, the Self-Acceptance sub-scale measures an individual's capacity to hold a positive attitude towards oneself. The scale utilises a six point response scale; where 1 = *Strongly Disagree*, 2 =

Disagree, 3 = *Somewhat Disagree*, 4 = *Don't Know*, 5 = *Somewhat Agree*, 6 = *Agree* and 7 = *Strongly Agree*. For brevity, the present study will utilise a short form version of the PWBS consisting of only 18 items (three items per sub-scale). Ryff reports internal consistency reliability (α) issues at the sub-scale level with the short form version, but promotes the use of a Total Composite score in situations where sub-scales fail to meet the required level of internal consistency reliability. The internal consistency coefficient (α) for the Total Composite score of the 18-item version is not provided.

Schutte Emotional Intelligence Scale (SEIS). The SEIS is a self-report, trait-based measure of Emotional Intelligence (EI) developed by Schutte et al. (1998). The model adopted by Schutte and her colleagues is based upon the earlier conceptualisation of EI (as a set of abilities) by Salovey and Mayer (1990). The SEIS consists of 33-items (three are negatively keyed) and Schutte et al. (1998) reports a single global factor for the scale. The scale is responded to using a five-point scale; where 1 = *Strongly Disagree* and 5 = *Strongly Agree*. The scale authors report an internal consistency coefficient (α) of .87 for the global score. Subsequent analysis of the scale (using 21 items) via confirmatory factor analysis by Gignac, Palmer, Manocha and Stough (2005) identified four sub-scales, namely: Appraisal of Emotions in Self (AES), Appraisal of Emotions of Others (AEO), Emotional Regulation of Self (ERS) and Using Emotions in Problem Solving (EPS). Sample items for the AES (two items), AEO (seven items), ERS (eight items) and EPS (four items) are, "I am aware of my emotions as I experience them", "I am aware of the non-verbal messages I send to others", "I expect good things to happen" and "When I am in a positive mood, solving problems is easy for me", respectively. Gignac et al. (2005) do not report reliability coefficients (α) for each sub-scale; however, CFA results suggest a moderately well fitting model (i.e., Comparative Fit Index > .90)[7]. The Gignac et al. (2005) scoring protocol will be used in the present study.

Sense of Coherence Scale (SOCS). The SOCS originally developed by Antanovsky (1993), consists of 29-items measuring three sub-scales, namely: Comprehensibility,

[7] Given that CFA utilises both the inter-item covariance and the square variance/covariance matrix models to determine model fit, McDonald (1999) states that adequately fitting models (i.e., RMSEA < .05 and CFI > .95) will also have acceptable levels of internal consistency reliability (α).

Manageability and Meaningfulness. A Total Composite score can also be calculated. Given the psychometric issues with the original SOCS, the modified 13-item version developed by Larsson and Kallenberg (1999) will be utilised in the present study. The modified SOCS was found to consist of two sub-scales, namely: Social Comprehension and Commitment, and Unpleasant Emotions and Inner Tension. The Social Comprehension and Commitment sub-scale measures an individual's levels of meaning and satisfaction from life. An example item for this sub-scale is, "In the past I have been surprised by the behaviour of people whom I thought I knew well" (negatively-keyed item). The Unpleasant Emotions and Inner Tension sub-scale measures negative affect. An example item for this sub-scale is, "Sometimes I have feelings inside I would rather not feel". The scale utilises a seven point response scale; where 1 = *Strongly Disagree* and 7 = *Strongly Agree*. Larsson and Kallenberg (1999) do not report reliability coefficients (α) for each sub-scale; however, CFA results suggest a well fitting model (i.e., Adjusted Goodness of Fit Index > .95). The Larsson and Kallenberg (1999) scoring protocol will be used in the present study.

Social Well-Being Scale (SWS). The SWS developed by Keyes (1998) consists of 33 items and is a measure of the extent to which individuals consider themselves to be social resources, care and feel safe in their communities, and lead coherent personal lives. The SWS consists of five sub-scales, namely: Integration, Contribution, Coherence, Actualisation and Acceptance. The Integration sub-scale consists of seven items and measures an individual's evaluation of his or her relationship to society and the community. An example item is, "I feel like I am an important part of my community". The Contribution sub-scale consists of six items and measures an individual's construal of society through the character and qualities of other people. An example item is, "My behaviour has some impact on other people in my community". The Coherence sub-scale consists of six items and measures an individual's evaluation of his or her social value. An example item is, "Most cultures are so strange that I cannot understand them" (negatively keyed item). The Actualisation sub-scale consists of seven items and measures an individual's evaluation of the potential and trajectory of society. An example item is, "I see society as continually evolving". Finally, the Acceptance sub-scale consists of seven items and measures an individual's perception of the quality, organisation, and operation of the social world, and a concern for knowing about the

world. An example item is, "I believe that people are kind". The scale utilises a seven point response scale; where 1 = *Strongly Disagree* and 7 = *Strongly Agree*. The scale author reports reliability coefficients (α) for each sub-scale of .57, .69, .81, .75 and .77 for Coherence, Actualisation, Integration, Contribution and Acceptance, respectively. The internal consistency coefficient (α) for a total composite score of the SWS is not provided.

10.3.3. Procedure

The questionnaire battery was administered via the Internet with participants responding anonymously. Participants were provided the opportunity to supply a return email address should they want to be informed of the results of the study. Participants were recruited from various sources, including word of mouth of the researcher, online forums and online social networking websites. Participants were provided an overview of the study's purpose via an introductory statement and were informed that participation was voluntary and that they were free to withdraw from participating at any time.

10.3.4. Data analytic strategy

An examination of each sub-scale's Means (*M*), Standard Deviations (*SD*) and internal consistency reliability (α) for males, females and combined was performed. In the case where 50% or more of the sub-scales of a specific scale fail to meet a minimum internal reliability coefficient (α) of 0.70 or greater, all further analyses will utilise the respective scale's total composite score only. The scale will be omitted completely from all further analysis should the internal reliability coefficient (α) of the total composite score fail to meet the α = 0.70 or greater threshold.

Pearson's correlations between the four sub-scales of the Spiritual Beliefs Inventory: Brief Version (SBI: Brief) and the study's identified measures were performed to examine the direction and strength of association. Correlations were interpreted according to Hempill's (2003) guidelines where a small, moderate and large correlation (two-tailed) equates to Pearson's correlation coefficients (*r*s) of less than .20, .20 to .30, and greater than .30, respectively. Based upon the guidelines of Tabachnick and Fidell (2006), a Pearson's correlation coefficient of .70 or greater was considered an indication of possible multicollinearity.

To examine the content validity of the SBI: Brief, Exploratory Factor Analysis (EFA) utilising the four sub-scales of SBI: Brief and associated scales (i.e., ERS, FFM-BAC, MAAS, PWBS, SEIS, SOCS, SWS) was conducted. The EFA was performed in SPSS 15.0 and were based on Maximum Likelihood Estimation (MLE). Given the expected significant correlations between respective (sub-)scales factors were rotated non-orthogonally (via direct oblimin). The analysis extracted factors based upon the identified factor having an eigen value of 1.0 or greater. Item level factor loadings were interpreted according to Abdel-Gaid et al.'s (1986) guidelines; where .320 to .449 is considered a *poor* loading; 450 to .549 is considered a *fair* loading; .550 to .629 is considered a *good* loading; .630 to .709 is considered a *very good* loading; and .710 or greater is considered an *excellent* loading. Further, a sub-scale was deemed adequately assigned to a factor if: (1) its factor loading on its primary factor was .550 (i.e., a good loading) or higher; and (2) its factor loading on the remaining factors was less than .450 (i.e., a poor loading) (Abdel-Gaid et al., 1986).

The final factor model identified within the exploration was then subjected to Partial Confirmatory Factor Analysis (PCFA) (Gignac, 2009) and an evaluation of model-fit determined based on five close-fit indices (calculated by hand). As recommended by Hu and Bentler (1999), a combination of both absolute close-fit and incremental close-fit indexes were used to evaluate model close-fit for any factor model identified. Specifically, two absolute close-fit indexes (RMSEA and SRMR) and three incremental close-fit indexes (NFI, TLI and CFI) were selected to be used in the investigation. In accordance with Hu and Bentler (1999), models were deemed well fitting when absolute close-fit indices (RMSEA and SRMR) were < .06 and incremental close-fit indices (NFI, TLI and CFI) were .95 or larger.

10.4. Results

Prior to testing the present study's hypothesis, the means (*M*), standard deviations (*SD*), and internal consistency reliabilities (α) for males, females and combined for the present study's identified variables were examined. As presented in Panel 1 of Table 10.1, the internal consistency reliability (α) of the ERS was above the present study's pre-determined threshold of .70. Further, all five sub-scales of the FFM-BAC (i.e., FFM) attained $\alpha > .70$ (refer to Panel 2). Similarly, the MAAS (Panel 3) obtained an internal consistency coefficient of $\alpha = .90$. An examination of the PWBS and its six sub-scales (Panel 4) shows that only one sub-scale (namely, $PWBS_{SELF\text{-}ACCEPT}$) surpassed the required internal consistency coefficient threshold of $\alpha > .70$. Therefore, the Total Composite of the PWBS (i.e., $PWBS_{TOTAL}$) will be utilised in all further analysis ($\alpha = .74$). An examination of the present study's measure of Emotional Intelligence (the SEIS) shows that only one sub-scale (namely, $SEIS_{EPS}$) failed to meet the minimum internal consistency criterion and will be omitted from further analysis (refer to Panel 5). As presented in Panel 6 of Table 10.1, the Social Comprehension and Commitment (i.e., $SOCS_{SCC}$) obtained an internal consistency coefficient of .69. Given that 50% of the sub-scales of the SOCS failed to meet the internal consistency coefficient threshold, only the Total Composite score (i.e., $SOCS_{TOTAL}$) will be used in subsequent analysis. Finally, an examination of the Social Well-Being Scale (SWS) (Panel 7) yielded two sub-scales with internal consistency coefficients below the pre-determined threshold of $\alpha = .70$, namely the Acceptance and Coherence sub-scales. These two sub-scales will be omitted from subsequent analysis.

Table 10.1

Means (M), Standard Deviations (SD) and internal consistency reliabilities (α) for males, females and combined for the study's measures (N = 293)

		Males (n=67)	Females (n=226)	Combined (N=293)	
	Number of items	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	α
Panel 1					
ERS	14	3.29 (0.36)	3.27 (0.35)	3.28 (0.35)	.78
Panel 2					
FFM_{AGR}	6	5.50 (0.59)	5.58 (0.60)	5.57 (0.60)	.70
FFM_{CONSC}	6	5.40 (0.77)	5.50 (0.76)	5.47 (0.76)	.81
FFM_{NEUR}	6	3.01 (0.94)	3.07 (0.84)	3.05 (0.86)	.86
FFM_{OTE}	6	5.03 (0.91)	5.24 (0.79)	5.20 (0.82)	.81
FFM_{EXTRA}	6	4.63 (0.90)	4.66 (0.93)	4.65 (0.92)	.85
Panel 3					
MAAS	15	4.22 (0.78)	4.05 (0.74)	4.09 (0.75)	.90

Table 10.1: *continued*

		Males (n=67)	Females (n=226)	Combined (N=293)	
	Number of items	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	α
Panel 4					
$PWBS_{AUTONOMY}$	3	4.67 (0.90)	4.79 (0.76)	4.76 (0.80)	**.63**
$PWBS_{ENV.\ MASTERY}$	3	4.73 (0.89)	4.79 (0.80)	4.78 (0.82)	**.62**
$PWBS_{PER.\ GROWTH}$	3	5.49 (0.69)	5.53 (0.54)	5.52 (0.58)	**.511**
$PWBS_{POS.\ RELAT}$	3	4.88 (1.07)	5.01 (0.90)	4.98 (0.94)	**.67**
$PWBS_{PURP-LIFE}$	3	4.77 (0.89)	4.89 (0.78)	4.86 (0.81)	**.34**
$PWBS_{SELF-ACCEPT}$	3	4.68 (1.05)	4.90 (0.98)	4.85 (1.00)	.80
$PWBS_{TOTAL}$	18	4.87 (0.64)	4.99 (0.53)	4.96 (0.56)	.83
Panel 5					
$SEIS_{EAS}$	2	3.94 (0.69)	4.00 (0.55)	3.99 (0.59)	.80
$SEIS_{EAO}$	7	3.71 (0.70)	3.95 (0.54)	3.89 (0.59)	.85
$SEIS_{ERS}$	8	3.90 (0.58)	4.00 (0.41)	3.98 (0.46)	.82
$SEIS_{EPS}$	4	3.92 (0.54)	3.89 (0.45)	3.90 (0.47)	**.69**
$SEIS_{TOTAL}$	28	3.87 (0.48)	3.96 (0.36)	3.94 (0.39)	.90

Table 10.1: *continued*

		Males (n=67)	Females (n=226)	Combined (N=293)	
	Number of items	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	α
Panel 6					
$SOCS_{SCC}$	7	4.97 (0.72)	4.89 (0.71)	4.91 (0.71)	**.69**
$SOCS_{UEIT}$	5	5.28 (0.89)	5.18 (0.96)	5.21 (0.94)	.81
$SOCS_{TOTAL}$	13	5.05 (0.70)	4.98 (0.74)	5.00 (0.73)	.86
Panel 7					
SWS_{INTEG}	7	5.19 (1.28)	5.18 (1.03)	5.18 (1.09)	.93
SWS_{ACCEPT}	7	4.46 (0.71)	4.57 (0.67)	4.54 (0.68)	**.60**
$SWS_{CONTRIB}$	6	5.57 (1.03)	5.71 (0.79)	5.68 (0.85)	.85
SWS_{COHER}	6	4.87 (0.61)	4.77 (0.57)	4.79 (0.58)	**.28**
SWS_{ACTUAL}	7	5.29 (0.90)	5.34 (0.84)	5.33 (0.85)	.83
SWS_{TOTAL}	33	5.07 (0.75)	5.11 (0.58)	5.10 (0.59)	.91

Note: ERS = Ego-Resilience Scale; FFM_{AGR} = Five Factor Model (FFM): Agreeableness; FFM_{CONSC} = FFM: Conscientiousness; FFM_{NEUR} = FFM: Neuroticism; FFM_{OTE} = FFM: Openness to Experience; FFM_{EXTRA} = FFM: Extraversion; MAAS = Mindfulness Awareness Attention Scale; $PWBS_{AUTONOMY}$ = Psychological Well-Being Scale (PWBS): Autonomy; $PWBS_{ENV.\ MASTERY}$ = PSW: Environmental Mastery; $PWBS_{PER.\ GROWTH}$ = PWBS: Personal Growth; $PWBS_{POS.\ RELAT}$ = PWBS: Positive Relations with Others; $PWBS_{PURP\text{-}LIFE}$ = PWBS: Purpose in Life; $PWBS_{SELF\text{-}ACCEPT}$ = PWBS: Self-Acceptance; $PWBS_{TOTAL}$ = PWBS: Total Composite; $SEIS_{EAS}$ = Schutte Emotional Intelligence Scale (SEIS): Emotional Awareness of Self; $SEIS_{EAO}$ = SEIS: Emotional Awareness of

Others; $SEIS_{ERS}$ = SEIS: Emotional Regulation of Self; $SEIS_{EPS}$ = SEIS: Emotions-based Problem Solving; $SEIS_{TOTAL}$= SEIS: Total Composite; $SOCS_{SCC}$ = Sense of Coherence Scale (SOCS): Social Comprehension and Commitment; $SOCS_{UEIT}$ = SOCS: Unpleasant Emotions and Inner Tension; $SOCS_{TOTAL}$ = SOCS: Total Composite; SWS_{INTEG} = Social Wellbeing Scale (SWS): Integration; SWS_{ACCEPT} = SWS: Acceptance; $SWS_{CONTRIB}$ = SWS: Contribution; SWS_{ACTUAL} = SWS: Actualization; SWS_{COHER} = SWS: Coherence; SWS_{TOTAL} = SWS: Total Composite. *Note:* bolded internal consistency coefficients (α) failed to meet the $\alpha > .70$ threshold for inclusion in future analysis.

Examining the nature of association between the SBI: Brief and its four sub-scales and the present study's other measures

To examine the present study's first hypothesis, a series of Pearson's product correlations (two-tailed) were performed between the SBI: Brief and its four sub-scales and the remaining measures selected for analysis. Measures failing to meet the initial screening criteria (i.e., $\alpha > .70$) were not included in the analysis as low reliability leads to an underestimation of the actual correlation between constructs (van Dierendonck, 2004).

As presented in Table 10.2, the Openness to Experience sub-scale of the FFM (i.e., FFM_{OTE}) was found to have a correlation of $r = .53$ with the Total Composite score of the SBI: Brief (i.e., SBI: $Brief_{TOTAL}$), which suggests 28% shared variance between the two constructs. No other dimension of the FFM obtained a correlation above .50 with the SBI: Brief or its four sub-scales. The Total Composite score of the PWBS (i.e., $PWBS_{TOTAL}$) was found to have a correlation of $r = .68$ (i.e., 46% shared variance) with the LMPD sub-scale of the SBI: Brief. Similarly, the Emotional Regulation of Self sub-scale of the SEIS (i.e., $SEIS_{ERS}$) was found to have a correlation of $r = .62$ (39% shared variance) with the LMPD sub-scale of the SBI: Brief and a correlation of $r = .53$ (28% shared variance) with SBI: $Brief_{TOTAL}$. The Total Composite score of the Sense of Coherence Scale (i.e., $SOCS_{TOTAL}$) was found to have a correlation of $r = .584$ (i.e., 34% shared variance) with the LMPD sub-scale of the SBI: Brief. Finally, the Contribution sub-scale of the Social Well-Being Scale (i.e., $SWS_{CONTRIB}$) was found to have a correlation of $r = .56$ (i.e., 31% shared variance) with the LMPD sub-scale of the SBI: Brief.

Table 10.2

Pearson's r correlation matrix between the SBI: Brief and its four sub-scales and related variables (N=293)

	OLM	LMPD	FWI	SDIG	SBI: Brief$_{TOTAL}$
ERS	.14	.38	.31	.27	.33
FFM$_{AGR}$	.23	.39	.27	.25	.35
FFM$_{CONSC}$	.17	.37	.16	.23	.28
FFM$_{NEUR}$	-.10	-.47	-.16	-.08	-.24
FFM$_{OTE}$	.41	.40	.45	.42	.53
FFM$_{EXTRA}$	.09	.37	.11	.16	.21
MAAS	.07	.42	.15	.01	.19
PWBS$_{TOTAL}$	.22	.68	.32	.22	.43
SEIS$_{EAS}$	.15	.30	.30	.29	.31
SEIS$_{EAO}$	.26	.34	.34	.38	.41
SEIS$_{ERS}$	.35	.62	.37	.39	.53
SOCS$_{TOTAL}$	.07	.58	.22	.04	.27
SWS$_{INTEG}$	.17	.47	.34	.15	.34
SWS$_{CONTRIB}$	.25	.56	.37	.28	.45
SWS$_{ACTUAL}$	.12	.42	.33	.17	.32

Note: OLM = Openness to Life's Mysteries; LMPD = Life Meaning, Purpose and Direction; FWI = Fostering Wholeness and Interconnectedness; SDIG = Self-Discovery and Inner Growth; refer to Table 10.1 for remaining acronym definitions.

Establishing the content validity of the SBI: Brief

To test the present study's second hypothesis, an EFA was performed using the 19 higher-order scales and/or associated sub-scales. The 19 higher-order scales and/or associated sub-scales were subjected to EFA analysis using Maximum Likelihood Estimation (MLE) with direct oblimin rotation with Kaiser normalisation. The number of factors extracted was determined based upon the identified factor having an eigen value of 1.0 or greater and an examination of the eigen value scree plot (Figure 10.1). As presented in Figure 10.1, the eigen value scree plot suggests a four-factor solution.

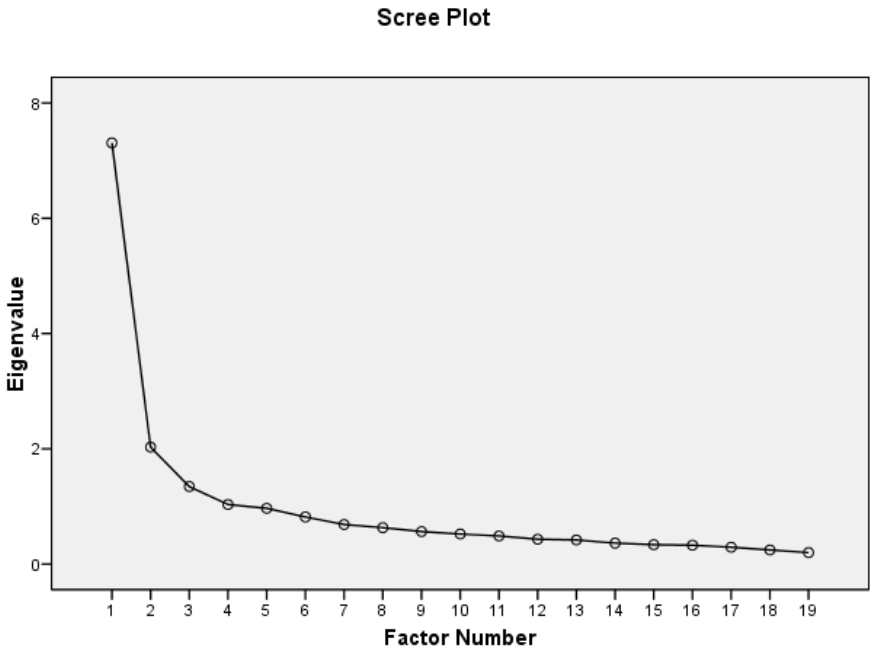

Figure 10.1: Scree plot of eigen values derived from the Maximum Likelihood Estimation (MLE) analysis for the higher-order factor analysis

As presented in Table 10.3, a total of four factors emerged after fifteen iterations and accounted for 51.95% of the variance in the data set. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy of the final four-factor solution was .90.

Table 10.3

Factor loadings of Maximum Likelihood Estimation (MLE) analysis for the four sub-scales of SBI: Brief and related variables (N=293)

Sub-scale	Factor 1	Factor 2	Factor 3	Factor 4	Items explained variance (%)
SWS_{INTEG}	**.75**				5.6%
SWS_{ACTUAL}	**.65**				4.3%
$SWS_{CONTRIB}$	**.62**				5.9%
$PWBS_{TOTAL}$	**.56**		.39		7.6%
FFM_{EXTRA}	.51				3.9%
$SEIS_{ESR}$	.44				5.5%
OLM		**.82**			6.2%
SDIG		**.70**			5.3%
FWI		**.57**		.33	5.7%
LMPD	.35	.47	.37		7.0%
MAAS			**.83**		6.4%
$SOCS_{TOTAL}$	.337		**.73**		7.8%
FFM_{NEUR}			-.54		4.7%
ERS				.54	5.0%
$SEIS_{EAS}$				.44	3.0%
FFM_{OTE}		.332		.40	4.6%
$SEIS_{EAO}$				.40	3.4%
FFM_{AGREE}				.35	3.2%
FFM_{CONSC}				.30	3.7%

Note: Factor loadings have been sorted ascending with factor loadings <|.3| suppressed; bolded factor loadings surpassed |.550|. Note: OLM = Openness to Life's Mysteries; LMPD = Life Meaning, Purpose and Direction; FWI = Fostering Wholeness and Interconnectedness; SDIG = Self-Discovery and Inner Growth; refer to Table 10.1 for remaining acronym definitions.

As presented in Table 10.3, the first factor included six (sub-)scales (three sub-scales of SWS, $PWBS_{TOTAL}$, FFM_{EXTRA} and $SEIS_{ERS}$), yielded an eigen value of 7.307 and accounted for 35.70% of the variance. Of the sub-scales loading on Factor 1, four were adequately defined with a factor loading of .550 or greater. The FFM_{EXTRA} sub-scale loaded fairly on Factor 1 and $SEIS_{ESR}$ loaded poorly on Factor 1. The second factor included the four sub-scales of the SBI: Brief (i.e., OLM, LMPD, FWI and SDIG), yielded an eigen value of 2.03 and accounted for an additional 8.56% of the variance. Only the LMPD sub-scale of the SBI: Brief was considered inadequately defined with a factor loading of .47 on Factor 2. The third factor attained an eigen value of 1.34, consisted of three (sub-)scales (the MAAS, $SOCS_{TOTAL}$ and FFM_{NEU}) and accounted for 4.37% in additional variance. The FFM_{NEU} sub-scale of the FFM loaded negatively into Factor 3 (with a factor loading of -.54). The final factor (Factor 4) accounted for a further 3.32% in additional variance, yielded an eigen value of 1.03 and consisted of six (sub-)scales (three sub-scales of FFM, two sub-scales of the SEIS and the ERS). None of the (sub-)scales were adequately defined in this factor (i.e., a factor loading of .550 or greater).

An examination of the sub-scale cross-loadings revealed that the LMPD sub-scale does load on two other factors, namely: Factor 1 (eigen value = .35) and Factor 3 (eigen value = .37). However, the cross-loadings for LMPD did not surpass the pre-determined criterion of .450. Similarly, the SDIG sub-scale did load on Factor 3 (eigen value = .33); however, the loading also failed to surpass the pre-determined criterion of .450. The $SOCS_{TOTAL}$ cross-loaded onto Factor 1 (eigen value = .34); the $PWBS_{TOTAL}$ cross-loaded onto Factor 3 (eigen value = .39); and FFM_{OTE} cross-loaded onto Factor 2 (eigen value of .33). It shall be noted that none of the cross-loadings surpassed the pre-determined criterion of .450, suggesting the cross-loadings were poor (Abdel-Gaid et al., 1986).

Table 10.4

MLE factor correlation matrix between the four second-order factors (N=293)

	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1	1			
Factor 2	.32	1		
Factor 3	.48	.19	1	
Factor 4	.37	.41	.40	1

As presented in Table 10.4, Factor 2 (consisting of the four sub-scales of the SBI: Brief) shares a low association with Factor 3 of .19 (the factor including the MAAS, $SOCS_{TOTAL}$ and FFM_{NEU}); and a high correlation with Factors 1 and 4 of r = .32 and r = .41, respectively. This finding suggests the four derived sub-scales of the SBI: Brief do share a degree of overlap with the other assessed measures. However, the results also suggest only 11% shared variance with Factor 1 and 16% shared variance with Factor 4.

Finally, the results generated from the second order factor were subjected to Partial Confirmatory Factor Analysis (PCFA) (refer to Table 10.5). A review of the absolute close-fit indexes for the model indicates that the model is well fitting. The incremental close-fit indexes are inconclusive. However, Byrne (2001) recommends adherence to the CFI as the "index of choice (p. 83)." Therefore, in accordance with the guidelines for interpreting fit indices outlined by Hu and Bentler (1999), the model is deemed as well-fitting. Table 10.5 presents the results of all absolute and incremental close-fit indices calculated for the PCFA (refer to Appendix A-7 for equations used to calculate each close-fit index).

Table 10.5

Partial Confirmatory Factor Analysis (PCFA) analysis for the second-order factor analysis examining the content validity of the four sub-scales of the SBI: Brief and related variables (N=293)

	χ^2_{null}	df_{null}	$\chi^2_{implied}$	$df_{implied}$	RMSEA	SRMR	NFI	TLI	CFI
4-factor model	2502.840	171	214.326	101	.058	.035	.914	.917	.951

10.5. Discussion

The present study aimed to analyse the content validity of the present dissertation's Spiritual Beliefs Inventory: Brief Version (SBI: Brief). The specific aims of the present study were two-fold, namely: (1) to demonstrate that the construct of spiritual beliefs has unique variance independent of other individual difference constructs; and (2) to demonstrate the incremental coherence of spiritual beliefs beyond existing individual difference constructs. On the basis of the aims of the present study, the hypotheses explored were that there would be a statistically significant correlation (in the expected direction) between the SBI: Brief and its four sub-scales and the remaining scales examined; however, that correlation would not be excessively large (i.e., Pearson's *r* = .50 or less). Further, using higher-order exploratory factor analysis, the four sub-scales of the SBI: Brief would load on a factor independent of the remaining scales analysed.

Unfortunately, some measures selected for analysis in the present study failed to achieve the most basic of criteria for assessing the reliability of a scale, namely adequate internal consistency (i.e., $\alpha > .70$). Given the recommendation of Clark and Watson (1995) that a scale or sub-scale's internal consistency coefficient be .80 or above, the results of the present study call into question the psychometric robustness of several of the scales selected for analysis. Most notably, five of the six sub-scales of the short-form version of the *Psychological Well-Being Scale* were found to be inadequate (i.e., α between .34 and .67). Only the Self-Acceptance sub-scale was found to have adequate internal consistency. The

Total Composite score of the PWBS was found to have adequate internal consistency (α = .83).

The present study's first hypothesis was mostly supported with only four of the 19 variables selected for analysis (i.e., only 21%) exceeding the pre-determined threshold of r = .50 (two-tailed). The Openness to Experience (i.e., FFM_{OTE}) dimension of the FFM-BAC (the present study's measure of personality) was found to correlate .528 with the Total Composite score of the SBI: Brief. Given that the FFM_{OTE} dimension (as assessed by the NEO-PI and NEO-FFI) has been found to correlate positively with the Adult Self-Transcendence Inventory (Levenson et al., 2005), Miller Measure of Spirituality (Miller, 2004) and the Spiritual Transcendence Scale (Piedmont, 1999), this finding is expected. Similarly, the Emotional Regulation of Self sub-scale of the SEIS (i.e., $SEIS_{ESR}$) was found to correlate positively with both the Life Meaning, Purpose and Direction (LMPD) sub-scale and the Total Composite Score of the SBI: Brief. A similar finding is reported in a study examining the Spiritual Assessment Scale (SAS) and the Trait Meta-Mood Scale (TMMS), completed by van Dierendonck, Garssen and Visser (2005). Van Dierendonck and his colleagues (2005) found a strong correlation between the Life Purpose and Meaning sub-scale of the SAS and the Repair of Negative Mood sub-scale of the TMMS (r = .33, p < .01). Interestingly, in the same study, a positive correlation of .50 (p < .001) was found between the Repair of Negative Mood sub-scale and the Transcendence sub-scale of the STS.

Although the direction of the association between LMPD and $SEIS_{ESR}$ is unknown in the present study, the findings for the Total Composite Score of the SOCS (i.e., $SOCS_{TOTAL}$) may provide some explanation. In the present study, $SOCS_{TOTAL}$ was found to have a strong association (i.e., r > .50) with the LMPD sub-scale of the SBI: Brief. In a study examining optimism, sense of coherence and life attitudes (i.e., an analog measure for life meaning and purpose) amongst undergraduate students, Adams et al. (2000) found a strong positive correlation between a respondent's life purpose (as operationalised by the *Life Attitude Profile*) and optimism and sense of coherence of rs = .55 and .60 (p < .05), respectively. Schutte et al. (1998) also reports a strong positive correlation between the SEIS and optimism (r = .52, p = .006). Adams et al. (2000) subsequently conducted a path analysis to examine the associations between life purpose, optimism and sense of coherence on

perceived wellness. Specifically, the relationship between life purpose and perceived wellness was hypothesised to be mediated by both optimism and sense of coherence. The model was found to be supported. Based upon these findings, it could be argued that the direction of the relationship between the EI sub-scale of $SEIS_{ESR}$ (and $SOCS_{TOTAL}$) and LMPD is likely to be from $SEIS_{ESR}$ to LMPD. Adams et al. (2000) interpreted their findings as evidence that one's life purpose tends to manifest much later in life than character dispositions such as optimism (i.e., emotional self-regulation) and a sense of coherence. As it relates to $SOCS_{TOTAL}$, it shall be noted that $SOCS_{TOTAL}$ failed to correlate significantly with either the Openness to Life's Mysteries (OLM) or Self-Discovery and Inner Growth (SDIG) sub-scales of the SBI: Brief.

Finally, the LMPD sub-scale of the SBI: Brief was found to have a strong association (i.e., $r > .50$) with the Total Composite score of the PWBS (i.e., $PWBS_{TOTAL}$). Subsequent item-level analysis of the short-form PWBS shows the strongest association between LMPD and $PWBS_{TOTAL}$ to be between the three items indexing the Self-Acceptance sub-scale (*r*s ranging from .538 to .585, $p < .001$) and one item (item 4 of the PWBS) indexing the Environmental Mastery sub-scale ($r = .583$, $p < .001$) of the PWBS. None of the remaining item-level correlations surpassed $r = .400$ with the three items pertaining specifically to the Purpose in Life sub-scale of the PWBS ranging from $r = -.02$ ($p = .687$) to $r = .31$ ($p < .001$) (refer to Appendix A-17 for all item-specific correlations between the PWBS and LMPD). However, given that van Dierendonck (cited in Springer & Hauser, 2006) found strong inter-scale correlations between the six sub-scales of the short-form PWBS, the item-level correlations found in the present study should be interpreted with caution. Finally, the findings of Adams et al. (2000) suggest that the likely direction of the relationship between LMPD and $PWBS_{TOTAL}$ in the present study is from LMPD to $PWBS_{TOTAL}$. A future study would need to validate this interpretation.

The present study's second hypothesis sought evidence of the content and incremental coherence of the four-factor model of spiritual beliefs. Specifically, a higher-order exploratory factor analysis was performed containing the four factors of the SBI: Brief and fifteen other variables. Support for the incremental coherence of the spiritual beliefs construct was shown to have occurred when all four factors of the SBI: Brief loaded on a

single factor with no other variable loading strongly onto that factor (i.e., a factor loading of .450 or greater). The present study's second hypothesis was supported and provides evidence for the incremental coherence of the spiritual beliefs construct. The first factor to emerge contained the three sub-scales of the *Social Well-Being Scale* (i.e., Integration, Actualisation and Contribution), $PWBS_{TOTAL}$, Extraversion and $SEIS_{ESR}$. Although the factor did contain two sub-scales not explicitly related to well-being (i.e., Extraversion and $SEIS_{ESR}$), it could be argued that this factor pertains to a respondent's overall well-being.

The second factor contained the four sub-scales of the SBI: Brief. No other scale or sub-scale loaded well (i.e., .550 or greater) onto this factor, which provides evidence for spiritual beliefs being a distinct construct. Further, no one sub-scale of the SBI: Brief was found to cross-load strongly (i.e., .450 or greater) onto another factor in the model. This finding provides additional evidence for the coherence of the construct. It should be noted that the LMPD sub-scale cross-loaded weakly onto Factors 1 and 3. A subsequent regression analysis was performed regressing LMPD onto all variables from these two factors (i.e., ten variables in total) and was found to be significant ($F_{6, 274} = 54.82$, $p < .001$), with the regression model accounting for 54.6% (i.e., $R^2 = .55$) of the variance in the LMPD sub-scale. It should also be noted that the FWI sub-scale also cross-loaded weakly onto the model's fourth factor (i.e., a loading of .33). A subsequent regression analysis was performed regressing FWI onto all variables from Factor 4 (i.e., six variables in total). The regression model was found to be significant ($F_{6, 274} = 16.68$, $p < .001$), with the model accounting for 26.6% (i.e., $R^2 = .27$) of the variance in the FWI sub-scale. According to the guidelines for determining construct redundancy outlined by Gignac et al. (2009) (whereby an R^2 value of .80 or greater indicates construct redundancy), these results indicate that the LMPD and FWI sub-scales do have adequate unique variance independent of the other variables in the model.

The third factor included the Mindfulness Awareness Attention Scale (MAAS), $SOCS_{TOTAL}$ and Neuroticism (negative loading). The construct of a sense of coherence (SOC) is argued to relate to an individual's cognitive and emotional capabilities (Pallant & Lae, 2002). Therefore, its loading with both MAAS and Neuroticism is expected. Further, research suggests that both SOC and personality constructs are relatively stable from adulthood (i.e.,

from age 30) (Larsson & Kallenberg, 1999; Piedmont, 1999). In validating the MAAS, Brown and Ryan (2003) found that the MAAS yielded a strong negative correlation with the Neuroticism sub-scale of the NEO-PI (r = -.56, p < .0001). An examination of the sub-facets of the Neuroticism sub-scale suggests the MAAS is most strongly related to the facets of Depression (r = -.53, p < .0001) and Vulnerability (r = -.47, p < .0001) (Brown & Ryan, 2003). Given these previous findings, it could be argued that the third factor in the model is representative of a respondent's positive/negative affect.

It must be noted that $PWBS_{TOTAL}$ loaded weakly onto Factor 3. Previous research examining the psychological well-being construct and SOC may provide an answer to this cross-loading. Specifically, one's SOC relates positively with enhanced psychological and physical well-being and functioning (Gana, 2001; Pallant & Lae, 2002). Further, sub-scales from the PWBS (namely the Autonomy, Personal Relations With Others and Environmental Mastery) have been found to correlate positively with the MAAS (rs from .21 to .68) (Brown & Ryan, 2003). Both of these previous findings support the weak cross-loading of $PWBS_{TOTAL}$ onto Factor 3.

It shall also be noted that the LMPD sub-scale of the SBI: Brief cross-loaded poorly onto the positive/negative affect factor of the model (Factor 3). This finding may highlight the importance of present-moment-awareness and having a sense of coherence (i.e., emotional stability) in the exploration of one's purpose and meaning in life. As already outlined, previous research completed by Adams et al. (2000) provides support for the mediating role of SOC in one's exploration of purpose in life. Further, meaningfulness is identified as a motivational characteristic of Antanovsky's original conceptualisation of the sense of coherence construct (Gana, 2001). The LMPD's second weak cross-loading was with Factor 1 (the well-being factor). One possible interpretation of this second cross-loading is that one's more dispositional affect may impact his/her pursuit of meaning and purpose, which may subsequently impact his/her well-being. In a future study, this interpretation would need to be tested empirically using suitable statistical analysis (i.e., path analysis). One second explanation may relate to the loading of the MAAS on the model's third factor. In validating the MAAS, Brown and Ryan (2003) found a significant positive correlation between the MAAS and a respondent's actualisation of potential experience (r = .43, p <

.0001). Put another way, higher levels of present-moment-awareness may relate to self-transcendence. Given that transcendence pertains to state of being above and beyond the limits of material experience (Ho & Ho, 2007), the weak cross-loading of the LMPD sub-scale onto a factor that includes the MAAS, may provide evidence that it is the ceasing of striving that provides one's life with meaning.

The final factor in the model (i.e., Factor 4), included the Ego-Resiliency Scale (ERS); the Emotional Awareness of Self (i.e., $SEIS_{EAS}$) and Emotional Awareness of Others (i.e., $SEIS_{EAO}$) sub-scales of the SEIS; and Agreeableness (i.e., FFM_{AGREE}), Conscientiousness (i.e., FFM_{CONSC}) and FFM_{OTE}. Although all scales and sub-scales congregating onto this factor are loading only poorly-to-fair, it could be argued that Factor 4 relates to one's emotional acuity and strength. The variable with the strongest loading onto Factor 4 is the ERS (i.e., a loading of .538). As conceptualised by Block and Kremen (1996), ego-resiliency is a stable construct. Given the findings of the present study, it could be argued that one's ego-resilience is related to his/her awareness of self-in-context, compassion, openness to ambiguity and achievement drive. It shall be noted that the openness to experience dimension of the FFM-BAC cross-loaded weakly (i.e., .32) onto the spiritual beliefs factor (Factor 2). This finding is not surprising given that openness to experience (OTE) has been shown to correlate positively with spirituality – specifically, the transcendental aspects of the construct – in previous research (e.g., Levenson et al., 2005; Miller, 2004; Piedmont, 1999). Of greater interest within the context of the present research is that the five dimensions of the FFM loaded across all four factors of the model (i.e., Extraversion on Factor 1; Neuroticism on Factor 3; OTE, Agreeableness and Conscientiousness on Factor 4; and a weak cross-loading of OTE on Factor 2. This finding provides further evidence of the over-expansiveness and incoherence of the FFM in individual differences research (Gignac et al., 2009).

10.5.1. Conclusion

The present study aimed to examine the spiritual beliefs construct in relation to constructs with which it is considered to be aligned yet theoretically and conceptually distinct. Related constructs included: psychological well-being, sense of coherence, personality, social well-being, Emotional Intelligence (EI), mindfulness and ego-resilience. Given that Wilbur (2006) argues that one's spiritual development is likely to be somewhat concordant with his/her

broader development (i.e., psycho-social, emotional/effective, moral, etc), it was anticipated that the spiritual beliefs construct would share some variance with the aforementioned constructs. However, it was argued *a priori* by the present researcher that the spiritual beliefs construct is new and unique and that the degree of association would not be too large. The findings of the present study support the present researcher's claims. The spiritual beliefs construct was found to correlate strongly with psychological well-being, emotional self-regulation (a dimension of EI) and one's sense of coherence. However, the strongest association (with psychological well-being) still indicated 54% unique variance for the spiritual beliefs construct as it pertains to psychological well-being. Further, the present study confirmed the psychometric issues with the short-form version of the PWBS reported by previous researchers (e.g., Springer & Hauser, 2006) suggesting that the inter-scale correlation found in the present study is questionable. More importantly, the present study confirmed that the spiritual beliefs construct is coherent and distinct from the remaining constructs analysed. Although, the present researcher acknowledges that the dual cross-loading of the LMPD sub-scale of the SBI: Brief is not ideal, and may suggest a potential structural validity issue with the inventory. In conclusion, the spiritual beliefs construct was found to be inter-related yet distinct from other related individual difference variables. Further, the content validity of the SBI: Brief was found to be supported; however, an analysis of the factorial validity of the measure utilising a second sample is warranted.

Chapter 11

Confirming the factor structure of the four factor model and measure of spiritual beliefs

11.1. Chapter overview

The present study seeks to examine the factorial validity of the Spiritual Beliefs Inventory: Brief Version (SBI: Brief) and its four sub-scales (Openness to Life's Mysteries, OLM; Life Meaning, Purpose and Direction, LMPD; Fostering Wholeness and Interconnectedness, FWI; and Self-Discovery and Inner Growth, SDIG) via the performing of confirmatory factor analysis. To perform the planned analyses, a second independent sample was obtained. The second sample consisted of 364 respondents and was found to be relatively homogeneous with the present dissertation's initial sample (N = 331). More specifically, independent samples t-tests indicated no significant differences in sub-scale and Total Composite scores for the SBI: Brief between the two samples. In accordance with the recommendations for completing spirituality-focused scale construction outlined by Fornaciaro, Sherlock, Ritchie and Lund Dean (2005a), the present study performed a series of increasingly complex factorial models to confirm or disconfirm the plausibility of the four-factor model of spiritual beliefs previously identified (refer to Chapter 6). The aims of the present study are three-fold: (1) to demonstrate that the four-factor model of spiritual beliefs identified previously by the present researcher is not sample specific; (2) to demonstrate that the spiritual beliefs construct does consist of four more specific dimensions; and (3) to demonstrate that the four-factor model of spiritual beliefs is not mis-specified. The findings of the present chapter are discussed in relation to the recommendations for spirituality scale development outlined by Fornaciaro et al. (2005a). Finally, how the findings of the present study support the present dissertation's proposed holistic conceptual framework for considering spirituality are also outlined.

11.2. Introduction

The use of confirmatory factor analysis (CFA) in scale construction and validation is increasingly common practice (Gignac, 2007, 2009; Noar, 2003). Within the field of spirituality research however, the practice is less common (Fornaciari et al., 2005a). In an examination of 65 studies reporting the development of spirituality-focused scales (published between 1996 and 2004), Fornaciari et al. (2005a) found that only 45% reported using factor analysis (principal components exploratory factor analysis) in the scale's construction and only 3% (i.e., two studies) utilised more comprehensive statistical methodologies, such as structural equation modelling (SEM). However, Fornaciari et al. (2005a) concluded that the two identified studies failed to report enough detail to evaluate the presence of a true confirmatory factor analysis. Fornaciari et al. (2005a) criticised the two studies stating, "… most researchers would agree that a more robust evaluation of scale construction was represented in these two studies … [however] none of the studies reported in our sample reported nested model comparisons and corresponding goodness of fit indices for competing models (p. 41)." In their review, Fornaciari and his colleagues (2005a) suggested three possible explanations for why many researchers shy away from the application of SEM in scale construction and examination, namely: (1) word limitations placed upon many published manuscripts may result in CFA analysis being edited out in preference for the reporting of other findings; (2) the use of CFA requires a larger sample that may be deemed impractical or impossible to obtain by researchers in the field of spirituality; and (3) the application of SEM to scale validation requires additional statistical training and knowledge that may be beyond many researchers (Fornaciari et al., 2005a). Even considering these limitations, Fornaciari et al. (2005a) strongly promotes the use of true confirmatory factor analysis (i.e., the examination of multiple competing models) in the development of spirituality-focused scales. Indeed, failing to do so may have significant consequences for the advancement of research examining the construct of spirituality. For example, within the field of psychological well-being research the *Psychological Well-Being Scale* (PWBS) developed by Ryff (1989) is widely used. However, researchers are increasingly questioning the validity of the PWBS (e.g., Springer & Hauser, 2006). In so doing, already published findings that utilise the scale are being discredited (see Springer & Hauser, 2006).

Spirituality-focused researchers have the opportunity to learn from the mistakes of the past to develop spirituality-focused scales that will not be queried in the future.

In the broader research community, Noar (2003) and others advocate the use of CFA in scale development stating that it greatly enhances a researcher's confidence in the structure and psychometric properties of a new measure. In advocating the use of CFA (in combination with exploratory factor analysis; EFA), Noar (2003) provides three justifications, namely: (1) CFA provides further confirmation that the psychometrics of a scale are strong; (2) CFA provides a strong test of the researcher's inductively or deductively derived model; and (3) CFA provides further information pertaining to the dimensionality of the scale. Therefore, it was deemed important to examine the psychometric rigour of the Spiritual Beliefs Inventory: Brief Version (SBI: Brief) via confirmatory factor analysis.

The SBI: Brief is a 26-item inventory examining an individual's spiritual beliefs according to four more specific dimensions, namely: (1) Openness to Life's Mysteries (OLM), a spiritual belief that there is an order to the universe that *transcends* human thinking; (2) Life Meaning, Purpose and Direction (LMPD), a spiritual belief that there is a meaning and purpose to one's life that *transcends* life's intermediatory pursuits; (3) Fostering Wholeness and Interconncetedness (FWI), a spiritual belief that there is an interconnectedness and synchronicity to all life that *transcends* the individual; and (4) Self-Discovery and Inner Growth (SDIG), a spiritual belief that all people are consciously (and unconsciously) undertaking a journey towards a *transcended* Self (upper case 'S'). The scale was developed as part of the present dissertation via exploratory factor analysis. The inventory shows good criterion and content validity (refer to Chapters 6, 8, 9 and 10).

Although the SBI: Brief shows good psychometric properties, McGrath (2005) argues that most scales used for the observation of psycho-social events and states are (at best) only a rough reflection of the constructs they were developed to represent. More specifically, McGrath (2005) suggests that the issue with many instruments pertains to their over complexity[1], that is, scales that (falsely) report to having a hierarchical representation

[1] It shall be noted that McGrath (2005) referred to this issue as 'conceptual complexity' within his article. However, given the present dissertation's existing use of this term (i.e., as being related to an individual's level

of a specific construct with conceptually distinct sub-constructs. Gignac (2007) demonstrated this issue empirically in an examination of three sub-facets of the Neuroticism dimension of the NEO-PI-R (Anxiety, Hostility and Depression). In Gignac's (2007) study, the results of a higher-order CFA (i.e., three first-order factors and one second-order factor) indicated the plausibility of a hierarchical Neuroticism construct. However, a subsequent model incorporating a nested general factor found the Depression sub-facet to be mis-specified. Specifically, the Depression sub-facet was found to not exist independent of the general Neuroticism factor. In a second example examining Ryff's (1989) PWBS, Springer and Hauser (2006) utilised CFA to examine competing models of the PWBS and concluded that the best fit of the data involved only three second-order factors (not six) and a negatively-keyed item factor. In Springer and Hauser's (2006) revised model, the Environmental Mastery, Purpose in Life, Self-Acceptance and Personal Growth sub-scales of the PWBS were combined to form a new factor; whereas, the Autonomy and Relationships with Others sub-scales were found to be unique.

11.2.1. The objectives of the present study

Research examining constructs often considered to be complimentary and/or competing with spirituality (i.e., personality and psychological well-being) have found these constructs to be potentially mis-specified. Therefore, it was considered important to also examine the possibility of the SBI: Brief being overly complex. Such an analysis requires the use of a second independent sample. The confirmation of the factor structure of the SBI: Brief as consisting of four more specific dimensions (i.e., OLM, LMPD, FWI and SDIG) utilising a second sample, would be further evidence of the plausibility of the present researcher's inductively and deductively derived four-factor model of spiritual beliefs. Further, the performing of a CFA would provide further information related to the dimensionality of the inventory; more specifically, potential mis-specification within the inventory proper. The aim of the present study is three-fold: (1) to demonstrate that the four-factor model of spiritual beliefs identified previously (refer to Chapter 6) is not sample specific; (2) to demonstrate

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of consciousness) it was deemed appropriate to refer to the issue of construct mis-specification as 'over complexity'.

that one's spiritual beliefs consists of four more specific dimensions (i.e., the model is not overly complex); and (3) to demonstrate that the four-factor model of spiritual beliefs is not mis-specified. Given both the inductive and deductive model generation process utilised by the present researcher, it is anticipated that the four-factor model of spiritual beliefs (as operationalised by the SBI: Brief) will be confirmed utilising a second predominantly Australian sample.

11.2.1.1 Hypotheses

On the basis of the aims of the present study, the hypotheses explored were that there would be a non-significant difference in sub-scale and Total Composite mean scores of the SBI: Brief between two homogeneous yet independent samples. Further, utilising confirmatory factor analysis, the four sub-scales of the SBI: Brief would be found to be uni-dimensional and well-fitting. Finally, the four-factor model of spiritual beliefs consisting of four first-order factors and one second-order factor would be found confirmed utilising confirmatory factor analysis.

11.3. Method

11.3.1. Participants (Sample 1)

Participants were a convenient sample recruited via the Internet. A total of 331 respondents participated in the study. Additional details pertaining to the sample are presented in Chapter 4.

11.3.2. Participants (Sample 2)

Participants were a convenient sample recruited via the Internet. A total of 364 respondents participated. The sample contained 115 males (31.6%), 208 females (57.1%) and 41 (11.3%) respondents that did not provide a gender. The mean age for males was 39.11 years (*SD* = 12.88; 18 – 72 years). The mean age for females was 43.63 years (*SD* = 11.95; 17 – 75 years). Three hundred and fifteen (86.5%) of the participants indicated Australia as their country of residence, 2.5% indicated a country of residence as the United

Kingdom (UK), 8.8% indicated a country of residence as the United States of America (USA), and 2.2% listed their country of origin as 'other' (note: 'other' includes New Zealand, Singapore, Germany, Italy, The Netherlands and South Africa). A total of 58.6% of the sample indicated they were in an intimate relationship (i.e., coupled, married or de-facto) with the remaining 41.4% of the sample indicating they were single or 'other'. A total of 41.8% of the sample indicated an annual salary (in $AUD) of $0 – $40,000, 22.5% indicated an annual salary of between $40,001 – $60,000, 19.5% indicated an annual salary of between $60,001 – $80,000, 6.3% indicated an annual salary of between $80,001 – $100,000 and the remaining 9.9% of the sample indicated an annual income of more than $100,001. Levels of education within the sample were 6.0%, 22.0%, 17.3%, 2.5%, 22.0%, 3.0%, 7.1%, 8.0%, 8.2% and 3.8% for Doctoral Degree, Masters Degree, Graduate Diploma, Graduate Certificate, Bachelor Degree, Advanced Diploma, Diploma, Certificate, Senior Secondary (i.e., yr 12) and Year 10 or equivalent, respectively. Participants indicated their current spiritual practice as Monotheistic-oriented (26.9%), Dharmic-oriented (16.2%), New Age-oriented (20.9%), Indigenous-oriented (5.2%), No Spiritual Practice (17.0%) and 'Other' (13.7%).

11.3.3. Instruments

Spiritual Beliefs Inventory: Brief Version (SBI: Brief). The SBI: Brief is a four factor model and measure of an individual's spiritual beliefs. Additional detail pertaining to the SBI: Brief is presented in Chapter 6.

11.3.4. Procedure

The questionnaire battery was administered via the Internet with participants responding anonymously. Participants were provided the opportunity to supply a return email address should they want to be informed of the results of the study. Participants were recruited from various sources, including word of mouth of the researcher, online forums and online social networking websites. Participants were provided an overview of the study's purpose via an introductory statement and were informed that participation was voluntary and that they were free to withdraw from participating at any time.

11.3.5. Data analytic strategy

The purpose of the present study was to confirm the factor structure of the Spiritual Beliefs Inventory: Brief Version (SBI: Brief) and its four sub-scales, namely: (1) Openness to Life's Mysteries (OLM); (2) Life Meaning, Purpose and Direction (LMPD); (3) Fostering Wholeness and Interconnectedness (FWI); and (4) Self Discovery and Inner Growth (SDIG). To test the present study's first hypothesis, a series of independent samples t-tests were performed. Given that the SBI: Brief was initially identified utilising exploratory factor analysis, a confirmatory factor analysis (CFA) approach to data reduction was employed to test the present study's second and third hypotheses and to help determine the plausibility of the proposed four-factor model of the inventory. Sample 2 was used for all CFA analyses.

Bentler and Chou (1987) recommend that a maximum of 20 observed variables be included in a structural equation model (SEM). However, the model and measure of spiritual beliefs to be investigated consists of 26 observed variables. Given these recommendations, the application of a total disaggregated model was not considered appropriate. Therefore, a partial aggregation model (Bagozzi & Heatherington, 1994) was used to evaluate the underlying factor structure of the SBI: Brief. A legitimate concern of a partial aggregation model (i.e., a model consisting of item parcels) is that elements of multi-dimensionality within a factor may be obscured by the creation of parcels (Bandalos & Finney, 2001). To address this concern and as recommended by Baumgartner & Homberg (1996), the present investigation conducted confirmatory factor analysis of each first order factor (i.e., OLM, LMPD, FWI and SDIG) to confirm that these partially aggregated composites are uni-dimensional and reliable. Gignac (2006) recommends a minimum of three item parcels per latent variable modelled. Therefore, given that some sub-scales of the SBI: Brief consist of only a small number of items (e.g., the FWI sub-scale consists of four items), some item parcels utilised in the present study are not 'parcels' in the truest sense (i.e., some item parcels consist of only one item)[2]. Each factor was then defined by three item parcels with items placed into parcels on a quasi-random basis (i.e., items with similar item content were

[2] Even with this limitation the utilisation of an item parcel consisting of only one item in the present study is still considered appropriate. Gignac (under review) provides evidence of this approach in the confirmatory factor analyses performed on the Genos Emotional Intelligence Inventory.

placed in separate parcels to reduce the chance of obscuring the possibility of multi-dimensionality). Each item parcel consisted of 1-3 items with any negatively keyed items per factor placed in separate item parcels to mitigate potential negatively keyed item bias (William, Ford, & Nguyen, 2002).

To test the plausibility of the four-factor model (for the SBI: Brief), a series of progressively more complex models were tested to confirm or disconfirm the implied four-factor model. The first model was an unrestricted global factor model defined by a single general factor (for a visual representation of the model see Appendix A-20; Model 1). The second model was a restricted four factor model defined by four first-order factors: OLM, LMPD, FWI and SDIG (see Appendix A-20; Model 2). The third model was a higher-order four factor model defined by four first-order factors and one higher-order global factor (see Appendix A-20; Model 3). The final model tested was the corresponding direct hierarchical model of the preceding four-factor higher order model (see Appendix A-20; Model 4), as recommended by Gignac (2007). To provide for additional insight into the factor solution and allow for a more direct comparison between Models 3 and 4, factor loadings within the higher order model (Model 3) will be subjected to the Schmid-Leiman transformation (Schmid & Leiman, 1957). This transformation is recommended by Gignac (2007) for all higher-order CFAs. It shall be noted that the present study did not test an oblique factor model (see Appendix A-20; Model 5) as Gignac (2007) argues that in the presence of a strong general factor virtually any combination of oblique factor model will result in "decent" levels of model fit.

All CFA analyses were based on Pearson covariance matrices and Maximum Likelihood Estimation (MLE) via AMOS 7.0. Model evaluations were based on close-fit indices, although chi-square (χ^2) and their corresponding probabilities were also reported. In accordance with the recommendation of Hu and Bentler (1999), a combination of both absolute close-fit and incremental close-fit indexes were used to evaluate model close-fit. Specifically, two absolute close-fit indexes (SRMR and RMSEA) and three incremental close-fit indexes (NFI, TLI and CFI) were selected to be used in the investigation. In accordance with Hu and Bentler (1999), models were deemed well fitting when absolute close-fit indices (RMSEA and SRMR) were < .06 and incremental close-fit indices (NFI, TLI and CFI) were .95 or

larger. Further, a model was considered acceptably well-fitting in the event that 95% of the elements within the normalised covariance matrix were less than |2.0| and no single element was particularly large (i.e., outlying) (Gignac, 2007).

When comparing models, the investigation selected the Bayes Information Criterion (BIC). The BIC takes into account sample size, allows for comparisons of non-nested models, and imposes a penalty for model complexity. Smaller values of BIC represent better fitting models – with negative values preferred. When comparing models, a BIC difference of ten or more (i.e., ≥ 10) between competing models provides very strong support for selecting the model with the smallest BIC value (Rafferty, 1995; Springer & Hauser, 2006).

11.4. Results

Prior to analysis, the data (for Sample 2) was examined for multivariate outliers using an SPSS syntax program by DeCarlo (DeCarlo, 1997). Based on the examination of the Bonferroni corrected Mahalanobis distance value probabilities and the corresponding ordered square distance scatter plot, a total of five multivariate outliers were identified and removed from subsequent analysis.

Prior to testing the present study's hypotheses, the means (*M*), standard deviations (*SD*), reliability coefficients (α), skew and kurtosis for males, females and combined for the Spiritual Beliefs Inventory: Brief Version (SBI: Brief) was first examined. It can be seen from Table 11.1 that both males and females (for Sample 2) scored higher than the midpoint for the inventory (a score of 3 out of a possible 6), with females scoring significantly higher than males on all four sub-scales of the SBI: Brief ($p < 0.05$). The Total Composite score of the SBI: Brief (i.e., SBI: Brief$_{TOTAL}$) also showed a significant difference ($p < .05$) between males and females, with females scoring higher than males. A review of the effect size (η^2) for these statistically significant differences was performed and was found to be .06, .04, .05, .03 and .07 for OLM, LMPD, FWI, SDIG and SBI: Brief$_{TOTAL}$, respectively. According to Hemphill's (2003) guidelines for interpreting effect sizes (where a small, medium, and large effect size corresponds to η^2 = .04, .06, and .09, respectively), the findings suggest small-to-medium effect size. A further review of the differences in means between males and females yielded

a numerical difference of .48, .32, .41, .21 and .36 for OLM, LMPD, FWI, SDIG and SBI: Brief$_{TOTAL}$, respectively. Therefore, it can be interpreted that although there is a statistically significant difference between males and females for each of the sub-scales, it could be argued that there is no practical difference. As a result, combined males and females results will be used for all subsequent analysis. Table 11.1 also indicates that the internal consistency reliability coefficients of the inventory's four sub-scales and SBI: Brief$_{TOTAL}$ are all acceptable with only the sub-scale of SDIG being below $\alpha = 0.80$. Finally, the skew and kurtosis of the inventory's four subscales and SBI: Brief$_{TOTAL}$ are all within an acceptable range (i.e., |2.0| and |7.0|, respectively) (Curran et al., 1996).

The means and standard deviations (males and females combined) for each sub-scale of the SBI: Brief and SBI: Brief$_{TOTAL}$ for the present dissertation's initial sample (i.e., Sample 1) are also presented in Table 11.1. To test the present study's first hypothesis that there would not be statistically significant differences between the two samples, a series of independent samples t-tests were performed. For the OLM sub-scale (equality of variances assumed), the mean score for Time 1 (M = 4.84, SD = .90) and Time 2 (M = 4.89, SD = .98) was not significant (t_{693} = -0.34, p = .732). For the LMPD sub-scale (equality of variances not assumed), the mean score for Time 1 (M = 4.76, SD = .59) and Time 2 (M = 4.86, SD = .79) failed to achieve significance (t_{685} = -0.41, p = .672). For the FWI sub-scale (equality of variances assumed), the mean score for Time 1 (M = 4.76, SD = .85) and Time 2 (M = 4.84, SD = .92) was not significant (t_{693} = -1.21, p = .225). For the SDIG sub-scale (equality of variances not assumed), the mean score for Time 1 (M = 5.01, SD = .54) and Time 2 (M = 5.20, SD = .65) failed to achieve significance (t_{689} = 0.29, p = .774). Finally, for SBI: Brief$_{TOTAL}$ (equality of variances assumed), the mean score for Time 1 (M = 4.84, SD = .60) and Time 2 (M = 4.95, SD = .64) was not significant (t_{693} = -0.53, p = .595). These findings provide support for the present study's first hypothesis.

Table 11.1

Means (M), Standard Deviations (SD) and internal consistency reliabilities (α) for males, females and combined for the SBI: Brief (Sample 1; N = 331) (Sample 2; N = 364)

		Sample 2							Sample 1
		Males (n=115)	Females (n=208)	Combined (N = 364)					Combined (N = 331)
	Number of items	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	Skew	Kurtosis	SEM	α	*M* (*SD*)
OLM	9	4.60 (1.10)	**5.08** (0.80)	4.89 (0.98)	-1.38	1.77	0.46	.89	4.84 (0.90)
LMPD	8	4.64 (0.84)	**4.96** (0.75)	4.86 (0.79)	-0.73	0.39	0.33	.87	4.76 (0.59)
FWI	4	4.60 (1.10)	**5.01** (0.76)	4.84 (0.92)	-0.81	0.52	0.19.	.80	4.76 (0.85)
SDIG	5	5.06 (0.73)	**5.27** (0.60)	5.20 (0.65)	-0.72	0.24	0.17	.79	5.01 (0.54)
SBI: Brief$_{TOTAL}$	26	4.72 (0.71)	**5.08** (0.55)	4.95 (0.64)	-0.65	0.10	0.90	.92	4.84 (0.60)

Note: Means in bold text (Sample 2) represent significantly different scores between males and females ($p < .05$).

Confirmation of the uni-dimensionality of the four sub-scales of the SBI: Brief

To test the present study's second hypothesis, each sub-scale of the SBI: Brief was subjected to confirmatory factor analysis. A sub-scale was considered adequately defined if the resulting absolute and incremental close-fit indexes met the guidelines recommended by Hu and Bentler (1999). Model A (refer to Figure 11.1) presents the item loads for the factor of OLM, which yielded a $\chi^2 = 84.7$, $p < .001$, and close-fit indices indicative of an adequately well fitting model (e.g., RMSEA = .081, SRMR = .034, NFI = .953, TLI = .951, CFI = .966; refer to Table 11.2). In contrast, the related null model for the factor of OLM yielded a $\chi^2 = 1416.7$, $p < .001$, and the absolute close-fit indices indicative of poor model fit (e.g., RMSEA = .368 and SRMR = .457). As can be seen in Figure 11.1 (Model A), the factor loading for each item is positive and statistically significant, ranging from .47 to .82. It shall also be noted that an examination of the model's modification indices suggested the co-varying of two sets of item's error variances, namely items 1 and 2 and 4 and 6. An examination of the item content for each item pair indicates similar wording, so respective item error variances were allowed to co-vary. These items where aggregated into separate parcels in subsequent analyses.

Table 11.2

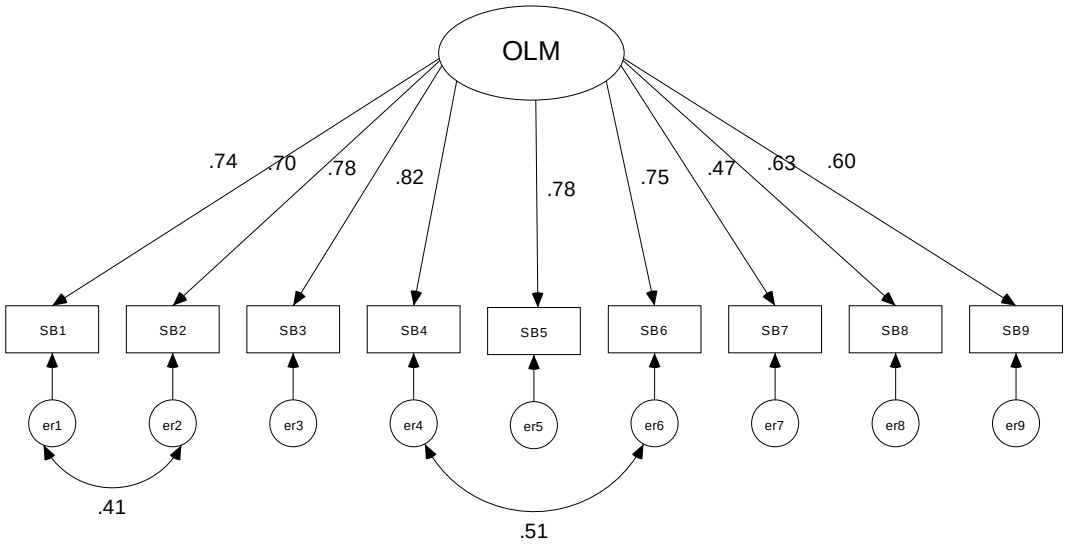
Confirmatory Factor Analysis (CFA) of the four sub-scales of the SBI: Brief (N=364).

		χ^2	*df*	RMSEA	SRMR	NFI	TLI	CFI
OLM	*(Model A)*	84.7	25	.081	.034	.953	.951	.966
LMPD	*(Model B)*	53.6	19	.071	.036	.965	.966	.977
FWI	*(Model C)*	3.5	2	.046	.015	.994	.982	.997
SDIG	*(Model D)*	27.4	4	.127	.036	.950	.891	.956

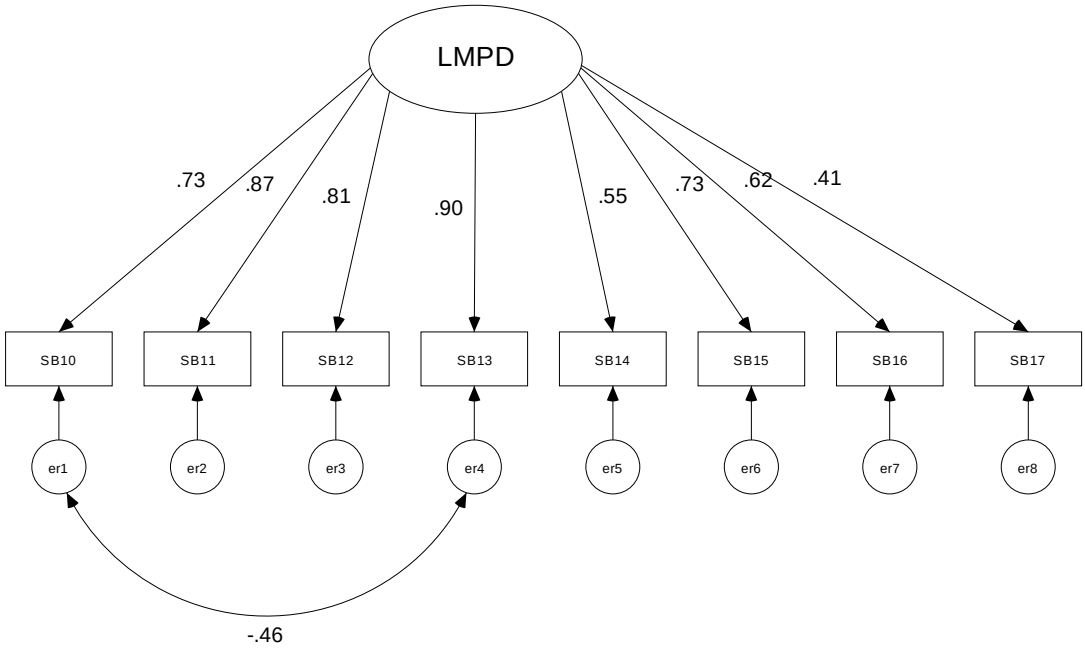
Note: RMSEA = Root Mean Square Error of Approximation; SRMR = Standardised Root Mean Square Residual; NFI = Normed Fit Index; TLI = Tucker-Lewis Index; CFI = Comparative Fit Index.

Model B (refer to Figure 11.1) presents the item loads for the factor of LMPD, which yielded a $\chi^2 = 91.5$, $p < .001$, and close-fit indices indicative of an adequately well fitting model (e.g., RMSEA = .071, SRMR = .036, NFI = .965, TLI = .966, CFI = .977; refer to Table 11.2). In contrast, the related null model for the factor of LMPD yielded a $\chi^2 = 1515.4$, $p < .001$, and the absolute close-fit indices indicative of poor model fit (e.g., RMSEA = .383 and SRMR = .448). As can be seen in Figure 11.1 (Model B), the factor loading for each item is positive and statistically significant, ranging from .41 to .90. An examination of the model's modification indices suggested the co-varying of the error variances for two items, namely items 10 ("My life has meaning and purpose") and 13 ("I have a sense of harmony or inner peace"). Although the content of each item indicates non-similar wording, it was considered appropriate to co-vary these items given the findings of a previous study (refer to Chapter 10) suggesting that one's sense of coherence (a.k.a. a sense of harmony or inner peace) influences a person's capacity to seek meaning and purpose in life. These items were aggregated into separate parcels in subsequent analyses. Model C (refer to Figure 11.1) presents the item loads for the factor of FWI, which yielded a $\chi^2 = 3.5$, $p < .001$, and close-fit indices indicative of an adequately well fitting model (e.g., RMSEA = .046, SRMR = .015, NFI = .994, TLI = .982, CFI = .997; refer to Table 11.2). In contrast, the related null model for the factor of FWI yielded a $\chi^2 = 600.2$, $p < .001$, and the absolute close-fit indices indicative of poor model fit (e.g., RMSEA = .522 and SRMR = .427). As can be seen in Figure 11.1 (Model C), the factor loading for each item is positive and statistically significant, ranging from .51 to .93. Finally, Model D (refer to Figure 11.1) presents the item loads for the factor of SDIG, which yielded a $\chi^2 = 27.4$, $p < .001$, and close-fit indices indicative of an adequately well fitting model (e.g., RMSEA = .127, SRMR = .036, NFI = .950, TLI = .891, CFI = .956; refer to Table 11.2). In contrast, the related null model for the factor of SDIG yielded a $\chi^2 = 548.5$, $p < .001$, and the absolute close-fit indices indicative of poor model fit (e.g., RMSEA = .385, SRMR = .359). As can be seen in Figure 11.1 (Model D), the factor loading for each item is positive and statistically significant, ranging from .42 to .81. It shall also be noted that an examination of the model's modification indices suggested the co-varying of the error variances relating to two sets of item pairs, namely items 24 and 26 and 25 and 26. An examination of the item content for items 24 ("The process of self discovery is very important to me") and 26 ("I tend to reflect on the events that occur in my life") could not

justify the co-varying of these items. However, items 25 ("People need to frequently evaluate what should be cherished in their lives") and 26 indicates similar wording, so respective item error variances for these two items were allowed to co-vary. These items where aggregated into separate parcels in subsequent analyses.

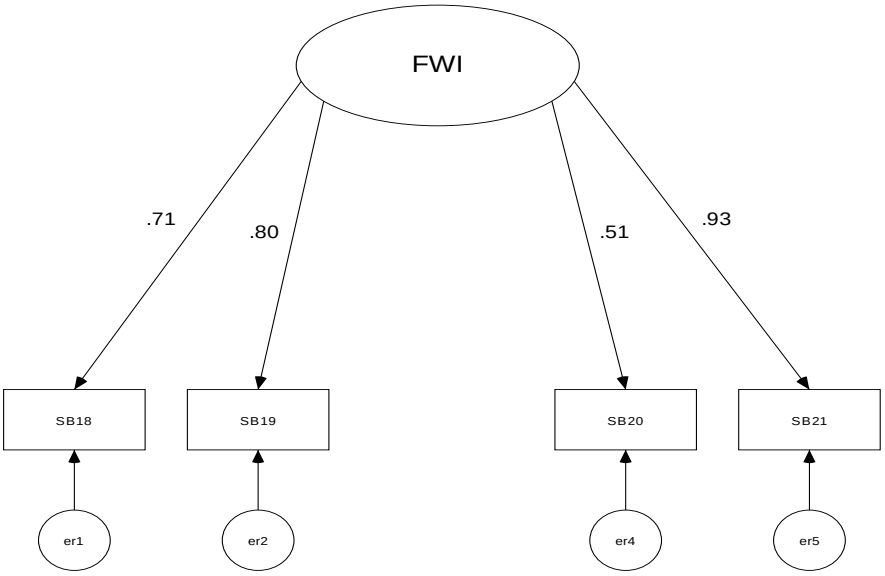


Model A: OLM sub-scale

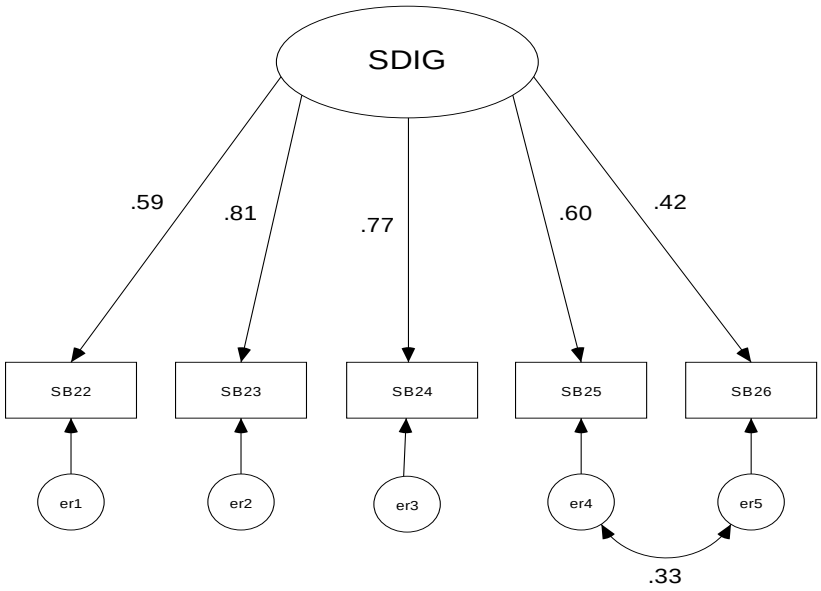


Model B: LMPD sub-scale

Figure 11.1: Modeling of the item loadings for each sub-scale of the spiritual beliefs measure



Model C: FWI sub-scale



Model D: SDIG sub-scale

Figure 11.1: continued

Examining the plausibility of the four-factor model of spiritual beliefs (as operationalised by the SBI: Brief)

To examine the present study's third hypothesis, a series of increasingly complex models were tested. The first model tested was a global model (Model 1), which yielded a χ^2 = 991.0, p < .001, and close-fit indices indicative of a poor fitting model (e.g., RMSEA = .219, SRMR = .124, NFI = .607, TLI = .534, CFI = .619; refer to Table 11.3). As can be seen in Table 11.4, the factor loading for each item parcel is positive and statistically significant, ranging from .360 (for item parcel SDIGBP3) to .771 (for item parcel SDIGBP1). Model 1 attained a BIC score of 1132.510.

The next model tested was the restricted four factor model (Model 2), which yielded a χ^2 = 500.9, p < .001, and close-fit indices also indicative of a poor fitting model (e.g., RMSEA = .151, SRMR = .290, NFI = .801, TLI = .778, CFI = .818; refer to Table 11.3). It shall be noted that the restricted four factor model did result in improved close-fit indices and a reduction in BIC score to 642.406 (i.e., ΔBIC = 490.104), the present study's comparative guide of improved model fit.

The third model tested was a higher-order four factor model (Model 3; refer to Figure 11.2), which yielded a χ^2 = 148.2, p < .001, and close-fit indices indicative of an adequately well fitting model (e.g., RMSEA = .074, SRMR = .046, NFI = .941, TLI = .947, CFI = .960; refer to Table 11.3). It shall be noted that the untransformed (and completely standardised) factor loadings for each item parcel are positive and statistically significant. As can be seen in Table 11.4, the Schmid-Leiman transformed factor loading for each item parcel remains positive, ranging from .39 (for item parcel FWIBP3) to .69 (for item parcel SDIGBP3). A further examination of the squared residual variance terms for each first order factor indicated acceptable levels of unique variance associated with the four factors of 41.0%, 50.4%, 27.0% and 74.0% for OLM, LMPD, FWI and SDIG, respectively. As presented in Table 11.3, the higher-order four factor model did result in improved close-fit indices beyond Model 2 and a reduction in BIC score to 313.29 (i.e., ΔBIC = 329.12), the present study's comparative guide of improved model fit.

Table 11.3

Confirmatory Factor Analysis (CFA) for four competing models of the SBI: Brief (N=364)

	χ^2	*df*	RMSEA	SRMR	NFI	TLI	CFI	BIC
Model 0	2533.7	66	.320	.391	.000	.000	.000	2593.51
Model 1	991.0	54	.219	.124	.607	.534	.619	1132.51
Model 2	500.9	54	.151	.290	.801	.778	.818	642.41
Model 3	148.2	50	.074	.046	.941	.947	.960	313.29
Model 4	119.8	42	.071	.037	.952	.950	.968	332.14

Note: Model 0 = Null; Model 1 = Unrestricted; Model 2 = Restricted four factor model; Model 3 = Restricted four factor model with higher order factor; Model 4 = Direct hierarchical model - Restricted four factor model with a nested 'global' factor. Note: SRMR = Standardised Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation; NFI = Normed Fit Index; TLI = Tucker-Lewis Index; CFI = Comparative Fit Index; BIC = Bayes Information Criterion.

Although the higher-order four factor model was adequately well-fitting of the data from both an absolute and incremental close-fit perspective, the corresponding direct hierarchical model (Model 4; refer to Figure 11.3) was tested to: (1) determine if any further improvement in model fit could be achieved; and (2) allow for a more direct examination of the plausibility of the four unique factors (and loadings). The direct hierarchical model yielded a χ^2 = 119.8, $p < .001$, and close-fit indices indicative of an adequately well fitting model (e.g., RMSEA = .071, SRMR = .037, NFI = .952, TLI = .950, CFI = .968; refer to Table 11.3). However, although the direct hierarchical model did result in a slight improvement in close-fit indices than the preceding model (Model 3), it also resulted in deterioration in BIC score to 332.148 (i.e., ΔBIC = -18.86), the present study's comparative guide of improved model fit. Further, all item parcel loadings remained positive and statistically significant. Therefore, it was deemed that Model 3 was the best fitting and provides evidence of the plausibility of the four-factors of the SBI: Brief.

Table 11.4

Completely standardized factor solution associated with the general factor model (Model 1), the restricted four factor model (Model 2), restricted four factor model with a higher order factor (Model 3) and a direct hierarchical model (Model 4) (N = 364)

						(Schmid-Leiman Transformation)									
	Model 1	Model 2				Model 3					Model 4				
	Global	OLM	LMPD	FWI	SDIG	Global	OLM	LMPD	FWI	SDIG	Global	OLM	LMPD	FWI	SDIG
OLMBP1	.72	.77				.66	.55				.71	.46			
OLMBP2	.42	.85				.64	.55				.64	.54			
OLMBP3	.69	.82				.57	.48				.48	.64			
LMPDBP1	.70		.83			.63		.64			.61		.67		
LMPDBP2	.69		.84			.59		.60			.60		.58		
LMPDBP3	.71		.91			.59		.60			.59		.58		
FWIBP1	.56			.91		.65			.39		.69			.29	
FWIBP2	.68			.82		.70			.42		.70			.42	
FWIBP3	.71			.74		.77			.47		.78			.47	

Table 11.4: *continued*

						(Schmid-Leiman Transformation)									
	Model 1	Model 2				Model 3					Model 4				
	Global	OLM	LMPD	FWI	SDIG	Global	OLM	LMPD	FWI	SDIG	Global	OLM	LMPD	FWI	SDIG
SDIGBP1	.77				.81	.37				.64	.41				.60
SDIGBP2	.46				.77	.38				.65	.32				.71
SDIGBP3	.36				.72	.40				.69	.40				.70

Note: All factor loading achieved statistical significance at $p < .001$.

Model 3 - Restricted four (4) factor model of spiritual beliefs with a higher order factor

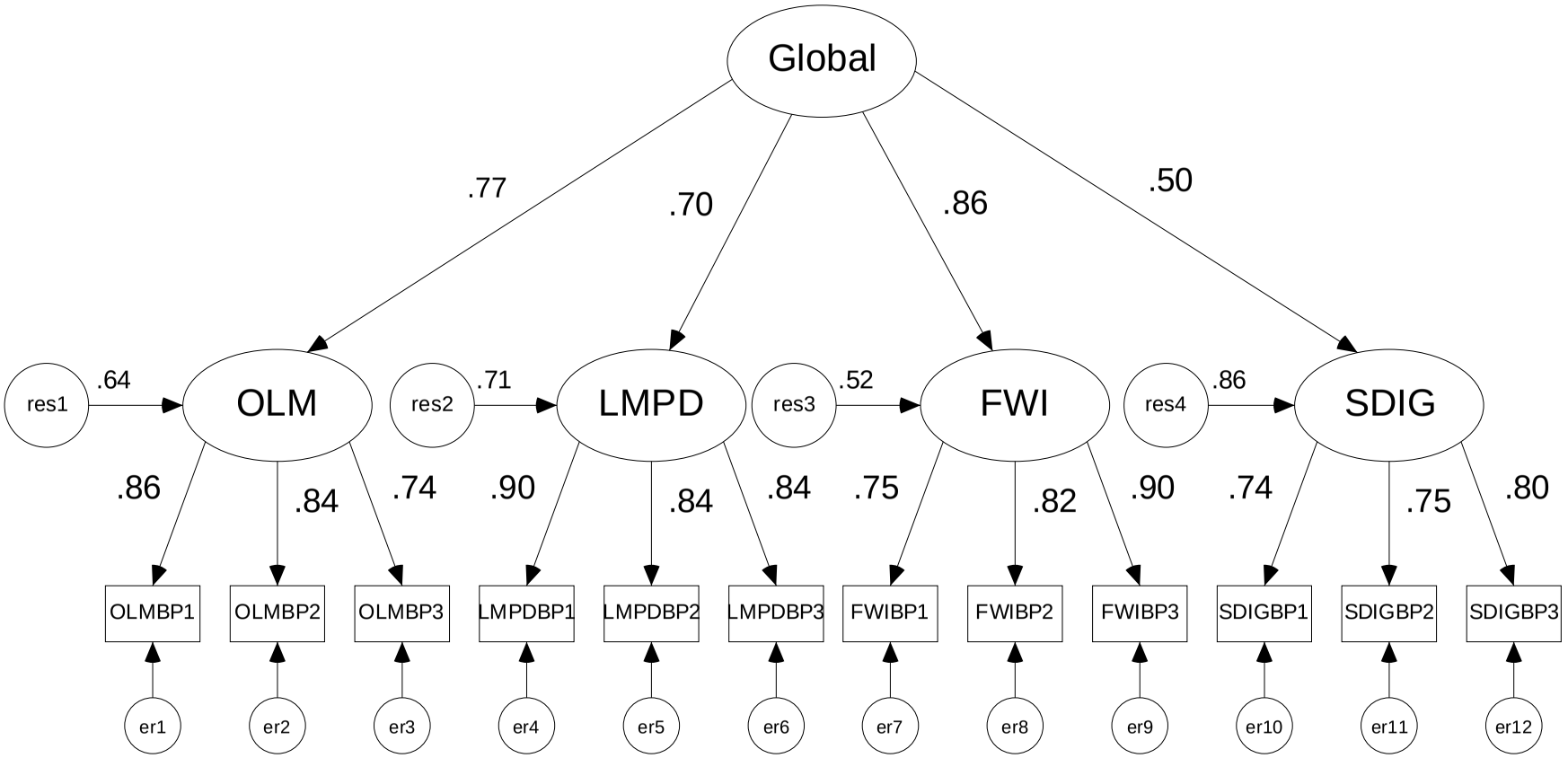


Figure 11.2: Completely standardized higher order four factor model of spiritual beliefs

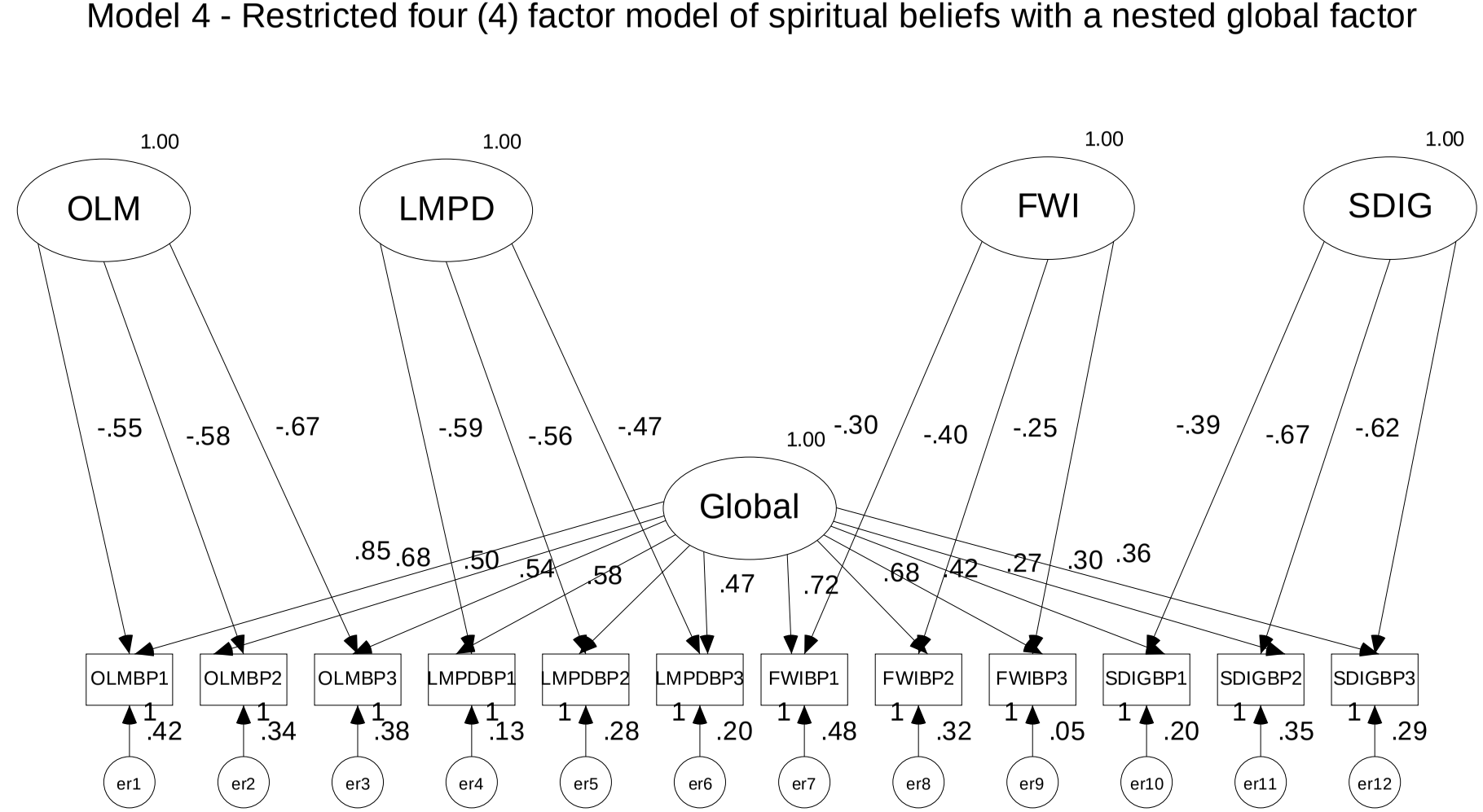


Figure 11.3: Completely standardized direct hierarchical model of spiritual beliefs

11.5. Discussion

The present study sought to examine the structural validity of the Spiritual Beliefs Inventory: Brief Version (SBI: Brief) and its four sub-scales (OLM, LMPD, FWI and SDIG) via the performing of confirmatory factor analysis. The specific aims of the present study were three-fold: (1) to demonstrate that the four-factor model of spiritual beliefs identified previously is not sample specific; (2) to demonstrate that one's spiritual beliefs consists of four more specific dimensions (i.e., the model is not overly complex); and (3) to demonstrate that the four-factor model of spiritual beliefs is not mis-specified. On the basis of the aims of the present study, the specific hypotheses explored were that there would be a non-significant difference in sub-scale and Total Composite mean scores of the SBI: Brief between two homogeneous yet independent samples. Further utilising confirmatory factor analysis, the four sub-scales of the SBI: Brief would be found to be uni-dimensional and well-fitting. Finally, the four-factor model of spiritual beliefs consisting of four first-order factors and one second-order factor would be found confirmed utilising confirmatory factor analysis.

The present study's first hypothesis was found to be supported. A comparison of the mean sub-scale and Total Composite scores of the SBI: Brief was found to be non-significant between two independent samples. Although not formally a part of the present study, the skew and kurtosis results of the SBI: Brief utilising a second sample were found to be more acceptable than the present dissertation's initial sample. Finally, the internal consistency coefficients for each sub-scale and the Total Composite (i.e., SBI: Brief$_{TOTAL}$) was found to be consistent with the initial sample (refer to Chapter 6; Table 6.12). This finding provides preliminary evidence that the SBI: Brief could be generalised to a broader population group.

The present study's second hypothesis was also found to be supported, with each sub-scale of the SBI: Brief shown to be uni-dimensional and well-fitting from both an absolute and incremental close-fit perspective. An examination of the OLM sub-scale found it to be well defined. More specifically, an examination of the normalised covariance matrix found all elements to be less than |2.0|. Further, in accordance with the recommendations of Gignac (2007), a negatively-keyed item latent variable (items 6 and 7 are negatively

keyed) was modelled and found to be non-significant. Similarly, the LMPD sub-scale was adequately defined with absolute and incremental close-fit indices in line with Hu and Bentler's (1999) guidelines. The FWI sub-scale was also found to be adequately defined and was exceptionally well-fitting from an absolute and incremental close-fit perspective. Finally, the SDIG sub-scale of the SBI: Brief was found to be adequately fitting from an absolute and incremental close-fit perspective. However, it shall be noted that the RMSEA index for the SDIG sub-scale does indicate a poorly fitting model (i.e., RMSEA = .127). An examination of the normalised covariance matrix found no elements excceded|2.0|; however, the covariance between items 25 and 26 was 1.93.

The CFAs performed for each sub-scale did highlight five sets of item pairs that require further examination in a future study. For the OLM sub-scale, item pair 1 ("There is more to this world than what can be seen and physically studied") and 2 ("There are some occurrences in the natural world that seem to be beyond scientific understanding") and item pair 4 ("I consider myself to be a spiritual person") and 6 ("Spirituality is not a central part of my life [negatively-keyed]") were both found to co-vary. It could be argued that the content of each item pair is similar. A more detailed examination of each item pair in a future study is recommended. Further, the error variances for items 10 and 13 (an item pair within the LMPD sub-scale) were found to co-vary. Given that the present researcher has argued previously (refer to Chapter 10) for the distinction between the construct of Sense of Coherence (SOC) and the LMPD dimension of the spiritual beliefs construct, the association between these two items could be argued to be problematic. A future study will need to adjust item 10 of the SBI: Brief to better reflect the intent of the LMPD sub-scale. Finally, the modification indices suggested the co-varying of the error variances for items 24 and 26 (SDIG sub-scale) and 25 and 26 (SDIG sub-scale) of the SBI: Brief. Although co-varying of item pair 25 and 26 could be justified due to similar item content, the present researcher could not justify co-varying the error variances for items 24 and 26 (although to do so would have resulted in a perfectly fitting model from an incremental close-fit perspective). It could be argued that item 24 is more abstract in item content than either item 25 or 26. That is, item 24 of the SBI: Brief asks the respondent to consider the 'process of self-discovery'; whereas items 25 and 26 are both more direct in focus (i.e., 'reflect on events' and 'evaluate what should be cherished'). The present researcher argues that item 24 is more aligned

with the theoretical underpinnings of the SDIG dimension and therefore, it is recommended that future research re-evaluate items 25 and 26 of the SBI: Brief.

The present study's third (and final) hypothesis can also be answered in the affirmative. A series of competing structural equation models were tested to identify the best fitting model for the spiritual beliefs construct. Both the higher-order (i.e., Model 3) and direct hierarchical (i.e., Model 4) models were found to be very well fitting. The higher-order model being deemed the best fitting based upon the model's BIC score (BIC = 313.29). An examination of the normalised covariance matrix for Model 3 (the higher-order model) found only one element (i.e., 4% of the inventory) to be greater than |2.0|; however, the value of 3.928 (found between item parcels LMPDBP3 and SDIGBP1) could be considered outlying. The confirmation of the spiritual beliefs construct as hierarchical (rather then simply consisting of a dominant general factor) also provides further support for the incremental coherence of the spiritual beliefs construct. Given that well established constructs such as personality and psychological well-being continue to be plagued with psychometric and methodological flaws in this regard (Gignac, Bates, & Jang, 2007; Gignac, Jang, & Bates, 2009; Springer & Hauser, 2006; van Dierendonck, 2004), this is a significant finding and provides further evidence for spiritual beliefs as a new and unique individual differences construct.

In concluding their review of spirituality focused scales, Fornaciari et al. (2005a) reported that spirituality-focused researchers were detailed in item development and scale construction; however, details pertaining to scale evaluation were lacking. The present study furthers the field of inquiry into spirituality scale development and evaluation in four important ways. First, the present study builds upon previous research by confirming the factor structure of a scale first identified via exploratory factor analysis. In doing so, the present study demonstrates greater psychometric rigour than 97% of the scales evaluated by Fornaciari and his colleagues (2005a). Second, the item-to-response ratio of 1:14 adopted by the present study exceeded the 'conservative' benchmark recommended for scale validation and was greater than 52% of the scales evaluated by Fornaciari et al. (2005a). Third, the present study utilised a second sample to validate the developed scale. Of the scale validation studies reviewed by Fornaciari et al. (2005a), only 6.5% (i.e., 10 studies)

utilised a second sample to validate the results of an initial respondent pool. Finally, in utilising a true confirmatory factor analysis approach (i.e., multiple competing models were evaluated), the present study meets a recommendation no other scale in Fornaciari et al.'s (2005a) review obtained. In defence of those researchers opting not to utilise SEM methodologies in the evaluation of spirituality scales, Fornaciari et al. (2005a) does state that larger samples may be required to perform such analyses, which makes such analysis problematic. However, previous research contradicts this perspective. For example, Gignac (2006) argues that scepticism of the application of SEM utilising small samples may be unfounded. In his study examining satisfaction with life as predicted by Trait Meta-Mood Scale (TMMS) and the Toronto Alexithymia Scale (TAS-20), Gignac (2006) utilised a sample of just 107 to demonstrate that smallish samples can be used within an SEM framework. Gignac (2006) also cites several other studies that successfully utilised a smallish sample (i.e., *N* = 100) that have successfully modelled statistically significant results. In recommending this approach, Gignac (2006) provides the following three caveats: (1) latent variables must be defined by three or more indicators; (2) non-biased parameter estimates must be found to exist; and (3) there must be an absence of convergence issues between variables. Given that only 17% of the scale validation studies reviewed by Fornaciari et al. (2005a) reported having a sample size of less than 100 respondents, it could be argued that 83% of the studies evaluated had the opportunity to utilise SEM to evaluate the developed scale's robustness.

11.5.1. Conclusion

The present study sought to examine the factorial validity of the SBI: Brief via the performing of confirmatory factor analyses utilising a second sample. The three more specific hypotheses tested were that there would be a non-significant difference in sub-scale and Total Composite mean scores of the SBI: Brief between two homogeneous yet independent samples. Further, utilising confirmatory factor analysis the four sub-scales of the SBI: Brief would be found to be uni-dimensional and well-fitting. Finally, the four-factor model of spiritual beliefs consisting of four first-order factors and one second-order factor, would be found to be confirmed utilising confirmatory factor analysis.

The findings of the present study answered each hypothesis in the affirmative. Importantly, the four sub-scales of the SBI: Brief (which correspond to the four dimensions of the spiritual beliefs construct), were found to be supported. The implications of this finding are three-fold, namely: (1) the present researcher's argument that four sub-scales of the Spiritual Beliefs Inventory (Brief Version) are associated with a sufficient amount of unique covariance independent of a 'general' spiritual beliefs factor is verified; (2) the incremental coherence of the spiritual beliefs construct (as operationalised by the SBI: Brief) is further validated; and (3) the present researcher's calculation and interpretation of sub-scale scores (of the SBI: Brief) appears justifiable.

The present dissertation's focus has been the examination of a 'multi-layered' conceptual framework for considering spirituality. In so doing, the more specific construct of spiritual beliefs has been examined. The present study provides additional evidence for the spiritual beliefs construct. Further, the findings of the present study also demonstrate the issue of having a too broad conceptualisation of the construct. Specifically, a total of two items (namely, items 25 and 26) of the SBI: Brief (i.e., 8%) were found to somewhat misrepresent the construct. An examination of the item level content of these two items suggests that they may be more related to one's spiritual practice than his/her beliefs (both items invite the respondent to consider 'reflecting upon' and 'evaluating an' event). This interpretation of the present study's findings requires exploration in a future study.

To conclude, the present study examined the factorial validity of the SBI: Brief utilising a second sample and found its psychometric properties to be strong. The findings of this study also provide additional weight to the present researcher's inductively and deductively derived four-factor model of spiritual beliefs. Further, the performing of a CFA provided further information pertaining to the dimensionality of the inventory. Finally, the present study demonstrated its rigour by adhering to the scale evaluation recommendations outlined by Fornaciaro et al. (2005a). Given that the factorial validity of the SBI: Brief has been demonstrated, future research is required to identify the temporal validity of the SBI: Brief as well as its susceptibility to both conscious and unconscious social desirable responding.

Chapter 12

Confirming the temporal stability and exploring the susceptibility to socially desirable responding of the four factor model and measure of spiritual beliefs

12.1. Chapter overview

The present chapter consists of two more targeted studies. The first study seeks to examine the temporal stability of the spiritual beliefs construct, as operationalised by the Spiritual Beliefs Inventory: Brief Version (SBI: Brief). Given the conceptualisation of one's spiritual beliefs as universally held filters through which life's spiritual experiences are screened and interpreted for life meaning, it is anticipated that the construct will be relatively stable in the short to medium term (i.e., 12 – 24 months). The second study seeks to examine a potential confound between one's level of conceptual complexity (i.e., level of consciousness) and the self-reporting of one's depth of spiritual beliefs. In undertaking this second study, the present researcher will examine if there is a statistically significant association between one's spiritual beliefs and the constructs of Self-Deceptive Enhancement (SDE) and Impression Management (IM). The aims of these two studies are three-fold: (1) to determine the temporal stability of the SBI: Brief; (2) to confirm or disconfirm the presence of potential response style bias in the completion of the SBI: Brief; and (3) to determine the more specific nature of respondents' bias should it be found to exist. The findings of the present chapter are discussed in relation to how one's level of conceptual complexity relates to his/her self-reported depth of spiritual beliefs. Finally, how the findings of the present study support the present dissertation's proposed holistic conceptual framework for considering spirituality are also outlined.

Chapter 12: Confirming the temporal stability and exploring the susceptibility to socially desirable responding of the four factor model and measure of spiritual beliefs

12.2. Introduction

Within the context of the present dissertation's holistic conceptual framework for considering spirituality, the spiritual beliefs construct is considered more permeable than one's conceptual complexity (i.e., one's 'self-theory'). However, given that the spiritual beliefs construct is conceptualised as a set of universal filters through which new experiences are screened and interpreted for meaning (Smith & Croom, 2000), it is expected that it will demonstrate stability across time. Paradoxically, research suggests that the same cannot be said for stage-trait theories (i.e., ego development), which the present researcher argues to be aligned to the *conceptual complexity* 'layer' of the present dissertation's proposed holistic conceptual framework for considering spirituality. For example, Redmore and Waldman (1975) tested the stage of ego development (the study used the *Washington University Sentence Completion Test*; WUSCT) of adolescent males and females in two samples. The test-retest reliability (one-week) of Sample 1 (*n* = 51; modal age was 15 years; range 14 – 16 years) was .79. The authors reported a reduction in ego development level for two-thirds of the sample at Time 2. The test-retest reliability (two-weeks) of Sample 2 (*n* = 81; modal age was 19 years; range 18 – 37 years) was only .44; however, the authors reported no significant change in ego development level at Time 2. The results of Redmore and Waldman's (1975) study suggest that the test-retest findings for the measurement of ego development (as operationalised by the WUSCT) may be influenced by the time elapsed between tests, testing situations (i.e., the instructions provided) and the age of the respondent. Similarly, in a longitudinal study of ego development utilising an adolescent sample using the WUSCT, Loevinger (1979) found test-retest correlations for four age samples of between .14 and .92. The time elapsed between test and retest in the four samples was longer; specifically, from 1.5 to 6 years. One explanation provided by Loevinger (1979) for the less than ideal test-retest correlation related to the change in mean scores on the WUSCT between testing situations. In interpreting this finding, Loevinger (1979) proposes that the lower test-retest *r*s for some studies may relate to respondents' transitions to latter ego stages. It could also be argued that the time elapsed between testing is too great. Loevinger (1979) concedes this point in her study stating, "Presumably, the longer the time between test and retest, the more the second test is like another first

test (p. 289)." In a more recent study reviewing ego development theory and research completed by Gilmore and Durkin (2001), the researchers highlight this potential scale evaluation confound. In examining a scale's temporal stability, Gilmore and Durkin (2001) warn against only relying upon high test-retest correlations. They cite the research of Redmore (1983) and state: "For the combined sample, the mean increase in level of ego development was statistically significant, with highly significant positive test-retest correlations … (p. 556)". In other words, the mere fact that test-retest correlations remain high between testing instances does not inform the researcher of any underlying developmental processes that may be at work. This finding suggests that multiple methods of evaluating an instrument's temporal stability are required.

The stage of ego development of a respondent does influence the consistency with which s/he responds to an instrument. This phenomenon is demonstrated empirically in Redmore and Waldman's (1975) study, where younger respondents were less consistent in their responses on the WUSCT (an instrument thought to be immune to the impact of socially desirable responding) than older respondents. This finding begs the question: Is there a third yet unknown psychological process impacting how an individual responds to the WUSCT? The same question could be asked of the SBI: Brief. For example, individual's at earlier stages of ego development are more inclined to have a false sense of self and a faulty interpretation of the ultimate reality (Cook-Greuter, 2002). It is possible that one's level of conceptual complexity (or lack thereof) may bias (upwardly or otherwise) his/her response style to the SBI: Brief. Should this be the case, of interest to the present researcher is the nature of that bias, that is, is the bias occurring consciously or un-consciously?

The present researcher has argued previously (refer to Chapter 10) that there is an association between one's spiritual beliefs and ego development. One's spiritual beliefs provide the filters through which life's experiences are screened, interpreted, understood and integrated as aspects of one's broader identity. The aim of this process, according to Ho and Ho (2007), is *psychological decentering*, which is considered to be a process aimed at facilitating selflessness (which does not mean absence of self). Put another way, spiritual development is " … an antidote to egocentrism and fixation (p. 63)" (Ho & Ho, 2007). Ideally,

individuals will respond to the SBI: Brief without conscious or unconscious bias. However, it remains to be determined empirically if this is the case.

12.2.1. The objectives of the present studies

The present researcher proposes that although one's understanding of his or her spiritual beliefs will evolve over the lifespan, one's spiritual beliefs will maintain a strong degree of temporal stability in the short-to-medium term. Given this supposition, the examination of the temporal stability of the SBI: Brief needs to take into account the optimal time elapsed between testings to: (1) allow for a respondent to choose to adopt or abandon the four more specific spiritual beliefs, and; (2) mitigate the potential that a respondent's stage-trait transition confounds the study's findings. Given the findings of previous research (e.g., Loevinger, 1979; Redmore, 1983; Redmore & Loevinger, 1979), the present researcher arbitrarily selected a test-retest 'window' of 12-months for Study 1. Given this elapsed time 'window', it remains to be tested empirically if the SBI: Brief demonstrates temporal stability over the period of one-year. Further, the present researcher proposes that the spiritual beliefs construct (as operationalised by the SBI: Brief) will remain immune to social desirable responding bias (i.e., both self-deceptive enhancement and impression management processes). These two propositions will be examined via two more targeted studies. The aims of these two studies are three-fold: (1) to determine the temporal stability of the spiritual beliefs construct (as operationalised by the SBI: Brief); (2) to confirm or disconfirm the presence of potential response style bias in the completion of the SBI: Brief; and (3) to determine the more specific nature of respondents' bias should it be found to exist.

12.3. Study 1

12.3.1. Overview

Study 1 reports on the temporal stability of the Spiritual Beliefs Inventory: Brief Version (SBI: Brief). More specifically, the hypotheses tested were that there would be a statistically significant and positive correlation between the SBI: Brief and its four sub-scales between two testing situations (12-months elapsed) and that the degree of association

would be large (i.e., $r > .50$). Further, the mean score differences between the SBI: Brief and its four sub-scales between two testing situations would be found to be non-significant.

12.3.2. Method

12.3.2.1.Participants

Participants were a convenient sample recruited via the Internet. A total of 50 respondents participated in Study 1. The sample contained 11 males (22.0%) and 39 females (78.0%). The mean age for males was 43.30 years (*SD* = 13.174; 29 – 66 years). The mean age for females was 43.28 years (*SD* = 11.105; 25 – 63 years). The sample consisted of predominantly Australian residents (98%) with one respondent listing their country of residence as the United Kingdom (UK). A total of 54.0% of the sample indicated they were in an intimate relationship (i.e., coupled, married or de-facto) with the remaining 45.0% of the sample indicating they were single or 'other'. A total of 92.0% of the sample indicated an annual salary (in $AUD) of less than $80,001 with the remaining 28.0% of the sample indicated an annual income of more than $80,001. The sample was educated with 70.0% of respondents indicating a Bachelor degree of higher. Participants indicated their current spiritual practice as Monotheistic-oriented (34.0%), Dharmic-oriented (22.0%), New Age-oriented (10.0%), Indigenous-oriented (2.0%), No Spiritual Practice (18.0%) and 'Other' (14.0%).

12.3.2.2.Instruments

Spiritual Beliefs Inventory: Brief Version (SBI: Brief). The SBI: Brief is a four factor model and measure of an individual's spiritual beliefs. Additional detail pertaining to the SBI: Brief is presented in Chapter 6.

12.3.2.3.Procedure

The questionnaire battery was administered via the Internet with participants responding anonymously. Participants were provided the opportunity to supply a return email address should they want to be informed of the results of the study. Participants were recruited from various sources, including word of mouth of the researcher, online forums

and online social networking websites. Participants were provided an overview of the study's purpose via an introductory statement and were informed that participation was voluntary and that they were free to withdraw from participating at any time. Those participants who provided an email address at Time 1 were invited to redo the questionnaire battery at Time 2. A total of 200 participants were invited with only 75 responding (a response rate of 27.5%).

12.3.2.4.Data analytic strategy

The present study utilised two approaches to examine the temporal stability of the Spiritual Beliefs Inventory: Brief Version (SBI: Brief). First, Pearson's product correlations between the four sub-scales and Total Composite score of the SBI: Brief for Time 1 versus Time 2 were performed to examine the direction and strength of association between all sub-scales. Correlations were interpreted according to Hempill's (2003) guidelines where a small, moderate and large correlation (two-tailed) equates to Pearson's correlation coefficients (*r*s) of .20, .20 to .30 and greater than .30, respectively. It shall be noted that the Pearson's correlations for each corresponding sub-scale (i.e., OLM_{TIME1} and OLM_{TIME2}; $LMPD_{TIME1}$ and $LMPD_{TIME2}$; FWI_{TIME1} and FWI_{TIME2}; $SDIG_{TIME1}$ and $SDIG_{TIME2}$; $SBI{:}Brief_{TOTAL\ –\ TIME1}$ and $SBI{:}Brief_{TOTAL\ -\ TIME2}$) were also disattenuated for imperfect reliability. Second, test-retest agreement was examined via the performing of paired sample t-tests, as recommended by Dawis (2000).

12.3.3. Results and Discussion

An examination of the data prior to the commencement of analysis identified 25 incomplete cases, which were removed from subsequent analysis. Although the sample size could be considered small (i.e., *N* = 50), Tabachnick and Fidell (2006) report samples sizes of $N \geq 30$ as acceptable for the performing of the planned analyses. Table 12.1 shows the Time 1 and Time 2 (12-months elapsed) sub-scale correlations between the four factors of the SBI: Brief as well as SBI: $Brief_{TOTAL}$ (combined males and females). It can be seen from Table 12.1 that the four sub-scales achieved positive and statistically significant ($p < .05$) correlations (attenuated) from Time 1 to Time 2 of .79, .63, .74, .54 and .93 for OLM, LMPD, FWI, SDIG

and SBI: Brief$_{TOTAL}$, respectively. Further, with the exception of the association between LMPD$_{TIME1}$ and SDIG$_{TIME2}$ correlation (r = .21, p = .138), all respective combinations of sub-scales were found to be positive and statistically significant.

Table 12.1

Test-retest (12-months) Pearson's r correlation matrix (disattenuated correlations in brackets) between the SBI: Brief and its four sub-scales (N=50)

	OLM$_{TIME1}$	LMPD$_{TIME1}$	FWI$_{TIME1}$	SDIG$_{TIME1}$	SBI: Brief $_{TOTAL\ –\ TIME1}$
OLM$_{TIME2}$	.79 (.87)				
LMPD$_{TIME2}$	.32	.63 (.72)			
FWI$_{TIME2}$	.46	.29	.74 (.73)		
SDIG$_{TIME2}$	.38	**.21**	.52	.54 (.68)	
SBI: Brief$_{TOTAL\ -\ TIME2}$	.70	.44	.62	.34	.73 (.74)

Note: **Bolded** correlations failed to achieve statistical significance at p < .05 (two-tailed).
Note: OLM = Openness to Life's Mysteries; LMPD = Life Meaning, Purpose and Direction; FWI = Fostering Wholeness and Interconnectedness; SBI: Brief$_{TOTAL}$ = Spiritual Beliefs Inventory: Brief Version (SBI: Brief) – Total Composite.

The finding for LMPD$_{TIME1}$ and SDIG$_{TIME2}$ is somewhat surprising upon first consideration. However, on closer reflection this is not too surprising and could be interpreted as further evidence of the non-linear nature of one's spiritual growth. More specifically, just because a person holds a strong belief that his/her life has meaning and purpose does not necessarily result in that same individual undertaking self-exploration and personal reflection over the short-to-medium term. Perhaps gaining clarity relating to one's life purpose results in the ceasing of one's 'search' as it relates to the big existential questions (i.e., Who am I?, Why am I?, etc)? This interpretation needs to be tested empirically in a future study.

To examine test-retest score agreement, a series of five paired-samples t-tests were performed. The OLM sub-scale of the SBI: Brief at Time 1 (M = 4.90; SD = 1.05) versus Time 2 (M = 4.87; SD = 0.95) was found to be non-significant (t_{49} = .42, p = .676). LMPD at Time 1 (M

= 4.90; *SD* = 0.62) versus Time 2 (*M* = 4.85; *SD* = 0.81) was found to be non-significant (t_{49} = .58, *p* = .563). FWI at Time 1 (*M* = 4.89; *SD* = 0.90) versus Time 2 (*M* = 4.89; *SD* = 0.95) was found to be non-significant (t_{49} = -.05, *p* = .958). SDIG at Time 1 (*M* = 5.25; *SD* = 0.53) versus Time 2 (*M* = 5.20; *SD* = 0.65) was found to be non-significant (t_{49} = .69, *p* = .492). Finally, SBI: Brief$_{TOTAL}$ at Time 1 (*M* = 4.97; *SD* = 0.63) versus Time 2 (*M* = 4.93; *SD* = 0.64) was found to be non-significant (t_{49} = .62, *p* = .539). The results indicate that there is no statistically significant mean score differences for the SBI: Brief or its four sub-scales between the two assessment instances (*t* = 12-months).

12.4. Study 2

12.4.1. Overview

Study 2 examines if there is a statistically significant association between one's spiritual beliefs and the constructs of Self-Deceptive Enhancement (SDE) and Impression Management (IM). More specifically, the hypotheses tested were that there would be a non-significant correlation between the SBI: Brief and its four sub-scales and SDE. There would be a non-significant association between the SBI: Brief and its four sub-scales and IM as assessed by both IM: Self-Promotion and IM: Ingratiation.

12.4.2. Method

12.4.2.1.Participants

Participants were a convenient sample recruited via the Internet. A total of 364 respondents participated in the study. Additional details pertaining to the sample are presented in Chapter 11.

12.4.2.2.Instruments

Spiritual Beliefs Inventory: Brief Version (SBI: Brief). The SBI: Brief is a four factor model and measure of an individual's spiritual beliefs. Additional detail pertaining to the SBI: Brief is presented in Chapter 6.

Impression Management Scale (IMS). The IMS was first developed by Bolino and Turnley (1999). The present study utilised two sub-scales of a modified (i.e., non-workplace) version of the IMS, namely: Self-Promotion and Ingratiation. Each sub-scale consists of four items. The Self-Promotion sub-scale measures an individual's propensity to point out their abilities or accomplishments in order to be seen as competent by observers. A sample question from this sub-scale is, "I talk proudly about my experience or education". The Ingratiation sub-scale measures an individual's propensity to do favours or use flattery to elicit an attribution of likability from observers. A sample question from this sub-scale is, "I do personal favours for my colleagues/acquaintances to show them that I am friendly". The scale is responded to using a five-point Likert scale; where 1 = *Never Behave This Way* and 6 = *Often Behave This Way*. The scale authors report good reliability for each sub-scale with a reliability coefficient (α) of .78 and .83 for Self-Promotion and Ingratiation, respectively. The present study used a scoring key recommended by Paulhus (1991) whereby only the extreme responses (i.e., 1 or 6) are scored as 1 with remaining scores recoded as 0.

International Personality Item Pool: Self-Deceptive Enhancement (IPIP: SDE). The IPIP: SDE scale was developed by Goldberg, Johnson, Eber, Hogan, Ashton, Cloninger & Gough (2006). The IPIP: SDE is based on the sub-scale of the same name included in the Balanced Inventory of Desirable Responding (BIDR) first developed by Paulhus (1991). The scale assesses an individual's tendency to endorse honestly held, but exaggerated positive self-descriptions. The scale consists of ten items (with an equal number of positively and negatively keyed items) and is responded to using a six-point Likert scale; where 1 = *Strongly Disagree* and 6 = *Strongly Agree*. A sample item is, "I know my decisions are correct". The scale authors report good reliability for the instrument with a reliability coefficient (α) of .80 (Goldberg et al., 2006). The present study used the scoring key recommended by Paulhus (1991) whereby only the extreme responses (i.e., 1 or 6) are scored as 1 with remaining scores recoded as 0.

12.4.2.3. Procedure

The questionnaire battery was administered via the Internet with participants responding anonymously. Participants were provided the opportunity to supply a return email address should they want to be informed of the results of the study. Participants were

recruited from various sources, including word of mouth of the researcher, online forums and online social networking websites. Participants were provided an overview of the study's purpose via an introductory statement and were informed that participation was voluntary and that they were free to withdraw from participating at any time.

12.4.2.4.Data analytic strategy

Sub-scales were subjected to a Pearson's product correlation (two-tailed) to identify the nature of any relationships. Based on Hempill's (2003) guidelines for interpreting correlations, a result of < .20, .21 to .30 and .30 or greater (two-tailed) was interpreted as low, moderate and high association, respectively. Correlations were also disattenuated for imperfect reliability.

12.4.3. Results and Discussion

An examination of the scale and sub-scale internal consistency reliabilities (α) of the International Personality Item Pool: Self Deceptive Enhancement (i.e., IPIP: SDE), Impression Management Scale (IMS) – Self-Promotion (i.e., $IMS_{SELF\text{-}PROMOTION}$) and IMS – Ingratiation (i.e., $IMS_{INGRATIATION}$) were calculated as .79, .76 and .80, respectively. Further, the internal consistency reliabilities (α) of the SBI: Brief and its four sub-scales were found to be acceptable in the present study (i.e., OLM = .89, LMPD = .87, FWI = .80, SDIG = .79, SBI: $Brief_{TOTAL}$ = .92).

Table 12.2 (Panel 1) shows the attenuated sub-scale correlations between the SBI: Brief and its four sub-scales (combined males and females) and the present study's Self-Deceptive Enhancement (SDE) and Impression Management (IM) scales. It can be seen from Table 12.1 that each of the four sub-scales shared a positive and statically significant correlation with the study's measure of SDE (i.e., IPIP: SDE), with the strongest correlation being Life Meaning, Purpose and Direction (LMPD) and SDE (r = .46, p = .000). The two variables share 21.0% in common variance, which indicates that the SBI: Brief has 79.0% unique variance from the IPIP: SDE.

Table 12.2

Attenuated (Panel 1) and disattenuated (Panel 2) Pearson's r correlations between the SBI: Brief and its four sub-scales and Self-Deceptive Enhancement (IPIP: SDE) and Impression Management (Self-Promotion and Ingratiation) (N=364)

	IPIP: SDE	$IMS_{SELF\text{-}PROMOTION}$	$IMS_{INGRATIATION}$
Panel 1			
OLM	.22	**.05**	**-.02**
LMPD	.46	.10	**-.04**
FWI	.29	**-.00**	**-.05**
SDIG	.31	.23	.11
SBI: $Brief_{TOTAL}$	.40	.11	**-.02**
Panel 2			
OLM	.27	.06	-.02
LMPD	.55	.13	-.05
FWI	.36	-.01	-.06
SDIG	.39	.30	.14
SBI: $Brief_{TOTAL}$	.47	.13	-.02

Note: **Bolded** (attenuated) correlations failed to achieve statistical significance at $p < .001$ (2-tailed). Note: IPIP: SDE = International Personality Item Pool (IPIP): Self-Deceptive Enhancement (SDE); $IMS_{SELF\text{-}PROMOTION}$ = Impression Management Scale (IMS): Self-Promotion; $IMS_{INGRATIATION}$ = IMS: Ingratiation; refer to Table 12.1 for remaining sub-scale acronym definitions.

The Total Composite score of the SBI: Brief (i.e., SBI: $Brief_{TOTAL}$) was found to share 16.2% (i.e., $r = .40$) in common variance with SDE. Finally, the spiritual beliefs sub-scales of Openness to Life's Mysteries (OLM), Fostering Wholeness and Interconnectedness (FWI) and Self Discovery and Inner-Growth (SDIG) were found to share a positive and statistically significant correlation SDE (*r*s = .22, .30 and .31 for OLM, FWI and SDIG, respectively).

Further, the Impression Management sub-scale of Self-Promotion (i.e., $IMS_{SELF\text{-}PROMOTION}$) was found to correlate positively and statistically significantly with LMPD (r = .10, p = .05) and SDIG (r = .23, p < .001). The $IMS_{SELF\text{-}PROMOTION}$ sub-scale of the IMS was also found to correlate significantly with SBI: $Brief_{TOTAL}$ (r = .11, p = .046). Finally, the spiritual beliefs sub-scale of SDIG shared a positive and statistically significant correlation with the Impression Management sub-scale of Ingratiation (r = .12, p = .039). Panel 2 of Table 12.2 presents the disattentuated Pearson's r correlations between the SBI: Brief and its four sub-scales and SDE and Impression Management (Self-Promotion and Ingratiation).

Given that the strength of correlation between the SBI: Brief and SDE could be considered large, it was deemed relevant to evaluate the association between SBI: Brief and SDE at an item level. Specifically, the present researcher sought to confirm or disconfirm if SBI: Brief items were associated with unique reliability, independent of SDE responding. The present researcher performed a technique predicated on the Differential Reliability Index (Jackson, 1994) and used specifically by Morey (1991) and Gignac (2008). The procedure involved the performing of the following steps: (1) each item of the SBI: Brief was correlated with the total score of the IPIP: SDE (i.e., r_{SDE}); (2) each item of the SBI: Brief was then correlated with its respective sub-scale of the SBI: Brief (i.e., r_{TOTAL}); (3) each set of correlations (i.e., r_{SDE} and r_{TOTAL}) was then squared (i.e., r_{SDE}^2 and r_{TOTAL}^2) and the difference between r_{SDE}^2 and r_{TOTAL}^2 was calculated (i.e., $r_{TOTAL}^2 - r_{SDE}^2$); finally, (4) the squared differences were square rooted to represent a "unique" correlation for the specific item of the SBI: Brief (i.e., Δr). In interpreting the results of the procedure, for a specific item of the SBI: Brief to demonstrate unique reliability independent of SDE responding, the difference between r_{SDE}^2 and r_{TOTAL}^2 must be positive and large.

Table 12.3

Differential Reliability Index for SBI: Brief demonstrating unique item-total correlations independent of SDE responding (N = 364)

	r_{SDE}	r_{TOTAL}	$r_{TOTAL}^2 - r_{SDE}^2$	Δr
i1	.14	.76	.56	.75
i2	.08	.74	.54	.73
i3	.17	.78	.58	.76
i4	.20	.85	.69	.83
i5	.24	.78	.56	.75
i6	.12	.81	.64	.80
i7	.07	.58	.33	.58
i8	.20	.69	.44	.66
i9	.28	.68	.38	.61
i10	.31	.75	.47	.68
i11	.33	.86	.62	.79
i12	.29	.82	.59	.77
i13	.44	.867	.54	.74
i14	.28	.66	.36	.60
i15	.43	.77	.40	.63
i16	.42	.70	.32	.57
i17	.18	.52	.24	**.49**
i18	.21	.78	.56	.76

Table 12.3: *continued*

	r_{SDE}	r_{TOTAL}	$r_{TOTAL}^2 - r_{SDE}^2$	Δr
i19	.34	.82	.56	.75
i20	.08	.75	.55	.74
i21	.38	.87	.61	.78
I22	.30	.66	.35	.59
i23	.20	.79	.59	.77
i24	.29	.80	.56	.75
i25	.21	.77	.54	.74
i26	.14	.65	.40	.63

Note: *Δr*s that fail to reach .50 are bolded.

As presented in Table 12.3, with the exception of item 17 ("I have goals and aims in my life"), each item's *Δr* is positive and large (i.e., *Δr* > .50). The mean unique item-total correlation for each sub-scale of the SBI: Brief is .72, .66, .76 and .96 for OLM, LMPD, FWI and SDIG, respectively. The mean unique item-total correlation for the Total Composite score of SBI: Brief is .70. Gignac (2008) reports that *Δr* of .49 or greater could be considered large. Therefore, the results presented in Table 12.3 suggest that each item of the SBI: Brief is associated with unique reliability, independent of SDE responding.

12.5. General Discussion

The aims of the two studies conducted were three-fold: (1) to determine the temporal stability of the spiritual beliefs construct (as operationalised by the SBI: Brief); (2) to confirm or disconfirm the presence of potential response style bias in the completion of

the SBI: Brief; and (3) to determine the more specific nature of respondents' bias should it be found to exist.

The hypotheses of Study 1 were that there would be a statistically significant and positive and large correlation (i.e., $r > .50$) between the SBI: Brief and its four sub-scales between two testing situations (12-months elapsed). Further, the mean score differences between the SBI: Brief and its four sub-scales between two testing situations would be found to be non-significant. The two hypotheses of the first study were confirmed. Each sub-scale of the Spiritual Beliefs Inventory: Brief Version (SBI: Brief) was found to correlate strongly across two assessment instances (12-months elapsed time). Further, the results of the paired samples t-tests demonstrate no significant differences in mean scores from Time 1 to Time 2. Given that the construct of spiritual beliefs is conceptualised as relating to the more universal 'filters" through which spiritual experiences are interpreted, it would follow that these filters would remain 'on' all of the time. The results support the validity and reliability of the SBI: Brief and suggest that scores for the inventory are fairly stable over time. A somewhat unexpected finding of Study 1 pertains to the non-significant finding between the LMPD sub-scale (at Time 1) and the SDIG sub-scale (at Time 2). In interpreting the non-significant results, the present researcher suggests that one's identification and adoption of a 'life-purpose' may result in the individual being less mindful of self-exploration. This finding highlights the importance of the *spiritual presence* layer of the present dissertation's holistic conceptual framework for considering spirituality. Both Mahoney and Pargament (2004) and Hamel and her colleagues (2003) argue that spirituality is a life-choice that an individual adopts on a moment-by-moment basis for his or her entire life. The findings of Study 1 demonstrate the inherent difficulty in maintaining the three tenants of the spiritual presence layer, namely: intentionality, commitment and timelessness. It could be argued that a perfect association (i.e., $r = 1.0$) between the four more specific beliefs of the spiritual beliefs construct provides a rudimentary indication of one's choice to believe in spirituality moment-by-moment, that is, one's spiritual oneness (Barnes, 2003; Mayer, 2000; Wilbur, 2006).

The hypotheses of the second study are only partially supported. Study 2's first hypothesis that there would be a non-significant correlation between the SBI: Brief and its

four sub-scales and self-deceptive enhancement (SDE) was not supported. The conceptualisation of the SDE construct may shed some light on this finding. The construct of self-deceptive enhancement captures an individual's tendency to give honest but inflated self-descriptions that reflect a lack of insight (Paulhus & Reid, 1991). In conceptualising the construct, Paulhus (1998) found it to share an association with narcissism and related psycho-social defence mechanisms. For example, SDE relates to one's egoistic bias, that is, an individual's unconscious tendency to exaggerate his/her social and intellectual status (Paulhus, 2002). In other words, an individual's propensity to engage in SDE is related to a need to strengthen or reinforce his/her ego. To this effect, the SDE construct can also be found to share a positive association with the construct of ego-resiliency (Block & Kremen, 1996; Paulhus, 1998). As already argued by the present researcher, ego-resilience is grounded in enhancing ego-strength; whereas, spirituality is grounded in ego-transcendence. This perspective was demonstrated empirically in Chapter 10. An explanation of the relationship between spiritual beliefs and SDE found in Study 2 may be considered one of paradox; whereby, one's ego strengthening is a prerequisite to its transcendence (Strohl, 1998). On one hand, perhaps an individual at an earlier stage of ego development (i.e., a lower level of conceptual complexity) utilises spiritual beliefs in the support of his/her search for identity integration and differentiation (Cook-Greuter, 2002). On the other hand, an individual at a latter stage of ego development (i.e., a higher level of conceptual complexity) utilises his/her spiritual beliefs to facilitate psychological decentering, that is, the transcendence of self (lower case 's') to a world-view of self (upper case 'S') (Ho & Ho, 2007; Pecchenino, 2009). This explanation needs to be tested empirically in a future study that examines the association between SBI: Brief and SDE after controlling for a respondent's level of conceptual complexity (e.g., stage of ego development).

Study 2's second hypothesis that there would be a non-significant association between the SBI: Brief and its four sub-scales and IM as assessed by both IM: Self-Promotion and IM: Ingratiation was partially supported. The SDIG sub-scale of the SBI: Brief was found to have a moderate and significant association with the Self-Promotion sub-scale of the Impression Management Scale (i.e., $IMS_{SELF\text{-}PROMOTION}$). The findings suggests that individuals who more strongly hold a belief that an exploration of oneself focused on rising above an ego-driven existence, is also more likely to point out their abilities or accomplishments to

others so as to be seen as competent. Perhaps this finding is simply evidence of the 'resilience' of the ego in the face of its transcendence (Strohl, 1998). The present researcher would argue that this finding contradicts the spiritual presence tenant of intentionality, which provides further evidence of the importance of this layer of the proposed holistic framework. It is recommended that future research examine the nature of this association.

The Total Composite score of the SBI: Brief shared only a weak correlation (i.e., $r <$ .20) with $IMS_{SELF\text{-}PROMOTION}$. Also, the LMPD sub-scale of the SBI: Brief was found to have a small yet significant association with $IMS_{SELF\text{-}PROMOTION}$. Although significant, it shall be noted that the strength of association between $IMS_{SELF\text{-}PROMOTION}$ and LMPD and the Total Composite score of the SBI: Brief was only just significant (i.e., p = .050 and .046, respectively). In addition, the SDIG sub-scale of the SBI: Brief was found to share a statistically significant association with the Ingratiation sub-scale of the IMS (i.e., $MS_{INGRATIATION}$); however, the correlation was only small (i.e., r = .109, p = .039). With the exception of the moderate association between SDIG sub-scale of the SBI: Brief and $IMS_{SELF\text{-}PROMOTION}$, it could be argued that these results may be sample specific (i.e., the correlation is only weak and the p-values are all greater than .03). A future study would need to confirm or disconfirm the findings of Study 2, as each relates to the impression management construct.

12.5.1. Conclusion

The two studies of the present chapter sought to: (1) examine the temporal stability of the spiritual beliefs construct; and (2) examine a potential confound between one's level of conceptual complexity (i.e., level of consciousness) and the self-reporting of one's spiritual beliefs. The temporal stability of the spiritual beliefs construct (as operationalised by the SBI: Brief) was confirmed and provides support for the conceptualisation of the construct as a universal set of filters that remain relatively stable across time. Conversely, the findings of the present studies suggest that one's self-reported depth of spiritual beliefs is affected by a self-deceptive enhancement response style bias. The present researcher provided a paradoxical explanation of this finding based upon an individual's level of conceptual complexity. Suggestions for determining the validity of the present researcher's interpretation of the results of Study 2 are provided.

Chapter 13

General discussion and conclusions for the present study

13.1. Chapter overview

This dissertation commenced with a reconceptualisation of the spirituality construct as consisting of four specific layers, namely: conceptual complexity, spiritual beliefs, spiritual presence, and spiritual practice. In demonstrating the utility of the proposed holistic conceptual framework for considering spirituality, the present researcher focused on the spiritual beliefs 'layer'. The four existing measures of spirituality, namely: the Adult Self-Transcendence Inventory (ASTI) (Levenson et al., 2005); Miller Measure of Spirituality (MMS) (Miller, 2004); Spiritual Assessment Scale (SAS) (Howden, 1993); and Spiritual Transcendence Scale (STS) (Piedmont, 1999), were re-examined in relation to the proposed holistic conceptual framework. All four measures were found to be mis-specified for a predominantly Australian sample. A revised measure of spiritual beliefs utilising suitable items from the ASTI, MMS, SAS and STS was devised and its criterion, content and factorial validity were examined. In this chapter, some conclusions about the proposed holistic conceptual framework for considering spirituality are provided.

13.2. General discussion

A review of existing literature examining spirituality within health and workplace contexts shows the construct to be a positive contributor. However, the present researcher suggests that results showing spirituality to be a positive contributor in these contexts could be argued to be inconclusive. In a review of the literature, four issues impacting the quality of previously published research are indentified and discussed. The four issues identified by this dissertation include: (1) the use of spirituality and religiosity as interchangeable constructs; (2) potential confounds between spirituality and other constructs, such as personality and psychological well-being; (3) the lack of consistency in the inclusion of

spirituality as a variable of interest in research; and (4) the lack of clarity in the operationalisation of the spirituality construct as pertaining to beliefs and attitudes versus behaviours and practices. In a systematic evaluation, the present dissertation examined each identified issue. In so doing, this dissertation utilised a proposed holistic conceptual framework for considering spirituality.

13.2.1. Examining the utility of four existing measures of spirituality for use within an Australian population

The present dissertation first sought to verify if four existing measures of spirituality could demonstrate discriminant validity for a sample of predominantly Australian respondents that self-reported having and not having a formal spiritual practice. Further, each measure's discriminant sensitivity in distinguishing between the four predominant spiritual practice types (i.e., Monotheistic, Dharmic, New Age and Indigenous) found within contemporary Australian society was examined. The findings were inconclusive with no instrument demonstrating both discriminant validity *and* discriminant sensitivity. Of greater consequence for the use of each instrument within an Australian context, was each measure's failure to demonstrate factorial validity via partial confirmatory factor analysis (PCFA) (Gignac, 2009). A measure's factorial validity is critical to the correct calculation and interpretation of that measure's sub-scale scores. The results of the present dissertation call into question the published scoring protocol for the Adult Self-Transcendence Inventory (ASTI) (Levenson et al., 2005), Miller Measure of Spirituality (MMS) (Miller, 2004), Spiritual Assessment Scale (SAS) (Howden, 1993) and Spiritual Transcendence Scale (STS) (Piedmont, 1999) within an Australian context. Given that the present researcher had already argued that much of the research examining spirituality: (1) incorrectly considers spirituality and religiosity to be interchangeable constructs; (2) inadvertently confounds spirituality with other constructs (i.e., personality); and (3) demonstrates a lack of clarity in the operationalisation of the spirituality construct as pertaining to beliefs and attitudes versus behaviours and practices, this finding was not suprising. For example, the MMS makes explicit reference to religiosity and religious leaders (i.e., "Religious leaders must always emphasize the importance of compassion and tolerance for all."). Further, the Alienation sub-scale of the ASTI is reported to be more akin to a measure of negative affect than spirituality (Levenson et al., 2005). Finally, items of the STS mix both spiritual beliefs (e.g.,

"All life is interconnected.") and practices (e.g., "I meditate and/or pray so that I can grow as a person."). As it pertains to the four measures examined, the findings of this dissertation demonstrated the importance of future research considering the construct of spirituality within the context of the present dissertation's proposed holistic conceptual framework.

13.2.2. Confirming a preliminary general taxonomy of spiritual beliefs

In recognising word-limit constraints for this dissertation, the present researcher elected to focus primarily on the spiritual beliefs 'layer' of the proposed holistic conceptual framework. As a first step, this dissertation established a preliminary general taxonomy of spiritual beliefs. To this effect, the points of commonality and departure between four measures of spirituality were examined. Using a language lexicon approach, four initial dimensions a spiritual beliefs taxonomy were identified. Each identified dimension had at its core the notion of *transcendence* (as it was argued by the present researcher that most definitions of spirituality have transcendence as a central component). Using the concept of transcendence as a criterion for inclusion in the taxonomy, four dimensions were identified, namely: (1) an openness to life's mysteries; (2) an exploration towards finding one's meaning and unique purpose for 'existing'; (3) the embracing of one's interconnectedness with all life; and (4) the process of self-exploration towards self-transcendence. The four proposed dimensions of the general taxonomy of spiritual beliefs were supported by previous research (e.g., Rosado, 2000). Using higher-order exploratory factor analysis, this dissertation confirmed the plausibility of the preliminary four dimension general taxonomy of spiritual beliefs using the sub-scales of the ASTI, MMS, SAS and STS. The present researcher further argued that the four identified dimensions serve as 'filters' through which spiritual experiences are screened, interpreted, understood and integrated as aspects of one's broader identity. This argument was found to be supported within this dissertation.

13.2.3. Examining the criterion validity of the spiritual beliefs construct

As already outlined, this dissertation identified four issues plaguing research examining spirituality, namely: (1) the use of spirituality and religiosity as interchangeable constructs; (2) potential confounds between spirituality and other constructs, such as personality and psychological well-being; (3) the lack of consistency in the inclusion of spirituality as a variable of interest in research; and (4) the lack of clarity in the

operationalisation of the spirituality construct as pertaining to beliefs and attitudes versus behaviours and practices. Upon confirmation of the plausibility of the preliminary general taxonomy of spiritual beliefs, this dissertation set about addressing three of the aforementioned issues in an examination of the spiritual beliefs construct. Given the inherent nature of this dissertation (i.e., its focus is the construct of spirituality), the third issue identified (i.e., the lack of consistency in the inclusion of spirituality as a variable of interest in research) could not be examined.

Using the proposed holistic conceptual framework for considering spirituality as a guide, the present researcher identified suitable items within the ASTI, MMS, SAS and STS for use in the validation of a measure of spiritual beliefs and a 'competing' measure of spiritual practices. To establish a measure of spiritual beliefs, items from the ASTI, MMS, SAS and STS were subjected to four screening criteria[1]. Items meeting one or more of the criterion were omitted from analysis. A total of 42 items were analysed via exploratory factor analysis and a Full (42-item) and Brief (26-item) version of a Spiritual Beliefs Inventory were identified. The present researcher highlights that the Spiritual Beliefs Inventory (Full and Brief versions) showed good psychometric properties in its initial validation study (refer to Chapter 6). Further, this dissertation demonstrated that the Spiritual Beliefs Inventory: Brief Version (SBI: Brief) showed good discriminant validity and discriminant sensitivity in distinguishing between the four predominant spiritual practice types (i.e., Monotheistic, Dharmic, New Age and Indigenous) found within contemporary Australian society. Finally, analysis of the factorial validity of the SBI: Brief via PCFA found the inventory to be very well-fitting.

Criterion validity requires the examination of a measure's concurrent and predictive validity. Therefore, this dissertation sought to establish a 'competing' measure of spiritual practices. Unfortunately, none of the items from the ASTI, MMS, SAS and STS could be argued to appropriately represent the spiritual practices 'layer' of the proposed holistic conceptual framework for considering spirituality. Indeed, this dissertation argued that given

[1] The item screening criteria were: (1) explicit reference to organized religion, religious concepts or religious figures; (2) reference to explicit religion-oriented practices and/or experiences; (3) item redundancy and/or duplication at face-value with an item within the same scale or in another scale; and (4) ambiguous item content, whereby the items intended meaning may be interpreted in alternative ways depending on the spiritual practice of the respondent.

the very nature of spiritual practices as functional, theocentric (predominantly) and particularistic in structure (Moberg, 2002), it is most likely impossible to create a comprehensive measure of spiritual practices. Given that previous researchers have stated that most existing spirituality scales have a bias towards Christian spirituality (see Kohls et al., 2009), it was argued in this dissertation that items from the ASTI, MMS, SAS and STS may also be biased towards Christian spirituality. A review of the items of the ASTI, MMS, SAS and STS identified a total of 21 items as suitable indicators of 'explicitly religiosity'. The 21 identified items were subjected to exploratory factor analysis and PCFA and two factors emerged, namely: (1) Connecting with a Higher Power and (2) Prayer/Meditation Fulfilment. The two-factor model of explicit religiosity was found to have discriminant validity in distinguishing between individuals with and without a self-reported formal spiritual practice. However, the findings of this dissertation were inconclusive with respect to discriminant sensitivity of the two-factor model of explicit religiosity.

The SBI: Brief was found to have concurrent validity with the explicit religiosity measure. This finding demonstrated the inter-dependence of one's spiritual beliefs and explicit religiosity (as an analog for spiritual practices). Given this finding, it is not surprising that some researchers consider the constructs of spirituality and religiosity to be interchangeable in research (e.g., Mattis, 2002; Zinnbauer et al., 1997). However, an examination of the predictive power of each respective construct in this dissertation demonstrates the error of such an approach. As already stated, this dissertation proposed a reconceptualisation of the spirituality construct as consisting of four more specific layers, namely: conceptual complexity, spiritual beliefs, spiritual presence, and spiritual practice. This dissertation argued for a hierarchical relationship between the four layers, with the conceptual complexity layer being the most abstract. The hierarchical nature of the framework was tested empirically via hierarchical regression analyses with one's identity stage resolution regressed onto both the SBI: Brief and the measure of explicit religiosity. The results of the analyses demonstrated: (1) the predictive validity of the spiritual beliefs construct beyond explicit religiosity in identifying unique variance in identity stage resolution; and (2) the non-linear association between the spiritual beliefs construct and identity stage resolution.

These findings have significant implications for both past and future research. First, existing research has found the predictive validity of 'spirituality' to be somewhat limited due to the inadequate demarcation between spirituality and religiosity. For example, Berry (2005) argues that although spirituality/religiosity (R/S) has been found to predict health outcomes, the methodological quality of these findings can be disputed. The same can be said for research examining spiritualty in the workplace (Lund Dean, 2004). This dissertation demonstrates the importance of clearly distinguishing between spirituality and religiosity constructs in future research, and also shows the predictive validity of the spiritual beliefs construct in identifying unique variance in identity stage resolution. Second, the non-linear association between the spiritual beliefs construct and identity stage resolution further demonstrates the plausibility of the development of spirituality being non-linear, that is, spiral in nature (Cook-Greuter, 2002; Csikszentmihalyi, 1993; Wilbur, 2006). The present researcher also argued that the non-linear association between the spiritual beliefs construct and identity stage resolution also shows support for this dissertation's proposed holistic conceptual framework for considering spirituality. The confirmation of the criterion validity of the spiritual beliefs construct (as operationalised by the SBI: Brief) furthers existing research by suggesting that spirituality and religiosity cannot be considered interchangeable constructs. It is recommended that future researchers operationalise the spirituality construct as either beliefs and attitudes or behaviours and practices, but not both.

13.2.4. Examining the content validity of the spiritual beliefs construct

Previous research demonstrates potential confounds between spirituality and other constructs, such as personality (Letzring et al., 2005; Slater et al., 2001) and psychological well-being (Ramirez et al., 2007; van Dierendonck, 2004). This dissertation argued that for the spiritual beliefs construct to be a new and unique individual differences variable, it must show independence from existing constructs. Previous research showing the content validity of spirituality (but not spiritual beliefs) in relation to constructs such as psychological well-being and personality have been inconclusive. However, given the structural issues pertaining to psychological well-being (Springer & Hauser, 2006; Springer et al., 2006) and personality (Gignac, 2009; Gignac, Bates, & Jang, 2007; Gignac, Jang, & Bates, 2009), the problem may not be with the construct of spirituality *per se*.

In a review of existing literature, the present researcher could not identify one study that explicitly and comprehensively examined spirituality and its commonality and independence from constructs such as: psychological well-being, personality, a sense of coherence, social well-being, Emotional Intelligence (EI), mindfulness and ego-resilience. Therefore, this dissertation examined the spiritual beliefs construct in relation to all of these variables. The findings demonstrated the content validity of the spiritual beliefs construct (as operationalised by the SBI: Brief) via higher-order exploratory factor analysis. Further, the findings of this dissertation demonstrated the incremental coherence (Gignac et al., 2009) of the spiritual beliefs construct beyond both psychological well-being, personality and EI.

13.2.5. Confirming the factorial validity of the spiritual beliefs construct and its operationalisation via the Spiritual Beliefs Inventory: Brief Version

The validation of any new construct is an ongoing process requiring the re-examination of the construct (and its operationalisation) across multiple samples (Clark & Watson, 1995). A comprehensive validation of the spiritual beliefs construct was beyond the scope of the present dissertation. However, this dissertation did demonstrate the factorial validity of the spiritual beliefs construct (as operationalised by the SBI: Brief) using a second, predominantly Australian, sample. Specifically, the plausibility of the uni-dimensionsality of the four sub-scales of the SBI: Brief was confirmed. Specific items for review in a future study were also identified. Further, the plausibility of the SBI: Brief as consisting of four first-order factors and one second-order factor was supported. Finally, this dissertation demonstrated empirically that four sub-scales of the SBI: Brief are associated with a sufficient amount of unique covariance independent of a 'general' spiritual beliefs factor. The present researcher highlights that in adopting a confirmatory factor analysis approach (consisting of the evaluation of multiple competing models) to evaluating the factorial validity of the SBI: Brief, this dissertation demonstrates a degree of scale evaluation rigour that surpasses many already published spirituality scales (Fornaciari et al., 2005a).

13.2.6. Examining the confound of one's level of conceptual complexity in the measurement of the spiritual beliefs construct

In the final two studies of this dissertation, the temporal stability and the susceptibility to socially desirable responding of the spiritual beliefs construct (as

operationalised by the SBI: Brief) was examined. The temporal stability of the SBI: Brief was confirmed over an elapsed time-period of 12-months. The findings also demonstrated the importance of the spiritual presence 'layer' of the present dissertation's proposed holistic conceptual framework for considering spirituality. Specifically, a non-significant finding between the LMPD sub-scale (at Time 1) and the SDIG sub-scale (at Time 2) was found. The finding suggests that one's identification and adoption of a 'life-purpose' may result in the individual being less mindful of self-exploration. Given that both Mahoney and Pargament (2004) and Hamel and her colleagues (2003) argue that spirituality is a life-choice that an individual adopts on a moment-by-moment basis for his or her entire life, this dissertation demonstrated the inherent difficulty of this proposition. The present researcher argued that one's spiritual presence – that is, maintaining the three tenants of the spiritual presence layer, namely: intentionality, commitment and timelessness – provides the necessary interface between one's spiritual beliefs and spiritual practices, which allows for the 'becoming' of one's spiritual oneness (Barnes, 2003; Mayer, 2000; Wilbur, 2006).

This dissertation's final study further reinforces the proposed holistic conceptual framework for considering spirituality. The present researcher has argued that central to spirituality is one's transcending to latter stages of consciousness. Individual's that continue to 'transcend' are increasingly able to concurrently consider different perspectives, and to integrate these differing perspectives and world-views without judgement or recourse. However, one 'barrier' to attaining latter stages of consciousness is one's ego (Ho & Ho, 2007; Rossouw & Stewart, 2005; Wilbur, 2006). In an examination of the relationship between one's self-reported spiritual beliefs (via the SBI: Brief) and the construct of self-deceptive enhancement (SDE), this dissertation found a positive and statistically significant association. Although researchers argue that enlightenment is the result of the 'deconstruction' of ego (Strohl, 1998; Wilbur, 2006), the findings of this dissertation suggest that the strengthening of one's ego is first required, prior to its transcendence.

13.3. Conclusion

This dissertation proposed a holistic conceptual framework for considering spirituality, consisting of four specific layers. This dissertation selected the 'spiritual beliefs' layer for a more detailed evaluation. Four already existing scales of spirituality were

examined within the context of the holistic conceptual framework and were found to be inadequate. To this end, a measure of spiritual beliefs (i.e., the SBI: Brief) was developed utilising suitable items from the four previously evaluated scales. The developed measure was found to have concurrent, discriminant, predictive (including incremental predictive), content and factorial validity. It is hoped that the proposed holistic conceptual framework will provide future research into spirituality with greater rigour.

Chapter 14

Limitations and directions for future research

14.1. Chapter overview

In this final chapter, limitations pertaining to this dissertation are highlighted and directions for future research are provided.

14.2. Limitations of this dissertation

This dissertation has a number of limitations that must be taken into account when interpreting each study's findings. Four limitations are worthy of note. The first limitation relates to the make-up of the two samples used across all studies. It could be argued that the use of two predominantly Australian samples may result in this dissertation's findings not being generalisable across cultures. For example, although Australians could be considered a spiritually diverse society, our history is grounded in Christianity. Given the 'Western' (a.k.a. individualistic) versus 'Eastern' (a.k.a. collectivist) perspective towards spirituality (Ho & Ho, 2007; Miovic, 2004), it is possible that the findings of this dissertation only apply to Australia, or societies similar to Australia. However, given that previous research suggests that Australia is a spiritually diverse society (Nasel, Haynes, & David, 2005; O'Connor, 1991), this limitation is not considered overly detrimental. Second, it must be noted that although this dissertation identified the five most predominant spiritual practice types explored in contemporary Australia (i.e., Monotheistic, Dharmic, New Age, Indigenous and No Spiritual Practice), not all practices were explicitly examined. The Australian Bureau of Statistics (ABS), classifies a total of 115 more specific categories of spirituality/religiosity (ABS, 1996). It is possible that nuances specific to a 'minority' spiritual practice group are not encompassed in the findings of this dissertation. Third, both samples used in this dissertation showed a bias towards female respondents (i.e., Sample 1 = 74.1% female; Sample 2 = 57.1% female). To-date, previous research examining the measurement of

spirituality has assumed measurement 'invariance' between males and females. Although this dissertation did identify gender differences using one-way Analysis of Variance (ANOVA) for all four scales examined[1] as well as the Spiritual Beliefs Inventory (SBI) (Full and Brief versions), the present researcher did not use the more sophisticated technique of structural equation modelling (SEM) to explicitly examine measurement invariance. In one study completed by Gomez and Fisher (2005), the findings suggest gender equivalence for the *Spiritual Well-Being Questionnaire* (SWQ) using SEM. Perhaps the same may apply for the scales used in this dissertation if SEM had also been used. Finally, both samples used in this dissertation could be argued to be quite spiritual. For example, the mean scores on the Spiritual Beliefs Inventory: Brief Version (SBI: Brief) for both samples were above the mid-point. Future research would need to examine if the findings of this dissertation are replicated with a 'low spirituality' sample.

A second limitation of this dissertation related to the source items for the Full and Brief versions of the SBI. The specific focus of this dissertation was the construct of spiritual beliefs. To this end, the present researcher utilised items from four existing scales (i.e., ASTI, MMS, SAS and STS) in the development of the SBI. Although the present researcher argued that the items selected for analysis were 'fit-for-purpose', it could also be argued that a more appropriate method of developing a new scale would be to generate new items specific to the construct of interest (Clark & Watson, 1995; Noar, 2003). Certainly, the present dissertation did demonstrate the content validity of the items selected, and also demonstrated the factorial validity of the SBI: Brief via confirmatory factor analysis (CFA). However, future research should consider the creation of a scale specifically developed to examine the construct of spiritual beliefs.

The third limitation of this dissertation related to the operationalisation of the conceptual complexity 'layer' of the proposed holistic conceptual framework for considering spirituality. In conceptualising conceptual complexity, the present researcher stated that it was a pseudonym for one's 'level of consciousness' that encompassed the range of stage-trait approaches currently utilised in research considering a person's subject-object relations

[1] Scales utilised in this dissertation included: the Adult Self-Transcendence Inventory (ASTI) (Levenson et al., 2005); Miller Measure of Spirituality (MMS) (Miller, 2004); Spiritual Assessment Scale (SAS) (Howden, 1993); and Spiritual Transcendence Scale (STS) (Piedmont, 1999).

(e.g., ego development, stages of faith, cognitive development, stages of moral development, spiral dynamics, etc). However, the present dissertation did not utilise a measure that could be considered synonymous to stage-trait theory (e.g., Loevinger's *Washington University Sentence Completion Test* or Kegan's *Subject-Object Interview*, etc). Rather, the present dissertation elected to use a measure of identity stage resolution as an analog indicator of conceptual complexity. Future researchers opting to use the present dissertation's proposed holistic conceptual framework for considering spirituality, could operationalise the conceptual complexity 'layer' using a more appropriate measure.

A related limitation pertains to the spiritual presence layer of the proposed holistic conceptual framework for considering spirituality. Although the present researcher extrapolated findings of this dissertation as they related to this layer of the proposed holistic conceptual framework, no direct examination of one's spiritual presence was undertaken.

The final limitation of the present study worthy of note relates to its design. Arguably, the most appropriate research methodology examining spirituality and identity development would incorporate a longitudinal study design. However, these are difficult to implement in practice (Wink & Dillon, 2002). With the exception of the study examining the temporal stability of the spiritual beliefs construct (i.e., Chapter 12; Study 1), all studies conducted within this dissertation utilised a cross-section design. Given that the temporal stability of the spiritual beliefs construct was found to be high, the implications of using such a cross-sectional versus longitudinal study design remain unclear. It is likely that future research examining the development of one's spiritual beliefs – as they pertain to one's level of conceptual complexity – would need to incorporate a longitudinal design.

14.3. Directions for future research

Future researchers exploring spirituality should take note and seek to address the already outlined limitations of this dissertation. Specifically, future research needs to examine measurement equivalence of the spiritual beliefs construct for an Australian population, as it relates to gender, spiritual practice type, etc. Future research should also examine the measurement of the spiritual beliefs construct. As already outlined, this dissertation utilised items from existing scales in the construction of the SBI (Full and Brief versions). Future research could either re-examine the items identified as potentially

problematic in this dissertation, or use the underlying theory of this dissertation to deductively generate a new set of items to measure the spiritual beliefs construct. Researchers deciding to re-examine the items used in this dissertation are encouraged to review more critically the following item pairs: 1 and 2, 4 and 6, 10 and 13, 24 and 26, and 25 and 26 of the Spiritual Beliefs Inventory: Brief Version (SBI: Brief). This dissertation identified that these five sets of items share error variance, which may suggest an underlying issue with one or both of the identified item pairs. Pertaining to these five item pairs, this dissertation highlighted the specific items (notably, items 10, 25 and 26) that should be adjusted. Future research should operationalise more formerly the spiritual presence layer of the proposed holistic conceptualise framework for considering spirituality. Further, it should also re-examine the operationalisation of the conceptual complexity 'layer' of the present dissertation's holistic conceptual framework for considering spirituality. Although many of the stage-trait theories thought to be somewhat synonymous with the present researcher's conceptualisation of conceptual complexity have been considered in relation to spirituality, the relationship between stage-trait theories of individual development and spirituality remains incomplete. Finally, as it pertains to the limitations of this dissertation, future research could utilise a longitudinal design to evaluate the relationships between and within each layer of the present dissertation's holistic conceptual framework.

The conceptualisation of spiritual beliefs as consisting of four dimensions emerged as part of this dissertation. Future research should attempt to validate the utility of the spiritual beliefs construct (as defined by this dissertation) against measures argued to be concurrent. For example, the *Brief Spiritual Beliefs Inventory* (BSBI) (Holland et al., 1998) is a 15 item measure of spiritual beliefs designed for use in quality of life research with patients with threatening illnesses (e.g., cancer). The name of the inventory denotes the inventory as relating to spiritual beliefs. A closer examination of the inventory's items indicate it to be assessing both a patient's spiritual beliefs and practices within an 'illness' context. It remains to be determined the degree of overlap between the spiritual beliefs construct (as conceptualised by this dissertation) and other scales purported to be measuring similar constructs.

A related direction for future research examining the spiritual beliefs construct is the predictive utility of the spiritual beliefs construct within well-being and/or organisational

contexts. This dissertation commenced with a review of existing literature within these two domains. The results of the review indicated that spirituality/religion contribute positively to both domains; however, the methodological rigour of many cited studies could be argued to be questionable. Future research could re-examine the role of spirituality (and specifically, spiritual beliefs) within these two domains taking into account the findings of this dissertation.

For researchers interested in the cross-cultural applicability of the findings of this dissertation, a magnitude of future research is possible. A key strength of the present dissertation relates to the specificity of the samples it utilised. Specifically, both samples examined in this dissertation were predominantly Australian residents. This is also a key weakness of this dissertation. It remains to be determined empirically if the four identified dimensions of the preliminary general taxonomy for spiritual beliefs can be generalised into other cultures. The present researcher argues that the four more specific spiritual beliefs are universal; however, no empirical evidence is yet available to support this claim.

Finally, future research should emphasise a multi-measurement approach to an examination of the proposed holistic conceptual framework for considering spirituality. This recommendation should be viewed within the context of the multitrait-multimethod (MTMM) validity research of Campbell and Fiske (1959). For example, an assessment of the depth of an individual's spiritual beliefs could be undertaken via self-report, rater-report, structured interview, real-life observations, etc. Scores derived from such an array of 'data sources', assuming that they correlate positively and strongly with each other, would provide a true representation of an individual's spiritual beliefs. Such an approach to examining spirituality is already occurring. For example, in completing the ongoing validation of the *Spiritual Transcendence Inventory* (STS) (Piedmont, 1999), Piedmont has examined both self- and rater-report STS across a number of samples and has found a positive and statistically significant association for all three sub-scales of the STS. It should be noted however, that the strongest correlations across multiple samples are found with the Prayer/Meditation Fulfilment sub-scale of the STS, which is arguably the sub-scale most easily observed (Piedmont, 1999, 2001). As such, it could be argued that different approaches to measuring the present dissertation's proposed holistic conceptual framework

for considering spirituality (e.g., self- and rater-report) may complement each other and should be further researched and developed.

Appendices

Appendix A-1: *Ethics Approval: Data collection phase 1*

Australian Catholic University
Brisbane Sydney Canberra Ballarat Melbourne

ACU National

Human Research Ethics Committee

Committee Approval Form

Principal Investigator/Supervisor: Prof Barry Fallon Melbourne Campus

Co-Investigators: Dr Terry Bowles Melbourne Campus

Student Researcher: Richard Harmer Melbourne Campus

Ethics approval has been granted for the following project:
What is the pinnacle of spiritual life and how is it attained: Implications of individuals and organisations

for the period: 14th July 2006 - 12th December 2006

Human Research Ethics Committee (HREC) Register Number: V200506 74

The following standard conditions as stipulated in the *National Statement on Ethical Conduct in Research Involving Humans* (1999) apply:

(i) that Principal Investigators / Supervisors provide, on the form supplied by the Human Research Ethics Committee, annual reports on matters such as:
- security of records
- compliance with approved consent procedures and documentation
- compliance with special conditions, and

(ii) that researchers report to the HREC immediately any matter that might affect the ethical acceptability of the protocol, such as:
- proposed changes to the protocol
- unforeseen circumstances or events
- adverse effects on participants

The HREC will conduct an audit each year of all projects deemed to be of more than minimum risk. There will also be random audits of a sample of projects considered to be of minimum risk on all campuses each year.

Within one month of the conclusion of the project, researchers are required to complete a *Final Report Form* and submit it to the local Research Services Officer.

If the project continues for more than one year, researchers are required to complete an *Annual Progress Report Form* and submit it to the local Research Services Officer within one month of the anniversary date of the ethics approval.

Signed: ..... Date: .....
(Research Services Officer, Melbourne Campus)

(Committee Approval.dot @ 15/10/04) Page 1 of 1

Appendix A-2: *Letter to participants (Data collection phase 1)*

Information Letter to Participants

Research title:

"What is the pinnacle of a spiritual life and how is it attained: Implications for individuals and organisations."

Investigators:

Principal Investigator: Prof. Barry Fallon

Co-supervisor: Dr. Terry Bowles

Student Researcher: Mr. Richard Harmer

Dear Participant

You are invited to participate in a study exploring the construct of spirituality and what role it plays in contemporary Australia. More specifically the study is trying to ascertain if there is a common definition of spirituality, what spirituality 'is' in Australia and what are the personal and organisational benefits of, to varying degrees, pursuing a more spiritual life. In exploring the topic of spirituality the study aims to collect responses to a range of questions related to this topic, from everyday Australians.

Please note that the current research is being conducted as a requirement for a post-graduate degree and although it is being conducted under the auspices of the Australian Catholic University we are not affiliated with any one religious or non-religious doctrine.

f you volunteer to participate in this study you will be asked to complete a battery of questions, accessed via the Internet. You will first be asked a number of general questions, such as age, education, and work status for the purpose of describing the sample we use. You will then be asked questions that are responded to using a numerically-anchored response scale. You should respond to each question as honestly as you can and first reactions are usually the best. There are no correct or incorrect responses to these questions. The assessment will take approximately 45 minutes to complete. Your responses to each question will remain confidential. Further, it is highly unlikely that you will incur any physical risk or discomfort in completion this study's assessment battery.

By completing the battery of questions and, subsequently, clicking 'Submit' it will be taken that you have provided informed consent pertaining to your participation in this research.

By participating in this research you will be given a valuable opportunity for self-reflection. You will have the opportunity to explore what spirituality means to you and to consider how you currently pursue your definition of spirituality, in the many domains of your life. More generally, your

responses and the responses of the many others who will also complete the same assessment battery will be collated and examined to determine the fundamental components of a spiritual life. By determining the fundamental steps in the pursuit of a spiritual life others may also benefit from knowing of a more structured approach to spiritual growth.

The researcher conducting this research project will collect and collate your responses to each of the questions asked. However, your responses will be made completely confidential. To maintain your confidentiality, your name will be kept separate to your responses to the study's battery of questions and will not be included in any analysis of the collated data. Further, although the results of this study may be published in reports submitted to scientific journals, only group data will be presented and at no time will individuals be identifiable.

Please consider the purposes and time commitment of this study before you decide whether or not to participate. Your participation in this study is completely voluntary. Your initial agreement to participate does not stop you from discontinuing participation and you are free to withdraw at any time.

Although unlikely, the completion of the online battery of questions may raise some concerns for you because of some personal questions. If you would like to discuss them with a counsellor, you could ring Dr Lisa Eisen (School of Psychology, Australian Catholic University) on 03 9953 3119, or Lifeline on 131 114.

If you have any questions regarding this study please contact the Principal Investigator:

Prof. Barry Fallon – Professor of Psychology

School of Psychology

Australian Catholic University

Melbourne Campus

Tel: 03 9953 3108

If you are interested in learning of the outcome of this research then our findings will be made available to you. If you would like to receive the findings of the study please check the appropriate box and supply a relevant email address.

This research has been approved by the Human Research Ethics Committee at Australian Catholic University.

In the event that you have any complaint or concern about the way you have been treated during this study, or if you have a query that the Primary Investigator or Student Researcher has not been able to satisfy, you may write to the Chair of the Human Research Ethics Committee care of the following address:

The Chair, HREC

C/o: Research Services

Australian Catholic University

Melbourne Campus

Locked Bag 4115

FITZROY VIC 3065

Tel: 03 9953 3158

Fax: 03 9953 3315

Any complaint or concern will be treated in confidence and fully investigate. You will be informed of the outcome of that investigation.

Thank you.

Principal Investigator	_____	Date:	_____
Student Researcher	_____	Date:	_____

Appendix A-3: *Scale items of the Adult Self-Transcendence Inventory (ASTI)*

Scale and item number		Item
ASTI	1[a]	I am more likely to engage in quiet contemplation.
ASTI	2[a]	I feel that my individual life is a part of a greater whole.
ASTI	3[a]	I have become less concerned about other people's opinions of me.
ASTI	4	I feel that my life has less meaning (R).
ASTI	5[a]	I feel a greater sense of belonging with both earlier and future generations.
ASTI	6[a]	My peace of mind is not so easily upset as it used to be.
ASTI	7[b]	I feel more isolated and lonely (R).
ASTI	8[b]	I am less interested in seeking out social contacts (R).
ASTI	9[b]	My sense of self has decreased as I have gotten older (R).
ASTI	10[a]	My sense of self is less dependent on other people and things.
ASTI	11[a]	I do not become angry as easily.
ASTI	12[a]	I find more joy in life.
ASTI	13[a]	Material things mean less to me.
ASTI	14[b]	I am less optimistic about the future of humanity (R).
ASTI	15[a]	I feel much more compassionate, even toward my enemies.
ASTI	16[ac]	I take myself less seriously.

Appendix A-3: *continued*

Scale and item number		Item
ASTI	17 [ac]	I am more focused on the present.
ASTI	18 [bc]	I have less patience with other people.

Note: [a] = Self-Transcendence items; [b] = Alienation items; [c] = items omitted from this dissertation.

Appendix A-4: *Scale items of the Miller Measure of Spirituality (MMS)*

Scale and item number	Item
MMS 1 [a]	I am often intrigued by things or matters that seem to be mysterious or unexplainable.
MMS 2 [a]	It is important for people to be at peace with themselves.
MMS 3 [a]	It deeply saddens me when I perceive that another person has suffered some sort of injustice.
MMS 4 [a]	If you think someone or something is important to you, then you should deeply value it.
MMS 5 [a]	There are some occurrences in the natural world that seem to be beyond scientific understanding.
MMS 6 [a]	There is more to this world than what can be seen and physically studied.
MMS 7 [a]	People need to frequently evaluate what should be cherished in their lives.
MMS 8 [a]	I tend to reflect upon the events that occur in my life.
MMS 9 [a]	Sometimes it takes a major loss to occur before a person realizes what is truly important in life.
MMS 10 [a]	Changing or growing as a person in a good way is one of the noblest endeavors that a person can undertake.
MMS 11 [a]	Every experience allows a person to learn something new about themselves.
MMS 12 [a]	I am very compassionate towards the needs of others.
MMS 13 [a]	1 am always trying to find ways to express myself
MMS 14 [a]	The search for meaning allows one to find inner peace.
MMS 15 [a]	The process of self-discovery is very important to me.
MMS 16 [a]	People should work to enact their most idealistic beliefs.

Appendix A-4: *continued*

Scale and item number		Item
MMS	17 [a]	I try to turn painful experiences into something that allows me to grow as a person.
MMS	18 [a]	Religious leaders must always emphasize the importance of compassion and tolerance for all.
MMS	19 [a]	I hope that most people will go to a good place after they die.
MMS	20 [b]	My belief in a higher being affects and influences most of my life.
MMS	21 [b]	I feel the need to communicate with some type of higher being.
MMS	22 [b]	I consider myself to be a spiritual person.
MMS	23 [b]	I firmly believe that good prevails over evil.
MMS	24 [b]	I feel that each and every person has a unique mission to fulfill in life.
MMS	25 [b]	My life would have little meaning if I did not believe in a higher being.
MMS	26 [b]	I regularly seek inner strength and guidance from a higher being.
MMS	27 [b]	By helping others, I am showing my love for my supreme or higher being.
MMS	28 [b]	I try to serve my higher power as best I know how.
MMS	29 [b]	I feel that I have a personal connection to some type of higher being.
MMS	30 [b]	I am moved by sacred rituals.
MMS	31 [b]	I am searching for the ultimate truths of everyday life.

Note: [a] = Pro-Social Beliefs items; [b] = Importance of a Higher Being items.

Appendix A-5: *Scale items of the Spiritual Assessment Scale (SAS)*

Scale and item number		Item
SAS	1[a]	I have a general sense of belonging.
SAS	2[a]	I am able to forgive people who have done wrong to me.
SAS	3[b]	I have the ability to rise above or go beyond a physical or psychological condition.
SAS	4[a]	I am concerned about destruction of the environment.
SAS	5[b]	I have experienced moments of peace in a devastating event.
SAS	6[a]	I feel a kinship to other people.
SAS	7[a]	I feel a connection to all of life.
SAS	8[c]	I rely on an inner strength in hard times.
SAS	9[a]	I enjoy being of service to others.
SAS	10[c]	I can go to a spiritual dimension within myself for guidance.
SAS	11[b]	I have the ability to rise above or go beyond a body change or body loss.
SAS	12[c]	I have a sense of harmony or inner peace.
SAS	13[b]	I have the ability for self-healing.
SAS	14[c]	I have an inner strength.
SAS	15[b]	The boundaries of my universe extend beyond usual ideas of what space and time are thought to be.
SAS	16[c]	I feel good about myself.

Appendix A-5: *continued*

Scale and item number		Item
SAS	17 [c]	I have a sense of balance in my life.
SAS	18 [d]	There is fulfilment in my life.
SAS	19 [a]	I feel a responsibility to preserve the planet.
SAS	20 [d]	The meaning I have found for my life provides a sense of peace.
SAS	21 [b]	Even when I feel discouraged, I trust that life is good.
SAS	22 [d]	My life has meaning and purpose.
SAS	23 [c]	My innerness or an inner resource helps me deal with uncertainty in life.
SAS	24 [c]	I have discovered my own strength in time of struggle.
SAS	25 [a]	Reconciling relationships is important to me.
SAS	26 [a]	I feel a part of the community in which I live.
SAS	27 [c]	My inner strength is related to a belief in a Higher Power or Supreme Being.
SAS	28 [d]	I have goals and aims for my life.

Note: [a] = Unifying Connectedness; [b] = Transcendence; [c] = Innerness or Inner Resources; [d] = Purpose and Meaning in Life.

Appendix A-6: *Scale items of the Spiritual Transcendence Scale (STS)*

Scale and item number		Item
STS	1[a]	I have not experienced deep fulfilment and bliss through my prayers and/or meditations (R).
STS	2[b]	I do not feel a connection to some larger Being or Reality (R).
STS	3[b]	I do not believe that on some kind of level my life is intimately tied to all humankind (R).
STS	4[a]	I meditate and/or pray so that I can reach a higher spiritual level.
STS	5[b]	All life is interconnected.
STS	6[b]	There is an order to the universe that transcends human thinking.
STS	7[c]	Death does not stop one's feelings of emotional closeness to another.
STS	8[a]	In the quiet of my prayers and/or meditations, I find a sense of wholeness.
STS	9[c]	I have done things in my life because I believed it would please a parent, relative, or friend that had died.
STS	10[c]	Although dead, memories and thoughts of some of my relatives continue to influence my current life.
STS	11[b]	Spirituality is not a central part of my life.
STS	12[a]	I find inner strength and/or peace from the prayers and/or meditations.
STS	13[c]	Although there is good and bad people, I feel that humanity as a whole is basically bad (R).
STS	14[c]	I do not have emotional ties to someone who has died (R).
STS	15[b]	There is no higher plane of consciousness or spirituality that binds on people (R).
STS	16[b]	Although individual people may be difficult, I feel an emotional bond with all humanity.

Appendix A-6: *continued*

Scale and item number		Item
STS	17 [a]	I meditate and/or pray so that I can grow as a person.
STS	18 [a]	Prayer and/or meditation does not hold much appeal to me (R).
STS	19 [a]	My prayers and/or meditations provide me with a sense of emotional support.
STS	20 [b]	I feel that on a higher level all of us have a common bond.
STS	21 [a]	I want to grow closer to the God of my understanding.
STS	22 [b]	The praise of others gives deep satisfaction to my accomplishments.
STS	23 [c]	I am not concerned about the expectations that loved ones have for me (R).

Note: [a] = Prayer Fulfilment; [b] = Universality; [c] = Connectedness.

Appendix A-7: *Equations used to calculate Partial Confirmatory Factor Analysis (PCFA) close-fit indexes (i.e., RMSEA, NFI, TLI and CFI)*

$$\text{RMSEA} = \sqrt{\frac{\chi^2_{\text{Implied}} - df_{\text{Implied}}}{(N-1) * df_{\text{Implied}}}}$$

$$\text{NFI} = \frac{(\chi^2_{\text{Null}} - \chi^2_{\text{Implied}})}{\chi^2_{\text{Null}}}$$

$$\text{TLI} = \frac{(\chi^2_{\text{Null}} / df_{\text{Null}}) - (\chi^2_{\text{Implied}} / df_{\text{Implied}})}{[(\chi^2_{\text{Null}} / df_{\text{Null}}) - 1]}$$

$$\text{CFI} = 1 - \frac{(\chi^2_{\text{Implied}} - df_{\text{Implied}})}{(\chi^2_{\text{Null}} - df_{\text{Null}})}$$

Appendix A-8: *Items used in the development of the Explicit Religiosity Scale (ERS)*

Scale and item number		Item
MMS	18	Religious leaders must always emphasize the importance of compassion and tolerance for all
MMS	19	I hope that most people will go to a good place after they die
MMS	20	My belief in a higher being affects and influences most of my life
MMS	21	I feel the need to communicate with some type of higher being
MMS	23	I firmly believe that good prevails over evil
MMS	25	My life would have little meaning if I did not believe in a higher being
MMS	26	I regularly seek inner strength and guidance from a higher being
MMS	27	By helping others, I am showing my love for my supreme or higher being
MMS	28	I try to serve my higher power as best I know how
MMS	29	I feel that I have a personal connection to some type of higher being
MMS	30	I am moved by sacred rituals
SAS	27	My inner strength is related to a belief in a Higher Power or Supreme Being
STS	1	I have not experienced deep fulfilment and bliss through my prayers and/or meditations
STS	2	I do not feel a connection to some larger Being or Reality
STS	4	I meditate and/or pray so that I can reach a higher spiritual level
STS	8	In the quiet of my prayers and/or meditations, I find a sense of wholeness

Appendix A-8: *continued*

Scale and item number		Item
STS	12	I find inner strength and/or peace from the prayers and/or meditations
STS	17	I meditate and/or pray so that I can grow as a person
STS	18	Prayer and/or meditation does not hold much appeal to me
STS	19	My prayers and/or meditations provide me with a sense of emotional support
STS	21	I want to grow closer to the God of my understanding

Appendix A-9: *Scale items of the Identity Issues Inventory (III)*

Scale and item number		Item
III	1[a]	I feel like I have grown into a "whole" person.
III	2[b]	I have a close set of accepting friends that will not change in the foreseeable future.
III	3[c]	I am permanently affiliated with a group of like-minded people who value me as a member.
III	4[d]	I do not need the emotional support of others before making my own decisions.
III	5[e]	Most of the time, my behaviour reflects my true, underlying character.
III	6[f]	1 I have found my niche (unique place of belonging) in life.
III	7[f]	I don't feel like I'm my own person (R).
III	8[e]	If I think someone won't approve of me, I pretend to have characteristics that I don't really possess (R).
III	9[e]	It is very important to me what people think about my ability to keep up with the latest trends and fashions (R).
III	10[d]	I am in control of my own thoughts.
III	11[d]	Sometimes other people feel like I rely on them too much emotionally (R).
III	12[c]	I have clear social roles that include responsibilities to others.
III	13[b]	People who know me well often treat me like I'm immature (R).
III	14[a]	I consider myself to be a mature and complete adult.
III	15[a]	I often feel like a different person when I am in different social situations (R).
III	16[a]	I often feel confused about who I am deep inside (R).

Appendix A-9: *continued*

Scale and item number		Item
III	17 [b]	My friends and family see me as a responsible person.
III	18 [c]	I belong to a community of like-minded people with whom I will be happy to closely associate indefinitely.
III	19 [d]	I have a difficult time thinking and acting decisively (R).
III	20 [e]	My behaviour is generally consistent in all situations.
III	21 [f]	I have found a place in society that is uniquely mine.
III	22 [e]	I continually change the way I present myself to others to get the best out of the situation I'm in (R).
III	23 [f]	I have been unable to find a place in society that is uniquely suited for me (R).
III	24 [d]	I cannot make it through most days without emotional reinforcements from people in my life (R).
III	25 [c]	I have been unable to find a meaningful group of like-minded people with which to affiliate on a more or less permanent basis (R).
III	26 [a]	Whatever happens, I still have a secure sense of who I am deep inside.
III	27 [b]	My friends think I behave maturely.
III	28 [c]	I have not been able to become a member of a "community" that will support who I am (R).
III	29 [e]	I feel compelled to dress and act in ways that reflect what my friends think is important (R).
III	30 [f]	I'm still not sure where I fit in adult society (R).
III	31 [b]	I *act* like a different person, depending on the social situation (R).
III	32 [b]	I find it difficult to keep the same friends for any period of time (R).

Appendix A-9: *continued*

Scale and item number		Item
III	33 [a]	There is a struggle inside of me about who I really am (R).
III	34 [c]	I am recognized as an adult member of an established social group.
III	35 [d]	I am in control of my own emotions.
III	36 [f]	Others would recognize me as a self-sufficient adult.

Note: a = Integrated - Subjective; b = Integrated - Behavioural; c = Integrated - Social; d = Differentiated - Subjective; e = Differentiated - Behavioural; f = Differentiated – Social.

Appendix A-10: *Scale items of the Ego Resilience Scale (ERS)*

Scale and item number		Item
ERS	1	I am generous with my friends.
ERS	2	I quickly get over and recover from being startled.
ERS	3	I enjoy dealing with new and unusual situations.
ERS	4	I usually succeed in making a favorable impression on people.
ERS	5	I enjoy trying new foods I have never tasted before.
ERS	6	I am regarded as a very energetic person.
ERS	7	I like to take different paths to familiar places.
ERS	8	I am more curious than most people.
ERS	9	Most of the people I meet are likeable.
ERS	10	I usually think carefully about something before acting.
ERS	11	I like to do new and different things.
ERS	12	My daily life is full of things that keep me interested.
ERS	13	I would be willing to describe myself as a pretty "strong" personality.
ERS	14	I get over my anger at someone reasonably quickly.

Appendix A-11: *Scale items of the Five Factor Model – Brief Adjective Checklist (FFM-BAC)*

Scale and item number		Item
FFM	1[a]	*being* Helpful
FFM	2[a]	*being* Understanding
FFM	3[a]	*being* Agreeable
FFM	4[a]	*being* Selfish
FFM	5[a]	*being* Discourteous
FFM	6[a]	*being* Uncooperative
FFM	7[b]	*being* Efficient
FFM	8[b]	*being* Hard-working
FFM	9[b]	*being* Conscientious
FFM	10[b]	*being* Disorganized
FFM	11[b]	*being* Forgetful
FFM	12[b]	*being* Lazy
FFM	13[c]	*being* Fearful
FFM	14[c]	*being* Depressed
FFM	15[c]	*being* Anxious
FFM	16[c]	*being* Moody

Appendix A-11: *continued*

Scale and item number		Item
FFM	17 [c]	*being* Calm
FFM	18 [c]	*being* Relaxed
FFM	19 [d]	*being* Creative
FFM	20 [d]	*being* Idealistic
FFM	21 [d]	*being* Insightful
FFM	22 [d]	*being* Artistic
FFM	23 [d]	*being* Intelligent
FFM	24 [d]	*being* Unimaginative
FFM	25 [e]	*being* Sociable
FFM	26 [e]	*being* Talkative
FFM	27 [e]	*being* Extroverted
FFM	28 [e]	*being* Silent
FFM	29 [e]	*being* Shy
FFM	30 [e]	*being* Withdrawn

Note: a = Agreeableness; b = Conscientiousness; c = Neuroticism; d = Openness to Experience; e = Extroversion.

Appendix A-12: *Scale items of the Mindfulness Awareness Attention Scale (MAAS)*

Scale and item number		Item
MAAS	1	I could be experiencing some emotion and not be conscious of it until some time later.
MAAS	2	I break or spill things because of carelessness, not paying attention, or thinking of something else.
MAAS	3	I find it difficult to stay focused on what's happening in the present.
MAAS	4	I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.
MAAS	5	I tend not to notice feelings of physical tension or discomfort until they really grab my attention.
MAAS	6	I forget a person's name almost as soon as I've been told it for the first time.
MAAS	7	It seems I am "running on automatic" without much awareness of what I'm doing.
MAAS	8	I rush through activities without being really attentive to them.
MAAS	9	I get so focused on the goal I want to achieve that I lose touch with what I am doing right now to get there.
MAAS	10	I do jobs or tasks automatically, without being aware of what I'm doing.
MAAS	11	I find myself listening to someone with one ear, doing something else at the same time.
MAAS	12	I drive places on "automatic pilot" and then wonder why I went there.
MAAS	13	I find myself preoccupied with the future or the past.
MAAS	14	I find myself doing things without paying attention.
MAAS	15	I snack without being aware that I'm eating.

Appendix A-13: *Scale items of the Psychological Well-Being Scale (PWBS)*

Scale and item number		Item
PBWS	1 [a]	I tend to be influenced by people with strong opinions (R).
PBWS	2 [a]	I have confidence in my opinions, even if they are contrary to the general consensus.
PBWS	3 [a]	I judge myself by what I think is important, not by the values of what others think is important.
PBWS	4 [b]	In general, I feel I am in charge of the situation in which I live.
PBWS	5 [b]	The demands of everyday life often get me down (R).
PBWS	6 [b]	I am quite good at managing the many responsibilities of my daily life.
PBWS	7 [c]	I think it is important to have new experiences that challenge how you think about yourself and the world.
PBWS	8 [c]	For me, life has been a continuous process of learning, changing, and growth.
PBWS	9 [c]	I gave up trying to make big improvements or changes in my life a long time ago (R).
PBWS	10 [d]	Maintaining close relationships has been difficult and frustrating for me (R).
PBWS	11 [d]	People would describe me as a giving person, willing to share my time with others.
PBWS	12 [d]	I have not experienced many warm and trusting relationships with others (R).
PBWS	13 [e]	I live life one day at a time and don't really think about the future (R).
PBWS	14 [e]	Some people wander aimlessly through life, but I am not one of them.
PBWS	15 [e]	I sometimes feel as if I've done all there is to do in life (R).
PBWS	16 [f]	When I look at the story of my life, I am pleased with how things have turned out.

Appendix A-13: *continued*

Scale and item number		Item
PBWS	17[f]	I like most aspects of my personality.
PBWS	18[f]	In many ways, I feel disappointed about my achievements in life (R).

Note: [a] = Autonomy; [b] = Environmental Mastery; [c] = Personal Growth; [d] = Positive Relations with Others; [e] = Purpose in Life; [f] = Self-Acceptance.

Appendix A-14: *Scale items of the Schutte Emotional Intelligence Scale (SEIS)*

Scale and item number		Item
SEIS	1 [e]	I know when to speak about my personal problems to others.
SEIS	2 [c]	When I am faced with obstacles, I remember times I faced similar obstacles and overcame them.
SEIS	3 [c]	I expect that I will do well on most things I try.
SEIS	4 [e]	Other people find it easy to confide in me.
SEIS	5 [b]	I find it hard to understand the non-verbal messages of other people (R).
SEIS	6 [e]	Some of the major events of my life have led me to re-evaluate what is important and not important.
SEIS	7 [d]	When my mood changes, I see new possibilities.
SEIS	8 [e]	Emotions are one of the things that make my life worth living.
SEIS	9 [a]	I am aware of my emotions as I experience them.
SEIS	10 [c]	I expect good things to happen.
SEIS	11 [e]	I like to share my emotions with others.
SEIS	12 [c]	When I experience a positive emotion, I know how to make it last.
SEIS	13 [e]	I arrange events others enjoy.
SEIS	14 [c]	I seek out activities that make me happy.
SEIS	15 [b]	I am aware of the non-verbal messages I send to others.
SEIS	16 [e]	I present myself in a way that makes a good impression on others.

Appendix A-14: *continued*

Scale and item number		Item
SEIS	17 [d]	When I am in a positive mood, solving problems is easy for me.
SEIS	18 [b]	By looking at their facial expressions, I recognize the emotions people are experiencing.
SEIS	19 [e]	I know why my emotions change.
SEIS	20 [d]	When I am in a positive mood, I am able to come up with new ideas.
SEIS	21 [e]	I have control over my emotions.
SEIS	22 [a]	I easily recognize my emotions as I experience them.
SEIS	23 [c]	I motivate myself by imagining a good outcome to tasks I take on.
SEIS	24 [e]	I compliment others when they have done something well.
SEIS	25 [b]	I am aware of the non-verbal messages other people send.
SEIS	26 [e]	When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself.
SEIS	27 [d]	When I feel a change in emotions, I tend to come up with new ideas.
SEIS	28 [c]	When I am faced with a challenge, I give up because I believe I will fail (R).
SEIS	29 [b]	I know what other people are feeling just by looking at them.
SEIS	30 [e]	I help other people feel better when they are down.
SEIS	31 [c]	I use good moods to help myself keep trying in the face of obstacles.
SEIS	32 [b]	I can tell how people are feeling by listening to the tone of their voice.

Appendix A-14: *continued*

Scale and item number		Item
SEIS	33 [b]	It is difficult for me to understand why people feel the way they do (R).

Note: a = Appraisal of emotions of the Self; b = Appraisal of emotions in others; c = Emotional regulation of Self; d = Using emotions for problem solving; e = items omitted from this dissertation.

Appendix A-15: *Scale items of the Sense of Coherence Scale (SOCS)*

Scale and item number		Item
SOCS	1[a]	I have the feeling that I don't really care about what goes on around me.
SOCS	2[a]	In the past I have been surprised by the behaviour of people whom I thought I knew well.
SOCS	3[a]	In the past people whom I counted on have disappointed me.
SOCS	4[a]	Until now my life has had no clear goal or purpose at all.
SOCS	5[a]	I have had the feeling that I have been treated unfairly.
SOCS	6[b]	I am in an unfamiliar situation and feel that I don't know what to do.
SOCS	7[b]	Doing the things I do every day is a source of pain and boredom.
SOCS	8[b]	I have very mixed-up feelings and ideas.
SOCS	9[b]	Sometimes I have feelings inside I would rather not feel.
SOCS	10[a]	Many people - even those with a strong character - sometimes feel like `sad sacks' (losers) in certain situations. I have often felt this way in the past.
SOCS	11[c]	When something happens, I have generally found that I overestimated or underestimated its importance.
SOCS	12[a]	I often have feelings that there's little meaning in the things I do in my daily life.
SOCS	13[b]	I often have feelings that I'm not sure I can keep under control.

Note: a = Social comprehension and commitment; b = Unpleasant emotions and inner tension; c = items omitted from this dissertation.

Appendix A-16: *Scale items of the Social Well-Being Scale (SWS)*

Scale and item number		Item
SWS	1[a]	I don't feel that I belong to anything I would call a community (R).
SWS	2[a]	I feel like I am an important part of your community.
SWS	3[a]	If I had something to say, I believe people in my community would listen to me.
SWS	4[a]	I feel close to other people in my community.
SWS	5[a]	I see my community as a source of comfort.
SWS	6[a]	If I had something to say, I don't think my community would take me seriously (R).
SWS	7[a]	I believe other people in society value me as a person.
SWS	8[b]	I think that other people are unreliable (R).
SWS	9[b]	I believe that people are kind.
SWS	10[b]	I believe that people are self-centered (R).
SWS	11[b]	I feel that people are not trustworthy (R).
SWS	12[b]	I think that people live only for themselves (R).
SWS	13[b]	I believe that people are more and more dishonest these days (R).
SWS	14[b]	I think that people care about other people’s problems.
SWS	15[c]	My behavior has some impact on other people in my community.
SWS	16[c]	I think I have something valuable to give to the world.

Appendix A-16: *continued*

Scale and item number		Item
SWS	17 [c]	My daily activities do not produce anything worthwhile for my community (R).
SWS	18 [c]	I don't have the time or energy to give anything to my community (R).
SWS	19 [c]	I think that my work provides an important product for society.
SWS	20 [c]	I feel I have nothing important to contribute to society (R).
SWS	21 [d]	I believe that society has stopped making progress (R).
SWS	22 [d]	Society isn't improving for people like me (R).
SWS	23 [d]	I don't think social institutions like law and government make my life better (R).
SWS	24 [d]	I see society as continually evolving.
SWS	25 [d]	I think our society is a productive place for people to live in.
SWS	26 [d]	For me there is no such thing as social progress (R).
SWS	27 [d]	I think the world is becoming a better place for everyone.
SWS	28 [e]	The world is too complex for me (R).
SWS	29 [e]	Scientists are the only people who can understand how the world works (R).
SWS	30 [e]	I cannot make sense of what's going on in the world (R).
SWS	31 [e]	Most cultures are so strange that I cannot understand them.
SWS	32 [e]	I think it's worthwhile to understand the world I live in (R).

Appendix A-16: *continued*

Scale and item number		Item
SWS	33 [e]	I find it hard to predict what will happen next in society.

Note: a = Integration; b = Acceptance; c = Contribution; d = Actualisation; e = Coherence.

Appendix A-17: *Pearson's r correlations between items of the Psychological Well-Being Scale (PWBS) (Short-Form) and the Life-Meaning, Purpose and Direction (LMPD) sub-scale of the Spiritual Beliefs Inventory: Brief Version (SBI: Brief)*

Item of the PWBS	LMPD
Item 1: I tend to be influenced by people with strong opinions	.33
Item 2: I have confidence in my opinions, even if they are contrary to the general consensus	.38
Item 3: I judge myself by what I think is important, not by the values of what others think is important	.39
Item 4: In general, I feel I am in charge of the situation in which I live	.58
Item 5: The demands of everyday life often get me down	.40
Item 6: I am quite good at managing the many responsibilities of my daily life	.36
Item 7: I think it is important to have new experiences that challenge how you think about yourself and the world	.21
Item 8: For me, life has been a continuous process of learning, changing, and growth	.38
Item 9: I gave up trying to make big improvements or changes in my life a long time ago	.24
Item 10: Maintaining close relationships has been difficult and frustrating for me	.37
Item 11: People would describe me as a giving person, willing to share my time with others	.32
Item 12: I have not experienced many warm and trusting relationships with others	.28
Item 13: I live life one day at a time and don't really think about the future	**-.02**
Item 14: Some people wander aimlessly through life, but I am not one of them	.31

Appendix A-17: *continued*

Item of the PWBS	LMPD
Item 15: I sometimes feel as if I've done all there is to do in life	*.16*
Item 16: When I look at the story of my life, I am pleased with how things have turned out	.58
Item 17: I like most aspects of my personality	.54
Item 18: In many ways, I feel disappointed about my achievements in life	.58

Note: All correlations are statistically significant at $p < .001$; Item 15 (italicized and underlined) is statistically significant at $p = .006$; item 13 (bolded) failed to achieve statistical significance (i.e., $p = .687$). Note: Items 1-3 relate to the *Autonomy* sub-scale of the PWBS; items 4-6 relate to *Environmental Mastery*; items 7-9 relate to *Personal Growth*; items 10-12 relate to *Positive Relations with Others*; Items 13-15 relate to *Purpose in Life*; Items 16-18 relate to *Self-Acceptance*.

Appendix A-18: *Ethics Approval: Data collection phase 2*

Australian Catholic University
Brisbane Sydney Canberra Ballarat Melbourne

ACU National

Human Research Ethics Committee

Committee Approval Form

Principal Investigator/Supervisor: Professor Barry Fallon Melbourne Campus

Co-Investigators: Dr Terry Bowles Melbourne Campus

Student Researcher: Mr Richard Harmer Melbourne Campus

Ethics approval has been granted for the following project:
What is the pinnacle of a spitiual life and how is it attained: Implications of individuals and communities. (Phase 2)

for the period: 21 August 2008 to 31 December 2008

Human Research Ethics Committee (HREC) Register Number: V200708 103

The following standard conditions as stipulated in the *National Statement on Ethical Conduct in Research Involving Humans* (2007) apply:

(i) that Principal Investigators / Supervisors provide, on the form supplied by the Human Research Ethics Committee, annual reports on matters such as:
- security of records
- compliance with approved consent procedures and documentation
- compliance with special conditions, and

(ii) that researchers report to the HREC immediately any matter that might affect the ethical acceptability of the protocol, such as:
- proposed changes to the protocol
- unforeseen circumstances or events
- adverse effects on participants

The HREC will conduct an audit each year of all projects deemed to be of more than low risk. There will also be random audits of a sample of projects considered to be of negligible risk and low risk on all campuses each year.

Within one month of the conclusion of the project, researchers are required to complete a *Final Report Form* and submit it to the local Research Services Officer.

If the project continues for more than one year, researchers are required to complete an *Annual Progress Report Form* and submit it to the local Research Services Officer within one month of the anniversary date of the ethics approval.

K. Pashley.

Signed: Date: 21 August 2008
(Research Services Officer, McAuley Campus)

(Committee Approval.dot @21/11/2007) Page 1 of 1

Appendix A-19: *Letter to participants (Data collection phase 2)*

Information Letter to Participants

Research title:

"What is the pinnacle of a spiritual life and how is it attained: Implications for individuals and communities."

Investigators:

Principal Supervisor: Prof. Barry Fallon

Co-supervisor: Dr. Terry Bowles

Student Researcher: Mr. Richard Harmer

Research Purpose:

This research project is being undertaken as partial fulfilment in a Doctor of Philosophy (PhD) in the School of Psychology at Australian Catholic University.

Dear participant,

We are conducting a study to explore the construct of spirituality and what role it plays in contemporary Australia. More specifically we are trying to ascertain what a person 'does' to develop their own personal form of spirituality and how these spirituality-oriented activities benefit individuals and communities. In exploring the topic of spirituality we aim to collect responses to a range of questions related to this topic, from everyday Australians.

Please note that the current research is being conducted as a requirement for a post-graduate degree and although it is being conducted under the auspices of the Australian Catholic University we are not affiliated with any one religious or non-religious doctrine.

If you volunteer to participate in this study you will be asked to complete a battery of questions, accessed via the Internet. You will first be asked a number of general questions, such as age, education, and work status for the purpose of describing the sample we use. You will then be asked questions that are responded to using a numerically-anchored response scale. You should respond to each question as honestly as you can and first reactions are usually the best. There are no correct or incorrect responses to these questions. Your responses to each question will remain confidential. Further, it is highly unlikely that you will incur any physical risk or discomfort in completion this study's assessment battery.

By participating in this research you will be given a valuable opportunity for self-reflection. You will have the opportunity to explore what spirituality means to you and to consider how you currently pursue your definition of spirituality. More generally, your responses and the responses of the many others who will also complete the same assessment battery will be collated and examined to determine the fundamental components that underpin the living of a spiritual life. By determining the fundamental steps in the pursuit of a spiritual life others may also benefit from knowing of a more structured approach to spiritual growth.

The researcher conducting this research project will collect and collate your responses to each of the questions asked. However, your responses will remain completely anonymous and confidential. Further, although the results of this study may be published in reports submitted to scientific journals, only group data will be presented and at no time will individuals be identifiable.

Please consider the purposes and time commitment of this study before you decide whether or not to participate. Your participation in this study is completely voluntary. Your initial agreement to participate does not stop you from discontinuing participation and you are free to withdraw at any time.

Although unlikely, the completion of the online battery of questions may raise some concerns for you because of some personal questions. If you would like to discuss them with a counsellor, you could ring Dr Lisa Eisen (School of Psychology, Australian Catholic University) on 03 9953 3119, or Lifeline on 131 114.

If you have any questions regarding this study please contact the Principal Investigator:

Prof. Barry Fallon – Professor of Psychology

School of Psychology

Australian Catholic University

Melbourne Campus

Tel: 03 9953 3108

If you are interested in learning of the outcome of this research then our findings will be made available to you. If you would like to learn of the findings of the study please visit the following website: www.developfullcircle.com. Latest research findings will periodically be posted to this website. Relevant contact details for the research are also located on this website.

This research has been approved by the *Human Research Ethics Committee* at Australian Catholic University.

In the event that you have any complaint or concern about the way you have been treated during this study, or if you have a query that the Primary Investigator or Student Researcher has not been able to satisfy, you may write to the Chair of the *Human Research Ethics Committee* care of the following address:

The Chair, HREC

c/o: Research Services

Australian Catholic University

Melbourne Campus

Locked Bag 4115

FITZROY VIC 3065

Tel: 03 9953 3158

Fax: 03 9953 3315

Any complaint or concern will be treated in confidence and fully investigate. You will be informed of the outcome of that investigation.

Thank you.

Please forward completed questionnaire booklets to:

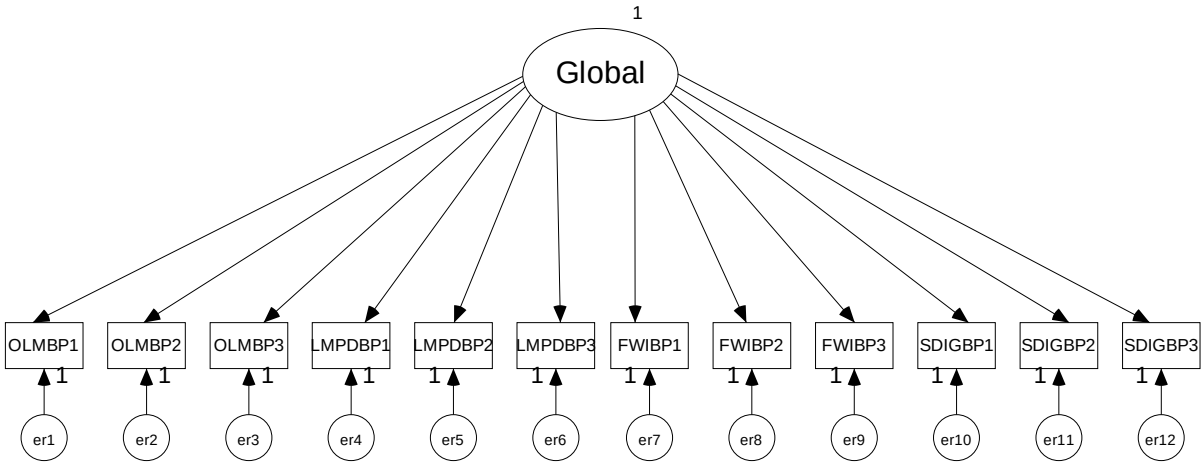
Richard Harmer

co: Prof. Barry Fallon – Professor of Psychology

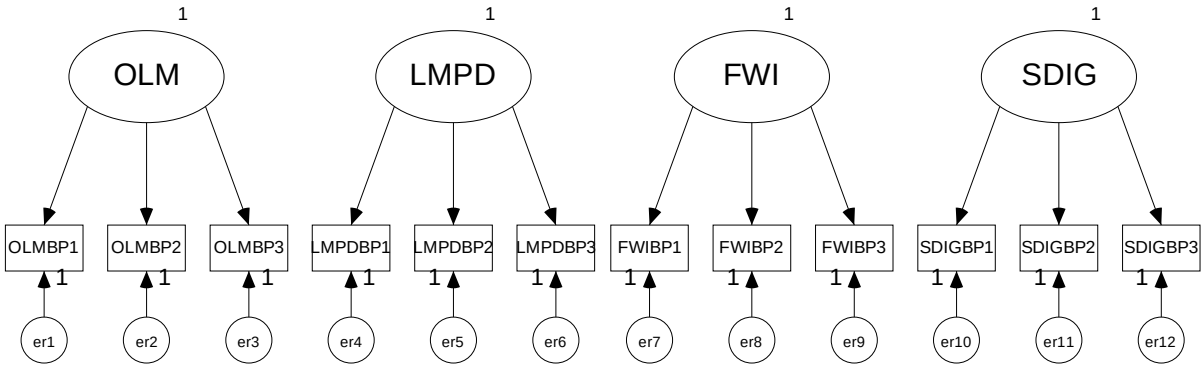
School of Psychology

Appendix A-20: *Visual depiction of the competing Structural Equation Models (SEMs) utilised in the Confirmatory Factor Analysis (CFA) performed in Chapter 11*

Model 1 - Unrestricted model of spiritual beliefs

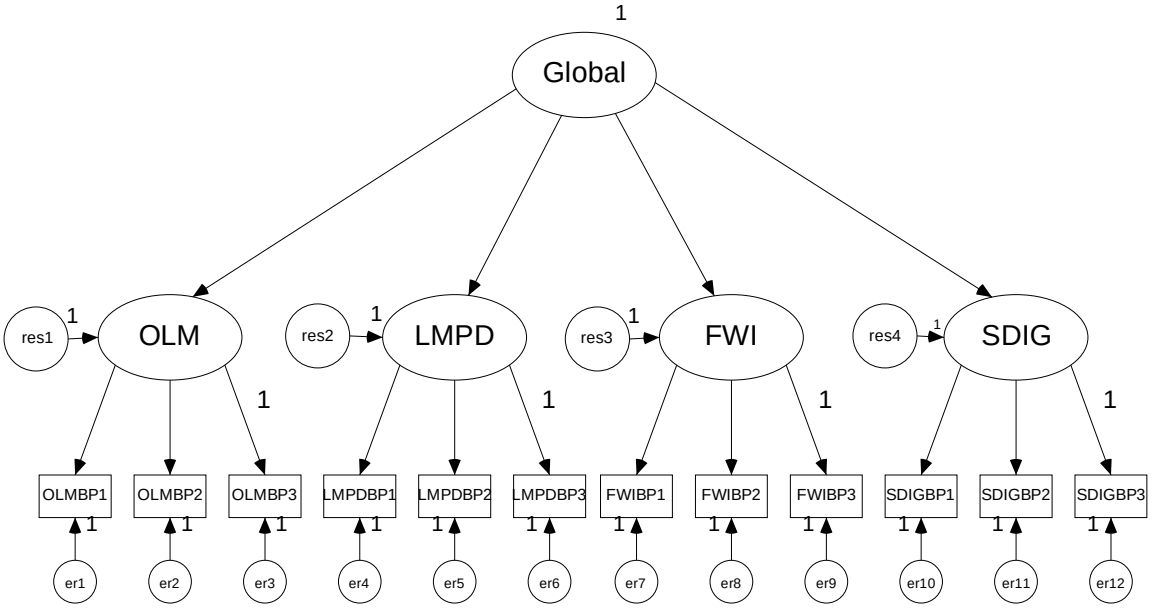


Model 2 - Restricted four (4) factor model of spiritual beliefs

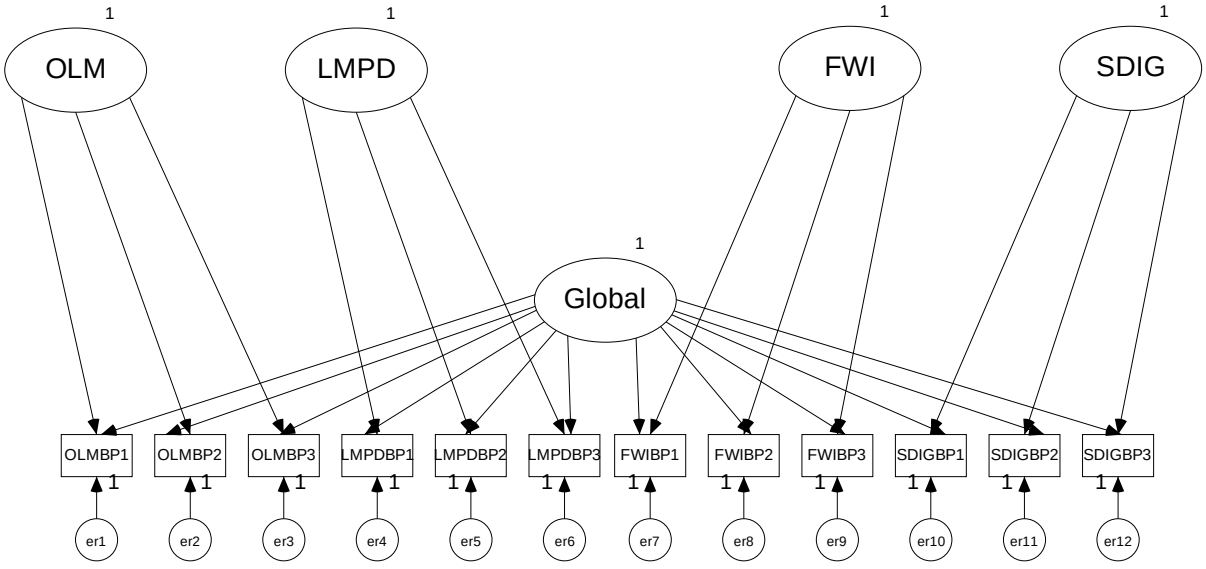


Appendix A-20: *continued*

Model 3 - Restricted four (4) factor model of spiritual beliefs with a higher order factor

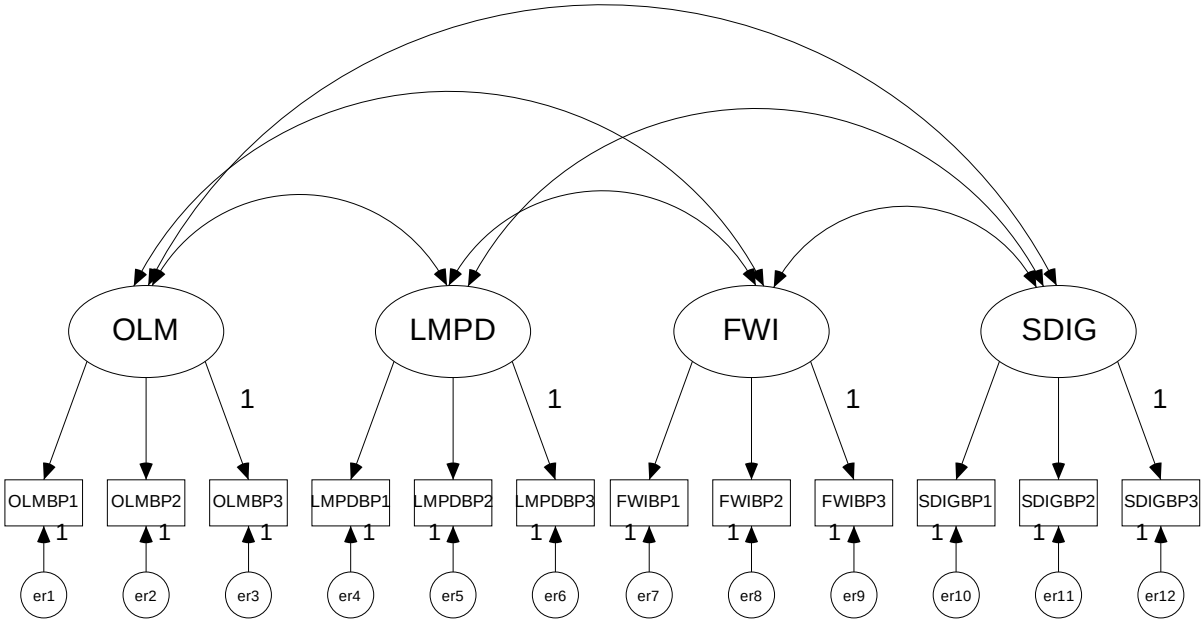


Model 4 - Restricted four (4) factor model of spiritual beliefs with a nested global factor



Appendix A-20: *continued*

Model 5 - Restricted four (4) factor oblique model of spiritual beliefs



Appendix A-21: *Scale items of the International Personality Item Pool: Self-Deceptive Enhancement (SDE)*

Scale and item number		Item
SDE	1	I always know why I do things.
SDE	2	I am not always honest with myself (R).
SDE	3	I just know that I will be successful.
SDE	4	I know my decisions are correct.
SDE	5	I sometimes have trouble making up my mind (R).
SDE	6	I feel comfortable with myself.
SDE	7	I worry about what people think of me (R).
SDE	8	I dislike myself (R).
SDE	9	I like to take responsibility for making decisions.
SDE	10	I have a low opinion of myself (R).

Appendix A-22: *Scale items of the Impression Management Scale (IMS)*

Scale and item number		Item
IMS	1[a]	I talk proudly about my experience or education.
IMS	2[a]	I make people aware of my talents or qualifications.
IMS	3[a]	I let others know that I am valuable to the community in which I am a part
IMS	4[a]	I make people aware of my accomplishments.
IMS	5[b]	I compliment my colleagues/acquaintances so they will see me as likable.
IMS	6[b]	I take an interest in my colleagues'/acquaintances' personal lives to show them that I am friendly.
IMS	7[b]	I praise my colleagues/acquaintances for their accomplishments so they will consider me a nice person.
IMS	8[b]	I do personal favours for my colleagues/acquaintances to show them that I am friendly.

Note: [a] = Self-Promotion; [b] = Ingratiation.

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