

UNIVERSITY OF CENTRAL OKLAHOMA
Edmond, Oklahoma
College of Graduate Studies & Research

Beliefs in and Experiences with Sasquatch and Corresponding Coping Strategies

A THESIS

SUBMITTED TO THE GRADUATE FACULTY

In partial fulfillment of requirements for
The degree of

MASTER OF ARTS IN COUNSELING PSYCHOLOGY

By

Mark Banta

Edmond, Oklahoma

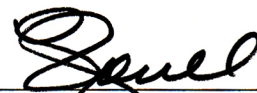
1/14/08

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APPROVED FOR THE DEPARTMENT OF PSYCHOLOGY

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Committee Chairperson

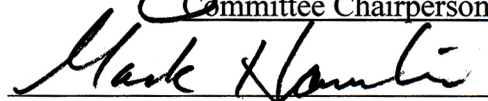


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Mark C. Banta
University of Central Oklahoma

Specific coping strategies were investigated and between-group comparisons were made based on the level of confidence each group had in the existence of sasquatch. The level of confidence was determined by the participants' level of belief combined with their level of experience with sasquatch. Participants were then divided into one of three groups: low, medium, or high confidence. The results indicated that there were no significant differences between groups on their preferred coping strategy. Past research has implied that paranormal beliefs may serve as a psychological coping mechanism, and some studies have shown a weak relationship, indicating that activation of paranormal beliefs may serve a minor role as a coping strategy. However, empirical support is lacking and what constitutes paranormal has been broadly interpreted. The results of this study did not reveal a relationship between a person's level of confidence in the existence of sasquatch and preferred coping strategies. However, a significant correlation was found between the level of income and avoidant coping strategies, showing a linear relationship, where the lower the income level, the higher the scores on avoidant coping strategies. Although these post hoc findings were not the original focus of this research, they are important.

Moore (2005) reported the results of a Gallup survey that found 3 in 4 Americans possess at least one paranormal belief. Given these findings, it is clear that clinicians may experience clients with a wide variety of belief systems. Understanding the psychological functions these belief systems fulfill can be the key to differentiating between healthy cultural belief systems and diagnosable pathology. In addition, understanding unique beliefs is an important aspect of building empathy, positive regard, and understanding the client from their unique world-view (Rogers, 2007).

There has been considerable study into paranormal beliefs and how these beliefs function

from a psychological standpoint. Some of the different constructs that have been studied in relationship to paranormal belief are coping strategies (see, Callaghan & Irwin, 2003; Rogers, Qualter, & Phelps, 2006), locus of control (see, Dag, 1999; Irwin, 2000), misattribution (see, Wiseman & Watts, 2006), and schizotypal thinking (see, Genovese, 2005; Goulding, 2004).

The purpose of this study is to investigate whether or not there exists a relationship between the level of confidence a person has in the existence of sasquatch and a specific psychological coping mechanism. In other words, this study examined the notion that beliefs in and experiences with sasquatch represent a coping strategy to deal with life stressors.

The term "sasquatch" is commonly associated with an upright, bipedal, hairy animal that is yet unknown to mainstream science. This term originated within the native tribes of Canada. In the United States it is commonly referred to as "bigfoot". In the Himalayas, it is known as "yeti" or "abominable snowman" (Patterson & Murphy, 2005, p. 9). In Australia, a similar creature has been reported and is called "yowie" (Krantz, 1999, p. 215).

Although studies have investigated these issues in broad terms, there has been mixed interpretations of data. Some authors suggest a weak relationship between paranormal beliefs and coping mechanisms (see, Callaghan & Irwin, 2003). Others either interpret such beliefs as having no relationship to coping or a moderating effect (see, Rogers, Qualter, & Phelps, 2006). Furthermore, there have been no studies that have specifically investigated a belief in sasquatch and its relationship to psychological coping mechanisms.

It has been suggested by some authors that paranormal beliefs, or beliefs that fall outside

scientific evidence, fulfill a need to understand life events. Frank (1977) referred to two such belief systems and labeled them as “articles of faith” (p. 555). Frank, a self-identified agnostic, noted these two types of beliefs: Scientific-humanistic world-view and transcendental world-view. The former can be identified by its ability to meet the criteria of scientific evidence, while the latter “assumes the existence of one or more realities which are accessible only to states of consciousness other than the ordinary waking one” (p. 556). Frank noted that many transcendental belief systems promote a sense of peace and happiness, as well as a sense of control over physical events. He succinctly stated, “control of physical events may be illusory – a rain dance may not actually bring the rain – but for the believer this does not challenge the belief system because it has ways of accounting for failure” (p. 557).

By the Frank (1977) definition, the existence of sasquatch fails to meet the scientific evidence required for the scientific-humanistic world-view. However, it has yet to be shown in research that it would meet the criteria for the transcendental world-view, which would require studies showing a relationship between states of consciousness other than the ordinary waking one and a belief in sasquatch. To date, no research has addressed this specific topic. It can be stated, however, that no published scientific research to date has made a claim that such a creature exists.

The study of paranormal beliefs has extended beyond quasi-experimental studies examining the relationship between specific coping strategies and belief systems. A search for meaning and control of one’s life, referred to as locus of control (see, Lindbloom & Faw, 1982), has been the focus of some researchers. Early learning theorists studied locus of control in terms of learning theory (Mowrer & Viek, 1948; Pervin, 1963). More recent research has examined its relationship to beliefs that fall into categories outside cultural norms (Dag, 1999; Irwin, 2000). Although locus of control and coping strategies have been studied separately, by definition, similarities exist. Avoidant coping can be described as an escape from reality to avoid life stressors. Such escape tendencies, if incorporated into a specific belief system, could serve as permanent avoidant coping strategies. Since this belief system exists in part outside the person, it could represent an external locus of control.

Another area of study that closely relates to coping strategies is misattribution hypothesis.

Assuming a belief system defies scientific reasoning, simple misattribution may be at least partially responsible for its formation. Misattributions may form through probability misjudgments, poor cognitive reasoning, finding correspondences in distantly related material, and fantasy proneness (Wiseman & Watts, 2006). Such distortions of perceived reality may serve to reinforce the validity of chosen coping strategies.

Also including the study of perceived reality, schizotypal thinking personality traits have been examined by authors in relationship to paranormal belief systems (Genovese, 2005; Goulding, 2004). In this area of study, a belief in the paranormal is interpreted as simple psychopathology. Schizotypal thinking offers an alternative view to coping strategies, which are the focus of this study.

Also offering an alternative view, some researchers outside the field of psychology have studied the evidence supporting the existence of sasquatch (Krantz, 1999; Meldrum, 2006). Rather than supporting the mainstream view that such a creature can not exist in today’s modern world, these researchers have compiled data and examined the fossil records to offer an intriguing glimpse into the possibility that such a creature does, in fact, exist. It should be noted, however, that even if such a creature exists, it does not fully explain the psychological constructs that must be in place for those who believe without evidence or experience. A believer in sasquatch, who has no evidence that such a creature exists, may still be utilizing the belief system as a form of control (locus of control) or coping strategy. It may also represent an underlying psychopathology (schizotypal thinking) or cognitive distortion (misattribution).

Coping Strategies

The primary focus of this study is in regard to coping strategies. Lazarus (1966) thoroughly examined both the internal and external environmental causes of stress and the defenses or coping techniques used to effectively deal with them. Lazarus pointed to three factors that might prevent harm. “They are (1) the location of an agent of harm, (2) the viability of alternative available actions to prevent harm, and (3) situational constraints concerning such actions” (p. 174). Lazarus and colleagues continued his studies on coping and examined how strategies affect both health and psychological functioning (Folkman, Lazarus & Gruen, 1986). Lazarus led the way to understanding psychological factors influencing a

person's choice of a coping strategy.

Holahan and Moos (1987) explored categories of coping strategies known as problem solving, social support seeking, and avoidant coping strategies. The latter is the primary focus of this study, which centers on the premise that avoidant coping is related to a higher level of confidence in the existence of sasquatch. Persons using an avoidant coping strategy would avoid dealing directly with the source of internal or external stress and instead seek out distractions to take their mind off the problem (Holahan & Moos, 1987). Rather than utilizing problem solving strategies or seeking support from others, a person using an avoidant coping strategy would participate in activities or think about events to distract them from the problem or stressor they are experiencing.

Although paranormal beliefs and belief in sasquatch have never been empirically validated, this encompassing category of belief (paranormal) may come closest to examining questions on the psychological functions that may be associated with a belief in sasquatch. The Paranormal Belief Scale (PBS; Tobacyk, 1988) does contain a question on belief in sasquatch, and this scale is often used in current literature that examines paranormal belief systems. It also contains questions on other "extraordinary life forms". A relationship between a belief in sasquatch and avoidant coping strategy could indicate that such beliefs serve as a distraction from dealing with daily life stressors.

Callaghan and Irwin (2003) conducted a study that examined paranormal beliefs and coping mechanisms. In this study, 117 Australian adults completed a questionnaire survey. As a dependent measure of paranormal beliefs, they used Tobacyk's (1988) Revised Paranormal Belief Scale (PBS-R). Callaghan and Irwin conceded the scale "incorporates an extremely broad view [of the paranormal]" (p.202). The PBS-R included items about witchcraft, extraordinary life forms, precognition, traditional religion, spiritualism, superstition, and psi (remote viewing and extra-sensory perception). Participants were placed in one of two groups according to their scores. These groups were Traditional Paranormal Beliefs and New Age Philosophy. Traditional Paranormal Beliefs are defined on the scale by traditional religious beliefs and spiritualism, while New Age Philosophy encompasses witchcraft, extraordinary life forms, precognition, superstition, and psi. For a measure of coping style, Endler and Parker's (1994,

1999) Coping Inventory for Stressful Situations (CISS) was utilized. The CISS is a scaled inventory that determines a coping style of Task-Oriented, Emotion-Oriented, or Avoidant. Callaghan and Irwin defined Task-Oriented coping as "an attempt to actively change or eliminate a problem situation" (p. 201). Emotion-Oriented coping was defined as focusing "on the management of emotional distress" (p. 201). Avoidant coping was defined as trying "to ignore the problem or distance oneself from it" (p. 201).

Results from the Callaghan and Irwin (2003) study revealed a weak relationship between paranormal belief and avoidant coping style, but only when compared to an emotion-oriented coping style. They suggested that these results "not be given undue emphasis, given the weakness of the observed canonical correlation between the set of paranormal beliefs and the set of coping styles" (p. 205). They further suggested that paranormal beliefs may serve as a different type of coping style, but only as a *post hoc* hypothesis.

A possible explanation for the weak relationship between avoidant coping and paranormal beliefs is that there are moderating factors. Emotional Intelligence (EI) is one such moderating factor that has been explored in recent research (see, Rogers, Qualter, & Phelps, 2006). The idea of EI is based on a person's ability to perceive, express, understand, and reflect emotions. Therefore, someone high in EI is likely to build better peer relationships and maintain better social relationships. Those with low EI are more likely to have difficulty building and maintaining close relationships and may feel socially isolated.

Rogers, et al. (2006) examined the extent to which low EI moderated avoidant coping in predicting paranormal belief. The study used 253 participants who were tested on EI, paranormal belief, and coping strategy. Despite the author's predictions, none of the coping strategies were accurate predictors of paranormal belief. Similarly, none of the four subscales of EI were accurate predictors of paranormal belief. However, results did show some support for the idea that low EI moderates a tendency to not use active behavioral coping strategies. Rogers and colleagues suggested that those showing difficulties understanding other's emotions may reject an active behavior coping response, feeling that such a response would not work. Thus, paranormal concepts, such as extra-sensory perception and life-after-death, may serve

as a way to gain a sense of control over negative life events. Such ideas are further explored in research on locus of control.

Locus of Control

Belief systems that promote a sense of control over physical events have been studied in research on locus of control. The relationship between paranormal beliefs and locus of control is founded on the assumption that such beliefs promote a sense of meaning in a person's life, which promotes a sense of control over internal and external events. Dag (1999) studied a population of 350 Turkish college students to determine the relationship between locus of control, paranormal beliefs, and psychopathology. Dag found that paranormal beliefs positively correlated with global locus of control. Overall, Dag concluded that paranormal beliefs predicted locus of control better than psychopathology. This suggests that although paranormal beliefs may not indicate psychopathology, they may reflect the believers need to find meaning and a sense of control in their lives, and they may look outside of themselves (external locus of control) to find it.

Early learning theorist explored the aspects of locus of control by exploring predictability. Seminal research can be traced back to Mowrer and Viek (1948). They explored the idea that pain was more tolerable if one has control over ending it. In other words, one has no idea how long the pain will continue in one condition, which causes a state of fear and anxiety. In the controlled condition, the fear and anxiety is avoided by a sense of control. Freud went so far as to equate the helpless feelings of pain and anxiety with trauma (Freud, 1936, p. 150).

Mowrer and Viek (1948) conducted a study in which 20 male rats were randomly assigned to controlled shock and uncontrolled shock groups. In the controlled shock group, rats were offered food. After ten seconds, whether the rat took the food or not, a shock was applied until the rat leapt vertically in the air. At that time, the shock was turned off. In the uncontrolled shock group, the rats were given the same conditions, except the shock was left on for a fixed period of time, regardless of how the rat responded to it. Results indicated that the rats in the uncontrolled group quickly showed inhibition to eating, while the rats that had the ability to stop the shock, initially showed inhibition, but quickly went back to eating when they learned they could control the duration of the shock. What these results

suggest is that having a sense of control over a feared event leads to a sense of relief. A loss of control leads only to more fear. It is reasonable to assume from this that humans who hold a fear of their future and a lack of control over their environment would seek out a belief system that offers relief from this fear.

Pervin (1963) conducted an experiment using a similar design on human subjects. Participants were 30 male undergraduate students. In this experiment, participants received a shock. In one condition, participants were signaled when a shock would occur. This was the Signal condition. In the Signal condition, a blue light signified to the subject that they would receive a shock, while a yellow light predicted no shock. In another condition, participants did not receive a signal that shock would occur. This was the No Signal condition. In the No Signal condition, a white light was sometimes followed by shock, and sometimes, it was not. The last condition was *Inconsistent Signal*. Subjects were given one of three colored lights previous to shock. They were led to believe there was a pattern of predictability, though none existed. Following a series of all three conditions, participants were then queried on their preference of treatment, pain rating, anxiety rating, subjective reports, and reaction times. Despite the fact that predictability did not lead to escape of the unpleasant shock, participants still significantly preferred the Signal condition. This offers evidence that a belief in the ability to predict when unpleasant events occur offers a person a sense of relief and control. Lefcourt (1973) notes that the ability or perceived ability to control aversive events leads to an ameliorating effect. He further notes that avoiding events that offer a threat or cause anxiety, offer secondary gains in that these events are effectively avoided.

Lack of predictability in one task can also lead to frustration and difficulty in tasks that follow (Glass, Reim & Singer, 1971). Not having a way to address wrongs can lead to frustration in controlling future situations. Glass et al. conducted an experiment on 49 human participants in which 24 bursts of noise occurred randomly over a 24-minute period of time. The duration of noise was also randomized in this experiment. In this experiment, four different conditions were used: (1) Perceived control in which the participants believed another participant could be signaled to turn off the noise; (2) No perceived control in which another participant had a control button, but the subject had no way of

signaling them; (3) Together-No-button in which neither participant could control the noise; and (4) Alone-No-button in which the participant was alone in the room and could not terminate the noise. The dependent measures were tonic skin conductance to determine habituation to the noise and a proof-reading task that followed the experimental conditions. The significant finding of this experiment showed a decrease in ability on the proof-reading task for those who had participated in the uncontrollable condition. Also, perceived control, whether it exists or not, as well as perceived control through another person, can have meliorating post adaptive effects.

Taken together, these studies indicate that a sense of predictability offers a feeling of control and avoids overwhelming fear and anxiety. When predictability and control are lost, a person is more likely to experience a conglomeration of fear and anxiety caused by the fear and anxiety associated with lack of control. Simply stated, the actual fear of fear can lead to feelings of anxiety, which in turn can lead to poor performance.

Irwin (2000) found new and differing results from other researchers. In a study of 174 Australian adults, he found that the desire for control was directly correlated to the intensity of paranormal beliefs. However, unlike many other studies, he did not find a correlation between external locus of control and paranormal beliefs. Irwin summarized these findings by stating that paranormal believers "might not be inspired by a perceived lack of control...but more fundamentally by the perception that it is important to have control over life events" (p. 75). Stated simply, rather than feeling at the mercy of others' control, the paranormal believer may simply desire more control. Irwin wisely warns that his findings are purely correlational and should not be used to assign causal processes.

Many belief systems offer some form of predictability or meaning for the believer's life. It is conceivable that a belief in sasquatch could offer the believer a sense of meaning. The discovery of an upright primate such as sasquatch would obviously have many implications and could have an impact on issues such as the origin of man and religion. In addition, such a discovery would call into question why science has failed for so long to make the discovery. Such questions would undoubtedly be reassuring to some that science is incapable of explaining all aspects of human existence. For a believer in sasquatch, it might then be conceivable

that belief is tied into such assumptions, and therefore offers the believer a sense of control and meaning. Although these are interesting questions to explore, the answers are currently unknown and beyond the scope of this research project. Locus of control would be another area for future researchers to explore when addressing the psychological functions involved with a belief in sasquatch.

Misattribution Hypothesis

Another theory that addresses how paranormal beliefs may be formed has been explained through simple misattribution. Among hypotheses that attempt to explain paranormal beliefs, it is one of the most parsimonious. The misattribution hypothesis has largely been studied in terms of belief in psychic ability, but has also included much research on general paranormal belief systems. It assumes that psychic causation is misattributed to normal experiences (Wiseman & Watts, 2006). Wiseman and Watts identified "poor cognitive abilities, probability misjudgements, propensity to find correspondences in distantly related material, and fantasy proneness" as four processes that may lead to misattribution (p. 326).

Studies have varied and the evidence is inconclusive as to whether low cognitive ability is directly related to belief in the paranormal. One of the earliest studies to find a positive correlation was Blackmore and Troscianko (1985). They administered probability tests to school-aged girls between the age of 14 and 18 years of age. The predictive measure was a questionnaire on assessing belief in precognitive dreams, extrasensory perception, and telepathy. Significant correlations were found between those scoring low on probability estimates and belief in the paranormal. In this study, there did appear to be a relationship between the probability estimates and paranormal beliefs.

Musch and Ehrenberg (2002) studied the probabilities of misattribution in terms of cognitive ability and belief in the paranormal. They had 129 participants complete a battery of reasoning tests as a dependent measure. A total of six tasks were completed by each participant. The predictive measure used was the PBS. As a measure of cognitive ability, a grade average was used for the previous two years of secondary education. A significant correlation was found between belief in the paranormal and poor probabilistic reasoning on three of six tasks. Also, four of the six tasks correlated with cognitive ability.

Lawrence and Peters (2004) examined both reasoning ability and delusional ideation among paranormal believers. The results of their research was interesting in that although they did find more delusional ideation among paranormal believers, there were no differences found in statements that were consistent with their belief systems. Like most studies dealing with the paranormal, Lawrence and Peters chose a quasi-experimental design to test their hypotheses that believers would score higher on delusional ideation, make more errors on a deductive reasoning task, and error rate would increase in statements incongruent with their beliefs. Drawing their pool of participants from the Society of Psychical Research, Lawrence and Peters allocated groups based on their level of belief in the paranormal. Each group was then given deductive reasoning and delusional ideation measures. Results were then compared within groups. "As predicted, individuals who held strong beliefs in the paranormal scored higher on a delusional ideation measure and made more errors on a deductive reasoning task than individuals with weaker beliefs" (p. 731).

Most studies about paranormal belief make no mention of sasquatch or bigfoot. However, Hergovich and Arendasy (2005) did mention bigfoot, but it was in the context of leaving a question about bigfoot off the PBS inventory, since they mistakenly believed bigfoot was not well known in Australia. In truth, a belief in a bigfoot-like creature, known as "yowie" by locals, has persisted in Australia for many years (Krantz, 1999).

Hergovich and Arendasy (2005) had a subject pool of 180 students from Australia. They randomly assigned participants to complete one of two critical thinking inventories. Then, all participants completed an intelligence test and their revised version of the PBS. Results indicated no significant differences between believers and non-believers on critical thinking ability. However, they did find that reasoning ability had a moderate influence on paranormal belief. To explain this apparent incongruence, they reasoned that the critical thinking tasks did not include a speed and power component, as did the reasoning task. This suggests that if given enough time to complete a task, no significant differences are apparent between the groups.

Reality testing has also been the focus of research into the paranormal and has been used in

conjunction with the misattribution hypothesis. Irwin (2004) conducted a questionnaire survey of 161 Australian adults. Included in the survey was a measure of both reality testing and paranormal beliefs. Findings indicated that deficits in reality testing served as a predictor of paranormal belief. Findings such as these do not necessarily indicate that paranormal believers are simply out of touch with reality. Irwin points out that on average, paranormal believers are less inclined to scrutinize and use critical thinking to evaluate situations, which may include paranormal situations. Therefore, it would be false to assume that believers in the paranormal would meet criteria for clinically significant reality testing deficits. In fact, only 10 participants in Irwin's sample met the criteria, which is not out of line with a normal distribution.

Other studies have also taken into account personality traits as a means to explaining paranormal beliefs (see, Auton, Pope, & Seeger, 2003). An identifiable personality disorder would go a long ways towards explaining deficits in reasoning and critical thinking that may lead to a belief in the paranormal. Auton et al. (2003) examined this possibility in a population of 105 undergraduate psychology students. Participants were administered both paranormal belief and personality assessment inventories. Participants' personality scores were compared between those who scored high on paranormal beliefs and those who scored low. The main findings of this study were that paranormal belief is not indicative of psychopathology. However, they did find that those with high paranormal belief were more likely to watch more television "programs with a paranormal theme, as well as had friends who also held similar beliefs" (p. 718). These findings are consistent with Sparks, Nelson, and Campbell (1997), who found a positive correlation between level of paranormal belief and watching paranormal programming. Although these studies establish a relationship between paranormal belief and watching paranormal programming, they did not explore which came first.

It might also be considered that if one misattributes the sighting of a known animal for a sasquatch, false memories could develop about the sighting. Those who hold a prior belief in the paranormal may be more susceptible to false memories. Wilson and French (2006) explored this exact question. One hundred undergraduate participants were told they would be tested on their memory of current events. Each participant

completed a questionnaire about their memory of news coverage footage from five major events. Four of the five events had actually been shown on television, while there is no known television coverage of the fifth. Each participant also filled out a paranormal belief measure. "Those reporting false memories in this study scored higher on various measures of paranormal belief..." (p. 1499). These findings lend credibility to the argument that paranormal believers are more susceptible to false memories.

Misattribution has been explained by some researchers as a tendency to attribute paranormal causation to normal events as a result of fantasy proneness. Wiseman, Greening, and Smith (2003) examined this possibility by conducting a fake séance with an actor. Participants were told during the séance that the table was levitating. These events were recorded to insure that the table did not actually lift. Ten weeks following the séance, a questionnaire was sent to participants. They were asked if they believe paranormal events sometimes occurred, as well as if things moved during the séance. Results indicated that a significant relationship existed between individuals' prior belief in the paranormal and their belief that the table moved during the séance. These results indicate higher suggestibility, and thus fantasy proneness, in individuals with high levels of paranormal belief. An obvious weakness of this study was the single question used to determine belief in the paranormal.

Some researchers have suggested that a person's responsiveness to being hypnotized is directly related to a person's imagination and fantasy proneness (see, Diamond & Taft, 1975; Dixon, Labelle, & Laurence, 1996). Diamond and Taft (1975) utilized a subject pool of 75 undergraduate students. Each subject reported they had never been hypnotized before. Subjects were administered a scale on imagery and on ego permissiveness. A scale of responsiveness to hypnosis was also completed. Results indicated a correlation between responsiveness to hypnosis and both the imagery and ego permissiveness scales. Diamond and Taft noted a correlation between sub-scales on imagination and responsiveness, which is consistent with fantasy proneness.

These findings were later corroborated by Dixon, Labelle, Laurence (1996) in a study using 748 participants. A unique aspect of this study was the inclusion of a questionnaire on paranormal

experiences. A significant correlation was found between scores on paranormal belief and susceptibility to hypnosis.

Research on the correlations between misattribution and paranormal beliefs paints a sketchy picture as a whole. In exploring the literature, it can reasonably be concluded that there are correlations between paranormal beliefs and misattributions. However, the possibility that misattribution is a reflection of beliefs falling outside of cultural norms has not been explored. It can be argued that if one holds a belief outside cultural norms, then one would be more likely to question other culturally accepted beliefs. Such questioning may be viewed by the culture as signs of poor reasoning and cognitive ability. These questions have not been thoroughly explored in literature and are another area for future research.

Schizotypal Thinking

Research has shown that many members of society have symptoms similar to that of schizophrenia, yet function well. These symptoms are often referred to as schizotypal thinking. These symptoms may include magical thinking, difficulty with concentration in combination with purposelessness, lack of enjoyment, and reckless and self-abusive behaviors (Nettle, 2006). Much research has been dedicated to studying the relationship between schizotypal thinking and paranormal belief systems.

Genovese (2005) surveyed 96 pre-service and in-service teachers to determine schizotypy personality traits. The Schizotypal Personality Questionnaire – Brief (SPQ-B) developed by Raine and Benishay (1995) was utilized for this task. Also measured was rational and intuitive thinking style. The instrument used was the Rational-Experiential Inventory (REI, Epstein, Pacini, Denes-Raj & Heier, 1996). The Belief in the Paranormal Scale (BPS, Musch & Ehrenberg, 2002) was also administered. Analysis revealed that correlations existed between paranormal beliefs and schizotypal thinking patterns. Genovese suggested these results indicate that intuitive thinking style and schizotypal thinking contribute to paranormal beliefs.

Goulding (2004) conducted a study of 86 undergraduate psychology students. Three sub-scales from the Oxford-Liverpool Inventory of Feelings and Experiences (O-LIFE) were utilized. The O-LIFE (Mason, Claridge, & Jackson, 1995) scales used were Unusual Experience (UE),

Cognitive Disorganization (CD), and Introverted Anhedonia (IA). High scores on the UE are thought to be consistent with psychosis. The CD scores describe problems associated with attention, concentration, and decision making, as well as sense of purposelessness, moodiness, and social anxiety. The IA subscale, which is thought to tap negative symptoms of schizophrenia, measures lack of physical and emotional intimacy and dislike for social situations. The Sense of Coherence (SOC, Antonovsky, 1991) scale was also used. This scale helps determine the person's ability to manage situations in life, sense of order and structure, and overall involvement in what happens. The Australian Sheep-Goat Scale (ASGS, Thalbourne, Bartemucci, Delin, Fox & Nofi, 1997) was used to measure paranormal beliefs. It measures beliefs and experiences, belief in life after death, and psychokinesis.

Analysis revealed that by comparing the IA, CD, and UE clusters, negative symptomology found in psychosis was not present. This indicates that those high in paranormal belief, though they show symptomology of schizotypal personality, are showing high scores in healthy schizotypal traits inconsistent with schizophrenia.

Our culture does have a history of assigning diagnostic labels of pathology to those who do not conform to cultural norms (Ishibashi, 2005). Assigning diagnoses or psychopathological terms to those who hold non-traditional views does little to explain the constructs behind such beliefs. Although this trend is now being questioned by more and more researchers, especially in the field of psychology, it continues to occur and should be carefully considered by researchers of the paranormal. The possibility should be considered that personality trait measures are picking up on relationships between nontraditional views and paranormal beliefs, which is to be expected, rather than identifying actual psychopathology.

Sasquatch Research

It should be noted that very little research exists specifically studying the subject of sasquatch, which is why the literature reviewed for this study consists primarily of the paranormal. Sasquatch belief is commonly assigned to the category of paranormal, along with other categories such as belief in extra-sensory perception, psychic abilities, telekinesis, and other unknown life forms.

Casually perusing the paper mill of academia is

not likely to uncover a lot of information on sasquatch, which is more commonly referred to as bigfoot. The few academics that have taken the time to research this cryptic corner of science are anthropologists and anatomists. They usually refer to the creature as a possible descendent of *Gigantopithecus Blacki* (see, Krantz, 1999).

The late Dr. Grover Krantz was one of the few academics to thoroughly study the phenomenon of sasquatch. Krantz was a professor of anthropology at Washington State University and is widely known for his reconstruction of a *Gigantopithecus Blacki* skull (see, Krantz, 1987). Krantz (1999) comprehensively reviewed the evidence to date, including footprints, film, and the fossil record. Krantz became a believer in sasquatch and felt that what people were witnessing was most likely *Gigantopithecus Blacki*, which was thought to have gone extinct 300,000 years ago.

Krantz summed up the resistance of science to serious study sasquatch when he stated:

Older scientists who have made their names can afford to indulge in the luxury of exploring a subject like this. Some of the younger scientists who have not yet realized how the Scientific Establishment works might also extend themselves along this line until they learn better. Most scientists know the criteria that are used for granting tenure and making promotions, and they are understandably cautious about being involved in any investigations that are not in the mainstream of acceptance or in recognized specialties (p. 236).

After Dr. Krantz passed away, the proverbial torch, as well as an extensive collection of track casts, were passed to Dr. Jeffrey Meldrum, who is an associate professor of anatomy and anthropology at Idaho State University. Meldrum (2006) used his experience and applied hard science to the phenomenon of sasquatch. Meldrum does not claim that a species known as sasquatch exist. Instead, he simply examines the evidence and believes it is a worthwhile pursuit. His interest in the functional morphology revealed by footprint evidence offers interesting insights that lend credibility to a field that has become known as cryptozoology.

Purpose of Research

Unlike much of the past research into paranormal beliefs, this research addresses a very specific type

of paranormal belief (confidence in the existence of sasquatch) and applies a quasi-experimental design to access relationships between such beliefs and specific coping strategies (problem solving, social support seeking, and avoiding the event). This study examines the following research questions: (1) Are there any differences between a person's level of confidence in the existence of sasquatch and their preferred coping strategy? (2) Is belief in sasquatch a form of avoidant coping?

The null hypothesis is that there is no relationship between a person's level of confidence in the existence of sasquatch and a specific coping strategy. Based primarily on past correlational evidence in a broader field of paranormal investigation, the hypotheses of this study are as follows: (1) participants who fall into the high confidence group will have a weak correlational relationship to avoiding coping strategy when compared to the low confidence group, and (2) a linear relationship will exist between confidence in the existence of sasquatch and the partially structured attitude measure.

Method

Participants

A total of 238 self-selected individuals voluntarily participated in an online survey. Of the original 238 who began the online survey, a total of 96 (74 men and 22 women) filled out all required fields necessary to be included in this study. Eighty-three (87%) reported their ethnicity as White, while there were four (4%) Native Americans, three (3%) Hispanics, and six (6%) reporting other. Twenty-six (27%) reported high school as their highest level of education, while 38 (40%) reported college and 32 (33%) reported graduate school.

Fifty percent of the total sample reported an income of more than \$60,000 per year ($n = 48$). Sixteen (17%) reported a total income ranging from \$45,000 to \$60,000 per year. A total of nine participants (9%) reported an income of \$35,000 to \$44,999 per year. Thirteen participants (14%) reported an income of \$25,000 to \$34,999 per year. Six (6%) participants reported an income of \$15,000 to \$24,999 per year, while only four (4%) reported an income below \$15,000.

Household sizes ranged from one to seven ($M = 3.01$, $SD = 1.46$), and 71% ($n = 68$) of the distribution fell between two and four person households. Twelve participants (13%) reported one person households, thirty-one (32%) reported two

person households, twenty-one (22%) reported three person households, sixteen (17%) reported four person households, ten (10%) reported five person households, four (4%) reported six person households, and two (2%) reported seven person households.

All participants completed an online survey through surveymonkey.com. Before accessing the questionnaire portion of the site, participants were directed to an informed consent form approved by the Institutional Review Board at the University of Central Oklahoma. If the volunteers agreed to take part in the survey, they were then directed to complete the remainder of the survey. If they did not agree to take part, they were directed to exit their internet browser.

All participants were solicited through the links placed on the websites sasquatchonline.com and bigfootresearch.com. These websites are connected to the Alliance of Independent Bigfoot Researchers (AIBR) and the Sasquatch Research Initiative (SRI), respectfully. These sites were selected because they both solicit sasquatch sighting reports from the public. To insure that a broad population of believers and non-believers alike were solicited, messages were posted on the James Randi Educational Forum, which is a forum dedicated to refuting claims of the paranormal, and is primarily made up of members who are skeptical.

Materials

The online survey consisted of six parts. As mentioned above, respondents first gave their informed consent before continuing on with the survey. They answered three questions on their level of belief in sasquatch, followed by three questions on their level of experience. These six questions were designed by the author of this paper to access the respondents' overall confidence in the existence of sasquatch. Each question was direct in nature and answered on a three point scale. For example, "I believe that sasquatch(s) exist" and "I have witnessed a sasquatch(s) in real life" are two questions used to assess the participants' level of belief and level of experience, respectively. Each question had three choices, which were as follows: (1) agree; (2) neutral; and (3) disagree.

Next, participants answered a partially structured attitude measure constructed by the author. Participants were given a small vignette to read. This vignette was ambiguous in nature and described the experiences of a man named Paul and

his belief or lack thereof in sasquatch. It was as follows:

Paul enjoys spending time outdoors and loves animals. He often goes on camping trips and spends a lot of time exploring remote areas. He's heard a lot of stories on television and books about sasquatch. His friend once asked him if he believed in sasquatch. Paul responded, "I've seen some pretty strange things when I've been alone in the woods".

Following the vignette, participants answered three questions on a scale from 1 to 7 accessing their opinion on Paul's beliefs in and experiences with sasquatch. The choices given were as follows: (1) very strongly disagree; (2) strongly disagree; (3) disagree; (4) neutral; (5) agree; (6) strongly agree; and (7) very strongly agree. Scores could range from 3 to 21. This partially structured attitude measure was used as a manipulation check to see if explicitly reported beliefs and experiences would correlate to implicit attitudes towards beliefs and experiences. Vargas, Von Hippel, and Petty (2004) showed that partially structured attitude measures work as well as implicit measures in predicting behavior.

The following section gathered demographic information. The number of people in the household, as well as total household income was solicited. Gender, education, and ethnicity were also asked of each participant.

Finally, participants completed the Coping Strategy Indicator (CSI) as a dependent measure. Developed by Amirkhan (1990), the CSI is a 33-item, 3-point rating scale. The participant is instructed to choose a stressful event that has occurred in the past six months or so, and answer questions with that event in mind. Based on these answers, the participant is given a score on three different coping strategies. The three strategies identified on the CSI are problem solving, seeking social support, or avoiding the event. The CSI has high reliability. Amirkhan reported that "Cronbach's alpha coefficient indicated high internal reliability for all CSI scales: .928 for Seeking Support, .894 for Problem Solving, and .839 for Avoidance" (p. 1071).

Design and Procedure

Data was gathered through the online survey for a three month period of time, ranging from October through December 2007. The total participation

time for each participant was approximately 10 to 15 minutes in duration.

Six questions were used to access the participants' level of belief in and experiences with sasquatch. Each question was rated by the participant on a scale from one to three. The first three questions accessed level of belief. A score between three and six was considered low belief, while a score between seven and nine was considered high belief. The next three questions accessed levels of experience. Consistently, a score between three and six was considered low experience, while a score between seven and nine was considered high experience. Participants that had a low belief, low experience result were placed in the low confidence group. Participants that had low belief, high experience or high belief, low experience were placed in the medium confidence group. Participants that had a high belief, high experience result were placed in the high confidence group.

On the partially structured attitude measure, which was used as a manipulation check, participants answered three questions on a scale from 1 to 7 and were given a total score from 3 to 21. Therefore a linear correlation should exist between the scores on the partially structured attitude measure and the level of belief rating. Through implicit means, participants with high confidence in the existence of sasquatch should assign more belief to Paul, while those with low confidence should assign less. If not, it could indicate a significant amount of participants were not being honest on the survey.

Answers on the CSI were scored from one to three points each. There are 11 questions for problem solving, 11 for social support seeking, and 11 for avoidant scattered within the measure. Therefore totals for each category can range between 11 and 33 points. The totals for all three categories were plotted on a distribution graph. Based on graphed scores, preferred coping strategies were identified.

This study was a three group design and quasi-experimental in nature. Based on questionnaires, participants were assigned to one of three groups: (1) low confidence in the existence of sasquatch; (2) medium confidence in the existence of sasquatch; or (3) high confidence in the existence of sasquatch. Relationships between groups and preferred coping strategies were assessed to test the hypotheses: (1)

participants who fall into the high confidence group will have a weak correlational relationship to avoiding coping strategy when compared to the low confidence group, and (2) a linear relationship will exist between confidence in the existence of sasquatch and the partially structured attitude measure. Post hoc analyses were used to determine the relationship between demographic variables and preferred coping strategies.

Results

A total of three categories were formed according to preferred coping strategy: problem solving, social support seeking, and avoidant. A total of 23 participants (24%) fell in the low confidence group. Forty-four (46%) fell within the medium confidence group. Twenty-nine (30%) fell within the high confidence group. A Kolmogorov-Smirnov Goodness-of-Fit Test was ran to determine distribution (table 1.1). Results indicated a normal distribution among groups, therefore parametric testing procedures were utilized.

All data on the CSI were converted to z scores for the three coping strategies. The precise means and standard deviations for the normative sample ($n = 954$) from Amirkhan (1990) were utilized to convert z-scores. In each of the three categories, the arithmetic mean from Amirkhan's normative sample was subtracted from the participants' raw scores for problem solving, social support seeking, and avoidant coping. This number was then divided by the standard deviation to obtain the z-score (standardized score). A one-way ANOVA showed no significance between groups on preferred coping strategy (table 1.2), which confirms the null hypothesis. This means that there were no significant differences in preferred coping strategy between the three levels of confidence.

Bivariate data was analyzed using Pearson's correlation coefficient (table 1.3). A significant correlation ($r = -.336$, $p = .001$) was revealed between avoidant coping strategy and income. A preference for problem solving was also significantly correlated ($r = .313$, $p = .002$) with social support seeking. No significant relationships were found between preferred coping style and level of confidence in the existence of sasquatch.

Linear regression revealed a relationship between avoidance and income level. The lower the income level dropped, the higher the total became on the avoidance score (see figure 1). The

manipulation check worked as predicted. Pearson's correlation coefficient showed a significant correlation ($r = .323$, $p = .001$) between belief and the partially structured attitude measure. A significant correlation ($r = .210$, $p = .04$) between confidence in the existence of sasquatch and the partially structured attitude measure was also found. Although experience significantly correlated with both belief and confidence, analysis did not reveal a relationship between experience and the partially structured attitude measure ($r = .027$, $p = .792$).

Discussion

The results of this study indicate that there are no significant differences in the coping strategies preferred between the three groups (low, medium, and high confidence in the existence of sasquatch). This result is inconsistent with the Callaghan and Irwin (2003) study on paranormal believers and indicates that an individual's belief and experience with sasquatch is not related to an avoidant coping strategy to deal with stressful life events. It also lends credence to the idea that sasquatch research should be studied separately from the paranormal.

Data from the partially structured attitude measure indicated that participants were truthful as to their actual belief in creatures known as sasquatch. However, when analyzed strictly between the partially structured attitude measure and experience, significant correlations ($r = .027$, $p = .792$) were not found. Belief, experience, and confidence all correlated ($p < .01$). This may indicate a need for further study of belief and experience separately. It also may indicate some dishonesty on reported experiences within the sample. Further study into this phenomenon needs to be explored, but is beyond the scope of this study.

The most interesting finding in this study was a high correlation between income level and avoidant coping strategies. Linear regression confirmed that the lower the income level, the more preference that was shown toward avoidant coping strategies. However, the weakness of this finding is that a small number of the total sample ($n = 4$) fell below an income level of \$15,000. In contrast, 48 participants (50%) in the sample reported an income exceeding \$60,000. Another weakness is that this was a self-report measure and participants could easily have given misinformation as to their actual income. As a result of these weaknesses, this finding should be viewed with caution.

The finding that lower income levels are related to avoidant coping strategies is not thoroughly explored in literature and warrants future study. Brantley, O'Hea, Jones, and Mehan (2002) explored income level and preferred coping strategies. They found a correlation between low income and emotion-focused coping strategies. They used the Folkman and Lazarus (1988) the Ways of Coping Questionnaire (WCQ) as a dependent measure. The WCQ and the CSI differ in the types of coping strategies identified. In this case, the emotion-focused coping strategy identified by Brantley and associates, which correlated to low income, includes escape/avoidance coping strategy. Therefore, in this respect, both studies are consistent in findings, however, this study is more specific in identifying avoidance as the primary correlate by studying it separately from emotion-focused.

The findings of this study are clear and the null hypothesis has been confirmed rejecting the author's first hypothesis. In this population, there were no significant differences in preferred coping strategies between groups that held low, medium, and high levels of confidence in the existence of sasquatch. These results indicate that belief and experience with sasquatch is not directly related to a coping mechanism to deal with stressful life events. It further confirms that sasquatch beliefs should be studied separate from the paranormal, as the finding of this study are inconsistent with paranormal studies.

The author also predicted that a linear relationship would exist between confidence in the existence of sasquatch and the partially structured attitude measure (hypothesis 2). This hypothesis was confirmed, however further analysis revealed an anomaly. Although the manipulation check showed a significant correlation with level of belief, it did not correlate with experience. Therefore, although when belief and experience are taken together, a significant correlation exists, this is not the case when experience is tested alone. This could indicate some deception on reported experiences, but is beyond the scope of this study to determine. There were significant correlations between belief, experience, and confidence, confirming the validity of the design in this study.

Weaknesses of this study include the online survey being within the realms of manipulation. It is conceivable that a single person could complete the survey more than once from a different computer and thereby spoil the data. Security measures were

used to track Internet Protocol (IP) addresses. No surveys had to be deleted because of dual IP addresses, indicating either no effort at deception or very careful effort at deception by using multiple home computers. Further, the partially structured attitude measure did correlate to reported belief and overall confidence, and is believed to be a reliable manipulation check. However, the non-correlation between experience and the manipulation check would suggest the possibility of deception on that variable, which could have skewed results.

As noted, the most significant finding of this study was the strong linear correlation between income level and avoidant coping strategies. This finding was not within the original purpose of this study, but is worthy of note and future research. As noted, it also is consistent with the findings in other research (see, Brantley, et al., 2002). However, due to being a self-report measure and the low number of participants falling below the \$15,000 income level ($n = 4$), this finding should be interpreted with caution.

It is important to note that the results of this study do not indicate or endorse the existence of sasquatch, but merely indicate a high belief in the existence of sasquatch is not indicative of an avoidant coping strategy. Although the possibility can't be ruled out that such a creature does exist, there are other areas that could be considered for future study. Future researchers may next want to focus on areas of locus of control, misattribution, and schizotypal thinking in understanding this unique belief system. Continued research into beliefs beyond the realms of known science could yield data and information germane to understanding the purposes of these beliefs, which could have implications in clinical settings.

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ACKNOWLEDGEMENTS

The completion of a thesis requires the patient mentoring of those that have gone before. Without the help and support of the faculty at the University of Central Oklahoma, this research would have remained but a passing thought and an unrealized idea. Dr. Lorry Youll, thank you for your constant encouragement. If not for your guidance, your motivation, and your foresight, I wouldn't have

pursued this project to the end and gained an incredible experience that will serve me throughout my academic career. Dr. Mark Hamlin, thank you for the wisdom and guidance you provided. Without your help, I would have been lost in a statistical nightmare. You helped me to create a design and choose the proper statistical analysis necessary to see this project through to the end. Dr. Kathy Brown, thank you for agreeing to be on my thesis committee. Thank you for your interest, your encouragement, and your kindness. Finally, thank you to my wife. Your constant love, patience, and encouragement at home have allowed me the time and motivation to succeed.

Table 1.1

Kolmogorov-Smirnov Goodness-of-Fit Test

Confidence	N	Mean	Standard Deviation	Minimum	Maximum	K-S
	96	2.0625	.73717	1.00	3.00	Normal

Table 1.2

Analysis of Variance for coping strategy

		Sum of Squares	df	Mean Square	F	Sig.
Problem Solving	Between Groups	.94	2	.47	.35	.70
	Within Groups	123.93	93	1.33		
	Total	124.88	95			
Social Support Seeking	Between Groups	1.19	2	.60	.62	.54
	Within Groups	89.20	93	.96		
	Total	90.39	95			
Avoidance	Between Groups	3.71	2	1.86	1.32	.27
	Within Groups	131.05	93	1.40		
	Total	134.76	95			

Table 1.3

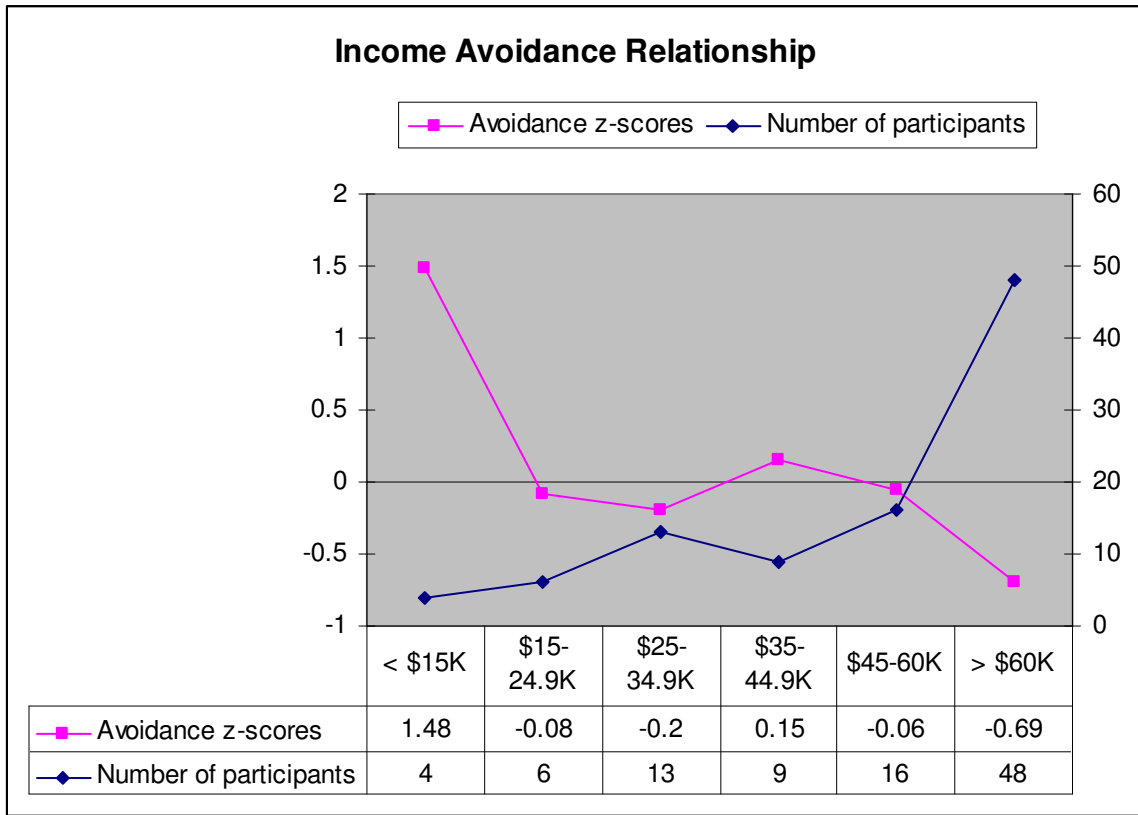
Correlations

		Income	Problem Solving	Social Support	Avoidance
Problem Solving	r	.068			
	p	.513			
Social Support	r	.043	.313(**)		
	p	.676	.002		
Avoidance	r	-.336(***)	.191	.163	
	p	.001	.062	.113	
Confidence	r	.040	-.081	.048	-.063
	p	.697	.430	.641	.542

* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

N = 96

Figure 1



Note. Actual avoidance scores ranged from 11 to 33. All scores were transformed into z-scores.