

Running head: EXPERIENCES DEEMED RELIGIOUS

Predictors and Outcomes of Experiences Deemed Religious:

A Longitudinal Investigation

(In press, *International Journal for the Psychology of Religion*)

C. Harry Hui¹, Wilfred W.F. Lau², Sing-Hang Cheung¹, Shu-Fai Cheung³,

Esther Y. Y. Lau¹, and Jasmine Lam¹

¹Department of Psychology, University of Hong Kong

²Faculty of Education, University of Hong Kong

³Department of Psychology, University of Macau

Corresponding author: C. Harry Hui. Address: Department of Psychology, University of Hong Kong, Pokfulam Road, Hong Kong. E-mail: huiharry@hku.hk. Phone: (+852) 3917-2291; Fax: (+852) 2858-3518.

Authors' note: Part of this paper was accepted for presentation at the 12th American Psychological Association Annual Mid-Year Conference on Religion and Spirituality. We thank the two anonymous reviewers for their very helpful comments on an earlier version of the manuscript, Victoria Chan for assistance in library research, Herrick Liu for help in interpreting some findings, and Doris Mok for her contributions during the initial stage of this project.

EXPERIENCES DEEMED RELIGIOUS

Abstract

“Experiences deemed religious” (EDRs) are events that a person regards as religious and/or supernatural. This study considered four such experiences -- miraculous healing, glossolalia, unusual joy and peace during meditation or prayer, as well as prayer answered. We proposed a process model, and conducted a longitudinal study to address three main research questions: (1) Who are more likely to have EDRs? (2) What effects would the experiences have on the person’s subsequent spiritual and psychological conditions? (3) Are all EDRs alike? Findings suggest that EDRs can be predicted through certain common individual characteristics, such as vertical faith maturity (i.e., intimacy with the divine). However, there are also individual predictors that are EDR-specific. Regarding outcomes, the experience of unusual joy and peace during prayer and meditation heightens vertical faith maturity, motivates more religious practices, predicts better sleep quality at a later time, and perhaps improves quality of life. However, tongue-speaking results in no change in any measured outcome variables. Neither does having prayers answered. Surprisingly, being healed from serious physical illness can have negative consequences. Results demonstrate that the EDRs should not be treated as the same when it comes to their antecedents and consequences.

EXPERIENCES DEEMED RELIGIOUS

Predictors and Outcomes of Experiences Deemed Religious:

A Longitudinal Investigation

Some religious believers report experiences of the divine presence or a miraculous event. Often highly emotionally charged, they are what the believers themselves consider extraordinary, miraculous, and overwhelming. However, despite Spilka, Brown, and Cassidy's (1992) call for more work on the correlates of such experiences and the post-experience lifestyles, growth in research in this area has been slow. In this study, we used a relatively large sample to elucidate the characteristics of people who report such experiences, and explored the possible faith-related and psychological effects that these experiences may have on the persons. Besides its theoretical import, this line of enquiry would have practical implications for religious workers as well as clinicians who work with religious clients reporting such experiences.

Experiences Deemed Religious

In this investigation we focus on what Taves (2009) understood as experiences deemed religious (EDRs). They are conceptually distinguishable from "religious experiences" in the process whereby people ascribe religious, mystical, or spiritual characteristics to certain events. This disaggregation from religious experiences enables more attention to be given to "the interaction between psychological, social, and cultural-linguistics processes in relation to carefully specified types of experiences sometimes considered religious and to build methodological bridges across divide between the humanities and the sciences" (p.8).

Taves's conceptualization is consistent with the finding that mystical experiences are more often reported by people who are suggestible (e.g., Granqvist et al., 2005). Proudfoot (1985) also asserted that the difference between religious and mundane experiences lies in the way that

EXPERIENCES DEEMED RELIGIOUS

human agents ascribe the origin of the experience. Primarily, a religious experience is defined on the basis of the type of explanation offered for the experience rather than the content of the experience itself. Recognizing or perceiving that an experience is religious is the first step of meaning-making.

Hence, if an experience is regarded by a person as religious, it falls in the domain of our inquiry. Whether or not the experience is truly supernatural is a debatable topic better left for others to decipher. Although some of these experiences may be rare and out of the ordinary, others are slightly more common, insofar as reported by the believers. For example, some Christians claim that their petitionary prayers have been answered. Some have seen or heard seriously ill people inexplicably healed. A substantial proportion of people in charismatic and Pentecostal congregations have spoken in tongues or seen somebody do so. Tongue-speaking (and other manifestations of “spirit baptism”) may even be viewed as normative in certain congregations such as the Church of God.

In the present research, we focused on four EDRs, namely physical healing from serious illness, speaking in tongues, unusual joy and peace during prayers and meditation, and prayer answered. Unlike some other experiences such as clairvoyance, extrasensory perception, contact with the dead, near-death experience, divine guidance through imageries, visions, or dreams, these four are not rare in some religious communities. In fact, with the spread of neo-Pentecostalism, they have become more prevalent across churches of different denominations and thus deserve more theoretical and empirical attention. The first two tend to occur more often, more sought after, and are described as important and essential religious experiences in Pentecostal/charismatic churches than in mainline and evangelical churches. For example, about 70% of Assemblies of God congregants reported having been miraculously healed from a

EXPERIENCES DEEMED RELIGIOUS

physical illness (Poloma & Green, 2010, p. 127), although it is not clear whether the illnesses were minor ailments or life-threatening diseases. In a national survey, 43% of respondents said that they had experienced divine healing of a physical illness (Lee, Poloma, & Post, 2013).

About 48% of a sample of Anglicans and Pentecostals reported that they had an occasion when they felt moved to pray or speak in tongues (Francis & Jones, 1997). Even in an evangelical congregation, about a third of members reported speaking in tongues occasionally (Luhmann, 2012). That is, these two EDRs are not restricted to Pentecostal/charismatic churches.

The other two EDRs (unusual joy and peace during prayers and meditation, and prayer answered) are even more widespread in churches, and are reported by believers across many denominations. These EDRs are just as frequently mentioned, reported, and preached about in Pentecostal/charismatic churches as in other churches. According to Poloma and Gallup (1991), about 15% of students believed that they regularly received answers to their prayer, although there were also 27% who never did. All these experiences are special, not because they are rare, but because they carry special religious meaning, which the experiencers have presumably taken part in making.

One question of theoretical interest is whether these four EDRs can be conveniently grouped under the same category and treated as one single psychological construct, or whether they are distinct experiences with different predictors and outcomes. There are some obvious differences among them. Tongue-speaking usually occurs in public, while the other three can be in private. Tongue-speaking and recovery from a serious illness or injury can be objectively assessed, while a participant's feeling joy and peace is harder to observe objectively. Besides being partially an outcome of the person's ascribing some religious meaning, do these EDRs

EXPERIENCES DEEMED RELIGIOUS

share the same antecedents? The answer to this question will help us in deciding whether we need to make conceptual distinctions among the EDRs.

Predictors of EDRs

That certain experiences are seen as religious by mostly people who are religious does not mean that everyone who has a religious affiliation would report EDRs. It is in fact worthwhile to understand if some people are more likely than others to regard certain experiences as revealing of the supernatural.

Some findings suggested that religious experiences vary across demographic variables such as gender, age, and social class. Hay (1982) found that women reported more instances of religious experiences (41%) than did men (31%). Maselko and Kubzansky (2006) showed from a national survey similar gender difference (30% vs. 23%) in daily spiritual experience. Another national sample survey in Britain revealed that the frequency of religious experiences increased from 29 percent for adolescents to 47 percent for those aged 60 and over (Hay, 1990). In a congregational survey of Pentecostals, Poloma and Green (2010, Table C.1) found age positively related to report of tongue-speaking and physical healing. They also found that income was negatively related to these experiences, and to the experience of divine presence. However, Hay and Morisy (1978) found people in upper-middle class reporting more religious experiences (47%) compared with unskilled workers (32%). Fox (1992) indicated that paranormal experiences were unaffected by income. On the balance of the literature, we proposed the following hypotheses for further exploration:

H1a: EDRs would be more likely among the female than the male.

H1b: EDRs would be more likely among those who are older than the younger.

EXPERIENCES DEEMED RELIGIOUS

H1c: EDRs would be more likely among those with higher income than those with lower income.

A few studies attempted to search for personality antecedents of EDRs. With a sample of 84 attendees of religious/spiritual group meetings, Granqvist, Hagekull, and Ivarsson (2012) showed that disorganized attachment (i.e., failure to mentally resolve childhood traumas) is a precursor to mystical experiences. In another study, Thaibourne and Delin (1999) found some evidence that mystical experience may be related to psychopathology. On the other hand, Argyle and Hills (2000) did not observe any difference on psychoticism and neuroticism between those who had mystical experiences and those who did not. In a small sample of glossolalics, only 25% had had a crisis (Stanley, Bartlett, & Moyle, 1978). Others even found among past participants of a charismatic event that “those experiencing positive emotions were also more likely to report a physical healing than were those who did not” (Poloma & Hoelter, 1998, p. 269). Francis and Jones (2005) reported a positive correlation between charismatic experience and emotional stability. This is in line with the body of literature on a link between general religiosity and positive affect (Lim & Putnam, 2010; Myers, 2000). Given that the research evidence regarding EDRs is mixed at best and often based on small samples, there is a need to test the following again with a larger sample:

H2a: Low emotional stability is a predictor of EDRs.

As Francis and Jones (2005) found a positive correlation between extraversion and charismatic experiences, we also tested if

H2b: Extraversion is a predictor of EDRs.

Although profoundly mystical experiences can occur to non-religious or anti-religious people (e.g., Saul, who was later Apostle Paul, on the road to Damascus), EDRs should be more

EXPERIENCES DEEMED RELIGIOUS

frequent among religious people. This is because the religious people's worldview is a rich source of information that can be used for the attributional process, and their cultural environment supports such attribution. As Argyle and Hill (2000) argued, church members reported twice as many mystical experiences as nonmembers did. Lee, Poloma, and Post (2013) also demonstrated that 62% of US Pentecostals (compared with 29% of the general population) claimed to have or witnessed a divine healing of an illness or an injury. One explanation of this difference is that the meaning of the experience would depend "on whether it is placed within a meaning frame that is secular, naturalistic, generically mystical, or tradition-based" (Taves, 2009, p. 118). The more devout individuals possess a supernatural meaning frame, and therefore are more inclined to search for extraordinary religious experiences, more open to such experiences when it occurs, and more likely to interpret ambiguous situations from a religious perspective, especially in a social environment that encourages religious meaning-making.

There are many indicators of a person's devoutness. Two faith-related demographics are baptismal status (which indicates the person's being a member of a local congregation as well as commitment in faith) and how long one has been a believer. Two other useful religious indicators are faith maturity and religiosity. Faith maturity is the extent to which "a person embodies the priorities, commitments, and perspectives characteristic of vibrant and life transforming faith" (Benson, Donahue, & Erickson, 1993, p. 3). It comprises two dimensions. The vertical dimension of faith maturity is about the maintenance of one's relationship with the Transcendence. It is personal transformation, encounter with the divine, and the love towards God. The horizontal dimension embodies a concern with social justice, charity towards fellow human beings, and serving humanity in mercy and justice. Religiosity refers to an axiomatic

EXPERIENCES DEEMED RELIGIOUS

belief in a supernatural power and its positive benefits to people's lives (K. Leung et al., 2002).

We proposed the following hypotheses:

H3a: Believers who have been baptized would be more likely to report EDRs.

H3b: Believers who have been in the faith for a longer period of time would be more likely to report EDRs.

H3c: Believers who engage in more religious practices would be more likely to report EDRs.

H3d: Believers who are high on faith maturity and religiosity would be more likely to report EDRs.

Effects of EDRs

Anecdotal evidence suggests that attributing an unusual event to a supernatural cause can have profound effects on the psychological and religious facets of a person's life. It "can trigger transformative changes in us and may allow us to transcend what we were before having these experiences" (Braud, 2012, p. 108). According to the personality integration hypothesis, glossolalia allows for neurosis to be resolved unconsciously, and that personality be reintegrated (Lovekin & Malony, 1977). Pentecostal theology (Williamson & Hood, 2011) posits that glossolalia and healing are signs of the Holy Spirit's baptism, and hence would usher in a person's spiritual growth and transformation.

Chou (2008) could not find a difference in general happiness between Protestants involved in the charismatic movement and those who were not. However, in a qualitative review, Braud (2012) found anomalous and transcendent experiences related to, for example, spiritual enquiry, sense of meaning, and recovery from suicidal tendency. Kennedy, Kanthamani, and Palmer (1994) asked college students about their transcendent or spiritual experiences

EXPERIENCES DEEMED RELIGIOUS

(overwhelming feelings of peace and unity with the entire creation or profound inner sense of Divine presence) and psychical experiences (ESP, precognition, telepathy, mind-over-matter, and out-of-body experiences). Students who have had these anomalous experiences showed a high overall sense of meaning in life. In particular, they reported becoming more expressive of artistic creativity, more spiritual, and more ready for changes in life. About 42% of Kennedy and Kanthamani's (1995) respondents who have had such experiences also reported an increase in the desire to help others. Palmer and Braud (2002) opined that the aftereffects of exceptional human experiences "were wide-ranging and included positive changes in health, well-being, beliefs, attitudes, motives, values, meaning, and spirituality" (p. 32). Alcoholism can be reduced (Ludwig, 1985). Maslow (1964) posited that those who have had peak experiences are more loving, accepting, and honest. Indeed, Niesz and Kronenberger (1978) found glossolalics to be higher in self-actualization than the non-glossolalics.

Taken together, these cross-sectional and retrospective studies suggest a positive effect of EDRs, which we would like to clarify with a more rigorous longitudinal design. We expected that the positive consequences would also be seen in other aspects of life, such as moods (depressive mood, anxiety, and stress), perceived quality of life, and quality of sleep. Sleep quality is essentially a biological construct, one to which psychological practitioners and investigators are paying increasing attention, but rarely found in the psychology of religion literature. If EDRs have positive health consequences, the effect might be reliable and generalizable to outcomes that have not been studied before. Therefore, we proposed the following hypotheses:

H4a: EDRs would improve sleep quality and moods during the following year.

H4b: EDRs would improve the level of quality of life during the following year.

EXPERIENCES DEEMED RELIGIOUS

There is also the question of whether such experiences would result in lasting spiritual and religious changes. Pattison, Lapins, and Doerr (1973) interviewed 43 individuals who had experienced healing. The interviewees reported no change in church attendance, private devotions, or bible reading. On the other hand, there is some evidence consistent with the change hypothesis. Content analysis of stories submitted by 120 persons suggested that “the experience of being filled with the Spirit and receiving tongues had both a positive and a non-transcient effect on their attitudes, behavior, and personal qualities” (Stanley et al., 1978, p. 277). There was a greater ability to understand the bible and to love other people. Along the same line, Kennedy and Kanthamani (1995) found that the number of transcendent experiences one has was associated with the perceived importance of spirituality and belief in life after death. With regard to missionary behaviors, Seymour, the leader of the Azusa Street Revival that began the Pentecostal movement, was credited with the saying that “Now do not go from this meeting and talk about tongues, but try to get people saved” (McLung, 2006). Poloma and Pendleton (1989b) documented that Pentecostal experiences such as glossolalia, prophecy, being slain in the Spirit, and divine healing were the most significant correlates of evangelistic activities among other variables such as personal devotions and ritual participation. Such experiences were also related to spiritual healing (Poloma & Hoelter, 1998). Hood, Hill, and Spilka (2009) theorized that mysticism would “intensify commitment to a tradition” (p.374). The above cross-sectional studies provide a ground for us to speculate if EDRs have a medium-term effect on a person’s religious practices and beliefs. Our hypotheses are that

H5a: EDRs would increase a person’s subsequent religious practices.

H5b: EDRs would increase a person’s subsequent level of faith maturity and religiosity.

The Present Study

EXPERIENCES DEEMED RELIGIOUS

In the present article, instead of continuing an atheoretical expansion of a list of predictors and outcomes of an atheoretical list of EDRs, we proposed a process model, after reviewing relevant studies from transpersonal, parapsychological, and mainstream psychological journals. This model specifies three categories of possible predictors (Figure 1). The demographic variables include gender, age, and socio-economic status. The personality predictors are emotional stability and extraversion. We would also explore if the other Big Five personality traits could be predictors as well. The faith-related antecedents are: faith maturity, religious practices, religiosity social axiom, duration which one has become a believer, and baptismal status. On the other side of the equation are two categories of possible consequences, namely the faith-related and the well-being outcomes.

[Insert Figure 1 about here.]

While this model is plausible, we are still short of strong evidence. As can be seen in the earlier literature review, many of the empirical studies on this topic are qualitative, small-sampled, retrospective, or correlational. In the present study we sought to advance knowledge in two ways. First, we expanded the spectrum of possible outcome variables, to minimize the probability of our missing any consequence of EDRs. Second, we made methodological improvements. We conducted the investigation on a large sample of believers who had not been pre-selected according to their prior EDRs and belief in such experiences. These individuals came from about 300 different congregations, some charismatic and many were not. Furthermore, heeding Richardson's (1973) call for "longitudinal designs that allow some assessment of change" (p.206), we used data collected in three waves, to partially avoid the problem of common-method variance and to provide more rigorous test of causality. Wherever possible, we used pre- and post- measurements for baseline correlates and dependent variables respectively.

EXPERIENCES DEEMED RELIGIOUS

To sum up, two questions formed the focus of the present longitudinal study: First, who are more likely to report EDRs? Second, what are the effects of such alleged experiences on the person's subsequent spiritual and psychological conditions? Through answering these two questions we shall address the third question -- whether different EDRs can be conceptualized within a single category, or they should be seen as distinct from each other in terms of causes and effects.

Method

Sample

Hong Kong is the primary site of the present study. Although the population is predominantly of Chinese descent, Hong Kong has long been highly influenced by Western cultures. The religious background of the Hong Kong population also reflects the intermix of Eastern and Western traditions. While many inhabitants, especially the older generations, are influenced by folk religions, Buddhism, and Eastern philosophies (e.g., Taoism), a small portion of the population are converted to Christianity through their contacts with the church planted by missionaries from the West. In this light, unlike their Euro-American counterparts, Christians in Hong Kong and Chinese societies in general have always been a minority. Of its seven million population, only about 3.4% of the 25-44 age group attended church during the last decade (<http://research.hkchurch.org>). Also unlike Christians in the West, most Christians in Hong Kong were converted from other religions or from no religion at all.

Data collection was done as part of a larger longitudinal online survey project to understand the formation and transformation of beliefs in Chinese. The 6,243 individuals who took part in the first wave (Fall of 2009) of the survey were recruited through various channels such as social media, university emails, and church announcement. Over 86.4% resided in Hong

EXPERIENCES DEEMED RELIGIOUS

Kong, and another 4.8% resided in Macau. From that sample we selected those Christian believers who completed the required items (e.g., age, gender, income, baptismal status, and conversion length). In the current study, the sample consisted of 909 believers (257 men, 652 women), at a mean age of 30.15 years ($SD = 10.35$; range = 18-67). Wave 2 survey was administered about four months later. For more details of the data collection procedure, please see Cheung et al. (2014) or Hui et al. (2012).

Of these respondents, 532 responded to a follow-up survey about eight months later (Wave 3). Attrition rate was 41.5%, attributable in part to the length of the follow-up questionnaire and comparable with other online longitudinal research (Hiskey & Troop, 2002). Table 1 indicates that those who dropped out from Wave 3 were different from those who did not in extraversion ($t(895) = 2.33, p < .05$) and religiosity ($t(886) = 2.78, p < .01$). The two groups were quite similar on conscientiousness, agreeableness, openness to experience, emotional stability, faith maturity (both vertical and horizontal), religious practices, quality of life (physical health, psychological health, social relationship, environment) and the frequencies of EDRs. As there were only two differences resulting from the above multiple comparison, the two groups are largely comparable.

[Insert Table 1 about here]

Measures

EDRs. At Wave 2, we asked participants to report, on a 4-point scale (1 = *never*, 2 = *once or twice*, 3 = *occasionally*, 4 = *often*), if they had experienced the following during the past year: miraculous healing from a serious illness, speaking in tongues, unusual joy and peace during meditation or prayer, and prayer answered. We collapsed each rating scale into a binary scale (“never” versus “at least once”), because there were very few people (4.6%) who gave a

EXPERIENCES DEEMED RELIGIOUS

response of “occasionally” or “often” to the item on healing, and only 16.6% to the item on speaking in tongues. There were slightly more people (69.2% - 77.9%) who responded “occasionally” or “often” to the two items on prayer.

Personality. The 50-item International Personality Item Pool Big-Five Domain scales (IPIP; Goldberg et al., 2006) was administered at Wave 1, on a 5-point Likert scale (1 = *strongly disagree*; 5 = *strongly agree*). The five personality dimensions measured were extraversion, conscientiousness, agreeableness, openness to experience (intellect), and emotional stability. The Chinese translation was produced by Hui, Pak, and Cheng (2009), and found to be satisfactory in reliability and validity. In the present sample, Cronbach’s alphas range from .77 to .90.

Faith maturity. The short form of Faith Maturity Scale (FMS; Benson et al., 1993) is made up of 12 scale items on a 7-point scale (1 = *never*; 4 = *occasionally*; 7 = *always*). Previous psychometric analysis of the data resulted in the removal of two items (Hui et al., 2011). The two indices derived from the scale are vertical faith maturity and horizontal faith maturity. Cronbach’s alphas are .88 and .78. The scale was administered at Waves 1 and 3.

Religiosity. As another measure of the respondents’ devoutness, five items from the religiosity subscale of the Social Axiom Scale II (SAS-II; K. Leung et al., 2012) were administered at Waves 1 and 3. Participants rated each item on a 5-point Likert scale (1 = *strongly disagree*; 5 = *strongly agree*). Cronbach’s alpha is .74.

Religious practices. This construct was measured with nine items, at both Waves 1 and 3. An earlier factor analysis allowed us to group these items under three subscales. The first subscale is personal religious behaviors, which include having read at least two books on Christianity during the past year, evangelized to at least two persons during the past year, attended Sunday school or other training sessions at least twice during the past month, and

EXPERIENCES DEEMED RELIGIOUS

having prayed or meditated on the bible five or more times during the past week. The score range is from 0 to 4. The second subscale is communal religious behaviors, which include having during the past month attended a church fellowship meeting at least twice, having attended a small group meeting at least twice, and volunteered time to serve at church. The score range is from 0 to 3. The third subscale is missionary involvement, which include having during the past year attended activities related to missionary work and offered financial support to missionary work. The score range is from 0 to 2. Cronbach's alphas of these three subscales range from .51 to .65.

Quality of life. This variable was measured at Waves 1 and 3 with the 28-item Hong Kong Chinese version of World Health Organization Quality of Life Measures abbreviated version (WHOQOL-BREF(HK); K. F. Leung, Tay, Cheng, & Lin, 1997). For the current study, we excluded an item on whether the food one likes is readily available (for being too trivial), and an item on sex life (for being too intrusive). Participants rated each item on a 5-point Likert scale. Four dimensions were measured, including Physical Health, Psychological Health (culturally adjusted for Hong Kong), Social Relationship, and Environment. Cronbach's alphas of the subscales range from .59 to .83.

Depressive moods, anxiety, and stress. These three mood states in the previous week were measured with the Chinese version of the 21-item Depression Anxiety Stress Scale (DASS-21; Lovibond & Lovibond, 1995; Taouk, Lovibond, & Laube, 2001) at Wave 3. The instrument has sound psychometric properties (Taouk et al., 2001), and has been widely used in Hong Kong (e.g., Wong, Cheung, Chan, Ma, & Tang, 2006). Cronbach's alphas for the three subscales are .86, .84, and .74 respectively.

EXPERIENCES DEEMED RELIGIOUS

Sleep quality. This was measured at Wave 3 with the Pittsburgh Sleep Quality Index (PSQI; Buysse, Reynolds, Monk, Berman, & Kupfer, 1989). A total score was derived by summing ratings on items from seven dimensions, namely, subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction. A higher score indicates poorer sleep quality. Cronbach's alpha is .57.

Demographics. Gender, age, family income, baptismal status, and the duration the person had become a Christian (conversion length) were measured at Wave 1.

Results

Preliminary Analysis

Tables 2 and 3 present the descriptive statistics and inter-correlations of the study variables. There were 16.1% of respondents who in the past year experienced own healing, 21.3% who spoke in tongues, 88.8% experienced unusual joy and peace during meditation or prayer, and 93.7% had prayer answered.

[Insert Tables 2 and 3 about here]

Who are More Likely to Have EDRs?

In four logistic regression analyses, we regressed each EDR on the hypothesized predictors. These variables include age, gender, family income, baptismal status, conversion length, extraversion, emotional stability, faith maturity, religiosity social axiom, and religious practices. For exploratory purpose, three other personality variables (agreeableness, conscientiousness, and openness to experience) were added in the second step.

[Insert Table 4 about here]

Table 4 is a summary of the findings. First, demographics generally did not predict EDRs, except that females were more likely than males to report unusual joy and peace during prayers

EXPERIENCES DEEMED RELIGIOUS

and meditation (H1a). Contrary to H1b and H1c, neither age nor income predicted any EDR. Second, emotional stability but not extraversion negatively predicted the experience of miraculous healing and the unusual experience of joy and peace. H2a but not H2b was partially supported. Third, healing was predicted by whether one had been baptized (H3a), and the experience of one's prayer having been answered was predicted by high vertical faith maturity and high religiosity (H3d). Unusual joy and peace was predicted by communal religious behaviors (H3c). However, other religious practices did not have effect on any of the four EDRs. Fourth, for each additional year of being a Christian, the probability of having a tongue-speaking experience during the past year was decreased by about 4%. That is, recent converts were more likely than people who have been in the faith for an extended period of time to be a glossolalic. This distinction contrary to H3b was not found for the other three EDRs. Finally, vertical faith maturity is a common antecedent of three out of four EDRs that we studied. H3d was partially supported.

The logistic models for unusual joy and peace during meditation or prayer and answered prayer had Nagelkerke R-squares .272 and .383, respectively. The percentages of correct classification were 90.7% and 94.8% respectively. The Nagelkerke R-squares of the other two models ranged from .060 to .069, and the percentages of correct classification ranged from 78.6% to 84.2%. In other words, the EDRs of unusual joy and peace and answered prayer could be better predicted than the other two EDRs with our list of hypothesized predictors.

EDRs and Well-Being Outcomes

For each of depressive moods, anxiety, stress, and sleep quality, a pair of regression analyses was performed. In one, we entered in the first block the demographic variables (base model), followed by the four EDRs in the second block, and then the three religious practices in

EXPERIENCES DEEMED RELIGIOUS

the third block. In the other regression analyses, the order of the second and third blocks of predictors was reversed. With this, we attempted to compare the strength of EDRs (if any) against ordinary religious practices in predicting the well-being outcomes.

Results showed that for depressive moods, the addition of the ordinary religious practices significantly improved prediction over the base model ($R^2 = .10$, $\Delta R^2 = .03$, $p < .001$), with income ($B = -.08$, $SE = .03$, $p < .005$) and communal religious behaviors ($B = -.13$, $SE = .05$, $p < .005$) as significant predictors. The addition of the EDRs did not significantly improve the prediction. This echoes Chou's (2008) finding that happiness is influenced by church attendance (which is a communal religious behavior) rather than by mystical religious experiences.

For anxiety, the addition of the ordinary religious practices did not improve prediction over the base model. However, the addition of EDRs did ($R^2 = .08$, $\Delta R^2 = .02$, $p < .05$), with income ($B = -.04$, $SE = .02$, $p < .05$), baptismal status ($B = -.26$, $SE = .07$, $p < .001$), and healing experience ($B = .28$, $SE = .09$, $p < .005$) along as significant predictors. People who reported a healing experience at Wave 2 felt more anxiety at Wave 3.

For stress, the addition of EDRs did not improve prediction, while the addition of ordinary religious practices did ($R^2 = .06$, $\Delta R^2 = .02$, $p < .01$). Nonetheless, healing appeared in the final model as a significant predictor ($B = .26$, $SE = .13$, $p < .05$). Age was also a significant predictor ($B = -.02$, $SE = .01$, $p < .05$).

For poor sleep quality, the addition of ordinary religious practices did not add to the prediction, but the addition of EDRs did ($R^2 = .06$, $\Delta R^2 = .04$, $p < .005$). The predictors were gender ($B = .57$, $SE = .25$, $p < .05$), healing ($B = .66$, $SE = .34$, $p < .05$), and the experience of unusual joy and peace during meditation or prayer ($B = -1.02$, $SE = .40$, $p < .05$).

EXPERIENCES DEEMED RELIGIOUS

For the four QOL indices, a similar analytic strategy was used to unpack the relative impacts of EDRs and ordinary religious practices. Furthermore, as we had collected baseline measures of QOL at Wave 1, we were able to include them along with the demographic variables as covariates. This approach essentially controlled for all unknown factors that might have influence on the QOL indices, and allowed us to make confident inference about the role of the predictors if shown to be significant.

Results showed that the EDRs healing as well as unusual joy and peace experienced during meditation or prayer significantly improved prediction of QOL-physical over the base model ($R^2 = .08$, $\Delta R^2 = .03$, $p < .005$). Besides gender ($B = -.34$, $SE = .17$, $p < .05$), income ($B = .13$, $SE = .05$, $p < .01$), and baptismal status ($B = .48$, $SE = .19$, $p < .05$), unusual joy and peace ($B = .63$, $SE = .26$, $p < .05$) also significantly enhanced QOL-physical, while healing ($B = -.46$, $SE = .22$, $p < .05$) lowered it. Upon the inclusion of the ordinary religious practices in the model, the effect of having one's own serious illness healed was weakened ($B = -.43$, $SE = .22$, $p < .05$). The effect of unusual joy and peace became non-significant.

For QOL-psychological, EDRs added predictive power to the base model ($R^2 = .09$, $\Delta R^2 = .03$, $p < .005$). Besides income ($B = .21$, $SE = .06$, $p < .001$) and baptismal status ($B = .44$, $SE = .22$, $p < .05$), unusual joy and peace ($B = .67$, $SE = .30$, $p < .05$) as well as having prayer answered ($B = .83$, $SE = .41$, $p < .05$) improved QOL-psychological. The effects disappeared when ordinary religious practices were added to the regression model. The effects of the EDRs were absorbed into that of personal religious behaviors.

The EDRs also added predictive power to the base model for the prediction of QOL-social ($R^2 = .07$, $\Delta R^2 = .02$, $p < .005$). The effect of unusual joy and peace on QOL-social ($B = .82$, $SE = .37$, $p < .05$) was again diminished when ordinary religious practices were added to the

EXPERIENCES DEEMED RELIGIOUS

regression model. In short, having an experience of joy and peace during religious devotion improves one's perceived quality of life, and yet the effect could have come from personal prayers and similar religious practices.

In short, most EDRs did not have any positive effect on perceived quality of life. For the one that did, the effect could not be distinguished clearly from that of ordinary religious practices.

EDRs and Faith-Related Outcomes

To understand how EDRs might impact on the believers' subsequent religious practices (H5a), we conducted a series of regression analyses. The dependent variables were personal religious behaviors, communal religious behaviors, and missionary involvement measured at Wave 3. The predictors were entered in two blocks. The first block comprised of the demographic variables as well as the corresponding religious practices measured at Wave 1. The second block comprised of the four EDRs.

Adding the four EDRs to the regression model significantly improved R-square for the prediction of changes in personal religious behaviors ($R^2 = .40$, $\Delta R^2 = .02$, $p < .005$), communal religious behaviors ($R^2 = .40$, $\Delta R^2 = .02$, $p < .005$), and missionary involvement ($R^2 = .28$, $\Delta R^2 = .02$, $p < .005$). In all three cases, the improvement in R-square was contributed by the experience "unusual joy and peace during meditation or prayer". The regression weights of this predictor on personal religious behaviors, communal religious behaviors, and missionary involvement were, respectively, $B = .58$ ($SE = .16$, $p < .001$), $.27$ ($SE = .12$, $p < .05$), and $.31$ ($SE = .10$, $p < .005$). Having prayers answered also contributed positively to communal religious behaviors, $B = .34$ ($SE = .17$, $p < .05$).

To understand the relative impacts of EDRs and ordinary religious practices (personal religious behaviors, communal religious behaviors, and missionary involvement) on FMS-

EXPERIENCES DEEMED RELIGIOUS

vertical, FMS-horizontal, and religiosity (H5b), we conducted three pairs of regression analyses. In the first analysis of each pair, we first controlled for demographics and the outcome measure assessed at Wave 1. We then entered into the regression model the ordinary religious practices, followed by the EDRs. To allow a comparison of the relative strengths of the EDRs versus ordinary religious practices, which may have effects on the outcome variables, in the second analysis of the pair, the order of the last two blocks of predictors was reversed (as done by Mechanic, Weaver, & Resick, 2008).

For the prediction of FMS-vertical at Wave 3, ordinary religious practices did not add any significant change in the variance accounted for by the regression model. However, EDRs brought improvement to the base model ($R^2 = .55$, $\Delta R^2 = .01$, $p < .005$). The primary predictor was unusual joy and peace ($B = .29$, $SE = .01$, $p < .005$), although gender was also significant ($B = .13$, $SE = .06$, $p < .05$).

For the prediction of FMS-horizontal, the addition of EDRs or ordinary religious practices did not significantly improve the regression model. Nevertheless, we found that unusual joy and peace during meditation or prayer still had some small influence on this outcome variable ($B = .20$, $SE = .10$, $p < .05$).

For religiosity, we found that the prediction was improved by adding EDRs in the second block ($R^2 = .35$, $\Delta R^2 = .01$, $p < .01$). The predictors were answered prayer ($B = .20$, $SE = .08$, $p < .05$) and age ($B = .005$, $SE = .002$, $p < .05$). The effect of answered prayer was significant even if ordinary religious practices were already in the regression model, although the increase in variance accounted for did not improve significantly. Personal religious behaviors ($B = .04$, $SE = .02$, $p < .05$) and age ($B = .004$, $SE = .002$, $p < .05$) were the main predictors after the inclusion of EDRs.

EXPERIENCES DEEMED RELIGIOUS

Discussion

Globally, there are about 584 million believers in the Pentecostal and charismatic denomination (Pew Research Center's Forum on Religion & Public Life, 2011). Many claim to have spoken in tongues and prayed for divine healing. Outside of the Pentecostal and charismatic circles, many have experiences of prayers being answered, and hearts being warmed by the presence. However, some suspect that such incidents reflect nothing more than the experiencers' wishful thinking, selective perception, and delusion. An EDR may be colored by the person's own motivation and needs (Proudfoot, 1985; Taves, 2009).

The aim of this study is modest. Since determining if the divine is involved in a particular EDR is beyond any psychologist's capability, we did not attempt to resolve the issue of whether a healing, for example, is supernatural. We nevertheless posit that all such experiences are processed by the human mind, and therefore have the potential of influencing and being influenced by some aspects of our psychological functioning. On this basis, one purpose of this investigation was to explicate some of the predictors and consequences of EDRs as depicted in our model. Table 5 summarizes the findings, the theoretical implications of which are discussed in the following subsections.

[Insert Table 5 about here]

EDRs and Being Religious

Most EDRs we studied are more likely to occur among people high on faith maturity, as measured on FMS-vertical. Those who cherish a deep relationship with God would seek out opportunities to understand spiritual matters. According to the attribution theory, these individuals have the cognitive schema to make sense of sensory information that comes their way. Therefore, they are more prone to considering special experiences religious. The chance of

EXPERIENCES DEEMED RELIGIOUS

their seeing what they look for would be higher than those who do not actively seek. In the same vein, people without faith or with small faith would not ascribe spiritual meaning to special events. They do not have the capacity or the religious language to comprehend and articulate the experience. Needless to say, there is no telling whether such attribution is correct or not.

Contrary to the predictions in H5a and H5b, not all EDRs strengthen one's faith. The only EDR that consistently improved indicators of religious commitment is unusual joy and peace during prayer and meditation. Having prayer answered, a very common EDR among religious believers, has some but not extensive impact. The two EDRs that are common in Pentecostal and charismatic communities (namely miraculous healing and tongue-speaking) do not alter religious commitment.

In short, people are unlikely to recognize a special event (such as having recovered from a serious illness, or making unintelligible sounds) as religious unless they already have a strong religious faith. Even if they do, the experiences do not have uniform influence on faith.

Unusual Joy and Peace

Being overwhelmed by a sense of the transcendent during meditation or prayer is different from the other three EDRs. This experience of joy and peace heightens faith maturity and motivates the individual to more religious practices. It may also improve the individual's quality of life, and predicts better sleep quality. Most of the effects remain even after several demographic variables known to affect one's religiousness have been controlled for in the regression analysis, although some effects could have been due to other ordinary religious practices.

The outcomes probably result from the here-and-now encounter with the divine, and do not hinge on whether the wishes are granted. They have been linked to "relaxation response

EXPERIENCES DEEMED RELIGIOUS

which in turn may be beneficial to psychological well-being” (Breslin & Lewis, 2008, p. 19).

The prayers during which this EDR occurs are not petitionary but are generally meditative (Poloma & Pendleton, 1989a) and contemplative in nature. During such prayers the pray-ers shift their focus from the self to the goodness of the divine (James & Wells, 2003). They experience the divine in the process of prayer rather than hoping to experience the divine in the outcomes of prayer. They develop self-regulation, thus removing unnecessary worries.

EDRs and Psychopathology

Whether those who have special religious experiences are getting enlightened or losing their mind has been a topic of disagreement (e.g., Castelein, 1984; Gersten, 2012; Kildahl, 1972). There is some support from the present study for the position that people who deem special experiences as religious are also psychologically vulnerable. For example, people low on emotional stability are more likely to later experience unusual joy and peace during their meditation or prayer. One explanation is that the psychologically vulnerable are equally susceptible to fantasies of heavenly peace. However, it could also be these individuals’ chronic state of negative affectivity, anxiety, and worry that has led them to pray and meditate more, thus providing more opportunities to experience calmness and tranquility. In line with this second explanation, we observed that such experience of joy and peace predicted better sleep quality and QOL a year later. Notwithstanding, the other three EDRs did not have any positive effects on well-being over and above that of ordinary religious practices.

The picture is even less clear for the negative association between emotional stability and miraculous healing. An explanation could be the pre-existence of some serious injuries or illnesses. They in all likelihood might have made the person anxious and worrisome, and affected the answers given to the emotional stability scale in the survey. To evaluate this

EXPERIENCES DEEMED RELIGIOUS

explanation we repeated the regression analyses with an additional control variable -- whether the person had a serious illness or injury during the year preceding Wave 1. Despite this, emotional stability remained a negative predictor of miraculous healing, thus ruling out prior illness or injury as an explanation.

Furthermore, miraculous healing does not improve one's QOL; on the contrary, it makes one feel worse physically. It also positively predicts levels of anxiety, stress, and poor sleep in the subsequent year. Could this be due to the individual developing higher level of anxiety and stress as a result of the fear of recurrence of illness and other related health problems? Future research has to explore why low emotional stability is related to the experience of miraculous healing, and why this EDR ironically has an undesirable influence on the believers concerned.

Are All EDRs Equal?

By now we can probably form an opinion on this question. The four EDRs are similar in their lack of correlation with age, family income, and most of the religious practices, as well as in having vertical faith maturity as their common antecedent for three EDRs (Table 2). Other than those similarities, they have markedly different antecedents. The experience of miraculous healing as well as unusual joy and peace during meditation or prayer, for instance, are preceded by a low level of emotional stability; but the same factor would not raise the probability of tongue-speaking and answered prayer.

Tongue-speaking is a construct distinguishable from unusual joy and peace during meditation or prayer when it comes to demographic and psychological predictors. Compared to those with a long history in the faith, people who are recently converted are more likely to speak in tongues. This is probably because people converted many years ago had more exposure in the past to teachings critical of the Pentecostal and charismatic movement, while more congregations

EXPERIENCES DEEMED RELIGIOUS

today are more empathetic when evaluating it. The socio-theological context believers find themselves in plays an important part in this EDR.

The experience of unusual joy and peace during meditation or prayer occurs more often among women as well as those high on vertical faith maturity, low on emotional stability, and frequent in church attendance. This EDR is not predicted by other demographic variables that we studied. The experience of having prayers answered belongs to those who are high on religiosity and in the transcendent aspect of their faith. On the basis of these findings, we posit that while most EDRs have a common antecedent in vertical faith maturity, they should be viewed as conceptually distinct from each other. Each EDR is a unique combination of some of the aforementioned factors. General statements about how EDRs come about, for example, should only be made with caution.

Two EDRs that shared a similar pattern of correlation with the outcome variables (Table 3) are unusual joy and peace during meditation or prayer and prayer answered. In general, both of them are related to religious commitment, quality of life, and fewer psychological symptoms. Such benefits are less apparent for the other two EDRs -- miraculous healing and tongue-speaking, which are not similar to each other either. While tongue-speaking is correlated with some aspects of religious commitment, miraculous healing is correlated with subsequent anxiety. Although miraculous healing and glossolalia are dramatic events especially sought after in the Pentecostal and charismatic communities, they are not as powerful as unusual joy and peace in prayers and meditation in bringing about positive consequences in one's faith and psychological well-being. In short, there is no evidence that the four EDRs that we studied here can be treated as functionally similar and inter-replaceable. In future research, each EDR should be examined in its own right. Despite the fact that attribution may play a role when we deem an experience

EXPERIENCES DEEMED RELIGIOUS

religious, the attributional processes may be different among the four EDRs. This should prompt new theoretical development to better capture the diversity of the EDRs. At the very least, a more nuanced approach in understanding of the four EDRs is warranted.

Uniqueness, Limitations, and Future Research

Unlike previous studies that investigated a single spiritual experience (usually glossolalia), the present study is probably the first that elucidated predictors and outcomes of several EDRs at the same time, using a large sample and a longitudinal design. To reduce demand characteristic and self-justifying biases, we did not directly ask participants for the causes and consequences of their experiences. Instead, the questions on the EDRs were administered at a different time from when the predictor and outcome data were collected. Thus any effect on the study variables we observed would be comparatively reliable. It is a major step forward from the anecdotal and qualitative approach so common in earlier studies on spiritual and mystical experiences. Nevertheless, a few caveats have to be mentioned.

First, we did not attempt in this investigation to delineate what are “real” spiritual experiences. Findings reported above should not be construed as relevant to the authenticity or validity of the experiences.

Second, the EDR model needs further development. For one thing, the outcome variables investigated in this study are restricted to only a few faith-related and psychological constructs. Future research should extend this model by including other dependent variables such as fear of death (which has been reported to be greatly decreased after a near-death experience, which is another EDR). For another, the low to moderate Nagelkerke R-squares in the logistic models imply that there are still a number of predictors that we have not yet identified. As in the case of many other psychological phenomena that are multifactorially determined, the present

EXPERIENCES DEEMED RELIGIOUS

conceptual framework can be expanded to include social antecedents. Research on religious experience from the perspectives of genetics and neuroscience will also enrich the model.

Furthermore, the findings that faith maturity predicts prayer answered and unusual joy and peace during meditation or prayer, and that prayer answered strengthens faith maturity imply a cyclical and reciprocal relationship between faith commitment and meditative/contemplative prayer. This should be incorporated into the conceptual model to guide future research.

Notwithstanding the above limitations, we learned from this piece of research several important lessons. First, experiences that may appear out of the ordinary to some people may not be as religiously meaningful to the skeptics, and hence it is no guarantee that these events can turn a skeptic into a committed believer. Second, not all EDRs are alike. They have different antecedents. Third, changes that follow the experiences are multidimensional and not uniformly desirable. Specifically, unusual joy and peace during meditation and prayer have the most positive outcomes, while miraculous healing from illnesses has the least positive outcomes. These three points can be the launching pad for better understanding about the mechanisms and functions of such experiences considered so essential to many religious traditions.

EXPERIENCES DEEMED RELIGIOUS

References

- Argyle, M., & Hills, P. (2000). Religious experiences and their relations with happiness and personality. *International Journal for the Psychology of Religion, 10*, 157-172. doi: 10.1207/S15327582IJPR1003_02
- Benson, P. L., Donahue, M. J., & Erickson, J. A. (1993). The Faith Maturity Scale: Conceptualization, measurement, and empirical validation. *Research in the Social Scientific Study of Religion, 5*, 1-26.
- Braud, W. (2012). Health and well-being benefits of exceptional human experiences. In C. Murray (Ed.), *Mental health and anomalous experience* (pp. 107-124). New York, NY: Nova Science Publishers.
- Breslin, M. J., & Lewis, C. A. (2008). Theoretical models of the nature of prayer and health: A review. *Mental Health, Religion & Culture, 11*, 9-21. doi: 10.1080/13674670701491449
- Buysse, D. J., Reynolds, C. F., III, Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: A new instrument for psychiatric practice and research. *Psychiatry Research, 28*, 193-213. doi: 10.1016/0165-1781(89)90047-4
- Castelein, J. D. (1984). Glossolalia and the psychology of the self and narcissism. *Journal of Religion and Health, 23*, 47-62. doi: 10.1007/BF00999899
- Chou, H.-T. G. (2008). The religious life and happiness of Protestants involved with the charismatic movement. *Mental Health, Religion & Culture, 11*, 359-367. doi: 10.1080/13674670701391078
- Cheung, S.-H., Hui, C.H., Lau, E.Y.Y., Cheung, S.F., & Mok, D.S.Y. (2014). Does church size matter? A cross-sectional and longitudinal study of Chinese congregants' religious attitudes and behaviors. *Review of Religious Research*. doi: 10.1007/s13644-013-0116-3

EXPERIENCES DEEMED RELIGIOUS

- Fox, J. W. (1992). The structure, stability, and social antecedents of reported paranormal experiences. *Sociological Analysis*, *53*, 417-431. doi: 10.2307/3711436
- Francis, L. J., & Jones, S. H. (1997). Personality and charismatic experience among adult Christians. *Pastoral Psychology*, *45*, 421-428. doi: 10.1007/BF02310642
- Francis, L. J., & Jones, S. H. (2005). Charismatic experience and emotional stability: A study among adult Christians. *Research in the Social Scientific Study of Religion*, *16*, 123-131.
- Gersten, D. (2012). *Are you getting enlightened or losing your mind? A psychiatrist's guide for mastering paranormal and spiritual experience*. San Diego, CA: Wisdom Moon Publishing.
- Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., & Gough, H. G. (2006). The international personality item pool and the future of public-domain personality measures. *Journal of Research in Personality*, *40*, 84-96. doi: 10.1016/j.jrp.2005.08.007
- Granqvist, P., Fredrikson, M., Unge, P., Hagenfeldt, A., Valind, S., Larhammar, D., & Larsson, M. (2005). Sensed presence and mystical experiences are predicted by suggestibility, not by the application of transcranial weak complex magnetic fields. *Neuroscience Letters*, *379*, 1-6. doi: 10.1016/j.neulet.2004.10.057
- Granqvist, P., Hagekull, B., & Ivarsson, T. (2012). Disorganized attachment promotes mystical experiences via a propensity for alterations in consciousness (absorption). *International Journal for the Psychology of Religion*, *22*, 180-197. doi: 10.1080/10508619.2012.670012
- Hay, D. (1982). *Exploring inner space*. Harmondsworth, United Kingdom: Penguin.

EXPERIENCES DEEMED RELIGIOUS

Hay, D. (1990). *Religious experience today: Studying the facts*. London, United Kingdom: Mowbray.

Hay, D., & Morisy, A. (1978). Reports of ecstatic, paranormal, or religious experience in Great Britain and the United States: A comparison of trends. *Journal for the Scientific Study of Religion*, *17*, 255-268. doi: 10.2307/1386320

Hiskey, S., & Troop, N. A. (2002). Online longitudinal survey research: Viability and participation. *Social Science Computer Review*, *20*, 250-259. doi: 10.1177/089443930202000303

Hood, R. W., Jr., Hill, P. C., & Spilka, B. (2009). *The psychology of religion: An empirical approach (4th ed.)*. New York, NY: Guilford Press.

Hui, C.H., Chan, S.W.Y., Lau, E.Y.Y., Cheung, S.F., & Mok, D.S.Y. (2012). The role of religion in moderating the impact of life events on material life goals: some evidence in support of terror management theory. *Mental Health, Religion, & Culture*. doi: 10.1080/13674676.2012.745494.

Hui, C.H., Ng, E.C.W., Mok, D.S.Y., Lau, E.Y.Y., & Cheung, S.F. (2011). "Faith maturity scale" for Chinese: A revision and construct validation. *International Journal for the Psychology of Religion*, *21*, 308-322. doi: 10.1080/10508619.2011.607417

Hui, C. H., Pak, S. T., & Cheng, K. H. C. (2009). Validation studies on a measure of overall managerial readiness for the Chinese. *International Journal of Selection and Assessment*, *17*, 127-141. doi: 10.1111/j.1468-2389.2009.00457.x

James, A., & Wells, A. (2003). Religion and mental health: Towards a cognitive-behavioural framework. *British Journal of Health Psychology*, *8*, 359-376. doi: 10.1348/135910703322370905

EXPERIENCES DEEMED RELIGIOUS

Kennedy, J. E., & Kanthamani, H. (1995). An exploratory study of the effects of paranormal and spiritual experiences on people's lives and well-being. *The Journal of the American Society for Psychological Research*, 89, 249-265.

Kennedy, J. E., Kanthamani, H., & Palmer, J. (1994). Psychic and spiritual experiences, health, well-being, and meaning in life. *Journal of Parapsychology*, 58, 353-383.

Kildahl, J. P. (1972). *The psychology of speaking in tongues*. New York, NY: Harper & Row.

Lee, M. T., Poloma, M. M., & Post, S. G. (2013). *The heart of religion : Spiritual empowerment, benevolence, and the experience of God's love*. New York, NY: Oxford University Press.

Leung, K., Bond, M. H., de Carrasquel, S. R., Muñoz, C., Hernández, M., Murakami, F., . . .

Singelis, T. M. (2002). Social axioms: The search for universal dimensions of general beliefs about how the world functions. *Journal of Cross-Cultural Psychology*, 33, 286-302. doi: 10.1177/0022022102033003005

Leung, K., Lam, B. C. P., Bong, M. H., Conway, L. G., III, Janelle, G. L., Amponsah, B., . . .

Zhou, F. (2012). Developing and evaluating the Social Axioms Survey in eleven countries: Its relationship with the Five-Factor Model of personality. *Journal of Cross-Cultural Psychology*, 43, 833-857. doi: 10.1177/0022022111416361

Leung, K. F., Tay, M., Cheng, S., & Lin, F. (1997). Hong Kong Chinese version World Health Organisation Quality of Life Measure -- Abbreviated version. Hong Kong: Hong Kong Hospital Authority.

Lim, C., & Putnam, R. D. (2010). Religion, social networks, and life satisfaction. *American Sociological Review*, 75, 914-933. doi: 10.2307/25782172

Lovekin, A., & Malony, H. N. (1977). Religious glossolalia: A longitudinal study of personality changes. *Journal for the Scientific Study of Religion*, 16, 383-393. doi: 10.2307/1386224

EXPERIENCES DEEMED RELIGIOUS

Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety Stress Scales* (2nd ed.). Sydney, Australia: Psychology Foundation.

Ludwig, A. M. (1985). Cognitive processes associated with “spontaneous” recovery from alcoholism. *Alcohol and Drugs, 46*, 53-58.

Luhrmann, T. M. (2012). *When God talks back: Understanding the American evangelical relationship with God*. New York, NY: Vintage.

Maselko, J., & Kubzansky, L. D. (2006). Gender differences in religious practices, spiritual experiences and health: Results from the US General Social Survey. *Social Science & Medicine, 62*, 2848-2860. doi: 10.1016/j.socscimed.2005.11.008

Maslow, A. H. (1964). *Religions, values, and peak-experiences*. Columbus, OH: Ohio State University Press.

McLung, G. (2006). Pentecostals: The sequel. What will it take for this world phenomenon to stay vibrant for another 100 years? Retrieved Jan 3, 2014, from <http://www.christianitytoday.com/ct/2006/april/7.30.html?start=1>

Mechanic, M. B., Weaver, T. L., & Resick, P. A. (2008). Risk factors for physical injury among help-seeking battered women: An exploration of multiple abuse dimensions. *Violence Against Women, 14*, 1148-1165. doi: 10.1177/1077801208323792

Myers, D. G. (2000). The funds, friends, and faith of happy people. *American Psychologist, 55*, 56-67. doi: 10.1037/0003-066X.55.1.56

Niesz, N. L., & Kronenberger, E. J. (1978). Self-actualization in glossolalic and non-glossolalic Pentecostals. *Sociology of Religion, 39*, 250-256. doi: 10.2307/3710445

EXPERIENCES DEEMED RELIGIOUS

- Palmer, G., & Braud, W. (2002). Exceptional human experiences, disclosure, and a more inclusive view of physical, psychological, and spiritual well-being. *Journal of Transpersonal Psychology, 34*, 29-59.
- Pattison, E. M., Lapins, N. A., & Doerr, H. A. (1973). Faith healing: A study of personality and function. *Journal of Nervous & Mental Disease, 157*, 397-408. doi: 10.1097/00005053-197312000-00001
- Pew Research Center's Forum on Religion & Public Life. (2011). Global christianity: A report on the size and distribuion of the world's Christian population.
<http://www.pewforum.org/files/2011/12/Christianity-fullreport-web.pdf>
- Poloma, M. M., & Gallup, G. H. (1991). *Varieties of prayer: A survey report*. Philadelphia, PA: Trinity Press International.
- Poloma, M. M., & Green, J. C. (2010). *The assemblies of God : Godly love and the revitalization of American Pentecostalism*. New York, NY: New York University Press.
- Poloma, M. M., & Hoelter, L. F. (1998). The "Toronto Blessing": A holistic model of healing. *Journal for the Scientific Study of Religion, 37*, 257-272. doi: 10.2307/1387526
- Poloma, M. M., & Pendleton, B. F. (1989a). Exploring types of prayer and quality of life: A research note. *Review of Religious Research, 31*, 46-53. doi: 10.2307/3511023
- Poloma, M. M., & Pendleton, B. F. (1989b). Religious experiences, evangelism, and institutional growth within the Assemblies of God. *Journal for the Scientific Study of Religion, 28*, 415-431. doi: 10.2307/1386574
- Proudfoot, W. (1985). *Religious experience*. Berkeley, CA: University of California Press.
- Richardson, J. T. (1973). Psychological interpretations of glossolalia: A re-examination of research. *Journal for the Scientific Study of Religion, 12*, 199-207. doi:10.2307/1384889

EXPERIENCES DEEMED RELIGIOUS

Spilka, B., Brown, G. A., & Cassidy, S. A. (1992). The structure of religious mystical experience in relation to pre- and postexperience lifestyles. *International Journal for the Psychology of Religion*, 2, 241-257. doi: 10.1207/s15327582ijpr0204_4

Stanley, G., Bartlett, W. K., & Moyle, T. (1978). Some characteristics of charismatic experience: Glossolalia in Australia. *Journal for the Scientific Study of Religion*, 17, 269-277. doi: 10.2307/1386321

Taouk, M., Lovibond, P. F., & Laube, R. (2001). Psychometric properties of a Chinese version of the short Depression Anxiety Stress Scales (DASS21). Sydney, Australia: New South Wales Transcultural Mental Health Centre, Cumberland Hospital.

Taves, A. (2009). *Religious experience reconsidered: A building block approach to the study of religion and other special things*. Princeton, NJ: Princeton University Press.

Thalbourne, M. A., & Delin, P. S. (1999). Transliminality: Its relation to dream life, religiosity and mystical experience. *International Journal for the Psychology of Religion*, 9, 45-61. doi: 10.1207/s15327582ijpr0901_6

Williamson, W. P., & Hood, R. W., Jr. (2011). Spirit baptism: A phenomenological study of religious experience. *Mental Health, Religion & Culture*, 14, 543-559. doi: 10.1080/13674676.2010.493860

Wong, J. G. W. S., Cheung, E. P. T., Chan, K. K. C., Ma, K. K. M., & Tang, S. W. (2006). Web-based survey of depression, anxiety and stress in first-year tertiary education students in Hong Kong. *Australian and New Zealand Journal of Psychiatry*, 40, 777-782. doi: 10.1111/j.1440-1614.2006.01883.x

EXPERIENCES DEEMED RELIGIOUS

Table 1

Demographic and Psychological Characteristics of Individuals Who Dropped Out from Wave 3 and Those Who Stayed in Wave 3

	Dropped out from Wave 3 (n = 377)	Stayed in Wave 3 (n = 532)	Significance tests	Cohen's d
Gender				
Male	26.3%	29.7%	$\chi^2(1) = 1.29$	.04
Female	73.7%	70.3%		
Occupation				
Full-time students	35.0%	36.3%	$\chi^2(1) = .17$	.02
Non-students	65.0%	63.5%		
Baptismal status				
Not yet	32.9%	37.8%	$\chi^2(1) = 2.30$	.05
Yes	67.1%	62.2%		
Household income (in HK\$)	3.29 (1.75) ¹	3.10 (1.70)	$t(907) = 1.64$	.11
<10,000	13.5%	18.4%	$\chi^2(5) = 7.88$	--
10,000 – 19,999	32.4%	29.1%		
20,000 – 29,999	14.1%	16.2%		
30,000 – 39,999	11.9%	12.0%		
40,000 – 49,999	7.4%	8.5%		
≥50,000	20.7%	15.8%		
Age	30.65 (10.75)	29.80 (10.04)	$t(907) = 1.22$	.08
Conversion length (in years)	10.03 (8.41)	10.81 (8.57)	$t(907) = -1.37$	-.09
Personality (W1)				
Extroversion	3.20 (.72)	3.10 (.66)	$t(895) = 2.33^*$	.14
Conscientiousness	3.48 (.61)	3.48 (.58)	$t(891) = .06$	.00
Agreeableness	3.83 (.47)	3.84 (.42)	$t(892) = -.22$	-.02
Openness to experience	3.38 (.56)	3.32 (.58)	$t(892) = 1.72$	.11
Emotional stability	3.15 (.82)	3.15 (.78)	$t(891) = -.13$	.00
Faith Maturity (W1)				
Vertical	5.15 (1.14)	5.12 (1.05)	$t(898) = .38$	.02
Horizontal	3.69 (1.09)	3.77 (1.13)	$t(898) = -.96$	-.07
Religiosity (W1)	4.29 (.51)	4.19 (.52)	$t(886) = 2.78^{**}$	.19
Religious practices (W1)				
Personal religious behaviors	2.44 (1.22)	2.42 (1.22)	$t(907) = .32$	.02
Communal religious behaviors	1.63 (1.14)	1.66 (1.15)	$t(907) = -.42$	-.03
Missionary involvements	.99 (.80)	.94 (.81)	$t(907) = .90$	.06
Quality of life (W1)				
Physical health	14.58 (2.00)	14.64 (1.90)	$t(893) = -.42$	-.03
Psychological health	13.89 (2.32)	13.63 (2.27)	$t(891) = 1.66$	.11
Social relationship	13.98 (2.64)	13.79 (2.58)	$t(890) = 1.09$	.07
Environment	13.91 (2.16)	13.82 (1.95)	$t(892) = .68$	.04

(continued)

EXPERIENCES DEEMED RELIGIOUS

Table 1 (continued)

Demographic and Psychological Characteristics

	Dropped out from Wave 3 (n = 377)	Stayed in Wave 3 (n = 532)	Significance tests	Cohen's d
	% / Mean (SD)	% / Mean (SD)		
EDRs (W2; Answered "yes")				
Healing	18.0%	14.7%	$\chi^2(1) = 1.87$	.04
Speaking in tongues	22.5%	20.5%	$\chi^2(1) = .56$	.02
Unusual joy and peace	89.7%	88.2%	$\chi^2(1) = .50$	.02
Prayer answered	93.9%	93.6%	$\chi^2(1) = .03$	.01

* $p < .05$; ** $p < .01$ ¹This numerical value was derived by coding <HK\$10,000 as 1 and \geq HK\$50,000 as 6.

EXPERIENCES DEEMED RELIGIOUS

Table 2

Descriptive Statistics and Inter-Correlations of Study Variables Measured at Wave 1 and Wave 2

Variables measured at Wave 1	% / Mean (SD)	EDRs (Measured at Wave 2)			
		Healing	Speaking in tongues	Unusual joy and peace	Prayer answered
Gender (Female) ¹	71.7%	-.03	.01	.13**	.09**
Age	30.15 (10.35)	.06	.04	.02	.04
Income	3.18 (1.73)	-.03	.01	.04	.04
Conversion length (in years)	10.48 (8.51)	.01	-.04	.02	.01
Baptismal status (Yes) ²	64.2%	.09	.08*	.09**	.10**
Extraversion	3.14 (.69)	.07	.06	.11**	.12**
Conscientiousness	3.48 (.60)	.04	-.00	.05	.07*
Agreeableness	3.84 (.44)	-.02	.03	.07*	.11**
Openness to experience	3.34 (.57)	.05	.07	.02	.02
Emotional stability	3.15 (.80)	-.07*	.004	.03	.13**
FMS-V	5.13 (1.09)	.09**	.13**	.32**	.34**
FMS-H	3.74 (1.11)	.05	.09**	.08*	.05
Religiosity	4.23 (.52)	.08*	.05	.22**	.25**
Personal religious behaviors	2.43 (1.22)	.05	.09**	.24**	.28**
Communal religious behaviors	1.65 (1.14)	-.002	.09**	.24**	.22**
Missionary involvement	.96 (.81)	-.02	.00	.18**	.17**
QOL-Physical health	14.62 (1.94)	-.08*	-.04	.02	.10**
QOL-Psychological health	13.74 (2.29)	-.01	.02	.13**	.17**
QOL-Social relationship	13.87 (2.60)	-.01	.02	.09**	.12**
QOL-Environment	13.86 (2.04)	-.05	-.04	.05	.10**

*Note.*¹Gender: 1 = Male; 2 = Female; ²Baptismal status: 1 = Not Yet; 2 = Yes.

Sample size ranged from 890 to 909.

* $p < .05$; ** $p < .01$

EXPERIENCES DEEMED RELIGIOUS

Table 3

Descriptive Statistics and Inter-Correlations of Study Variables Measured at Wave 2 and Wave 3

Variables measured at Wave3	Mean (SD)	EDRs (Measured at Wave 2)			
		Healing	Speaking in tongues	Unusual joy and peace	Prayer answered
FMS-V	5.00 (1.03)	.09*	.17**	.29**	.29**
FMS-H	3.83 (.98)	.01	.12**	.11**	.07
Religiosity	4.12 (.54)	.06	.13**	.21**	.24**
Personal religious behaviors	2.77 (1.67)	.03	.12**	.25**	.22**
Communal religious behaviors	1.49 (1.14)	.01	.11**	.24**	.23**
Missionary involvement	.83 (.81)	-.003	.04	.23**	.17**
QOL-Physical health	14.72 (2.02)	-.06	.02	.13**	.12**
QOL-Psychological health	13.80 (2.36)	-.02	.05	.15**	.14**
QOL-Social relationship	13.89 (2.86)	.01	.08*	.16**	.13**
QOL-Environment	14.04 (2.13)	-.08*	.03	.07	.10*
Depressive moods	1.00 (1.03)	-.02	-.05	-.11**	-.15**
Anxiety	.84 (.77)	.09*	-.04	-.05	-.05
Stress	1.63 (1.15)	.05	-.03	-.06	-.10*
Poor sleep quality	6.23 (2.68)	.07	.03	-.16**	-.14**

Note. Sample size ranged from 533 to 714.* $p < .05$; ** $p < .01$

EXPERIENCES DEEMED RELIGIOUS

Table 4

Logistic Regression of EDRs on Demographic, Personality, and Faith-Related Variables

	Healing			Speaking in tongues			Unusual joy and peace			Prayer answered		
	B	SE	OR	B	SE	OR	B	SE	OR	B	SE	OR
Gender (Female) ¹	-.30	.23	.74	.11	.21	1.12	.74**	.28	2.10	.52	.39	1.67
Age	.02	.01	1.02	.02	.02	1.02	-.02	.02	.98	-.02	.02	.98
Income	-.06	.06	.94	.02	.05	1.02	.03	.08	1.03	.02	.12	1.02
Conversion length	-.02	.01	.98	-.04**	.01	.96	.00	.02	1.00	-.03	.03	.98
Baptismal status (Yes) ²	.61*	.28	1.84	.30	.24	1.34	-.25	.34	.78	-.37	.45	.69
Extraversion	.19	.16	1.21	.09	.15	1.10	.19	.21	1.21	.04	.29	1.04
Emotional stability	-.51***	.14	.60	-.09	.13	.91	-.41*	.19	.66	.23	.26	1.26
Personal religious behaviors	.01	.11	1.01	.04	.10	1.04	.14	.14	1.15	.30	.20	1.36
Communal religious behaviors	-.10	.11	.91	.18	.10	1.20	.46**	.15	1.59	.29	.22	1.34
Missionary involvement	-.20	.14	.82	-.20	.13	.82	.22	.20	1.24	.27	.29	1.30
FMS – V	.31*	.14	1.36	.23	.12	1.26	.80***	.17	2.22	1.09***	.25	2.98
FMS – H	-.01	.10	.99	.10	.09	1.11	-.14	.13	.87	-.34	.18	.72
Religiosity	.14	.23	1.15	-.16	.20	.86	.21	.28	1.23	.76*	.38	2.14
Constant	-2.97**	.98	.05	-	.87	.06	-2.11	1.16	.12	-5.06**	1.65	.01
						2.91**						

*Note.*¹Gender: 1 = Male; 2 = Female; ²Baptismal status: 1 = Not Yet; 2 = Yes.

Sample size = 786

* $p < .05$; ** $p < .01$; *** $p < .001$

EXPERIENCES DEEMED RELIGIOUS

Table 5.

Hypothesis Testing Results for the Antecedents and Consequences of Four EDRs

	Healing	Speaking in tongues	Unusual joy and peace	Prayer answered
H1a: EDRs would be more likely among the female than the male.	No	No	Yes	No
H1b: EDRs would be more likely among those who are older than the younger.	No	No	No	No
H1c: EDRs would be more likely among those with higher income than those with lower income.	No	No	No	No
H2a: Low emotional stability is a predictor of EDRs.	Yes	No	Yes	No
H2b: Extraversion is a predictor of EDRs.	No	No	No	No
H3a: Believers who have been baptized would be more likely to report EDRs.	Yes	No	No	No
H3b: Believers who have been in the faith for a longer period of time would be more likely to report EDRs.	No	Reversed	No	No
H3c: Believers who engage in more religious practices would be more likely to report EDRs.	No	No	Partial	No
H3d: Believers who are high on faith maturity and religiosity would be more likely to report EDRs.	Partial	No	Partial	Yes
H4a: EDRs would improve sleep quality and moods during the following year.	Reversed	No	Partial	No
H4b: EDRs would improve the level of quality of life during the following year.	No	No	Yes	Partial
H5a: EDRs would increase a person's subsequent religious practices.	No	No	Yes	Partial
H5b: EDRs would increase a person's subsequent level of faith maturity and religiosity.	No	No	Yes	Partial

EXPERIENCES DEEMED RELIGIOUS

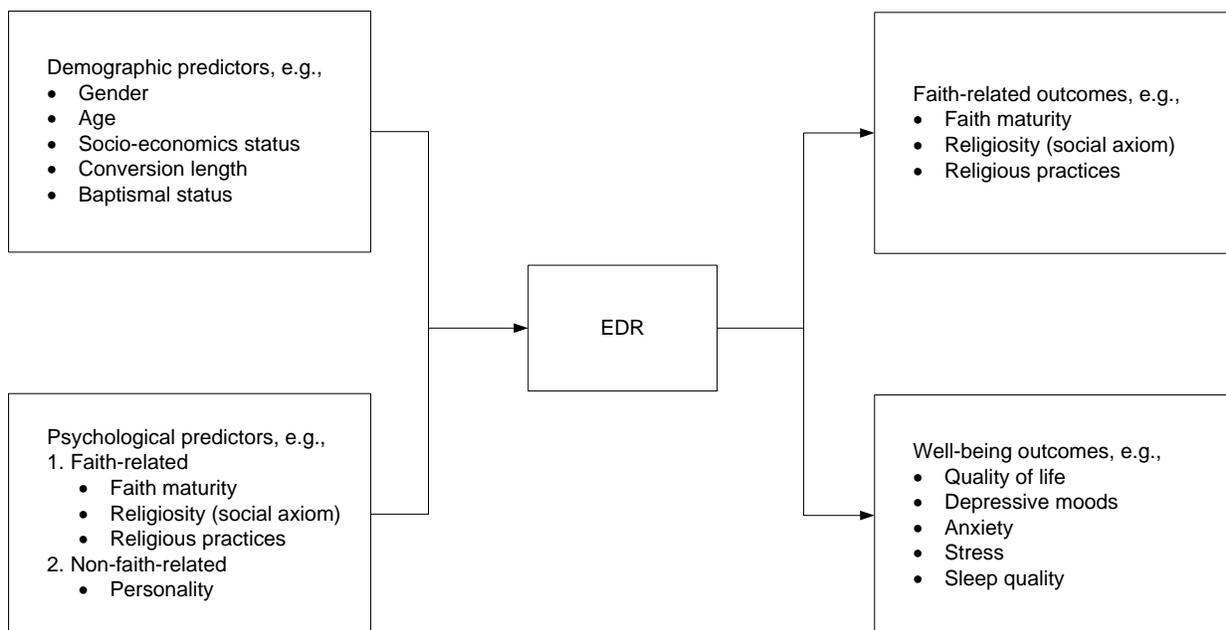


Figure 1. A conceptual model of the predictors and consequences of EDRs