

Watt, C. & Tierney, I. (2014). Psi-Related Experiences. In E. Cardeña, S. J. Lynn, & S. Krippner (Eds) *Varieties of Anomalous Experience*, 2nd Ed. Washington, DC: American Psychological Association.

Psi-Related Experiences¹

Caroline Watt and Ian Tierney

Koestler Parapsychology Unit, University of Edinburgh

Recently, a woman whom we will refer to as “Isobel” approached a UK parapsychology unit together with her sister. Both were extremely distressed because, on three occasions, Isobel had dreamed about a child dying after falling from a tall building. Within days of each dream, which she described to her sister at the time, Isobel learned that a child had indeed subsequently fallen from a tall building. In two cases, the child died. In the third, the child was severely injured. Isobel and her sister came to believe that Isobel caused the accidents. They feared that something similar might happen again, and Isobel developed a sleep disturbance because she was afraid to have a similar dream. What are we to make of such experiences? How can we best understand and advise individuals like Isobel?

Definitions

For over a century researchers have investigated purported anomalous experiences like the ones reported by Isobel (Irwin & Watt, 2007; Targ et al., 2000). Known as *psi-related experiences* (PREs) or *spontaneous psi*, these include reports of apparent telepathy (direct mind-to-mind communication), clairvoyance (knowledge of distant events), precognition (knowledge of the future, as illustrated by Isobel's dreams), and psychokinesis (mind over matter, as

¹ We thank Milan Valášek for his help in the preparation of the manuscript.

suggested by Isobel's fears that she had caused the accidents). Because it seems to the experient that some "paranormal" process is involved in these events, the PRE is defined phenomenologically (Irwin & Watt, 2007). The underlying ostensible process is termed *psi*, and may be investigated under suitably controlled laboratory conditions. Thus, *psi* is a hypothetical construct relating to a presumed anomalous process for which there is, arguably, evidential support (Bem, 2011; Hyman, 2010; Ritchie, Wiseman, & French, 2012; Storm, Tressoldi, & Di Risio, 2010). In this chapter, we briefly review the research literature on *psi*-related experiences and consider implications for professionals to whom experients may turn for help or advice. Our focus is on subjective reports of *psi* experiences, rather than on attempts to differentiate the phenomenology of non-veridical and presumably veridical *psi*.

Three main theories have been proposed to explain PREs. For many individuals, their experience can arise through the operation of well-understood, non-pathological psychological mechanisms. First, the experient may *misattribute* a normal experience to a paranormal cause. Second, a small but arguably sound body of research implies that some of these experiences reflect the operation of actual *psi* processes. Third, research has established that a significant proportion of distressed experients require clinical support and guidance, either because they are in the early stages of undiagnosed psychopathology, or because they have turned away from treatment for a diagnosed condition in favor of a parapsychological interpretation of their experiences. This third class may be regarded as reflecting experiences with a *psychopathological* origin. It is vital to have some understanding of these three potential contributory factors because they have different implications for how we advise and/or treat individuals who present to professionals in some distress following their anomalous experience.

Therefore, this chapter has three aims: 1. To review the literature on the phenomenology, impact, and individual differences associated with PREs. 2. To summarize research addressing the three principal theories of PREs. 3. To provide practical guidance for professionals who are approached by individuals who claim psi-related experiences and who may be distressed by these experiences.

Prevalence

Psi-related experiences such as purported clairvoyance, telepathy, precognition, and psychokinesis (generally referred to as psi) are commonly reported worldwide. For example, a 1987 survey of almost 1,500 adult Americans published by the University of Chicago's National Opinion Research Center found that 67% of respondents claimed PREs (Greeley, 1987). Broadly similar levels of prevalence have been documented in surveys across Europe (Haraldsson, 1985), Asia (Glicksohn, 1990; McClenon, 1993), and Australasia (Thalbourne, 1995), although to some extent the form and frequency of the experience is influenced by the cultural context (Hess, 1992; Irwin & Watt, 2007). More recent surveys show little change in the prevalence of PREs (Pechey & Halligan, 2011), and because spontaneous case collections have been compiled systematically from the 1800s (Gurney, Myers, & Podmore, 1886), we conclude that PREs are ubiquitous.

Phenomenology

Case collections consist of reports of PREs described by the experiencers themselves. Therefore, the study of these collections provides abundant data on the phenomenological characteristics of PREs. Presumably because they are relatively rare, less is known about the phenomenology of psychokinetic experiences than about extrasensory experiences (for a review of psychokinetic experiences see Irwin & Watt, 2007). The phenomenology of extrasensory

experiences is summarized below. Note that by referring to these experiences as "extrasensory" we make no assumptions as to the ontological nature of the events.

Extrasensory (ESP) experiences typically fall into one of two temporal categories. Most (about 60% of the case collection of L. E. Rhine, 1981) are *contemporaneous*. That is, they relate to an event occurring simultaneously in a distant location; almost all of the remainder seemingly relate to future events and are termed *precognitive*. ESP experiences are reported to take one of four forms: realistic visual images (44%), intuitive impressions (26%), unrealistic visual images (21%), or hallucinations (9%) (L. E. Rhine, 1953, 1962a). Realistic visual images in ESP experiences most often occur as dreams in which the imagery seems to refer quite literally and specifically to events. An intuitive impression comprises a "gut feeling" without imagery. In unrealistic visual images, the imagery represents events in a fantastic, unreal, or symbolic fashion. In a hallucinatory ESP experience, the extrasensory information occurs as a sensory hallucination, for instance seeing an apparition or hearing a voice (see also Bentall, this volume). The form of the experience correlates with its temporal context: most precognitive experiences occur as realistic visual images in dreams (Sannwald, 1963), whereas about one third of contemporaneous ESP experiences are experienced as intuitive impressions.

Extrasensory experiences usually include only partial information about the event to which they presumably refer. Analyses of whether the experience conveyed the general meaning of *what* happened and to *whom* have revealed that realistic visual images have the highest level of completeness of content (91%), followed by unrealistic images (72%), intuitions (55%), and hallucinatory experiences (32%) (L. E. Rhine, 1962a, b). The content often tends to be personally significant to the experient, related to someone emotionally close to the experient, and

to deaths, personal crises, and other events of personal importance (L. E. Rhine, 1956; Schouten, 1981). Thus, for the individual, the ESP experience seems to be purposive and meaningful.

Experients often find extrasensory experiences to be very powerful. In L. E. Rhine's collection (1962a), 36% of experients were convinced of the reality of their experience at the time it occurred. Perhaps paradoxically, the strongest conviction tends to be reported in the cases with the least amount of detail: the intuitive impressions (84%). Experients report the least conviction for cases involving unrealistic visual images (19%; L. E. Rhine, 1962a; Schouten, 1981).

Impact

The emotional impact of PREs has been rarely researched, but it presumably depends on the experience's phenomenological characteristics, such as its form and the level of felt conviction. For example, if conviction is low or the content disguised by symbolism, the experient might be relatively unmoved by any underlying negative tone. However, if conviction is high but the person fails to act, for instance to warn a loved one of impending danger following a precognitive experience, the experient might feel guilt-ridden or responsible. In a survey of 190 individuals reporting precognitive experiences, Steinkamp (2000) found that 58% of the experiences referred to "preventable" events, and there was a significant tendency for participants to act on these experiences compared to precognitions of "unpreventable" events.

The PRE's impact is also indexed by whether or not the experient tells others about it. A survey of extrasensory experiences in a sample of 124 Australian university students (Irwin, 1989a) asked respondents if they had told someone of their experience before they learned by conventional means of the depicted event's actual occurrence: 17% reported that they had not told anyone because of the lack of an opportunity. 30% had told others, and 53% had no

inclination to tell anyone. Presumably, the nature of the event affects the tendency to report it to others; a trivial event may be less likely to be reported than one with emotional relevance to oneself or a loved one. Surveys of the emotional impact of extrasensory experiences have found the most commonly reported emotions are anxiety and happiness (Irwin & Watt, 2007; Milton, 1992).

The cultural context of the event, particularly regarding whether PREs are widely recognized and accepted, will also moderate their impact. For those in Western societies, PREs may be frightening and challenge the experient's worldview (Kennedy, Kanthamani, & Palmer, 1994; Tart & LaBore, 1986). Presumably, the meaning that the individual attributes to the experience will affect subsequent adjustment. Clearly, there is need for further research, including longitudinal studies, on the impact of PREs.

Individual differences

Researchers have conducted extensive studies on individual differences in the correlates of paranormal belief and experience (Irwin, 2009). In the brief review that follows, we draw on these two intrinsically linked research areas.

Demographic correlates

Surveys do not paint a clear picture regarding the association between age and predisposition to PREs (Emmons & Sobal, 1981; Irwin 2001a). A similarly mixed picture is found for socioeconomic status (Emmons & Sobal, 1981; MacDonald, 1995) and for ethnicity (Emmons & Sobal, 1981; Tobacyk, Miller, Murphy, & Mitchell, 1988). It may be that the relation, if any, between these variables and PREs will become clearer in the future if more sophisticated statistical modeling methods are applied. The one demographic variable that *is* predictive of predisposition to PREs is gender: women report these experiences to a greater

extent than men (Irwin, 2001a; Rice, 2003). However, researchers have not established the degree to which this pattern may reflect a propensity to report PREs because of stereotypical gender roles and expectations.

Cognitive correlates

Some researchers, often those who embrace a skeptical viewpoint, have investigated whether those who report PREs tend to exhibit relatively poor performance on various indicators of education, intelligence, and reasoning ability (see reviews by French & Wilson, 2007, and Wiseman & Watt, 2006). Some evidence indicates that individuals with education emphasizing the sciences tend to report lower levels of PREs than individuals educated in the humanities (Díaz-Vilela & Álvarez-González, 2004; Otis & Alcock, 1982). However, as with gender, it is not clear whether this trend reflects a more scientific thinking style in non-experients, or the enculturation process of a scientific education that would typically discourage acknowledgement or reporting of PREs. Few studies have directly investigated the link between propensity to PREs and IQ, and these have obtained conflicting results (Jones, Russell, & Nickel, 1977; Killen, Wildman, & Wildman, 1974). Studies of the link between PREs and reasoning or critical thinking ability have again provided mixed results. Some have found propensity to PREs to be associated with poor performance on these indicators (Alcock & Otis, 1980; Wierzbicki, 1985), whereas others have reported the opposite (Hergovich & Arendasy, 2005; Irwin, 1991c; Roe, 1999).

Personality correlates

Surveys investigating dissociative and a variety of related tendencies and PREs indicate that those predisposed to PREs tend to obtain high scores on measures of creativity (Davis, Peterson, & Farley, 1974; Thalbourne & Delin, 1994), absorption (Glicksohn, 1990; Myers &

Austrin, 1985), fantasy-proneness (Irwin, 1990a, 1991a; Lawrence et al., 1995), hypnotic susceptibility (Cardeña, Marcusson-Clavertz, & Wasmuth, 2009; Pekala, Kumar, & Cummings, 1992), dissociation (Pekala, Kumar, & Marcano, 1995; Wilson & French, 2006), schizotypy (Goulding, 2005), and propensity to hallucinations (Parra & Paul, 2010).

Two measures of individual difference encompass a considerable number of these measures: boundariness (Hartman, 2011) and transliminality (Thalbourne & Maltby, 2008). Transliminality is defined as a hypersensitivity to psychological material (e.g., imagery, ideation, affect, and perception) originating in the unconscious, and/or the external environment. Researchers (Houran, Thalbourne, & Lange, 2003) have suggested that this construct, measured using the Revised Transliminality Scale (Houran et al., 2003), accounts most parsimoniously for various individual differences, including alleged paranormal experiences, mystical experiences, creative personality, manic experience, magical ideation, high absorption, fantasy proneness, hypersensitivity to sensory stimuli and a positive attitude to dream interpretation (Thalbourne & Maltby, 2008). Thalbourne and Maltby concluded that the underlying factor that best correlates with these various measures is the concept of "Thinness of boundaries" derived from the Boundary Questionnaire of Hartmann (1991), which, in turn, correlates strongly with hypnotizability and suggestibility, creativity, and absorption (Hartmann, 2011).

Specifically with relation to hypnotizability, Cardeña et al. (2009) commented that the paucity of even moderate correlations between hypnotizability and the "big five" personality traits, and the finding that hypnotizability is related to the character trait of self-transcendence, suggests that the concept of "personal unboundariedness" may be the latent trait underlying all of these correlations.

Theories

Numerous factors may lead individuals to conclude that they have had a psi-related experience. Some of these factors can be illustrated through Isobel's case of apparent precognitive dreams. Perhaps she has many different kinds of dreams about individuals coming to harm, and some of these aligned with real-world events just by chance, as will inevitably happen from time to time (Diaconis & Mosteller, 1989). Alternatively, she may adopt a relatively low criterion for what would count as a match between a dream and subsequent events, thereby greatly increasing the likelihood of her perceiving it as such (Blackmore, 1997). Subsequently, the precision of the match might be exaggerated in the re-telling of the event (Lamont & Wiseman, 2001). Alternately, she may be fantasy-prone or even psychotic and thus give an inaccurate or distorted account of her experiences. Furthermore, it is possible that Isobel's dreams really did predict future events (we review, below, empirical support for this hypothesis.)

For the purposes of this review, we have categorized these potential explanations as follows: misattribution, psi, and psychopathology. This categorization is not exhaustive and the explanations may overlap to some extent. The literature has not developed to the extent that researchers have been able to model the different contribution of these hypothesized processes to PREs; nevertheless, we suggest that practitioners who are aware of the empirical literature may make better-informed judgments on how to advise and, if appropriate, treat individuals presenting with PREs.

Misattribution

Although numerous physiological conditions and behaviors, pathological and otherwise, may result in experiences that can be misattributed to psi (e.g., Charles Bonnet syndrome, temporal lobe epilepsy, or various other neuropathological conditions, anoxia, sensory

deprivation, drug misuse), ordinary life events may also produce experiences that are sometimes interpreted as a PRE. For instance, the grief-related experience of seeing and talking with a deceased loved one in the year after their death was reported in 80% of a sample of elderly people (Grimby, 1993). Misattribution is thought to result more often from several different “ordinary” – i.e., non-pathological – psychological factors. Principal among these are events in the sleep/wake cycle, probability misjudgment, and the propensity to find correspondences between unrelated events.

Events in the sleep/wake cycle. Sleep paralysis is often a frightening experience that may occur in the state between sleep and wakefulness (French & Santomauro, 2007). Normally, during Rapid Eye Movement (REM) sleep, muscle paralysis prevents people from acting out their dreams. Occasionally, individuals may become reflectively conscious while still paralyzed and continue to experience dream-related sensations such as intense fear, a strong sense of a presence near or on the bed, and visual and auditory hallucinations. Individuals may attempt to make sense of these powerful and mysterious sensations by attributing them to the presence of an alien (French et al., 2008; McNally & Clancy, 2005; Appelle, Lynn, Newman, & Malaktaris, this volume), or a malevolent spirit attempting to attack or communicate with them (French & Santomauro, 2007). Approximately 40% of the general population experiences sleep paralysis at least once in their lifetime; 3-6% experience it more often; and some individuals report intense and repeated episodes (*The International Classification of Sleep Disorders, revised*, 1997).

Less dramatic, but more commonly, most individuals experience a number of different sensations as they fall asleep (hypnagogic imagery) and wake up (hypnopompic imagery). These experiences can be subtle or strikingly vivid, and include: visual hallucinations ranging from moving dots of light to figurative images; auditory hallucinations ranging from faint sounds to

loud crashing and banging noises (alarmingly known as “exploding head syndrome”), and structured sounds such as hearing one’s own name being called; and, finally, kinesthetic sensations, the most common of which is falling. Individuals may interpret these experiences as visions or premonitions, depending on their beliefs and cultural background. Over a number of studies, hypnagogic and hypnopompic experiences have an estimated general population lifetime prevalence of between 72-77% (Mavromatis, 2010).

Probability misjudgment. Occasional chance coincidences occur between two unrelated events, such as thinking of someone who then calls on the telephone. Accordingly, some researchers have argued that people who make poor probability judgments, and see such coincidences as unlikely (Blackmore, 1002; Blackmore & Troscianko, 1985), may be more likely than others to view their experiences as psi-related. Researchers have investigated this hypothesis in numerous studies by presenting participants with various probability judgment tasks and scenarios that vary in the degree to which they resemble real-world PREs. Reviews (French & Wilson, 2007; Wiseman & Watt, 2006) conclude that individuals with a propensity for PREs score relatively poorly on abstract probability tasks such as generating strings of random numbers later analyzed for non-random patterns (Brugger, Landis, & Regard, 1990). However, Musch and Ehrenberg (2002) found that the correlation between propensity for PREs and performance on abstract tasks disappeared when cognitive ability was controlled for. Importantly, when researchers use more ecologically valid tasks (Wiseman & Watt, 2006), such as estimating the likelihood that two people at a party share a birthday (Blackmore & Troscianko, 1985), they typically observe few performance differences between experiencers and non-experiencers. In Bressan’s (2002) study, performance on probability problems tended to be negatively correlated with paranormal belief for non-students but not for students. Regardless of

educational level, paranormal belief was correlated with the frequency of meaningful coincidences experienced in everyday life. Contrary to the prediction of probability misjudgment theory, experience of meaningful coincidence was not correlated with performance on the probability tasks. According to Bressan, the most parsimonious explanation of these results is that individuals with a propensity for PREs exhibit a stronger tendency to find connections between separate events. The following section reviews research that converges on the same conclusion from a different starting point.

Finding correspondences. The tendency to find links between events that are not in fact connected is associated with magical ideation (Eckblad & Chapman, 1983), and questionnaire studies have indeed demonstrated a correlation between magical ideation and paranormal beliefs and experiences (e.g., Thalbourne & Delin, 1994; Thalbourne & French, 1995). However, item overlap may partially account for this correlation and it is therefore instructive to consider 'performance measures', such as Gianotti et al.'s (2001) Bridge the Associative Gap task, as an alternative index of propensity to find correspondences. Some researchers have hypothesized that the more individuals find connections between their experiences and actual events, the more likely they are to view their experiences as psi-related (Brugger & Graves, 1997; Fyfe, Williams, Mason, & Pickup, 2008; Houran & Lange, 1998). Support for this hypothesis comes from several studies in which researchers presented participants with images of random dot patterns and asked them to try to identify drawings embedded in the image (Blackmore & Moore, 1994; Brugger et al., 1993b). As predicted, a propensity to PREs was associated with a tendency to identify drawings in random patterns. These results have been conceptually replicated in other studies in which participants find meaningful connections between a variety of randomly paired stimuli, including animations (Fyfe et al., 2008), line drawings (Brugger & Taylor, 2003;

Brugger et al., 1994; Wiseman & Smith, 2002) and nouns (Pizzagalli, Lehmann, & Brugger, 2001).

Additional work on this topic has explored whether there is a neurological underpinning to the ability to find meaningful connections between unrelated events. Given the significant body of research implicating the right cerebral hemisphere in the processing of not obviously related material (e.g., metaphors and humor, certain aspects of creativity), some researchers have argued that the type of right hemisphere over-activation seemingly exhibited by PRE-prone individuals may explain why they are better able to find meaningful connections between experiences and events, and thus be more likely to have PREs (e.g., Brugger & Taylor, 2003). For example, Brugger et al. (1993a) observed enhanced lexical-decision accuracy in the left visual field/right hemisphere for PRE-prone individuals. Similarly, in an EEG study, Pizzagalli et al. (2000) found relatively high right hemisphere activation and reduced hemispheric asymmetry of functional complexity for individuals with a propensity to PREs.

Brugger and Taylor (2003) have also argued that high scores on tasks involving perceived connections in distantly related material are the result of disinhibition of semantic network activation that may act as one basis for schizophrenic thought disorder, potentially providing insight into the positive relation between PREs and a propensity for schizophrenia (Peltzer, 2002, 2003; Thalbourne, 1998; Thalbourne & French, 1995). Researchers have arrived at similar conclusions from an Event-Related Potential (ERP) study concerning schizotypy, paranormal ideation, and unusual experiences (Sumich et al., 2008). Paranormal belief has been associated with two distinct types of schizotypy: 1) high scores on schizotypy measures combined with low levels of well-being and 2) high scores on the positive symptom elements of the schizotypy measures combined with high levels of well-being (Holt, Simmonds-Moore &

Moore, 2008). Holt and colleagues have argued that this supports the concept of the “happy schizotype” (McCreery & Claridge, 1995). Studies that link “anomaly-prone” personality types, boundary thinness, positive schizotypy, and their incidence in healthy populations are examined below.

Methodological limitations. A cautionary methodological note should be applied to much of the literature reviewed above, insofar as it is mostly correlational in nature. Accordingly, we must exercise caution in inferring the direction of causality between PREs and the psychological variables reviewed. In the context of alleged hauntings and poltergeist experiences, a small number of researchers have started to use statistical techniques to identify causal relations between these experiences and associated psychological variables (Houran, Kumar, Thalbourne, & Lavertue, 2002; Houran, Wiseman, & Thalbourne, 2002; Lange & Houran, 1998, 1999), and a similar approach might be applied to psi-related experiences (Lawrence et al., 1995). Longitudinal research might also be helpful in understanding the precise relation between PREs and their psychological correlates.

Furthermore, most of the studies reviewed above, which have found correlations between PREs and measures of absorption, dissociation, fantasy-proneness, schizotypy, magical ideation, unusual experiences, and so on, rely on self-report measures, often with overlapping content. Further research is needed to rule out the possibility that these studies simply reflect the respondent’s propensity to report unusual experiences or to respond affirmatively when completing questionnaires. Blagrove, French, and Jones (2006) provided empirical support for the latter hypothesis in a study in which individuals were asked to report whether they had precognitive dream experiences, and to answer three questions: ‘Do you have a scar on your left knee?’ ‘Do you have back pain at the moment?’ ‘Do you have a cat?’ The researchers found a

significant ($p = .001$) relation between the number of precognitive dream experiences, and the number of 'yes' answers to the personal questions. This intriguing finding may suggest either that there exist peculiar lifestyle differences between experiencers and non-experiencers or, more plausibly in our view, that individuals who have PREs may adopt broader response categories that facilitate an affirmative response (Blackmore 1997). For example, the individual with a propensity for PREs might consider "at the moment" to refer to "this week or this month," whereas a person who lacks this propensity might interpret the timeframe more narrowly as "at the time of completing this questionnaire."

Some forms of affirmative response bias could be controlled for with carefully constructed questionnaires that include a balanced number of reverse-scored items. Blagrove and colleagues note that many of the questionnaires used in this research area are instead constructed so that an affirmative answer indicates greater levels of belief or experience for the majority of items. It seems clear that response bias may affect interpretations of findings in this research area, and more work is needed to understand the extent to which this problem undermines the interpretation of extant findings.

Veridical psi

The research reviewed thus far was not designed to address the question of whether veridical psi processes might contribute to PREs. Indeed, many researchers appear to assume either that there is no evidence for psi, or that the possible existence of psi is irrelevant to their investigations (Goulding & Parker, 2001). However, this question does have implications for clinicians who are approached by individuals convinced that they are having paranormal experiences.

In the 1930s, J. B. Rhine at Duke University led the way in developing controlled laboratory-based psi research. Evaluations of the ensuing body of scientific literature have arrived at conflicting conclusions. Many studies have reported evidence in support of the psi hypothesis (J. B. Rhine et al., 1966; Targ & Puthoff, 1974), whereas many others have found no evidence for anomalous information transfer – to the extent that this is often termed the “repeatability problem” in parapsychology (Beloff, 1985; Shapin & Coly, 1985). Sensory leakage, selective reporting of data, or experimenter or participant fraud have been advanced by some critics as the most plausible explanation for positive results (e.g., Alcock, 2010; Hyman, 2010).

In more recent decades, parapsychologists have adopted the statistical technique of meta-analysis in order to try to resolve the controversy over the evidential basis for psi (Utts, 1991). Indeed, the application of meta-analysis to the psi research database has been dubbed the “controversy killer” (Broughton, 1991, p. 279). Meta-analyses enable similar studies to be compared and combined, creating common effect-size indicators and enabling the assessment of the relation between moderator variables (e.g., design, type of participants or treatment, methodological quality) and study outcomes.

Several meta-analyses have strongly suggested that sensory leakage, randomization problems, and selective reporting cannot account for the positive results found in some groups of methodologically similar studies testing the psi hypothesis (Bem & Honorton, 1994; Child, 1985; Storm, Tressoldi, & di Risio, 2010). At the same time, meta-analyses of other groups of psi studies, suggest the database shows signs of selective reporting (Bösch, Steinkamp, & Boller, 2006), or that some significant psi effects correlate with poor study quality (Schmidt, Schneider, Utts, & Walach, 2004).

Some researchers have explored whether technological advances that have become popular in related fields may be applied to study psi. Brain imaging is one such technique. The rationale behind this work is presumably that although it may be difficult to detect psi using cognitive tasks, the operation of psi may be directly observed with appropriate physiological measures. Notwithstanding the inherent difficulty in using a relatively insensitive measure (such as fMRI) to detect an apparently weak and unreliable *signal* (psi), a small number of studies have sought to establish whether changes in activity in particular areas of the brain are associated with performance on psi tasks (Achterberg et al., 2005; Bierman & Scholte, 2002; Moulton & Kosslyn, 2008; Richards et al., 2005; Standish et al., 2003). These few studies have yielded inconsistent findings, and several have been criticized for inappropriate design (Neppe, 2010) or poor methodological quality (Watt & Irwin, 2010).

Currently, there is no consensus in the scientific community regarding the evidence for psi. There is agreement, however, that due to the inherent complexities and difficulties in drawing conclusions from spontaneous paranormal experiences, researchers must look to controlled experimental investigations to best address the psi question. In doing so, suggestions that this endeavor is pseudoscientific can be readily dismissed. Professional parapsychologists' work bears many key hallmarks of scientific activity (Irwin & Watt, 2007), including: a professional association that is affiliated with the AAAS, peer-reviewed specialist journals and conferences, representation within long-established and accredited higher education institutions both for research and teaching, widespread use of double-masked methods (Watt & Nagtegaal, 2004), and publication of research in high-impact mainstream scientific journals (e.g., Bem, 2011; Storm, Tressoldi, & Di Risio, 2010). However, more credence may be given to the argument that some of this work is proto-scientific, in that much of it has proceeded without a

widely accepted theory or mechanism for psi (Alcock, 2010) to guide hypothesis formulation and empirical endeavors.

What we can say at this point is that the methodological quality of laboratory-based parapsychological research is typically high (e.g., Bösch, Steinkamp, & Boller, 2006); indeed, arguably higher than in comparable areas of scientific inquiry, perhaps because of the controversial claims evaluated and the ensuing scrutiny from within and outside the field. Some of the variability in results of psi studies may be explained by it being a relatively young, small, and under-resourced area of study, still searching for a productive research paradigm to aid theory-building (Watt, 2005). Work is underway to develop this paradigm and to encourage mainstream scientists to attempt to replicate reported positive findings (e.g., Bem, 2011).

Psychopathology

The third theory that we now review pertains to the link between PREs and psychopathology. In two analyses, individuals distressed by their PREs contacted the Koestler Parapsychology Unit (KPU, N = 120) at the University of Edinburgh (Tierney, Coelho, & Lamont, 2007) or the Institut für Grenzgebiete der Psychologie und Psychohygiene (IGPP, N = 1465) in Freiburg (Belz, 2009; Belz-Merk, 2000; Belz & Fach, 2012). The researchers reported that 50% of experiencers evidenced behaviors or history, other than the anomalous experience, that suggested co-existing psychopathology.

In both the *WHO International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) Version 2010* and the similar *APA Diagnostic and Statistical Manual of Mental Disorders DSM-IV-TR* (2000), certain experiences, particularly delusional perceptions and beliefs and auditory and other hallucinations (that phenomenologically can be linked to PREs), are considered symptoms relevant to a diagnosis of mental disorders including

schizophrenia, schizoaffective disorders, and schizotypal disorders, including schizotypal personality disorder (Cardeña, 2011). However these symptoms, which are often termed positive symptoms of schizophrenia, are neither necessary nor sufficient for a diagnosis, representing only some of the criteria. The other symptoms, most of which constitute the negative symptoms of schizophrenia, include thought disorders of specific kinds, flat or blunted affect and emotion, poverty of speech, inability to experience pleasure, lack of desire to form relationships, and lack of motivation. It is possible that the distress reported by the 50% of experients who appeared to be mentally healthy resulted from apprehension that they might be developing mental illness.

In relation to the positive symptoms it is becoming increasingly evident from a large number of studies that there is no necessary association between a range of hallucinations (auditory, visual, haptic and olfactory) and psychopathology (Bentall, 2000a, 2009, and this volume). For example, Laroi and his colleagues reported a number of studies involving what they described as normal but hallucination-prone individuals. In one study they isolated four factors obtained from 265 healthy individuals whom they described as having a hallucinatory disposition: (1) sleep-related hallucinatory experiences, (2) vivid daydreams, (3) intrusive thoughts or realness of thought, and (4) auditory hallucinations. The researchers contended that their results offer further evidence of the multi-dimensionality of hallucinatory disposition in the normal population (Cangas, Langer, & Moriana, 2011; Laroi et al., 2005). Pechey and Halligan (2011) reported a 48% incidence of anomalous experiences of these types in a general population sample of 1000 individuals. Of more direct relevance is Parra and Paul's (2010) research that compared two large non-clinical samples on measures of PRE and hallucinatory experience. This study found greater auditory, visual and tactile hallucination, fantasy proneness, absorption, and cognitive-perceptual schizotypy in PRE experients than non-experients. The researchers

concluded that an explanatory model that could explain their results is that of the happy schizotypy (McCreery & Claridge, 1995).

Researchers have devoted considerable attention to the concept of happy, benign, or healthy schizotypy in relation to mental health, and specifically to the experience of PREs. Parra and Paul's (2010) results point to significant schizotypal traits in the general population and question models of schizotypy that view such traits as necessary markers of psychopathology (Goulding & Ödéhn, 2009).

Several individual differences that may link PREs to schizotypy have been identified. Allen, Freeman, Johns, and McGuire (2006) have shown that misattribution of self-generated speech occurs in relation to hallucinatory proneness and delusional ideation in healthy volunteers with positive psychotic symptoms. Furthermore, Tsakanikos and Reed (2005) have reported that on a word detection task using a non-clinical sample of students, high scores on the *unusual experiences* (positive schizotypy) factor in the 4 factor O-LIFE questionnaire measure of schizotypy (Mason & Claridge, 2006) were highly correlated with false perceptual experiences in the form of a positive response bias and a bias to perceive non-existing words. The researchers concluded that these scores might reflect a disposition to "jump-to-conclusions."

This conjectured disposition was evident in 20% of a non-clinical general population sample, compared to 50% in clinical (delusional) groups. In the latter groups this disposition has been found to be associated with delusional conviction, but not with delusion distress, anxiety, or depression (Freedman, Pugh, & Garety, 2008). Simmonds-Moore (2008) has reviewed the studies linking positive schizotypy, belief in psi, creativity, and mental well-being. Her findings are supported by Rabeyron and Watt (2010) who found no differences in mental health between people reporting many or few PREs, and that people with many PREs reported that they had

spent less time in therapy than people who reported fewer paranormal experiences. Rabeyron and Watt concluded that PREs cannot axiomatically be associated with mental health disorders.

In summary, the evidence is growing in support of a full continuum model of schizotypy, ranging from positive experiences and beliefs (including PREs) that may be positively associated with well-being at one end, to serious and debilitating conditions involving mainly negative symptoms mixed with some positive symptoms (including PREs) at the other end. This model can be contrasted with the quasi-dimensional or disease model of schizotypy that views the condition as a mild form of schizophrenia (Meehl, 1962). Nevertheless, research to date does not answer the essential question about the degree to which PREs, distressing or otherwise, play a causal role in the development of mental disorders that subsequently require treatment. It is likely that only prospective longitudinal studies of large general population samples, involving detailed assessment of the phenomenology of the PRE, will provide a definitive answer.

Therapeutic approaches

There is a variety of clinical approaches to counselling people with anomalous PRE experiences that cause distress. These include psychoanalytic approaches (Eisenbud, 1970; Ullman, 1977), “normalization” (Harary, 1993; Hastings, 1983), family therapy (Snoyman, 1985), Rogerian client-centred therapies (Kramer 1993), integrative psychotherapy (Belz-Merk, 2000; Belz, 2009), humanistic group therapy (Montanelli & Parra, 2004), cognitive-behavioral therapy (Tierney, Coelho, & Lamont, 2007), and a systems theory therapeutic approach based on the Model of Pragmatic Information and General Quantum Theory (Zahradnik & Lucadou, 2012). The majority of these interventions employ client-led, non-directive, non-judgemental counselling. Determining the consensual validity of the PRE is not as material in these approaches because the principal aim to reduce distress. Published reports pertinent to the last

four approaches suggest that, although there is a lack of comprehensive outcome studies, each clinical approach has reported some success.

Belz (2009) has developed a comprehensive scheme for categorizing PRE experiences and subsequently treating attendant distress. The scheme is based on theoretical constructs (Metzinger's reality model and Caspar's plan-analysis) and an analysis of 1,465 people with PREs who turned to the IGPP for help and consultation between 1996 and 2006. She has suggested that the subject matter of *clinical parapsychology* can be subsumed under three rubrics that can inform the intervention goals of therapy: (1) the *phenomena* themselves (e.g., description, epidemiology, etiology), (2) the *explanatory model/s* used by persons and organizations involved with the client, and (3) the characteristics of the affected *person* (socio-demographic and psychological variables). She contends that the PREs can be divided into two phenomenological groups that constitute a reality model. They can relate to *external* (localized in the outer physical world and comprising anomalies in the world model, including the external body) or *internal phenomena* (localized in the inner psychological world and comprising anomalies in the self-model). Although they are not differentiated as such, these phenomenological groups basically can be thought of in terms of: (a) events that could, *in principle*, be witnessed and experienced by someone other than the experient present at the time of the event, without interpretation or report by the experient; and (b) events that by definition are private to the experient and whose presence could only be revealed by the person's report. Orthogonal to these categories is a continuum comprising psychophysical dissociation (i.e., separation of usually combined elements of the self and body model) at one end, and coincidence phenomena (a combination of normally separated elements of self- and/or world model) at the other.

Belz (2009) reviews some of the differences that distinguish the PREs of clinical and non-clinical groups: (1) Reports of PREs by clinical groups are more negative, bizarre, and more detailed and disturbing (Bentall, 2000b); (2) in clinical groups, auditory hallucinations are reported to be more uncontrollable compared with nonclinical groups who report they can control their hallucinations (Honig et al., 1998); and (3) individuals diagnosed as experiencing psychosis are often not able to recognize the strangeness of their experiences compared with healthy individuals (Bell, Halligan, & Ellis, 2006). Belz maintains that the PRE may be integrated into the experient's psychological functioning to serve important needs and motives, such as avoiding responsibility or negative emotions, demonstrating specialness, giving meaning to life, and establishing the ontological status of the experience. On the basis of previous research at the IGPP, Belz (2009) was able to confirm that the motivational goals that are most important to individuals concerned by their PRE are intimacy/attachment, autonomy, and maintaining control. An outline of the steps used within the IGPP in planning treatment reveals the integrative nature of this approach, which recruits a wide number of clinical interventions, each of which has empirical support from clinical evidenced-based research. Belz draws attention to the need for outcome studies of this and of other treatments reviewed in this chapter.

Montanelli and Parra's (2004) report of a humanistic group therapy intervention with people reporting PREs was undertaken at The Institute of Paranormal Psychology (IPP) in Buenos Aires, which sponsors a clinic for paranormal/anomalous experients. Thirty-two participants participated in weekly group humanistic group therapy sessions. The intervention activity involved three stages: (a) emotional support, (b) intellectual and emotional processing, and (c) group-closing and interpretation. An evaluation was made of emotional and intellectual thinking and feelings, motivation to be a group member, comprehensibility of the experiences,

integration of the experiences into daily life, emotional and intellectual meaning, and emotional disturbance prior to entry into the group and after therapy. The predominant emotion associated with the PRE, reported by 75% of the group, was fear in different forms. Disturbance scores decreased as a consequence of the group activity consistent with emotional processing and integration of the experience into everyday life and the self-concept. More than half of the participants reported positive outcomes of various types after group therapy.

Since the mid-1980s, the main clinical approach used at the KPU in Edinburgh to help individuals distressed by PREs has followed a cognitive-behavioral therapy model, a widely used evidence-based therapy (Butler, Chapman, Forman, & Beck, 2006). In the context of PREs, this systematic approach examines the attributions and misattributions, logical errors, and behavioral sequelae of anomalous experience considered by the experient to be a possible, or definite, PRE. The systematic formulation includes detailed examination of the emotional and motivational context in which the PRE occurs and encourages the experient to monitor the effects of considering and testing (if that is appropriate) alternative explanations for the experience (Tierney et al., 2007). Formal assessments using well-validated instruments (as was the practice at the IGPP) have not been undertaken. Anecdotally, from the feedback received, the approach seemed to be effective, but selective reporting is a notorious pitfall in such situations.

Systematic recording and evaluation of the PRE by both the therapist and experient is a necessary component of the approach used at the Wissenschaftliche Gesellschaft zur Förderung der Parapsychologie (WGFP) in Freiburg, Germany. This unit employs a systems theory therapeutic approach based on the Model of Pragmatic Information (MPI) and General Quantum Theory (GQT; Zahradnik & Lucadou, 2012). In clinical practice terms, the approach is similar to that employed by the KPU, in that the experient is encouraged to document and reflect upon his

or her experience. Where the WGFP approach differs from other therapies, however, is in the central theoretical role given to *observation*. This approach is based on the assumption of the MPI and GQT that PREs are associated with anomalous (‘non-local entanglement correlations’) processes that are affected by observation (see also: Kennedy, 2011). The therapeutic outcome in terms of attenuation, as well as concurrent increased understanding and emotional integration of the PREs into the experient’s psychosocial circumstances, is directly attributed to the theoretical role of observation, recording, and judgements of the PREs by the experient and others.

Zahradnik & Lucadou give examples of what they term the ‘counter-intuitive’ attenuation effect of documentation on examples of RSPK and precognitive dreams (*ibid* pp. 128-130, 133). It is helpful that the theoretical element of this approach, as formulated in the MPI, allows predictions of outcome in defined circumstances that, in the future, could promote empirical tests of the approach.

Clinical risks

The majority of PREs that cause distress occur in contexts where they are not witnessed and could not in principle be witnessed. For such cases it is usual that standard clinical/therapeutic interventions be employed using client-led, non-directive, non-judgmental counselling, although Hastings (1983) has described a more directive approach. The consensual validity of the experience is often less important than the principal aim of the therapy, which is to reduce distress. Importantly, the methods available to achieve this aim are well documented, part of any professionally trained psychotherapist’s skill-package. As mentioned previously, in addition to reducing distress, the therapist has at least two other possible outcomes to bear in mind. If the experients are receiving, or have in the past received, treatment for a diagnosed mental condition but believe their experience is a PRE and that the psi explanation accounts for

their experience, there is considerable risk that they will avoid or withdraw from traditional treatments, either psychological or pharmacological. Alternatively, if the PRE occurs in conjunction with a prodromal state preceding a condition such as schizophrenia, then early treatment is advantageous (McGorry, Nordentoft, & Simonsen, 2005).

Tierney (in press) has suggested that the term “clinical parapsychology,” if used at all, should be reserved for a rare type of PRE (i.e., the external type, Belz, 2009) that is recorded in some form or witnessed. Isobel is a case in point, as she discussed her dreams with her sister prior to the events. When the circumstances and/or effects of the PRE accrues ontological support by being witnessed, the therapist is likely to first rule out the possibility of a *folie à deux*, a shared psychotic disorder, or collaboration for some secondary or tertiary gain.

Once therapy has started, it is common at some point in the discussion of the PRE for the experient to ask a question along the lines of “Do *you* believe such things can happen?” This inquiry is not typically about whether the therapist believes such *experiences* can happen but whether, whatever the cause or process, genuine psi events *do* occur in the real world. This poses a dilemma for the therapist that occurs in a milder form in counselling any PRE, but it is particularly acute when there are witnesses to the event. If the therapist prevaricates or is non-committal about the *possibility* that such events can take place in the real, consensual world, the therapeutic relationship can suffer, often severely. The experient and therapist then find themselves in different universes of discourse. If the therapist does have the background that permits acknowledgment that *in principle*, such odd events could occasionally occur (in the commonsense, consensual, use of that phrase) then, despite risking the criticism of colluding with a delusion, discussion of the evidence for and against a PRE interpretation can take place.

Failure to acknowledge this possibility implies that the therapist must believe the experient(s) is either deluded, has been fooled, or is lying.

For a therapist counseling in these specific circumstances, as opposed to a parapsychological researcher, it is not sufficient to say “I do not have an opinion about this possibility.” That these circumstances prove difficult for therapists to deal with is evident from the number of inquiries the KPU receives from professional therapists nonplussed by such situations. To add to the difficulty of these specific circumstances, there is considerable risk involved in attempting to inquire about the veracity or ontological status of the specific PRE that is causing distress and to counsel the experient at the same time; indeed, this may not be possible (Kramer, 1993). Tierney (2012) describes some of the risks involved in attempting such an enterprise, and provides a catalogue of potential errors that can be made by doing so. Consequently, we conclude this section with some guidelines for clinicians. Reports of clinical interventions suggest that, in the main, it is important to supplement standard therapeutic approaches with knowledge of the following:

- The cognitive and personality correlates of PREs.
- The potential explanations for PREs, principally misattribution, psi and psychopathology.
- The increasing evidence that PREs are not necessarily indicative of psychopathology.
- The range and efficacy of the various approaches to treating distress associated with PREs.
- The clinical issues and risks associated with counseling individuals reporting different types of PRE.

With this knowledge, and in addition to the standard practices of clinical interview, we recommend our predecessors' suggestions to clinicians in the first edition of this chapter (Targ, Schlitz, & Irwin, 2000, p. 243):

- Assess how the individual interprets the experience rather than trying to determine whether it actually entailed paranormal processes.
- Identify the individual's positive and negative preconceptions and stereotypes about psi.
- Discuss with the individual the evidence on the reliability of PREs as sources of information.
- Explore the meaning of the experience in the individual's life.
- Normalize the experience where appropriate.

Future research

Most of the research on individual differences and the possible interpretation of PREs in terms of psychological and misattributional processes is correlational in nature. Accordingly, we must exercise caution, particularly in a clinical setting, about inferring the direction of causality between PREs and psychological factors or variables. For this, and other reasons, Neppe (2010) stressed the need for a detailed phenomenological approach to gathering information on PREs. Ideally the question of causality may be best addressed using inductive research methods involving longitudinal developmental studies, with multiple experimenters and large cohorts of healthy individuals followed over time. There may be good practical reasons for doing this - there are growing difficulties of obtaining spontaneous cases of PRE to include in studies, probably due to the proliferation of Internet-sites giving information, support, and advice on matters relating to psi in a biased and uninformed manner. Since the year 2000, these sites have

multiplied exponentially (Winsper, Parsons, & O'Keefe, 2008). At their worst, these sites are exploitative; at best, they try to promote enthusiasm about PREs or be entertaining. Occasionally, as Bell, Maiden, Muñoz-Solomando, and Reddy (2006) have determined, people with PRE-type experiences form social organizations and communities that are self-referring and often uncritical to an unhelpful degree. Such networking is greatly facilitated nowadays by the Internet. The authors of this chapter have amassed considerable anecdotal evidence that in the last decade the reduction in the number of contacts made by members of the public (spontaneous PRE experiencers) to academic centers with an interest in PREs can be attributed to these sites.

Conclusion

In this chapter, we have briefly reviewed research into the three contrasting and potentially overlapping approaches to understanding Psi-Related Experiences: non-pathological misattribution of normal processes for anomalous ones; actual psi processes; and psychopathology. Although there is debate over the interpretation of the results of controlled laboratory investigations of the psi hypothesis, it is certainly premature to dismiss this body of work as pseudo-scientific. The publication of studies supporting the psi hypothesis in high-impact psychology journals indicates that these studies have endured rigorous scrutiny - probably more rigorous than the majority of studies making less controversial claims. Nevertheless, the ubiquity with which PREs are reported in the "real world" contrasts with the seemingly elusive nature of psi under controlled tests, indicating that misattribution and psychopathology play a role in PREs, as indeed is suggested by relevant research.

Many if not most people who report anomalous experiences that they attribute to psi are not adversely affected by them, and indeed may view them positively. However, people experiencing distressing events that they attribute to psi and/or individuals with concomitant

psychopathology who, as a result of attributing their anomalous experience to psi, choose to decline or stop cooperating with therapy, may benefit from informed advice in clinical settings. The responsible clinician will, we trust, be better able to provide the needed support by following the guidelines provided in this chapter.

"In the final analysis, the job of the clinician is to support and strengthen individuals without judgment— helping them to develop life satisfaction and achieve their full human potential" (Targ, et al., *ibid*).

References

- Achterberg J., Cooke K., Richards T., Standish L. J., Kozak L., & Lake J. (2005). Evidence for correlations between distant intentionality and brain function in recipients: A functional magnetic resonance imaging analysis. *Journal of Alternative and Complementary Medicine, 11*, 965-71.
- Alcock, J. E. (2010). The parapsychologist's lament. In S. Krippner & H. L. Friedman (Eds.), *Mysterious minds: The neurobiology of psychics, mediums, and other extraordinary people* (pp. 45-63). Santa Barbara, CA: Praeger.
- Alcock, J. E., & Otis, L. P. (1980). Critical thinking and belief in the paranormal. *Psychological Reports, 46*, 479–482.
- Allen, P., Freeman, D., Johns, L., & McGuire, P. (2006). Misattribution of self-generated speech in relation to hallucinatory proneness and delusional ideation in healthy volunteers. *Schizophrenia Research, 84*, 281–288.
- American Academy of Sleep Medicine (1997). *The International Classification of Sleep Disorders (Revised)*. Rochester, MN: Davies Printing Co.

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- Bell, V., Halligan, P. W., & Ellis, H. D. (2006). The Cardiff Anomalous Perceptions Scale (CAPS): A new validated measure of anomalous perceptual experience. *Schizophrenia Bulletin*, *32*, 366-377.
- Bell, V., Maiden, C., Muñoz-Solomando, A., & Reddy, V. (2006). 'Mind control' experiences on the Internet: Implications for the psychiatric diagnosis of delusions. *Psychopathology*, *39*, 87-91.
- Beloff, J. (1985). Research strategies for dealing with unstable phenomena. In B. Shapin & L. Coly (Eds.), *The repeatability problem in parapsychology* (pp. 1-21). New York, NY: Parapsychology Foundation.
- Belz, M. (2009). Clinical parapsychology: Today's implications, tomorrow's applications. In C. A. Roe, L. Coly & W. H. Kramer (Eds.), *Utrecht II: Charting the future of parapsychology*. (pp. 326-362). New York, NY: Parapsychology Foundation & Het Johan Borgmanfonds Foundation.
- Belz-Merk, M. (2000). Counseling and therapy for people who claim exceptional experiences. *Journal of Parapsychology*, *64*, 238-239.
- Belz, M., & Fach, W. (2012). Reflections on counseling and therapy for individuals reporting exceptional experiences. In W. H. Kramer, E. Bauer, & G. H. Hövelmann (Eds.) *Perspectives of clinical parapsychology* (pp. 168-189). Bunnik, The Netherlands: Stichting Het Johan Borgman Fonds.

- Bem, D. J. (2011). Feeling the future: Experimental evidence for anomalous retroactive influences on cognition and affect. *Journal of Personality and Social Psychology, 100*, 407-425.
- Bem, D. J., & Honorton, C. (1994). Does psi exist? Replicable evidence for an anomalous process of information transfer. *Psychological Bulletin, 115*, 4-18.
- Bentall, R. P. (2000a). Research into psychotic symptoms: Are there implications for parapsychologists? *European Journal of Parapsychology, 15*, 79-88.
- Bentall, R. P. (2000b). Hallucinatory experiences. In E. Cardeña, S. J. Lynn & S. Krippner (Eds) *Varieties of anomalous experience* (1st ed.) (pp. 85-120). Washington, DC: American Psychological Association.
- Bentall, R. P. (2009). *Doctoring the mind: Why psychiatric treatments fail*. New York, NY: Penguin.
- Bierman, D. J., & Scholte, S. (2002). A fMRI brain imaging study of presentiment. *Journal of the International Society of Life Information Sciences, 20*, 380-389.
- Blackmore, S. J. (1992). Psychic experiences: Psychic illusions. *Skeptical Inquirer, 16*, 367-376.
- Blackmore, S. J. (1997). Probability misjudgement and belief in the paranormal: A newspaper survey. *British Journal of Psychology, 88*, 683-689.
- Blackmore, S. J., & Moore, R. (1994). Seeing things: Visual recognition and belief in the paranormal. *European Journal of Parapsychology, 10*, 91-103.
- Blackmore, S. J., & Troscianko, T. S. (1985). Belief in the paranormal: Probability judgements, illusory control and the "chance baseline shift". *British Journal of Psychology, 76*, 459-468.

- Blagrove, M., French, C. C., & Jones, G. (2006). Probabilistic reasoning, affirmative bias and belief in precognitive dreams. *Applied Cognitive Psychology, 20*, 65-83.
- Bösch, H., Steinkamp, F., & Boller, E. (2006). Examining psychokinesis: The interaction of human intention with random number generators. A meta-analysis. *Psychological Bulletin, 132*, 497-523.
- Bressan, P. (2002). The connection between random sequences, everyday coincidences, and belief in the paranormal. *Applied Cognitive Psychology, 16*, 17-34.
- Broughton, R. S. (1991). *Parapsychology: The controversial science*. New York, NY: Ballantine Books.
- Brugger, P., Gamma, A., Müri, R., Schäfer, M., & Taylor, K. I. (1993a). Functional hemispheric asymmetry and belief in ESP: Towards a neuropsychology of belief. *Perceptual and Motor Skills, 77*, 1299-1308.
- Brugger, P., & Graves, R. E. (1997). Testing vs. believing hypotheses: Magical ideation in the judgment of contingencies. *Cognitive Neuropsychiatry, 2*, 55-57.
- Brugger, P., Landis, T., & Regard, M. (1990). A sheep-goat effect in repetition avoidance: Extrasensory perception as an effect of subjective probability? *British Journal of Psychology, 81*, 455-468.
- Brugger, P., Regard, M., Landis, T., Cook, N., Krebs, D., & Niederberger, J. (1993b). Meaningful patterns in visual noise: Effects of lateral stimulation and the observer's belief in ESP. *Psychopathology, 26*, 261-265.
- Brugger, P., Regard, M., Landis, T., Krebs, D., & Niederberger, J. (1994). Coincidences: Who can say how meaningful they are? In E. W. Cook & D. L. Delanoy (Eds.), *Research in Parapsychology 1991* (pp. 94-98). Metuchen, NJ: Scarecrow Press.

- Brugger, P., & Taylor, K. I. (2003). ESP: Extrasensory perception or effect of subjective probability? *Journal of Consciousness Studies*, *10*, 221–246.
- Butler, A. C., Chapman, J. E., Forman, E. M., & Beck, A. T. (2006). The empirical status of cognitive-behavioral therapy: A review of meta-analyses. *Clinical Psychology Review*, *26*, 17–31.
- Cangas, A. J., Langer, A. L., & Moriana, J. A. (2011). Hallucinations and related perceptual disturbance in a non-clinical Spanish population. *International Journal of Social Psychiatry*, *57*, 120-131.
- Cardeña, E. (2011). Altered consciousness in emotion and psychopathology. In E. Cardeña, & M. Winkelman (Eds.), *Altering consciousness: Multidisciplinary perspectives. Volume II. Biological and psychological perspectives* (pp. 279-299). Santa Barbara, CA: Praeger.
- Cardeña, E., Marcusson-Clavertz, D., & Wasmuth, J. (2009). Hypnotizability and dissociation as predictors of performance in a precognition task: A pilot study. *Journal of Parapsychology*, *73*, 137-158.
- Child, I. L. (1985). Psychology and anomalous observations: The question of ESP in dreams. *American Psychologist*, *40*, 1219-1230.
- Davis, G. A., Peterson, J. M., & Farley, F. H. (1974). Attitudes, motivation, sensation seeking, and belief in ESP as predictors of real creative behavior. *Journal of Creative Behavior*, *8*, 31-39.
- Diaconis, P., & Mosteller, F. (1989). Methods for studying coincidences. *Journal of the American Statistical Association*, *84*, 853–861.

- Díaz-Vilela, L., & Álvarez-González, C. J. (2004). Differences in paranormal beliefs across fields of study from a Spanish adaptation of Tobacyk's RPBS. (Revised paranormal belief scale.). *Journal of Parapsychology*, *68*, 405–421.
- Eckblad, M., & Chapman, L. J. (1983). Magical ideation as an indicator of schizotypy. *Journal of Consulting and Clinical Psychology*, *51*, 215-225.
- Emmons, C. F., & Sobal, J. (1981). Paranormal beliefs: Testing the marginality hypothesis. *Sociological Focus*, *14*, 49–56.
- Freedman, D., Pugh, K., & Garety, P. (2008). Jumping to conclusions and paranoid ideation in the general population. *Schizophrenia Research*, *102*, 254–260.
- French, C. C., & Kerman, M. K. (1996). *Childhood trauma, fantasy proneness and belief in the paranormal*. Paper presented at the Annual Conference of the British Psychological Society, London.
- French, C. C., & Santomauro, J. (2007). Something wicked this way comes. Causes and interpretations of sleep paralysis. In S. Della Sala (Ed.) *Tall tales about the mind and brain: Separating fact from fiction* (pp. 380-398). Oxford: Oxford University Press.
- French, C. C., Santomauro, J., Hamilton, V., Fox, R., & Thalbourne, M. (2008). Psychological aspects of the alien contact experience. *Cortex*, *44*, 1387-1395.
- French, C. C., & Wilson, K. (2007). Cognitive factors underlying paranormal beliefs and experiences. In S. Della Sala (Ed.) *Tall tales about the mind and brain: Separating fact from fiction* (pp. 3-22). Oxford: Oxford University Press.
- Fyfe, S., Williams, C., Pickup, G., & Mason, O. (2008). Apophenia, theory of mind and schizotypy: Perceiving meaning and intentionality in randomness. *Cortex*, *44*, 1316-1325.

- Gianotti, L. R. R., Mohr, C., Pizzagalli, D., Lehmann, D., & Brugger, P. (2001). Associative processing and paranormal belief. *Psychiatry and Clinical Neurosciences*, *55*, 595-603.
- Glicksohn, J. (1990). Belief in the paranormal and subjective paranormal experience. *Personality and Individual Differences*, *11*, 675-683.
- Goulding, A. (2004). Schizotypy models in relation to subjective health and paranormal beliefs and experiences. *Personality and Individual Differences*, *37*, 157-167.
- Goulding, A. (2005). Healthy schizotypy in a population of paranormal believers and experiencers. *Personality and Individual Differences*, *38*, 1069-1083.
- Goulding, A., & Ödén, N. (2009). Schizotypy and mental health in the general population: A pilot study. *Personality and Mental Health*, *3*, 193-202.
- Goulding, A., & Parker, A. (2001). Finding psi in the paranormal: Psychometric measures used in research in paranormal beliefs/experiences and in research on psi-ability. *European Journal of Parapsychology*, *16*, 73-101.
- Greeley, A. (1987). Mysticism goes mainstream. *American Health*, *7*, 47-49.
- Grimby, A. (1993). Bereavement among elderly people: Grief reactions, post bereavement hallucinations and quality of life. *Acta Psychiatrica Scandinavia*, *87*, 72-80.
- Gurney, E., Myers, F. W. H., & Podmore, F. (1886). *Phantasms of the living (Vols. 1-2)*. London, UK: Trubner.
- Haraldsson, E. (1985). Representative national surveys of psychic phenomena: Iceland, Great Britain, Sweden, USA and Gallup's multinational survey. *Journal of the Society for Psychical Research*, *53*, 145-158.

- Harary, K. (1993). Clinical approaches to reported psi experiences: The research implications. In L. Coly & J. D. S. McMahon (Eds) *Proceedings of an international conference psi and clinical practice* (pp. 20-42). New York, NY: Parapsychology Foundation.
- Hartmann, E. (1991). *Boundaries in the mind: A new psychology of personality*. New York, NY: Basic Books.
- Hartmann, E. (2011). *Boundaries: A new way to look at the world*. Summerland, CA: CIRCC Everpress.
- Hastings, A. (1983). A counselling approach to parapsychological experience. *Journal of Transpersonal Psychology, 15*, 143-166.
- Hergovich, A., & Arendasy, M. (2005). Critical thinking ability and belief in the paranormal. *Personality and Individual Differences, 38*, 1805-1812.
- Hess, D. J. (1992). *Science in the new age: The paranormal, its defenders and debunkers, and American culture*. Madison, WI: University of Wisconsin Press.
- Holt, N., Simmonds-Moore, C., & Moore, S. (2008). Benign schizotypy: Investigating differences between clusters of schizotypy on paranormal belief, creativity, intelligence and mental health. *Proceedings of presented papers: The Parapsychological Association 51st Annual Convention*, 82 – 96.
- Honig, A., Romme, M. A. J., Ensik, B. J., Escher, S. D. M. A. C., Pennings, M. H. A., & Devires, W. M. (1998). Auditory hallucinations: A comparison between patients and non-patients. *Journal of Nervous and Mental Disease, 186*, 646-651
- Houran, J., Kumar, V. K., Thalbourne, M. A., & Lavertue, N. E. (2002). Haunted by somatic tendencies: Spirit infestation as psychogenic illness. *Mental Health, Religion and Culture, 5*, 119–133.

- Houran, J., & Lange, R. (1998). Modeling precognitive dreams as meaningful coincidences. *Psychological Reports, 83*, 1411–1414.
- Houran, J., Thalbourne, M., & Lange, R. (2003). Methodological note: Erratum and comment on the use of The Revised Transliminality Scale. *Consciousness and Cognition, 12*, 140-144.
- Houran, J., Wiseman, R., & Thalbourne, M. A. (2002). Perceptual-personality characteristics associated with naturalistic haunt experiences. *European Journal of Parapsychology, 17*, 17–44.
- Hyman, R. (2010). Meta-analysis that conceals more than it reveals: Comment on Storm et al. (2010). *Psychological Bulletin, 136*, 486-490.
- Irwin, H. J. (1989). Extrasensory experiences and the need for absorption. *Parapsychology Review, 20*, 9-10.
- Irwin, H. J. (1990). Fantasy proneness and paranormal beliefs. *Psychological Reports, 66*, 655–658.
- Irwin, H. J. (1991). Reasoning skills of paranormal believers. *Journal of Parapsychology, 55*, 281-300.
- Irwin, H. J. (1992). Origins and functions of paranormal belief: The role of childhood trauma and interpersonal control. *Journal of the American Society for Psychical Research, 86*, 199–208.
- Irwin, H. J. (2001). Age and sex differences in paranormal beliefs after controlling for differential item functioning. *European Journal of Parapsychology, 16*, 102-106.
- Irwin, H. J. (2009). *The psychology of paranormal belief: A researcher's handbook*. Hatfield: University of Hertfordshire Press.

- Irwin, H. J., & Watt, C. A. (2007). *An Introduction to Parapsychology 5th ed.* Jefferson, NC: McFarland.
- Jones, W. H., Russell, D. W., & Nickel, T. W. (1977). Belief in the paranormal scale: An objective instrument to measure belief in magical phenomena and causes. *Catalog of selected documents in psychology*. Washington DC: American Psychological Association, 7, MS. 1577.
- Kennedy, J. E. (2011). Information in life, consciousness, quantum physics and paranormal phenomena. *Journal of Parapsychology*, 75(1), 15-43.
- 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.
- Killen, P., Wildman, R. W., & Wildman, R. W. II (1974). Superstitiousness and Intelligence. *Psychological Reports*, 34, 1158.
- Kramer, W. H. (1993). Recent experiences with psi counselling in Holland. In L. Coly & J. D. S. McMahon (Eds), *Proceedings of an international conference psi and clinical practice* (pp. 124-138). New York, NY: Parapsychology Foundation.
- Lamont, P. & Wiseman, R. (2001). The rise and fall of the Indian rope trick. *Journal of the Society for Psychical Research*, 65, 175-93.
- Lange, R., & Houran, J. (1998). Delusions of the paranormal: A haunting question of perception. *Journal of Nervous and Mental Disease*, 186, 637-645.
- Lange, R., & Houran, J. (1999). The role of fear in delusions of the paranormal. *Journal of Nervous and Mental Disease*, 187, 159-166.

- Laroi, F., DeFruyt, F., van Os, J., Aleman, A., & Van der Linden, M. (2005). Associations between hallucinations and personality structure in a non-clinical sample: Comparison between young and elderly samples. *Personality and Individual Differences, 39*, 189-200.
- Lawrence, T., Edwards, C., Barraclough, N., Church, S., & Hetherington, F. (1995). Modelling childhood causes of paranormal belief and experience: Childhood trauma and childhood fantasy. *Personality and Individual Differences, 19*, 209–215.
- MacDonald, W. L. (1995). The effects of religiosity and structural strain on reported paranormal experiences. *Journal for the Scientific Study of Religion, 34*, 366-376.
- Mason, O., & Claridge, G. (2006). The Oxford-Liverpool Inventory of Feelings and Experiences (O-LIFE): Further description and extended norms. *Schizophrenia Research, 82*, 203-211.
- Mavromatis, A. (2010). *Hypnagogia: The unique state of consciousness between wakefulness and sleep* (3rd ed.). London, UK: Thyrsos Press.
- McClenon, J. (1993). Surveys of anomalous experience in Chinese, Japanese, and American samples. *Sociology of Religion, 54*, 295-302.
- McCreery, C., & Claridge, G. (1995). Out-of-body experiences and personality. *Journal of the Society for Psychical Research, 60*, 129-148.
- McGorry, P. D., Nordentoft, M., & Simonsen, E. (2005). Introduction to 'Early psychosis: A bridge to the future'. *British Journal of Psychiatry, 187*, (suppl. 48), s1-s3.
- Meehl, P. (1962). Schizotaxia, schizotypy and schizophrenia. *American Psychologist, 17*, 827-838.
- Milton, J. (1992). Effects of "paranormal" experiences on people's lives: An unusual survey of spontaneous cases. *Journal of the Society for Psychical Research, 58*, 314-323.

- Montanelli, D. G., & Parra, A. (2004). A clinical approach to the emotional processing of anomalous/paranormal experiences in group therapy. *Journal of the Society for Psychical Research, 68*, 129-142.
- Moulton, S. T., & Kosslyn, S. M. (2008). Using neuroimaging to resolve the psi debate. *Journal of Cognitive Neuroscience, 20*, 182-192.
- Musch, J., & Ehrenberg, K. (2002). Probability misjudgment, cognitive ability, and belief in the paranormal. *British Journal of Psychology, 93*, 169–177.
- Myers, S. A., & Austrin, H. R. (1985). Distal eidetic technology: Further characteristics of the fantasy-prone personality. *Journal of Mental Imagery, 9*, 57-66.
- Neppe, V. M. (2010). Neurobiology, brain reductionism, and subjective experience. In S. Krippner & H. L. Friedman (Eds) *Mysterious minds: The neurobiology of psychics, mediums, and other extraordinary people*, (pp. 129-149). Santa Barbara, CA: Praeger.
- Otis, L. P., & Alcock, J. E. (1982). Factors affecting extraordinary belief. *Journal of Social Psychology, 118*, 77–85.
- Parra, A. (2006). “Seeing and feeling ghosts”: Absorption, fantasy proneness, and healthy schizotypy as predictors of crisis apparition experiences. *Journal of Parapsychology, 70*, 357-372.
- Parra, A., & Paul, L. E. (2010). Extrasensory experience and hallucinatory experience: Comparison between two non-clinical samples. *Journal of the Society for Psychical Research, 74*, 145-155.
- Pechey, R., & Halligan, P. (2011). Prevalence and correlates of anomalous experiences in a large non-clinical sample. *Psychology and Psychotherapy: Theory, Research and Practice*. doi: 10.1111/j.2044-8341.2011.02024.x

- Pekala, R. J., Kumar, V. K., & Cummings, J. (1992). Types of high hypnotically susceptible individuals and reported attitudes and experiences of the paranormal and the anomalous. *Journal of the American Society for Psychological Research, 86*, 135-150.
- Pekala, R. J., Kumar, V. K., & Marcano, G. (1995). Anomalous/paranormal experiences, hypnotic susceptibility, and dissociation. *Journal of the American Society for Psychological Research, 89*, 313–332.
- Peltzer, K. (2002). Paranormal beliefs and personality among black South African students. *Social Behavior and Personality, 30*, 391–398.
- Peltzer, K. (2003). Magical thinking and paranormal beliefs among secondary and university students in South Africa. *Personality and Individual Differences, 35*, 1419–1426.
- Pizzagalli, D., Lehmann, D., & Brugger, P. (2001). Lateralized direct and indirect semantic priming effects in subjects with paranormal experiences and beliefs. *Psychopathology, 34*, 75–80.
- Pizzagalli, D., Lehmann, D., Gianotti, L., Koenig, T., Tanaka, H., Wackermann, J., & Brugger, P. (2000). Brain electric correlates of strong belief in paranormal phenomena: Intracerebral EEG source and regional Omega complexity analyses. *Psychiatry Research: Neuroimaging, 100*, 139–154.
- Rabeyron, T. & Watt, C. (2010). Paranormal experiences, mental health and mental boundaries, and psi. *Personality and Individual Differences, 48*, 487-492.
- Rhine, J. B., Pratt, J. G., Stuart, C. E., Smith, B. M., & Greenwood, J. A. (1966). *Extra-sensory perception after sixty years*. Boston: Bruce Humphries. (Original work published 1940.)
- Rhine, L. E. (1953). Subjective forms of spontaneous psi experiences. *Journal of Parapsychology, 17*, 77-114.

- Rhine, L. E. (1956). Hallucinatory psi experiences: I. An introductory survey. *Journal of Parapsychology*, 20, 233-256.
- Rhine, L. E. (1962a). Psychological processes in ESP experiences. Part I. Waking experiences. *Journal of Parapsychology*, 26, 88-111.
- Rhine, L. E. (1962b). Psychological processes in ESP experiences. Part II. Dreams. *Journal of Parapsychology*, 26, 172-199.
- Rhine, L. E. (1981). *The invisible picture: A study of psychic experiences*. Jefferson, NC: McFarland.
- Rice, T. W. (2003). Believe it or not: Religious and other paranormal beliefs in the United States. *Journal for the Scientific Study of Religion*, 42, 95-106.
- Richards, T. L., Kozak, L., Johnson, L. C., & Standish, L. J. (2005). Replicable functional Magnetic Resonance Imaging evidence of correlated brain signals between physically and sensory isolated subjects. *The Journal of Alternative and Complementary Medicine*, 11(6), 955-963.
- Ritchie, S. J., Wiseman, R., & French, C. C. (2012). Failing the Future: Three Unsuccessful Attempts to Replicate Bem's 'Retroactive Facilitation of Recall' Effect. *PLoS ONE* 7(3): e33423. doi:10.1371/journal.pone.0033423
- Roe, C. A. (1999). Critical thinking and belief in the paranormal: A re-evaluation. *British Journal of Psychology*, 90, 85-98.
- Sannwald, G. (1963). On the psychology of spontaneous paranormal phenomena. *International Journal of Parapsychology*, 5, 274-292.
- Schmidt, S., Schneider, R., Utts, J., & Walach, H. (2004). Distant intentionality and the feeling of being stared at: Two meta-analyses. *British Journal of Psychology*, 95, 235-247.

- Schouten, S. A. (1981). Analysing spontaneous cases: A replication based on the Sannwald collection. *European Journal of Parapsychology*, 4, 9-48.
- Shapin, B., & Coly, L., (Eds.). (1985). *The repeatability problem in parapsychology*. New York, NY: Parapsychology Foundation.
- Simmonds-Moore, C. (2008). Personality variables in spontaneous psi research: contextualising the boundary construct in its relationship to spontaneous psi phenomena. In C. A. Roe, L. Coly, & W. Kramer (Eds). *Utrecht II: Charting the future of parapsychology*. (pp. 151-215) NY: Parapsychology Foundation & Het Johan Borgmanfonds Foundation.
- Snoyman, P. (1985). Family therapy in a case of alleged RSPK. *Parapsychological Journal of South Africa*, 6, 75-90.
- Standish, L. J., Johnson, L. C., Kozak, L., & Richards, T. L. (2003). Evidence of correlated functional MRI signals between distant human brains. *Alternative Therapies in Health and Medicine*, 9, 122-128.
- Steinkamp, F. (2000). Acting on the future: A survey of precognitive experiences. *Journal of the American Society of Psychical Research*, 94, 37-57.
- Storm, L., Tressoldi, P. E., & Di Risio, L. (2010). Meta-analysis of free-response studies, 1992-2008: Assessing the noise reduction model in parapsychology. *Psychological Bulletin*, 136, 471-485.
- Sumich, A., Kumari, V., Gordon, E., Tunstall, N., & Brammer, M. (2008). Event-related potential correlates of paranormal ideation and unusual experiences. *Cortex*, 44, 1342 - 1352.

- Targ, E., Schlitz, M., & Irwin, H. J. (2000). Psi-related experiences. In E. Cardeña, S. J. Lynn, & S. Krippner (Eds) *Varieties of anomalous experience* (1st ed.) (pp. 219-252). Washington, DC: American Psychological Association.
- Targ, R., & Puthoff, H. (1974). Information transmission under conditions of sensory shielding. *Nature*, *251*, 602-604.
- Tart, C., & LaBore, K. (1986). Attitudes toward strongly functioning psi: A preliminary study. *Journal of the American Society for Psychical Research*, *80*, 163–173.
- Thalbourne, M. A. (1995). Further studies of the measurement and correlates of belief in the paranormal. *Journal of the American Society for Psychical Research*, *89*, 233-247.
- Thalbourne, M. A. (1998). Transliminality: Further correlates and a short measure. *Journal of the American Society for Psychical Research*, *92*, 402-419.
- Thalbourne, M. A. (2010). Some thoughts on the happy schizotype. *Journal of the Society for Psychical Research*, *74*, 246-253.
- Thalbourne, M. A., & Delin, P.S. (1994). A common thread underlying belief in the paranormal, mystical experience and psychopathology. *Journal of Parapsychology*, *58*, 3-38.
- Thalbourne, M. A., & French, C. C. (1995). Paranormal belief, manic-depressiveness, and magical ideation: A replication. *Personality and Individual Differences*, *18*, 291-292.
- Thalbourne, M. A., & Maltby, J. (2008). Transliminality, thin boundaries, unusual experiences, and temporal lobe lability. *Personality and Individual Differences*, *44*, 1617–1623.
- Tierney, I., Coelho, C., & Lamont, P. (2007). Distressed by anomalous experience: Early detection of psychosis. *Clinical Psychology Forum (The British Psychological Society)*, *170*, 37-39.

- Tierney, I. (2012). Lessons from a case study: An annotated narrative. In W. H. Kramer, E. Bauer, & G. H. Hoevermann (Eds) *Perspectives of clinical parapsychology* (pp. 20-29). Bunnik, The Netherlands: Stichting Het Johan Borgman Fonds.
- Tierney, I. (2012). Clinical parapsychology in the United Kingdom. In C. Simmonds-Moore (Ed.) *Exceptional Experiences and Health: essays on mind, body and human potential* (pp. 242-253). Jefferson NC: McFarland Publishers Inc.
- Tobacyk, J. J. (1988). *A revised Paranormal Belief Scale*. Ruston, LA: Louisiana State University.
- Tobacyk, J., Miller, M., Murphy, P., & Mitchell, T. (1988). Comparisons of paranormal beliefs of black and white university students from the southern United States. *Psychological Reports, 63*, 492–494.
- Tsakanikos, E., & Reed, P. (2005). Do positive schizotypal symptoms predict false perceptual experiences in nonclinical populations? *Journal of Nervous and Mental Disease, 193*, 809-812.
- Ullman, M. (1977). Psychopathology and psi phenomena. In B. B. Wolman (Ed.) *Handbook of parapsychology* (pp. 557-574), Van Nostrand Rhinehold.
- Utts, J. (1991). Replication and meta-analysis in parapsychology. *Statistical Science, 6*, 363-378.
- Watt, C. (2005). Presidential Address. Parapsychology's contribution to psychology: A view from the front line. *Journal of Parapsychology, 69*, 215-232.
- Watt, C., & Irwin, H. J. (2010). Processes underlying the phenomena of mysterious minds: Laboratory evidence for ESP. In S. Krippner & H. L. Friedman (Eds.), *Mysterious minds:*

- The neurobiology of psychics, mediums, and other extraordinary people* (pp. 45-63).
Santa Barbara, CA: Praeger.
- Watt, C., & Nagtegaal, M. (2004). Reporting of blind methods: An interdisciplinary survey. *Journal of the Society for Psychological Research*, 68, 105-114.
- World Health Organisation (2010), *ICD-10 Version 2010 classification of mental and behavioural disorders*. Geneva: WHO.
- Wierzbicki, M. (1985). Reasoning errors and belief in the paranormal. *Journal of Social Psychology*, 125, 489–494.
- Winsper, A. R., Parsons, S. T., & O’Keefe, C. J. (2008). Have the lunatics taken over the (haunted) asylum? *Proceedings of 51st Annual Convention of the Parapsychological Association, Inc & the 32nd Annual Convention of the Incorporated Society for Psychological Research*, (pp. 400-401), Winchester, England.
- Wiseman, R., & Smith, M. D. (2002). Assessing the role of cognitive and motivational biases in belief in the paranormal. *Journal of the Society for Psychological Research*, 66, 178-186.
- Wiseman, R., & Watt, C. (2006). Belief in psychic ability and the misattribution hypothesis: A qualitative review. *British Journal of Psychology*, 97, 323–338.
- Zahradnik, F., & Lucadou W. von (2012). Counselling in cases of extraordinary experience. In W. H. Kramer, E. Bauer, & G. H. Hövelmann (Eds.) *Perspectives of clinical parapsychology* (pp. 118-134). Bunnik, The Netherlands: Stichting Het Johan Borgman Fonds.