PERSONALITY AND MOTIVATIONS TO BELIEVE, MISBELIEVE, AND DISBELIEVE IN PARANORMAL PHENOMENA

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ABSTRACT: Paranormal beliefs and experiences are associated with certain personality factors, including absorption, fantasy proneness, and the Myers-Briggs intuition and feeling personality dimensions. Skepticism appears to be associated with materialistic, rational, pragmatic personality types. Attitude toward psi may also be influenced by motivations to have control and efficacy, to have a sense of meaning and purpose in life, to be connected with others, to have transcendent experiences, to have self-worth, to feel superior to others, and to be healed. The efforts to obtain reliable control of psi in experimental parapsychology have not been successful. Given the lack of control and lack of practical application of psi, it is not surprising that those who are by disposition materialistic and pragmatic find the evidence for psi to be unconvincing. When psi experiences have been examined without a bias for control, the primary effect has been found to be enhanced meaning in life and spirituality, similar to mystical experiences. Tensions among those with mystical, authoritarian, and scientific dispositions have been common in the history of paranormal and religious beliefs. Scientific research can do much to create better understanding among people with different dispositions. Understanding the motivations related to paranormal beliefs is a prerequisite for addressing questions about when and if psi actually occurs.

The striking diversity of beliefs about paranormal phenomena is a noteworthy and poorly understood characteristic of humanity. On the extremes, some people are almost violently opposed to the very concept of paranormal phenomena and others are equally adamant that such phenomena are real. Neither side has prevailed and there is no indication that either is getting the upper hand (Mathews, 2004; Musella, 2005). Even those who claim tempered scientific perspectives sometimes appear to be living in different worlds. For example, Schumaker (1990), a skeptic, described belief in paranormal phenomena as one of the strongest human motivations and as resulting from the "terror" of facing reality without irrational illusions. On the other hand, Tart (1984), a proponent of psi, described the fear of psi as a powerful, pervasive, instinctive human motivation that prevents the acceptance and occurrence of psi.

As might be expected, the proposed explanations for paranormal beliefs tend to reflect the attitudes of the person proposing the explanation. In his extensive review, Irwin (1993) noted that "much of the skeptical research on the topic seems to have the implicit objective of demonstrating that believers in the paranormal are grossly deficient

in intelligence, personality, education, and social standing" (p. 6). These skeptical efforts have also carefully ignored the obvious fact that the deep hostility of some extreme skeptics indicates an irrational prejudice that needs explanation.

At the same time, proponents have done little to offer alternative models or to explain the prevalence of misbeliefs about psi. Many people apparently misinterpret normal experiences as paranormal. Broughton (1991, p. 10) noted that surveys typically find that over half of the population report having had a psi experience, but closer examination of the cases suggests that only about 10% to 15% of the population have had experiences that appear to be possible psi. This estimate is consistent with early surveys (Rhine, 1934/1973, p. 17) and with later studies (Haight, 1979; Schmiedler, 1964). At least 70% to 80% of the people reporting psychic experiences appear to be misinterpreting the experiences.

The motivations for such extensive misinterpretations need to be explored. In fact, understanding the motivations related to attitude toward psi would seem to be a prerequisite for understanding whether, when, and how psi occurs.

The purpose of this article is to summarize and discuss some of the key personality factors and motivations that appear to be relevant for understanding why people believe, misbelieve, and disbelieve in the paranormal. Of course, innumerable personal, social, and cultural factors may have a role in attitude toward the paranormal. The present discussion is intended as a starting point focusing on selected prominent factors. These factors are diverse, and the possibility of conflicting motivations should be recognized.

BACKGROUND

Terminology and Concepts

Certain distinctions in the terminology and concepts related to paranormal phenomena are useful for this discussion. According to the definitions in the *American Heritage Dictionary* (3rd Edition), "paranormal" is a broad term that means beyond scientific explanation. The term "psychic" is more narrow and refers to extraordinary mental powers such as ESP. This definition of psychic implies that a person is the causal factor for the phenomena, although it can include communication with the spirit of a deceased person. The term "supernatural" means outside the natural world or attributed to divine power. Supernatural typically implies paranormal phenomena caused by a nonphysical being or power that has motivations and intentions separate from those of living persons. Such beings are often considered as God or gods if the motivations are beneficial for people, or as the devil or demons if the motivations are detrimental or evil. The term "miracle" means an event with a supernatural origin. According to the glossary in the *Journal of Parapsychology,* the term "psi" refers to ESP and PK, which also

implies that the phenomena are produced by the mind of a person. Also in that glossary, the term "parapsychology" primarily refers to the study of ESP and PK. Supernatural interpretations tend to be excluded from parapsychological writings and are often assumed to be misinterpretations of psi phenomena produced by living persons. The extent to which psychic and supernatural are different interpretations for the same basic phenomena is an interesting empirical question that remains to be investigated.

The most widely used measures for paranormal beliefs are sheep-goat scales based on psychic phenomena (Palmer, 1971; Thalbourne *8c* Delin, 1993) and the much broader paranormal beliefs scales that also include things like the Loch Ness monster, that black cats bring bad luck, and heaven and hell (Tobacyk & Milford, 1983). The sheep-goat scales were developed by parapsychologists and the broader paranormal belief scales were generally developed by researchers who were more skeptical. The number, validity, and orthogonality of factors in paranormal beliefs have been persistent, unresolved topics of debate (Hartman, 1999; Lange, Irwin, & Houran, 2000; Lawrence, Roe, & Williams, 1997; Tobacyk & Thomas, 1997).

The most widely held beliefs about paranormal phenomena involve supernatural religious interpretations and are not included in these scales. In U.S. national surveys, 89% of respondents strongly or somewhat agreed that "there is a God who watches over you and answers your prayers" (Barna, 1991) and 82% agreed that "even today, miracles are performed by the power of God" (Gallup & Castelli, 1989). Measures that do not capture the most widely held beliefs may be of limited value in understanding the characteristics of paranormal beliefs.

Personality and Genetics

Behavioral genetic and related research indicates that personality has significant genetic components and is also influenced by experiences, particularly during childhood (Gary, 2003; Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Heath, Cloninger, & Martin, 1994; Rutter, Pickles, Murray, & Eaves, 2001; Stallings, Hewitt, Cloninger, Heath, & Eaves, 1996; Tellegen et al., 1988). Attempts to isolate genetic from environmental effects are difficult because of methodological factors, such as the possibility that genes can influence which environments a person chooses to experience (Rutter et al., 2001). However, for purposes of the present article, the basic concept that personality depends on both genetic dispositions and environmental experiences is sufficient.

The discussions of personality types here are primarily intended to show that these factors appear to have a significant role in attitude toward the paranormal. These discussions are not intended to limit the recognition of the variability among people or the likelihood that an individual may have motivations associated with various

personality actors. The research studies discussed here have often employed the Myers-Briggs personality model. A summary of that model is described in the Appendix for those who may not be familiar with it. Other personality models could probably be developed that would be more useful for research on paranormal beliefs.

Capricious, Evasive Psi

Discussions of belief in psi must recognize the problematic properties of psi experiments that make scientific conclusions controversial. The inability to develop reliable practical applications of psi after a century of research indicates a fundamental lack of scientific progress (Kennedy, 2003a). The research efforts have not been able to overcome the capricious, evasive properties of psi that include unintended and undesired psi-missing and loss of effects. If the basic assumptions of experimental parapsychology were true, gambling industries such as casinos, lotteries, and commodity markets would not be expected to be viable. The fact that these industries remain in business and appear to make profits consistent with the laws of probability places significant restrictions on the scientific expectations about psi. Parapsychological writings generally have not addressed this central dilemma. Greater acceptance of and attention to the capricious, evasive nature of psi may be a prerequisite for scientific progress in parapsychology (Kennedy 2003a).

One of the most revealing properties of psi research is that meta-analyses consistently find that experimental results do not become more reliably significant with larger sample sizes as assumed by statistical theory (Kennedy, 2003b; 2004). This means that the methods of statistical power analysis for experimental design do not apply, which implies a fundamental lack of replicability.

This property also manifests as a negative correlation between sample size and effect size. Meta-analysis assumes that effect size is independent of sample size. In medical research, a negative correlation between effect size and sample size is interpreted as evidence for methodological bias (Egger, Smith, Schneider, & Minder, 1997).

The normal factors that can produce a negative correlation between effect size and sample size include publication bias, study selection bias, and the possibility that the smaller studies have lower methodological quality, selected subjects, or different experimenter influences. All of these factors reduce confidence in a meta-analysis. However, for psi experiments, the failure to obtain more reliable results with larger sample sizes could be a manifestation of goal-oriented psi experimenter effects or decline effects (Kennedy, 1995; 2003a). Even if these effects are properties of psi, parapsychologists cannot expect that other scientists will find the experimental results convincing if methods such as power analysis cannot be meaningfully applied. Further, for the past two decades, the debates about the reality of psi have focused on

meta-analysis. The evidence that psi experiments typically do not have properties consistent with the assumptions for meta-analysis adds substantial doubts to the already controversial (Kennedy, 2004) claims about meta-analysis findings in parapsychology.

THE TRANSCENDENCE FACTOR

Paranormal and mystical beliefs are closely related. The personality factors most consistently associated with paranormal beliefs and experiences are the interrelated cluster of absorption, fantasy-proneness, and temporal lobe symptoms. All three of these personality constructs involve a high degree of imagination and fantasy. These factors generally correlate in the .5 to .6 range with each other and with mystical and paranormal experiences (summarized in Kennedy, Kanthamani, & Palmer, 1994).

Thalbourne (1998; Lange, Thalbourne, Houran, & Storm, 2000) found that mystical experience, belief in paranormal phenomena, absorption, and fantasy proneness actually constitute a single factor. He proposed that it reflects a tendency for unconscious processes to emerge into consciousness and called the factor *transliminality.* Hartmann's (1991) earlier concept of thin boundaries of the mind is the same idea and has been associated with paranormal experiences (Palmer & Braud, 2002; Richards, 1996) and with the transliminality scale *(r= .66)* (Houran, Thalbourne, & Hartmann, 2003).

Based on his work with the Myers-Briggs personality model, Keirsey (1998) stated that people having intuitive, feeling (NF) personality types are mystical in outlook and often explore occultism, parapsychology, and esoteric metaphysical systems. Those with NF dispositions aspire

> to transcend the material world (and thus gain insight into the essence of things), to transcend the senses (and thus gain knowledge of the soul), to transcend the ego (and thus feel united with all creation), [and] to transcend even time (and thus feel the force of past lives and prophecies), (p. 145)

Research studies have found that belief in paranormal phenomena is associated with the N and F personality factors (Gow, et. al., 2001; Lester, Thinschmidt, & Trautman, 1987; Murphy & Lester, 1976). In a study of a technique attempting to induce a sense of contact with someone who had died, 96% of the participants with NF personality types reported after-death contact experiences, whereas 100% of the participants with ST (sensing, thinking) personality types did not have these experiences (Arcangel, 1997). In a survey of parapsychological researchers, Smith (2003) found that the F factor was associated with experimenters who were rated as psi-conducive. Temporal lobe symptoms have been found to be associated with the N and P Myers-Briggs personality

factors, and to a weaker extent with F (Makarec & Persinger, 1989). Thin boundaries have been found to be associated with NF personality dispositions (Barbuto & Plummer, 1998).

Taken together, these findings indicate that certain people have innate interests in and motivations for mystical and paranormal experiences. Behavioral genetic research indicates that absorption, the Myers-Briggs personality types, and interest in spirituality all have significant genetic components similar to other personality factors (Bouchard & Hur, 1998; Gary, 2003; Hammer, 2004; Tellegen et al., 1988).

Common Source for Psi and Mysticism

Psychical and mystical experiences have several characteristics in common that suggest that they derive from the same or very similar processes.

Personality. As discussed above, paranormal and mystical experiences are associated with the same personality characteristics and appear to be components of one personality factor.

Unconscious. Psychical and mystical experiences are both thought to arise from an unconscious or higher part of the mind and to be facilitated by efforts to still the conscious mind and to reduce superficial unconscious activity. Both types of experience are viewed as a link or doorway to a higher realm of interconnectedness. In fact, the primary difference is that psychical experiences provide information about the material world whereas mystical experiences provide information about the higher realm of interconnectedness itself. William James (1902/1982) noted that the knowledge revealed in mystical experiences may pertain to sensory events (e.g., precognition or clairvoyance) or to metaphysics.

Lack of control. Both psychical and mystical experiences are spontaneous and normally outside of direct conscious control. At best, one can create conditions that set the stage for the experiences. Claims for direct, sustained, consistent control of mystical experiences or psi are very controversial (Kennedy, 2003a; Kornfield, 2000). Such claims for sustained control appear to be illusions in virtually all cases.

After-effects. As discussed in a later section, the primary effects of both mystical and paranormal experiences are increased sense of meaning in life, interconnectedness, and spirituality. Mystical experiences and paranormal miracles have both had major roles in most spiritual traditions (Woodward, 2000).

Lack of evident evolutionary advantage. According to the prevailing scientific perspective, humans have emerged through biological evolution, which is driven by self-serving enhancement of reproductive and associated material success. However, mystical and psychical experiences both have characteristics that do not appear to be driven by the self-serving materialism associated with biological evolution. The pursuit of mystical transcendence in the form of monastery traditions inhibits reproductive success and

has the goal of reducing the motivations for material self-interest and status. These conditions are in direct opposition to the assumed driving forces of biological evolution. Similarly, the inability to develop or demonstrate practical applications of psi prevents its use for material self-interest (Kennedy, 2003a; in press). The personality constructs of thin boundaries and transliminality are both reported to be associated with susceptibility to mental illness (Hartmann, 1991; Thalbourne & Delin, 1994), which further detracts from any evolutionary advantage.

On the other hand, speculations about the benefits of these personality types that may keep them in the gene pool include: (a) enhanced imagination and creativity (Hartmann, 1991; Thalbourne & Delin, 1994), (b) enhanced flexibility and adaptability (Hartmann, 1991), (c) reduced tendency to create stress and conflict (Hartmann, 1991), (d) enhanced tendency to develop a strong sense of meaning and purpose in life and to inspire a sense of purpose in others (Keirsey, 1998; McClenon, 1994; White, 1997b), (e) highly cooperative, compassionate, altruistic, and motivated by ideals (Keirsey, 1998), and (f) enhanced self-healing through placebo and hypnotic effects (McClenon, 2002). The evolutionary implications of mystical and paranormal experiences remain an open and fascinating topic of inquiry.

THE MOTIVATION FOR CONTROL

The need for control has been investigated in numerous studies and is a basic human motivation that influences many activities, including religion and science (Baumeister, 1991; Schumaker, 2001; Spilka, Hood, Hunsberger, & Gorsuch, 2003). Spilka and colleagues (2003, pp. 46-47, 58, 484-485) note that need for control has many aspects and has a genetic component that varies among people. Control can be direct, interpretive, predictive or vicarious and may involve self, powerful others, God, or supernatural powers in a self-directive, collaborative, or deferring mode.

Baumeister (1991) considered control as part of a need for efficacy, which includes having an impact on the world and changing the world. He considered this need to be an aspect of obtaining a sense of meaning in life.

From the perspective of daily life, the drive to impress one's self on the world manifests in various forms, including creating technology, building construction projects, climbing or conquering mountains "because they are there," making scientific discoveries, writing books, and creating various forms of entertainment. Conflicts with other people are another way of impressing one's self on the world. This includes various forms of competition in sports, business, and politics. The development of computer viruses may be some of the clearest evidence for this motivation. Most computer viruses have no apparent purpose other than for the developers to impress themselves on the

world just because they can. As indicated by the fact that computer viruses are developed almost entirely by males, this motivation appears to be more prominent in males but certainly can also be present in females.

The Rational Scientific Personality

Keirsey (1998) described the development of rational scientific understanding and pragmatic application of science as the central motivations for people with intuitive, thinking (NT) personality types. People with these dispositions are naturally attracted to the process and results of the scientific method. Of course, experiencing scientific culture presumably enhances rationality and empiricism. The tendency to elevate a rational, scientific, mathematical style of thinking to an almost religious-like level of commitment and faith is widely apparent in scientific writings.

The inability to reliably control, predict, or understand psi may exclude paranormal phenomena from the interests of many who have pragmatic, scientific orientations. From this perspective, it is not surprising that scientists tend to be skeptical of psi (McClenon, 1982; McConnell & Clark, 1991). Prediction is the foundation of science, and control and application provide the most compelling evidence and value. For example, the concepts of quantum physics are as radical as the ideas of parapsychology; however, quantum physics has provided numerous successful applications, including lasers and transistors. If psi experiments produced reliable results, and particularly if they produced useful applications, scientists would likely accept the phenomena and begin developing theories for further control and application.

Skeptical scientists tend to explain belief in psi as due to a failure of rational, empirical analysis (e.g., Alcock & Otis, 1980; Blackmore & Troscianko, 1985; Gray & Mill, 1990). These explanations often imply that all people should share the scientist's devotion to rational, empirical analysis. The possibility that alternative values, personalities, and ways of processing information may also have value is rarely acknowledged in these writings.

Skeptics also tend to have a greater internal locus of control (belief that they control the events in their lives) than those who believe in psi (summarized in Irwin, 1993). This is consistent with a stronger motivation for control by skeptics or possibly with less belief in supernatural influences.

I suspect that there is a closely related motivation for rational explanations but with less emphasis on pragmatic application and empiricism. This motivation would underlie the pursuit of philosophy and the more abstract, intellectual approaches to religion. However, I have not found a specific personality description that aligns with such a motivation.

Experimental Parapsychology

Belief in instrumental control of psi occurs in spite of the persistent failure to develop reliable applications of psi. The assumption of instrumental control of psi is the foundation for experimental parapsychology as well as for occultism, new age beliefs, and commercial psychics and fortune tellers. These belief systems basically view psi as a magical power that can fulfill a person's wants or provide information about the future.

Numerous authors have speculated that belief in psi results from an illusion of control or mastery over uncertain events motivated by the need for control (e.g., Blackmore & Troscianko, 1985; Irwin, 2000; Schumaker, 1990; Vyse, 1997). Motivations for control probably have a significant role in the pursuit of experimental parapsychology. Carrying out a psi experiment with an expectation of success requires the assumption and belief that people can control psi, even if only to a weak, statistical degree. However, other factors besides control also appear to be involved in the pursuit of experimental parapsychology. These factors may include an intense fascination with the subject matter and a tendency to overlook the problematic properties of the results or to optimistically assume that these properties will soon be overcome.

The Propensity to Explain

The motivation for control is closely linked to motivations to learn and to understand causes (Baumeister, 2005). The evolution in humans of imagination, symbolic thought, memory, symbolic communication, planning based on hypothetical futures, and creativity greatly enhanced the abilities to learn, to control, and to adapt (Baumeister, 2005; Donald, 2001).

However, the propensity to explain may go beyond achieving control. Donald (2001) argued that the human mind and human culture co-evolved, with the mind becoming extremely plastic in order to adapt to the diversity of culture. He argued that culture and particularly myths provide a needed framework for experiencing life and are actively sought. The cultural framework for experiencing and explaining life can include myths, religion, and science.

Science in theory focuses on empirically verifiable explanations but in practice often seems to be a constant struggle to control the propensity to imagine extensive myths. In the social sciences in particular, a few selected observations tend to be extrapolated way beyond scientific confidence to develop all-inclusive theories that, like myths, are abstract explanations with little empirical support. One can make a strong argument that the writings and associated subcultures of psychoanalysis and behaviorism were more similar to religions than to science. Even for the most well established physical forces such as gravity, the diversity of conceptual explanations over the years (general relativity,

quantum physics, string theory, etc.) indicates that scientific concepts are products of imagination that are at least as much cultural fads as enduring truths.

The propensity for mythology, including within science, makes it likely that the diversity of attitudes toward the paranormal will remain for the foreseeable future. In modern pluralistic societies, people are exposed to and can select from a diversity of alternative world views and mythologies.

Summary

The motivation for control may contribute to both skepticism and belief in psi. Research on various aspects of the motivation for control and its interaction with other psychological factors is needed to understand its role in attitude toward the paranormal. The initial evidence suggests that skeptics may tend to have a greater need for control. In fact, the speculations that an illusion of control is a significant factor in psi beliefs have primarily been proposed by skeptics and may be projections of their own needs for control.

THE MOTIVATION FOR MEANING AND PURPOSE

If one moves beyond the motivation for control and looks at psi on its own terms, a different motivation emerges as prominent. Many people report experiences of ostensible spontaneous paranormal phenomena that occur without attempting to elicit or control the phenomena (Rhine, 1981; Stokes, 1997). Even a casual review of these reports indicates that the experiences do not seem to be guided by self-serving, materialistic motivations or needs for control.

Research indicates the primary effect of psi experiences is an altered worldview and an increased sense of meaning and purpose in life and spirituality (Kennedy & Kanthamani, 1995; McClenon, 1994, 2002; Palmer, 1979; Palmer & Braud, 2002; White, 1997a, 1997c). For example, Dossey (1999, p. 3) describes how a series of unexpected paranormal experiences changed the direction of his professional career. Similarly, a survey of people who were interested in parapsychology and reported having paranormal or transcendent experiences found that (a) 72% agreed with the statement "As a result of my paranormal or transcendent experience, I believe my life is guided or watched over by a higher force or being," (b) 45% agreed with the statement "I feel like I have a purpose or mission in life as a result of my paranormal or transcendent experience (s)," (c) 25% agreed with "One or more paranormal or transcendent experiences motivated me to make a major life change that I was not previously thinking about making," and (d) 38% agreed with "One or more paranormal or transcendent experiences seemed to confirm or reinforce that I was doing what I should be doing," (Kennedy & Kanthamani, 1995). White (1997a, 1997c) has collected and evaluated cases of exceptional experiences and

found that transformative aftermaths that redirected a person's worldview and focus in life were common. Ostensible paranormal miracles have been a decisive factor in persuading people to join particular religious groups (McClenon, 1994).

The transformative psi experiences appear to guide a person rather than the person guiding psi. This is a significantly different world view than the assumptions of experimental parapsychology. These types of cases may induce an attitude of a humble seeker rather than a sense of control. Dossey (1999, p. 3) characterized his series of psi experiences as: "It was as if the universe, having delivered the message, hung up the phone. It was now up to me to make sense of it."

The source of the experience is viewed as external to the person. Without a bias for efficacy and control, the spiritual implications and supernatural aspects of paranormal phenomena predominate. The relatively few spontaneous psi cases that appear to have direct benefits related to motivation may actually serve as vehicles for this transformative aspect of psi (Kennedy, 2000).

White (1993) suggested that the best research strategy for parapsychology may be to let psi lead us rather than to try to control or apply psi. One could argue that the persistent failure to control psi leaves no choice but to pursue a more humble, learning approach.

The Need for Meaning

Baumeister (1991) integrated a wide diversity of information and ideas about the human need for a sense of meaning in life. He concluded that there are at least four aspects to the sense of meaning in life. These are:

Purpose. The need to be able to interpret current events in relation to expectations about the future, and to have and achieve goals.

Value: The need to know right and wrong behavior and to regard one's actions as right and good.

Efficacy: The need to be able to control the environment and to have an impact on the world.

Self-worth: The need to have self-respect and the respect of others, which is typically based on feeling superior to others.

Baumeister (1991) described religion as the central source of meaning in life historically. The need for meaning is also reflected in the propensity for myths described by Donald (2001). Religion can fulfill all four aspects of meaning. Baumeister and Donald both noted that science has an increasing role in the cultural explanatory framework.

Baumeister also commented that science is highly successful at providing control and efficacy but does not provide a sense of purpose, values, and self-worth. He noted that this makes it more difficult to obtain a sense of meaning and to handle stresses and traumas. Schumaker (1995, 2001) similarly argued that religion and transcendence have

important roles in human mental health that are not being fulfilled by the secular rationality and materialism of modern society. Schumaker (2001) argued that the declining meaning, purpose, values, and spirituality are contrary to human nature and are causing mental health and ecological crises.

Paranormal beliefs and experiences can be directly related to purpose, efficacy, and self-worth. The extent to which paranormal beliefs provide a sense of meaning and purpose only for persons who are by disposition attracted to transcendence and spirituality is an important topic that merits empirical investigation.

THE MOTIVATION FOR SELF-WORTH/SUPERIORITY

Baumeister (1991) noted that the motivation for self-worth often manifests as a need to feel superior. Judging oneself as better off than others is a significant factor in human happiness, and comparing oneself to less fortunate persons is a standard technique for coping with unfortunate events (Baumeister, 1991; Myers, 1992). Exaggerated positive self-evaluations and illusions have long been recognized as a characteristic of people (Hornsey, 2003; Taylor & Brown, 1988). Human males in particular tend to have an innate drive to compete for power and status and to feel superior to most other persons (e.g., Campbell, 2002; Geary, 1998).

The motivations for superiority and efficacy (including control) are closely related, particularly when competition is involved. The tendency to divide into polarized groups and attempt to prevail over opponents provides both efficacy and superiority. The motivation of some individuals to persuade others to accept their views, beliefs, and values may be related more to these drives, similar to sports competitions, than to the specific content of the beliefs. This could be a motivating factor for both belief and skepticism about the paranormal.

Superiority Through Authority and Dominance

Keirsey (1998) described the sensing, judging (SJ) personality types as materialistic, distrusting of fantasy and abstract ideas, and tending to feel a duty to maintain traditional rules of right and wrong. These personality types focus on external authority and tradition rather than internal experience.

People with STJ personality types tend to rise to positions of leadership and authority in hierarchical organizations (Keirsey, 1998; Kroeger, Thuesen, & Rutledge, 2002). Fudjack and Dinkelaker (1994) noted that the masculine "extraverted/rational-empirical/pragmatic/ materialist" ESTJ personality is prominent in western culture and tends to prefer hierarchical organizations that emphasize power and control rather than creativity and flexibility. Kroeger, Thuesen, and Rutledge (2002) administered the

Myers-Briggs personality test to over 20,000 people in all levels of a wide variety of corporate, government, and military organizations. Across these diverse groups, they found that 60% of 2,245 people in top executive positions had STJ personalities (ESTJ or ISTJ). The proportion of STJ types increased as the level on the management hierarchy increased.

On the other hand, only about 1% of top executives had NFP personalities, which would be more interested in psi and mysticism. For comparison, general population samples have found STJ for 26%-43% of males and 18%-29% of females, and NFP for 6%-12% of males and 9%-18% of females (Macdaid, McCaulley, & Kainz, 1986). Kroeger, Thuesen, and Rutledge also commented that 95% of top executives were T (thinking) types rather than F (feeling) types.

This rational, pragmatic, materialist personality bias in the upper echelons of power and status may be a major factor in the institutional skepticism and resistance to psi described by Hansen (2001). This value system may also be associated with the "hypercompetition" and "hypermaterialism" that Schumaker (2001) believes prevail in modern society and contribute to depression and anxiety. Somit and Peterson (1997) discuss the evolutionary and social aspects of the biological basis for dominance and hierarchy.

Baumeister (1991) observed that religion often provides a sense of superiority. He also noted that this sense of superiority unfortunately has a long history of hostility and violence toward those who are viewed as being inferior. The sense of superiority is particularly prominent in fundamentalist groups, which are found among most of the world's major religions and believe that their particular set of beliefs and values, and only theirs, has been chosen for a special relationship with God (Hunsberger, 1996). Fundamentalists also emphasize authority and tradition. Religious terrorists are characterized by extreme fundamentalism, including superiority, adherence to the authority of a particular tradition and its leader(s), and lack of respect for, dehumanization of, feelings of threat by, and hostility toward people with different beliefs and values (Stern, 2003).

Research indicates that the S personality types are associated with conservative religions that emphasize institutional religious authority and tradition whereas the intuitive (N) types are associated with more liberal, subjective, experiential approaches to religion and tolerance for religious uncertainty (Francis and Ross, 1997; Francis and Jones, 1998,1999; Macdaid, McCaulley, & Kainz, 1986). Similarly, greater dogmatism was associated with the S and J personality types (Ross, Francis, & Craig, 2005).

Other personality models describe related factors like authoritarianism, traditionalism, or right-wing authoritarianism (Altemeyer, 1996; Carey, 2003, pp. 395-398; Spilka et al., 2003, pp. 467-468). Altemeyer (1996) argued that fundamentalism is a religious manifestation of the authoritarian personality. Monaghan (1967) described "authority-seeker" as one of the main motivations for attending a fundamentalist church.

Fundamentalist religions often consider mystical or paranormal experiences as delusions or dangerous events. Pentecostal and charismatic religious movements emphasize "gifts of the spirit," including prophesy, healing, recognition of spirits, performance of miracles, wisdom, and knowledge (Roberts, 1995, p. 370; Rosten, 1975, pp. 591-592). Christian fundamentalists frequently have conflicts with Pentecostals and charismatics because fundamentalists give primacy to the inerrant authority of the Bible rather than to direct spiritual experience (Roberts, 1995, pp. 370-371).

Tensions between those who give primacy to the authority of tradition rather than to direct mystical and miraculous experiences have occurred for centuries, as would be expected if personality dispositions have a role. The life and death of Jesus were based on conflicts between those who maintained rules, authority, and superiority of past traditions versus proponents of inspired teachings supported by claims of paranormal phenomena. Such tensions were also apparent in the reactions within Christianity to the desert ascetics and in the Protestant Reformation (Woodward, 2000). One argument that goes back to at least the sixteenth century is that the miracles described in the Bible were real and were needed to establish the authority of the Bible, but once that authority was established, miracles were not needed and claims for post-biblical miracles are fraudulent or the work of the devil (Mullin, 1996, pp. 12-16). The variation in beliefs among individuals and groups should also be kept in mind. Some of those who focus on authority also believe that supernatural interventions sometimes occur in post-biblical times.

The hostility of some extreme skeptics toward those who believe in paranormal phenomena has noteworthy similarities with religious fundamentalism and appears to be a manifestation of dominance and superiority (Kennedy, 2003c). Like fundamentalists, these skeptics believe that people and organizations which have different beliefs and values are a threat that must be vigorously fought and deserve ridicule and hostility. "Feelings of threat, hostility, and lack of respect for those with different beliefs and values are prominent with both fundamentalists and extreme skeptics" (Kennedy, 2003c, p. 30).

Skeptical writers generally view science as authoritative and consider religious and paranormal beliefs as indicating an immature stage of cognitive development that is in opposition to rational scientific theories (e.g., Kurtz, 2001; Schumaker, 1990; Vyse, 1997; Zusne & Jones, 1989). This perspective implies superiority of the skeptics and is based on philosophy and personal values that may reflect temperament and are far outside the domain of established scientific evidence.

Superiority Without Authority and Dominance

Religion and spirituality can also provide a sense of self-worth and superiority for those who do not have social status and dominance.

Baumeister (1991) pointed out that the religions of slaves typically glorified meritorious rewards in an afterlife and punishment of oppressors. Glorification of rewards in the afterlife and of austere living in the present are also apparent in the religions of the less affluent whereas the religions of the more affluent tend to view material success in the present world as blessings from God (Roberts, 1995).

More subjective forms of spirituality can also provide a means for establishing a hierarchy of superiority. Characteristics and criteria for determining who is more spiritually advanced are often proposed (e.g., White, 1972; Wilber, 2000). The claim that one is among a small minority of highly evolved people and that everyone should strive to be like him or her is a common symptom of the drive to achieve a sense of superiority.

Certain religious traditions have included the belief that the occurrence of miracles was a sign of divine favor or of the holiness of those involved (Mullin, 1996). In addition, mystical or transcendent experiences have been widely interpreted as evidence of high spirituality and sought through practices such as meditation (Kornfield, 2000; Spilka et al. 2003, pp. 259-263, 297-298).

Psi experiences are sometimes presented as associated with an advanced state of spiritual development (Grosso, 1992; Murphy, 1992; Ring, 1984; Thalbourne, in press). Traditional yoga writings similarly proposed that paranormal abilities are associated with developing spirituality (Prabhavananda & Isherwood, 1981). Gopi Krishna (1974) claimed that his kundalini experiences (which resembled a mental health breakdown) made him a highly evolved "genius" and gave him psychic powers. However, that appears to have been a self-evaluation with no objective or tangible evidence to support his high opinion of himself.

It is now widely recognized that the occurrence of transcendent and related experiences do not necessarily indicate ethical behavior, compassion, wisdom, integration, or other characteristics normally associated with spirituality (Kornfield, 2000; Zweig, 2003). In fact, the sense of superiority from such experiences may promote self-serving abuse of power. The most conspicuous evidence for this point comes from the numerous cases of spiritual leaders who claim many transcendent experiences but have a lavish lifestyle and use their position of authority for sexual activity with people they are supposedly spiritually guiding. Sexual exploitation has happened much more widely than is generally acknowledged in both eastern and western spiritual organizations (Gonsiorek, 1995; Kornfield, 2000; Neimark, 1998; Roemischer, 2004; Zweig, 2003). Such behavior appears to have occurred in the majority of prominent yoga and meditation organizations in the U.S. As discussed in the references above, the sexual exploitation has resulted in numerous lawsuits, but even when consensual, it still appears to be an abuse of authority and trust. In an important discussion of the realities of spiritual pursuits, Kornfield (2000) described the common error of mistaking charisma for wisdom.

Summary

Some people build superiority hierarchies in the material world and some build them only in their minds. Those who build superiority hierarchies in the material world tend to have more negative attitudes toward the paranormal. Paranormal and mystical experiences may sometimes be pursued or claimed in an effort to achieve a sense of superiority. Tensions between people with authoritarian and transcendent dispositions have occurred throughout history and appear to underlie many religious and social conflicts.

THE MOTIVATION FOR CONNECTEDNESS

For some people, belief in psi may be motivated more by a need for a sense of interconnectedness rather than for control and superiority. Social connections and support are one of the widely recognized functions of religion (Spilka et al. 2003). Women, in particular, tend to value social and emotional connections (Campbell, 2002; Geary, 1998; Gilligan, 1993). Religious, supernatural, or paranormal beliefs may be held primarily to fit into a social group or organization. Alternatively, the beliefs themselves may reflect and reinforce the motivation for interconnectedness. Blackmore (1994) noted that belief in psi may be more common among women because of their greater sense that the world is interconnected. White (1997b), Braud (1997), and Tart (2002) have discussed the sense of interconnectedness that results from psi experiences.

The relationship between interconnectedness and transcendence merits investigation. Deacon (1997) suggested that humans evolved an innate motivation to become part of something larger than oneself. This motivation promotes social organization. Deacon also suggested that this motivation, combined with a propensity to find meaning or symbolic relationships in all experiences, underlies mystical or religious beliefs.

People with a strong sense of connection may view the world as an interconnected whole that is meaningful and benevolent. These views are similar to the "assumptive worldviews" that initial research suggests may be related to belief in paranormal phenomena (Irwin, 2003). This holistic worldview may also lead to altruism because the world is not divided into an in-group versus outsiders.

THE HEALING FACTOR

McClenon (1994, 2002) proposed that paranormal demonstrations and beliefs promote healing through placebo and hypnotic effects. He argued that these healing benefits may have been the foundation for the evolution of religion and paranormal beliefs. He also noted that these benefits apply even if psi effects are not real, and that

deception has been widely practiced to induce such beliefs.

Schumaker (1995) similarly argued that transcendent myths and religious beliefs are important for mental health. He proposed that the decline in the role of religion in culture has greatly hindered the ability for mental health healing and that a new balance between myth and reality needs to be found. This appears to be a change from his earlier view that paranormal and religious beliefs were driving humanity down a road of irrational self-destruction (Schumaker, 1990).

These ideas are closely related to the motivation for efficacy and control. Placebo effects are basically self-healing by the body. It has long been thought that expectation has a major role in placebo effects (Hyland, 2003; Shapiro & Morris, 1978; White, Tursky, & Schwartz, 1985). Certain modern medical practices may reduce expectations. In particular, legal obligations for full disclosure and informed consent can be expected to reduce optimism and expectations. The circumstances of psychic, spiritual, or alternative healing techniques may optimize self-healing in ways that are difficult to achieve in the standard medical profession.

However, placebo effects have always been controversial. After decades of research and experience, some investigators question whether placebo effects exist at all (e.g., Hrobjartsson & Gotzxche, 2001). Placebo effects and their relationship to other variables are inconsistent and unpredictable, even when procedures and subject populations are as similar as possible (Hyland, 2003; Shapiro & Morris, 1978). Conditions for reasonably reliable results have not been identified. Hypnosis also has a long history of controversy, including whether it actually exists and whether responses to suggestion are primarily limited to individuals with certain personality characteristics, notably fantasy proneness (Baker, 1990; Spanos & Chaves, 1989).

The controversies about placebo and hypnotic effects raise questions about whether they are sufficiently powerful to have the role in evolution McClenon proposed. It may be difficult to distinguish the evolutionary role of healing beliefs from other factors such as the motivations for meaning and purpose, efficacy, and superiority. It is also possible that healing beliefs have a role primarily for certain personality types, such as fantasy proneness.

Placebo effects have many parallels with psi effects. Both have inconsistent experimental results and controversy about whether the effects are real. The mechanisms of action for both effects are not known, resulting in negative definitions based on what they are not rather than what they are. Also, the initial research efforts on placebo effects were focused on identifying the characteristics of certain individuals who were "reactors"; however, those efforts were not sufficiently successful to maintain the interest of researchers (Shapiro & Morris, 1978; White, Tursky, & Schwartz, 1985), which is similar to the experience with efforts to identify special subjects for psi experiments (Rao, 1965).

Despite their similar properties, placebo effects have become much more widely accepted among scientists than psi effects. In fact, controlling for possible placebo effects is a standard design criterion for medical research. A more comprehensive comparison of the characteristics and scientific acceptance of placebo and psi effects might be revealing.

FEAR OF PSI

The usual explanations in parapsychology for the inability to obtain reliable psi effects involve speculations about unconscious, instinctive fear of psi (e.g., Batcheldor, 1984; Braude, 1997; Ehrenwald, 1978; Eisenbud, 1992; Radin, 1989; Tart, 1984) and suppression of psi to prevent information overload (e.g., Bergson, 1914; Ehrenwald, 1978; Koestler, 1972).

However, the widespread interest in psi and the extensive efforts of some people to cultivate psi abilities are not consistent with these speculations about fear of psi. It may be true that some people fear psi, but there is strong evidence that many others do not, and, in fact, some people desire to develop useful psi abilities, as evidenced by the perpetual popularity of books and courses on developing psi abilities (e.g., Robinson & Carlson-Finnerty, 1999) and the continuing existence of commercial psychics. Similarly, the speculations about information overload overlook the fact that instances of striking psi occur without information overload. These speculations do not explain why instances of striking psi do not occur more frequently and with greater control.

The speculations about fear and information overload, combined with the unreliable, unuseful nature of psi effects, imply that psi has more adverse effects than benefits. Experimental parapsychology assumes that psi is a widespread human ability; however, psi would not be expected to evolve as a human ability if it caused substantial adverse effects and little benefit.

The arguments about unconscious fear of psi have direct spiritual assumptions that are rarely acknowledged. Given the implausibility of evolution producing an ability that has the characteristics of psi, one possibility is that the source of psi is supernatural or external to living people. The instinctive propensity to fear snakes (Tallis, 2002, pp. 135-138) provides a useful comparison. Such instinctive fears make sense for reacting to external threats like snakes but do not offer a rationale for the evolution of an ability that appears to have negligible material benefit and serious adverse effects that need to be suppressed. Following this line of thought, an instinctive fear of psi would imply that the source of psi is external to people. Alternatively, psi could be a pre-existing, innate spiritual ability that is detrimental in the material world, as suggested by Bergson (1914). Either of these approaches identifies psi with a dualistic spiritual realm rather than as a human ability that emerged through evolution.

In terms of motivations, the lack of control of psi is the main theme emerging from empirical findings on fear of psi (Siegel, 1986; Tart, 1986; Tart & Lahore, 1986).

The need for research on various aspects of the motivation for control and attitude toward psi was noted earlier. Given the human need for control, fear of psi is probably a result of the lack of control rather than a cause, which is contrary to the rationale that fear causes psi effects to be unreliable.

CONCLUSIONS

The efforts to achieve control of psi in experimental parapsychology have not produced significant scientific progress. When psi phenomena are examined without the implicit bias for control, the relationship with spirituality emerges as the central organizing factor. The primary effect of psi experiences appears to be enhanced spirituality and meaning in life. Reliable use of psi for material self-interest in a manner that is scientifically convincing has not occurred and, at this point, does not seem likely.

It is not surprising that those who are by disposition materialistic, pragmatic, and rational find the evidence for psi not to be remotely convincing. If psi phenomena had a degree of predictability and usefulness, the scientific community could assign a label to the unknown process and begin developing methods for its control and practical application. That would not be noticeably different from the situation with the established physical forces. People with pragmatic, materialistic values cannot be expected to be interested in something that has no pragmatic, materialistic use.

People more attracted to transcendence continue to have experiences that they describe as providing absolutely certain knowledge that there is a spiritual realm (James, 1902/1982; Miller & C'de Baca, 2001; Ring, 1984). These people find substantial commonalities among their experiences and the after-effects. The fact that others with more externally focused, materialistic dispositions do not have such experiences and are skeptical is irrelevant to the interpretation of their experiences. They feel that they are dealing with direct experience and knowledge, not philosophical theories, academic rationalizations, or speculations. As William James (1902/1982) noted, there is no point in trying to convince them that their experiences are not real.

Paranormal and mystical experiences have several characteristics in common, including the ability to inspire a sense of meaning and purpose in life. Science, on the other hand, is often described as fulfilling the needs for control and efficacy but not the needs for meaning, purpose, values, and self-worth. However, this perspective may not fully take into account the diversity of motivations associated with different personality types. Some people may find meaning and purpose from scientific understanding, others from transcendent experiences, and others from enforcing the authority of tradition.

Objective scientists must recognize that they cannot prove scientifically that reports of subjective transcendent experiences do not have some validity that is beyond current

scientific understanding. Paranormal phenomena that are viewed as miracles initiated by supernatural powers to inspire spiritual growth are largely outside the domain of science, as are many other religious beliefs. The extent to which attitudes toward such matters are based on personal dispositions rather than scientific knowledge deserves recognition.

Tensions among those with transcendent, authoritarian, and scientific dispositions have been common in the history of paranormal and religious beliefs. The motivation for superiority is not limited to authoritarian personalities and can contaminate both science and spirituality. This motivation can prevent proponents of science from being objective and rational, and it can prevent proponents of spirituality from being compassionate and ethical. The aggressive promotion of a particular belief system can be a form of competition and dominance similar to sports. Such aggressiveness can be seen on both sides of psi beliefs but is particularly strong for some of the skeptics. Persons on each side can see the irrational drive for superiority in their opponents, but they have difficulty acknowledging it in themselves.

Science can do much to sort out the web of motivations and to create better understanding among people with different dispositions. The ideas presented here provide a plausible beginning and have some initial empirical support.

A useful next step would be to develop measures that address various factors, including motivations for transcendence, connectedness, control and efficacy, superiority, authority, and healing. Measuring exposure to basic social and cultural factors related to belief in the paranormal would also be useful, particularly for identifying people who do not have strong personal motivations and tend to go along with social and cultural influences. The mix of factors could be characterized for an individual and for different types of paranormal experiences and beliefs. For example, it would be useful to measure the mix of factors associated with (a) experiences that could be actual psi, (b) experiences that appear to be misinterpreted as psi, and (c) skepticism about psi. The motivation for superiority, in particular, has been underappreciated in research, perhaps because many scientists prefer to overlook that aspect of their own personality.

Exploring factors of humility and gratitude versus efficacy and superiority may be particularly valuable. The tangible lesson from the failure to develop useful applications of psi is that motivations for efficacy and superiority may not be applicable in this domain. Successful research strategies in this area must identify and adapt to the properties of the phenomena. The evidence for psi and its association with transcendent experiences may hint that there is a spiritual realm that tentatively encourages development in a transcendent, humble, non-self-serving, nonmaterialistic direction.

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APPENDIX

SUMMARY OF THE MYERS-BRIGGS PERSONALITY MODEL

The Myers-Briggs personality model (Keirsey, 1998; Myers&McCaulley, 1985; Myers & Myers, 1995) was developed for practical use in occupational settings and interpersonal relationships, and has been widely used in those contexts for several decades. The magnitude of the genetic component is similar to that of other personality models (Bouchard & Hur, 1998).

The Myers-Briggs model utilizes 16 personality categories based on the combinations of four factors. The summary below was taken from Keirsey (1998), whose concepts are largely the same as the original Myers-Briggs model but more clearly separate the E/I and S/N factors that conceptually overlap in the original model.

Extraverted/introverted (E/I) indicates whether a person feels energized (E) or drained (I) from being with a group of people;

Sensing/intuitive (S/N) indicates whether a person focuses his or her awareness and attention more on the external, material world and prefers concrete, observable facts (S) or focuses internally on the self and imagination and prefers abstract ideas (N);

Thinking/feeling (T/F) indicates whether a person tends to value rational thinking and self-control (T) or emotional expression (F);

Judging/perceiving (f/P) indicates whether a person prefers setting and achieving goals and having a sense of closure (J) or spontaneously exploring open-ended possibilities and keeping options open (P).

For example, ESTJ is one personality type and the most different type from that is INFP.

The primary difference between the sexes in personality types is on the T/F factor. About two-thirds of males are T (thinking) and about two-thirds of females are F (feeling) for U.S. data (Macdaid, McCaulley, & Kainz, 1986).

The Myers-Briggs model describes all personality types as being valuable in some circumstances. Presumably, the different personality types have been maintained throughout evolution because they had adaptive value or at least did not inhibit reproductive success. This positive approach may be a significant reason for the widespread use of the Myers-Briggs test in occupational settings. Most personality models have factors that measure neuroticism or similar negative traits that imply a superiority/inferiority ranking of people. When organizations are experiencing tensions between departments that tend to have people with different personalities (e.g., between a sales-marketing group and a data processing group), joint meetings that discuss the existence and value of different personalities may be helpful. However, interjecting a dimension of superiority is counterproductive and inappropriate in these situations. The Myers-Briggs model works well in such cases.

The Myers-Briggs model has been subject to criticism because it was developed over 50 years ago by persons without academic credentials and without fully utilizing the methods and theories of academic psychology (e.g., Pittenger, 1993). The fact that the model is based on types (categories) rather than traits (continuous measures) is one of the more tangible technical criticisms.

A review and meta-analysis of a large number of reliability and validity studies concluded that the Myers-Briggs test performed well and was comparable with other personality tests (Harvey, 1996). In addition to convergent, divergent, and predictive validity, the studies included confirmatory factor analyses. To my mind, the best indication of the validity of a psychological test is useful, practical application for real-world behavior. In that regard, the Myers-Briggs model has good standing because it has been widely used in organizational settings for decades. In addition, consistent, meaningful research results, including studies with large, noncollege student samples, provide further evidence for the usefulness of the Myers-Briggs test (Hammer, 1996; Kroeger, Thuesen, & Rutledge, 2002; Macdaid, McCaulley, & Kainz, 1986). The fact that it may not be fully optimal from an academic, mathematical perspective (e.g., types versus traits) does not mean that it lacks useful validity and reliability.

Although the Myer-Briggs test has been the most frequently used general personality test in research on paranormal and related beliefs, it would be useful to carry out research with other personality models. As noted in the conclusion, the optimal strategy for research on the role of personality in paranormal beliefs may be to develop personality tests that directly measure certain personality factors, including mystical, authoritarian, and scientific dispositions. The value of such a personality test may apply beyond paranormal beliefs and may be helpful for understanding many conflicts among people.