

The Relationship Between Felt Presence and Psychosis-Proneness

Catherine Rast

Department of Psychology, Vanderbilt University

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Dr. Sohee Park

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Abstract

Felt presence (FP) is the perception that somebody (or something) is nearby without corresponding sensory stimuli. This phenomenon is relatively common within the general population. However, it is under-researched and mostly appears in publications as case reports. Additionally, FP has not extensively been studied in relation to schizophrenia-spectrum despite anomalous bodily self-experiences being central to this disorder. In order to address this gap, we conducted an online survey of the general population (N = 202) about their possible FP experiences using a previously validated scale for FP (Barnby & Bell, 2017), with the addition of 25 qualitative questions regarding these experiences. In addition, we examined FP in relation to psychosis risk by administering the Prodromal-Questionnaire-16 (Ising et al., 2012). In study 2, we conducted a qualitative study with individuals diagnosed with schizophrenia regarding their FP experiences.

Results from Study 1 demonstrate that FP is more common in a psychosis-prone, prodromal population than those at low-risk for schizophrenia. Additionally, some characteristics of FP differed between these two groups. The psychosis-prone group tended to experience FP touch them. In addition, the two groups differed in their perception of time while experiencing FP. However, location of FP did not differ between groups. Interviews with the three patients in Study 2 showed that the presentation of FP is incredibly varied both between and within patients, regarding general emotion accompanying FP, duration, and form.

In conclusion, FP is accompanied by a wide variation of sensations, perceptions, and understandings. Given the increased presence of FP in those at risk for psychosis, it might be a candidate marker for schizophrenia.

Introduction

Felt presence (FP) is a phenomenon that is most frequently described as the awareness of a general presence around one's bodily self despite the lack of a physical being. Such an experience can be considered an anomalous experience of bodily self. However, in this instance it is important to note that anomalous is not analogous to rare, as it is experienced relatively frequently in the general population. Although no study has determined its prevalence, some studies estimate its rate is up to 70% of the general population (Barnby & Bell, 2017).

Additionally, this phenomenon has been experienced throughout history and across cultural lines (Pierre & Persinger, 2006). Due to its expansive array, both its phenomenology and triggers are extremely varied. Such variety allows for an intriguing investigation into the processes that help define and understand the self. However, such variety also complicates the systematic investigation into this phenomenon. Perhaps in part due to this variety, the majority of research into FP has been through case reports. Nevertheless, important common themes still appear consistently in the descriptions of FP.

Most frequently, FP is simply described as the awareness of a general presence as a certain "vagueness and immateriality" (Brugger et al., 1996). However, people may also be able to identify it as a deceased loved one (Brugger et al., 1996). The nature of FP does not remain consistent, neither within participants nor between them. There is one reported instance of a neurological patient who first experienced FP as a vague shadow, but then identified it as her husband after he passed away (Brugger et al., 1996). Additionally, in one case report, a patient with Parkinson's disease experienced their FP in the afternoon and identified it as the same presence as the visual hallucination they experienced in the morning (Fenelon et al., 2011). Other cases have reported changes from a general "shadow" to a "person" of indiscriminate sex, to a

“man” (Arzy et al., 2006). Roballo and Delgado (2019), suggest that these changes in the nature of FP (e.g., shadow to man) may be dependent on the emotional state of the person experiencing them, or stated succinctly, is dependent on “emotional coding”. However, additional empirical evidence is necessary to support this hypothesis.

The location of FP is also variable between participants, and is commonly spontaneously reported (Picard, 2010). Although it is most often experienced contralaterally to a brain lesion (generally a right hemisphere pathology and therefore possibly experienced more on the left side), the lateralization of this phenomenon is not convincing in a healthy population. In one case series analyzing 31 different cases, 61% reported sensing a presence on their right side-- the opposite as predicted (Brugger et al., 1996). Furthermore, Picard (2010) reported a case in which a patient experienced a FP directly in front of her. The nature of this experience resists lateralization. FP is generally considered to be located within one’s peripersonal space (PPS), or within reach (Nielsen, 2007; Picard, 2010). FP is related to activation in the temporoparietal junction (TPJ) and frontoparietal regions, which are associated with PPS (Vieira et al., 2020). However, some studies define FP as occurring “near the extra personal space” (Roballo & Delgado, 2019). Additionally, if FP is based more on the idea of social connectedness, which is not limited by a physical space, it may be possible that FP is not bound by peripersonal space (Ratcliffe, 2021). Therefore, this research seeks to determine the location of FP, more definitively.

Additionally, FP has some variability in the duration of the experience. Some patients report experiencing it for as long as 15 minutes, while for others it only lasts a few seconds (Brugger et al., 1996). In specific instances of extreme stress, such as solitary mountain climbing at high altitudes, these experiences can last for hours at a time (Brugger et al., 1999). The

majority of the population that experience FP do so for only a few seconds; 80% of a Parkinson's sample that experienced felt presence experienced it only briefly, but multiple times a week (Fenelon et al., 2011).

As demonstrated above, the presentation of FP can vary greatly. The general factors and environments that are associated with these experiences, and instances considered triggers for this experience, vary greatly as well. These can include mental disorders, organic diseases such as epilepsy (Arzy et al., 2006; Brugger et al., 1996; Landtblom et al., 2011), Parkinson's disease (Fenelon et al., 2011), bereavement (Castelnovo et al., 2015; Kamp et al., 2020; Larøi et al., 2019; Ratcliffe, 2021; Steffen & Coyle, 2011), and various environmental stimuli such as high stress experiences (Brugger et al., 1999). Additionally, FP is more common in those who are religious than in the general population (Barnby & Bell, 2017; Yamamoto et al., 1969), as well as easier to experimentally induce in women (Persinger, 1992, 2003). The large variation in environments which trigger this experience necessitates the creation of a general sensed presence questionnaire, which was created recently by Barnby & Bell (2017). However, this questionnaire lacks some specificity regarding the phenomenology of FP, including duration, location, frequency, and distress associated with FP. Therefore, it should be modified and tested in a general population.

Felt presence (FP), despite generally occurring spontaneously, can be induced through various means. It has been reliably induced in participants through noninvasive electric or magnetic stimulation of the frontoparietal regions (Booth & Persinger, 2009). This result remains when general suggestibility and temporal lobe excitability are taken into account (Pierre & Persinger, 2006). Furthermore, one case study of an epileptic patient reports that FP could be repeatedly induced by electrical stimulation to the left temporal parietal junction (TPJ) (Arzy et

al., 2006). Therefore, the TPJ appears to play an important role in the experience of FP. The TPJ is the site of multisensory integration in the brain wherein the systems associated with different senses (taste, touch, smell, hearing, seeing) combine (Arzy et al., 2006).

The general population may experience FP at relatively high rates compared to other anomalous experiences (Larøi et al., 2019). However, it is important to consider this phenomenon in specific populations of interest as well, such as Parkinson's and schizophrenia. Although this phenomenon has been catalogued in Parkinson's (Fenelon et al., 2011), there has been little research in its connection to schizophrenia (SZ) or psychosis-risk, which is surprising given the elevated rates of anomalous perceptions in schizophrenia (Bell et al., 2006), in addition to the high prevalence of these anomalous self-experiences in this population (Barnby & Bell, 2017; Bell et al., 2006; Benson et al., 2019; Ferri et al., 2018; Michael & Park, 2016; Milne et al., 2017; Thakkar et al., 2011). The presence of these anomalous self-experiences may be a risk factor for SZ. Therefore, those who may have a latent liability for schizophrenia (e.g. prodromal individuals) are also likely to experience FP.

Present Research

The present research sought to investigate the phenomenology of FP in individuals who may be at elevated risk for schizophrenia. We hypothesized that prodromal individuals would report experiencing FP more often than those who are not at risk for schizophrenia. We also aimed to conduct a qualitative study of individuals who are diagnosed with schizophrenia to delve into the subjective experience of FP which will inform future investigations. It is important to investigate both broad trends (as investigated by a general survey) and individual experiences (as investigated by narrative descriptions) to gain a complete understanding of the phenomenon.

Study 1: Comprehensive Survey of Felt Presence in the General Population

Method

Design

We investigated the prevalence and experience of felt presence (FP) in the general population with an anonymous online survey, which received an IRB-exempt status from the Vanderbilt University Institutional Review Board. The survey included validated questionnaires of psychosis risk (Prodromal Questionnaire 16; PQ-16, (Loewy et al., 2011)) as well as questionnaires on trauma, loneliness, religious experiences, and aspects of mental health (depression, anxiety and stress). The questionnaire took approximately 45 to 60 minutes to complete.

Participants

Participants ($N=228$) were recruited online via social media (Twitter, Instagram, and Reddit) and word of mouth. 202 respondents completed the entire survey (58.9% female, mean age = 36.86, $S.D = 17.60$, complete demographic information found in *Table One*). The survey was offered in English only. Participants were not paid.

Measures

General demographic information, as well as information pertaining to previous experiences of FP were collected.

Demographic information was collected including age, sex, ethnicity, employment, religion, education level, types of residence, country of residence, and partial zip code. Additionally, this section asked if the participant has ever experienced an out of body experience. If so, the participant is asked if it was due to the use of drugs, either recreational or prescribed, or alcohol.

Following these demographic questions, participants completed seven validated questionnaires and inventories regarding their general mental health.

The Prodromal Questionnaire 16 (Ising et al., 2012) asks about hallucinations and delusions, and the participant's associated distress for each endorsed item, with distress being measured on a 4-point Likert scale. PQ-16 is widely used to ascertain those at risk for schizophrenia (prodromal group).

The 10-item Brief Trauma Questionnaire (Paula P. Schnurr et al., 2009) asks about traumatic events, such as sexual assault, natural disasters or war.

The Transliminality Scale (Thalbourne, 1998) is a 29-item measure on a five point Likert scale and asks about transliminal experiences, experiences were psychological thoughts cross in and out of consciousness.

The Depression, Anxiety and Stress – 21 Scale (Osman et al., 2012) measures depression, stress and anxiety. This measure contains three separate scales for each category.

The 16-item Daily Spiritual Experience Scale (Underwood & Teresi, 2002) inquired about the participants' relationship with God or spiritual being, as well as their general feelings toward spirituality, nature, and humanity through 6-point Likert style questions.

The UCLA-Loneliness Scale (Russell, 1996) assessed perceived social isolation and loneliness through 21 questions rated on a 4 point Likert scale.

The Brief Resilient Coping Scale (Sinclair & Wallston, 2004) has 4-items and determines a participant's tendency to cope adaptively when faced with stress on a 5 point Likert scale.

The Sensed Presence Questionnaire (SenPQ: Barnby & Bell, 2017) assesses the prevalence and experience of FP. There are sixteen questions that probe a wide variety of possible scenarios wherein a participant may experience FP in order to gain a complete picture of

this phenomena. Participants either endorse or do not endorse each question. Additionally, for each question, if endorsed, the participant noted the vividness, frequency and distress associated with the FP in that scenario on a 5-point Likert scale.

Lastly, a new question was included to see if the participant could locate where they experience the FP. This question was added as it has been suggested that patients spontaneously report the location of the presence (Picard, 2010), although this has not been confirmed in a general population.

Detailed questions about Felt Presence. Participants continued to part two of the survey if they endorsed having experienced a FP. This portion of the survey requested further details about the FP experiences: the duration of the experience (multiple choice), frequency (open ended), familiarity (yes/no), approximate location (select all that apply), qualities of the FP (series of yes/no questions), sensations that accompany the FP (select all that apply with ‘other’ option), control over the FP (yes/no), and understanding of the FP (select all that apply with ‘other’ option). These questions had a variety of styles, including open ended, multiple choice, yes/no, or ‘select all that apply’. The participants noted the location of the FP by associating it with a square on a numbered grid overlaying a human figure. Location of FP was also determined in a multiple-choice, ‘select all that apply’ format, which includes more dimensional locations, such as above, below, in front, behind, or to the left or right. Additionally, participants reported their age when they first experienced a sensed-presence, along with any potential triggering events in a short-answer style format.

Part two of the survey concludes with two questions allowing for narrative descriptions of the FP. The questions are phrased in such a way to elicit true descriptions. One question asks,

“how do you perceive the felt presence in relation to yourself”, while the other asks, “please describe the characteristics of the sensed presence with as much detail as possible.”

Procedure

The participants were able to directly access the survey link when notified of the opportunity to participate in the current research. Participants opened and completed this survey on any device connected to the internet. All survey measures were completed through RedCap. As the participant moved through the survey, they were told the percent of the survey they have already completed. Once they completed the survey, they were thanked for their time and data they provided.

Results

Survey data was screened to ensure participants completed the entire survey. A total of 228 participants began the survey but 26 participants were excluded for incomplete data. Table 1 describes the demographic characteristics of the sample.

To determine if those who experience FP and those who do not have differences, the sample was separated into two groups, FP-present and FP-absent. Those who endorsed at least one question on the SensePQ were placed into the FP-present group (N = 122), all others were placed into the FP-absent group.

First, we were interested in determining the relationship between psychosis proneness and FP. Employing an ANOVA, we found that those experiencing FP scored higher on the PQ-16 than the FP-absent group ($F(1,200) = 60.611, p < 0.001$). Those who experience FP are more psychosis prone. To determine if this relationship is degree dependent, we conducted a spearman correlation in the FP-present group between overall SensePQ scores (sum total of endorsement, distress, vividness, and frequency) and PQ-16. There is a strong and positive relationship

between FP experience and psychosis proneness ($r=0.4$, $p<0.001$). Since psychosis-proneness can also be understood categorically, we then formed two groups, high-risk (HR) and low-risk (LR), according to scores on the PQ-16. Those scoring higher than 6 were designated to the high-risk group and the others to the low-risk group. The cut-off score of six was established by Ising et al., (2012). Using independent ANOVAs, we found that those in the HR group endorsed significantly more items ($F(1,200) = 36.142$, $p<0.001$) on the SensePQ, at a higher frequency ($F(1,200) = 31.08$ $p<0.001$), and more associated distress ($F(1,200) = 47.64$ $p<0.001$), and vividness ($F(1, 200) = 31.35$ $p<0.001$) than those at low-risk for psychosis.

Next, we asked if those with FP experienced more general mental health issues, beyond an increased psychosis-proneness. Using an ANOVA, we found that the FP-present group experienced more stress ($F(1,200) = 15.182$, $p = 0.0013$), anxiety ($F(1,200) = 15.05$, $p = 0.0014$), and loneliness ($F(1,200) = 35.22$, $p <0.001$) than the FP-absent group. There were no significant differences in depression between the groups ($F(1,200) = 4.9836$, $p = 0.267$). To determine if the degree of FP experienced is associated with the degree of mental health risk we conducted spearman correlations. Among those with FP, there is no significant association between overall score on the SensePQ and depression, anxiety, stress, or loneliness ($p = 0.85$, $p = 0.53$, $p = 0.76$, $p = 0.33$, respectively).

We then examined the two groups (FP-present v FP-absent) for possible benefits of FP. Utilizing ANOVA, we found that those with FP are more resilient ($F(1,199) = 41.8$, $p<0.001$) and transliminal ($F(1,163) = 104.13$, $p <0.001$). However, there were no differences in spirituality between the two groups. To determine if the relationship between FP-presence and resiliency and transliminality is degree dependent, spearman correlations were conducted in the FP-present group. There is a significant, positive relationship between transliminality and overall

SensePQ scores in those with FP ($r= 0.50, p < 0.001$), and no degree dependent relationship between resiliency and SensePQ in those with FP ($r=0.14, p =0.11$).

Lastly, we examined possible phenomenological differences in presentation of FP between psychosis-proneness groups. There appears to be no large differences in location of FP between groups (Figure 1). Only 32.8% of those who experienced FP could pinpoint its location. However, those in the HR group endorsed understanding the FP more as a symptom of illness, social isolation/loneliness than those in the LR group (Figure 2). Additionally, the HR group endorsed having more control over FP, greater ability to touch the FP, and having a distorted perception of time while experiencing FP than the LR group (Figure 3).

Discussion

As predicted, those with prodromal psychosis (the high-risk group) experienced FP with greater frequency, associated distress, and vividness and FP is associated with greater risk for psychosis. This aligns with previous research suggesting that those at risk for psychosis experience higher prevalence of anomalous perceptions compared to those with lower risk (e.g Michael & Park, 2016). Importantly, this relationship was found to be degree dependent, meaning that the more FP one experiences, the higher risk they are to develop psychosis. This makes FP an excellent candidate marker for schizophrenia.

The phenomenological experience of prodromal individuals also differed from low-risk individuals as they had more associated sensations, including touch, and a different perception of time while experiencing FP. This is congruent with experiences of those with schizophrenia, as they often endorse a general difference in perception of time (Ueda et al., 2018). Therefore, it is possible that prodromal individuals are experiencing hallucinations, such as FP, in a similar manner as those with schizophrenia.

Additionally, there were differences in understanding of what the FP was a result of between groups – the HR group understood the FP to be a symptom of illness. This suggests that prodromal individuals maintain a level of insight regarding their psychosis. Indeed, a recent meta-analysis has found that at-risk individuals had similar overall cognitive insight abilities compared to healthy controls (Dondé et al., 2021). However, evaluating FP as a symptom of illness may be erroneous because FP is still relatively common within the general population. Future research should investigate a possible moderating variable in the relationship between psychosis risk and understanding FP as a symptom of illness, such as additional sensations (e.g. touch) that accompany the FP.

It is interesting to note that those at high-risk for psychosis are more likely to understand their FP as a ghost or a bad spirit than those with LR, although this difference is not as great as other categories of understanding of FP. This is, perhaps, a possible moderating variable in the relationship between psychosis risk and understanding FP as a symptom of illness.

In opposition to our hypothesis, there were no differences in where the FP was located (nearby vs far away) between the two risk groups. Distance is an important variable to consider, as it imperfectly measures peripersonal space (PPS), which is theorized to be an important component of sense of self, and subsequently anomalous perceptions. It is interesting to note that there was a relatively low number of endorsements, as only 35 and 27 participants in the FPP group endorsed experiencing the FP nearby and far away respectively. This suggests that the majority of participants experience FP at a relatively moderate distance away from them. If this is the case, then differences in distance of the FP between groups, and subsequently PPS, would be slight, by only a few centimeters. Indeed, differences in PPS between patients with schizophrenia and controls are around 0.2 meters (Lee et al., 2021). However, the lack of clear

difference between groups could also be due to only 33% of participants being able to pinpoint where they experienced the FP. This is in opposition to what is found in neurological populations (Arzy et al., 2006; Picard, 2010).

It is important to note that 46% of those in the low-risk group also endorsed experiencing a FP. This further supports the idea that FP is a relatively common phenomenon. Due to its frequency, FP is an ideal anomalous perception to investigate in the general population to better understand how these perceptions arise, as well as their implications for the greater understanding of the self. One's sense of self is at their core of their experiences and interpretation of those experiences. In investigating anomalous perceptions, such as FP, it is possible to gain insight into how the sense of self is constructed through observing the self when it is slightly deconstructed.

Lastly, this study provided important preliminary results regarding the possible negative effects accompanying experiencing FP, including increased anxiety, stress, and loneliness. However, these effects are not degree dependent, meaning that those who experience FP more frequently do not experience higher levels of anxiety and stress. This suggests that experiencing FP only once may heighten susceptibility to other mental health risks. Future research should investigate if there is a directional component to this relationship.

Nevertheless, FP is associated with some beneficial aspects, including increased resiliency and transliminality. This suggests that in some situations FP is adaptive and beneficial to those experiencing it. Future research should investigate what circumstances lead to a beneficial FP (FP associated with increased resiliency) versus maladaptive FP (FP associated with anxiety and stress).

Study 2: Qualitative Investigation of FP through Collected Narratives

Felt presence (FP) varies drastically in its presentation, including its duration, distance from the person experiencing FP, and general description of the FP. Therefore, if FP is to be systematically investigated in the future, there first must be phenomenological accounts of this experience to determine how vast this variety is, along with any accompanying sensations.

Method

Design

We conducted interviews with participants diagnosed with schizophrenia or schizoaffective disorder who experienced felt presence, to gain a more in-depth qualitative data. Written informed consent was obtained from the participants. The study procedure was approved by the Vanderbilt University Institutional Review Board.

Participants

Two participants with schizophrenia and one patient with schizoaffective disorder were interviewed. These participants were recruited from an ongoing study of social cognition in ParkLab. This interview was between 30 minutes and 1.5 hours long and the participants were compensated \$20 per hour and for travel.

Qualitative Interviews

One patient, BS, is a 21-year-old male, with the diagnosis of schizophrenia and bipolar disorder. Additionally, he has had one seizure in the past. He has endorsed drug use, including marijuana, amphetamines, cocaine, sedatives, LSD, hallucinogens, ecstasy, opiates, and inhalants, with the most frequent and heavy use being marijuana, sedatives, and inhalants. He previously has been addicted to drugs. He has completed 17 years of education. His symptoms began at the age of 20 and has been hospitalized twice to receive treatment. He is currently

taking medication and receiving Cognitive Behavioral Therapy. Less than three months prior to the qualitative interview, BS was interviewed employing Scales for the Assessment of Positive and Negative Symptoms (SAPS and SANS), as well as the Brief Psychiatric Rating Scale (BPRS). He endorsed severe anxiety ('5' out of a six-point scale), moderately severe depression, guilt, blunted affect, and mannerisms/posture ('4' out of '6'). Additionally, he experiences auditory and visual hallucinations, along with delusions of sin and grandiosity. Throughout the interview he demonstrated blunted affect, with unchanging facial expressions and lack of vocal inflections. However, speech was coherent and organized.

The second patient, CM, is a 56-year-old male, with the diagnosis of schizophrenia, who has completed 11 years of education. Over the course of his 25 years with SZ, he has been hospitalized once. He is currently taking medication. Less than three months prior to the qualitative interview, CM was interviewed employing Scales for the Assessment of Positive and Negative Symptoms (SAPS and SANS), as well as the Brief Psychiatric Rating Scale (BPRS). He had moderately severe ('4' out of '6') conceptual disorganization, motor retardation, and uncooperativeness. His symptoms appear mainly in the form of persecutory delusions. He also had difficulty organizing speech, as well as alogia. He has history of drug use, last using marijuana and amphetamines more than 30 years ago. He does not currently endorse substance abuse problems or drinking.

The third patient, RM, is a 66-year-old male, diagnosed with schizoaffective disorder at the age of 23. RM holds a master's degree and is currently working and taking medication. He has been hospitalized around 15-20 times. He has no history of seizures or ECT. He has reported difficulties with his vision, due to having glaucoma, for which he previously received eye surgery. RM experiences ocular migraines accompanied by visions of geometric patterns. RM

also has infrequent hallucinations of his brother and father. Executive functioning, language, and memory seemed intact, although no formal interviews or measures were conducted.

Procedure

Participants were interviewed by the author, alongside trained research staff or graduate students. Interviews were loosely structured, generally following the SensePQ, with the allowance for additional detailed questions regarding statements that they endorsed. Additional questions included, but were not limited to, duration, distress, comfort, frequency, understanding of, and location of the felt presence.

Results

All those interviewed endorsed felt presence experiences.

BS has two different experiences with felt presence, one that is generally positive, and one that is more negative. During times of stress, BS feels his deceased friend's presence. This presence is felt within his chest and heart and is accompanied by the feeling of happiness. Additionally, it is felt on the right side, but occasionally behind him. BS expressed some difficulty in discerning if this presence was a hallucination or a separate feeling of presence. Feeling the presence of his friend is often accompanied with hearing his voice saying encouraging things, such as "you're doing a good job." The relationship with the FP was described as distant, but still present. BS also was aware that feeling the presence of his friend may be a hallucination/symptom of schizophrenia. BS also feels the presence of "shadow people". BS identified 2-3 distinct "shadow people", who are black blob-like figures, although BS cannot tell them apart. This FP also has voices attached to it, telling BS negative things, such as 'you're going to get into a car wreck'. These FP only occur for a split second but occur more frequently at night. Sometimes these negative FPs are accompanied by throwing up. The

“shadow people” also appear more frequently during times of stress. The distinct FPs never occur at the same time as one another.

CM endorses feeling the presence of both positive and negative spirits. In times of stress or potential danger, such as a flash flood, falling down, or an uncontrolled vehicle, CM has felt the presence of a spirit or guardian angel. Additionally, at times CM feels a bad spirit accompanying either himself or others. These bad spirits may influence others to act poorly, or not pay attention during important and dangerous tasks, such as driving in a busy street. However, this influence of bad spirits is towards others, not himself. Lastly, CM feels as though some of his family members are next to him when he thinks of them, although this is not a constant presence. Overall, CM feels as though there are multiple presences throughout his life, present during any major event or event with intense emotion attached to it.

RM can identify three distinct felt presences. Two of them are associated with feelings of warmth and comfort, as they are the presence of his deceased father and brother. Although self-identified by RM as feelings of presence, further questioning led to understanding that these FP are accompanied by visual and auditory hallucinations of both the brother and father. These hallucinations occur directly in front of RM, for around 15-20 minutes. RM clarified that the hallucinations and FP are “one package” and cannot be separated by one another. These FP are accompanied by feelings of warmth and comfort and described in an overwhelmingly positive manner. These FP/hallucinations occur with more frequency when under stress. RM’s third distinct FP was described as moderately threatening, bad, scary, short (4ft), fat shadow that is felt 2-3ft behind RM. This presence usually only occurs in stores with bright lights and is accompanied by feelings of dizziness and disorientation. The FP lingers for around 10-15 minutes after it first begins. When questioned about his relationship with the FP, RM was

surprised at the terminology, but later confirmed that it was a sort of threatening relationship with the FP, and that relationship was the correct terminology.

Discussion

These collected narratives demonstrate the variation in presentation of felt presence (FP), both within and between subjects. It is important to note that all participants endorsed experiencing both positive and negative FP. There were some phenomenological differences between positive and negative experiences. Both RM and BS experienced a positive FP that was a friend or family member and could be clearly identified. In contrast, their negative FP were described as being dark and unlike a normal human figure. Perhaps the presence being known to them leads to a more positive FP experience. However, CM experienced a general, nondescript guardian angel presence that was associated with feelings of warmth and gratitude. Therefore, specific identification is not necessary to experience positive FP. Future research should investigate the degree to which identifying FP leads to positive experiences.

Although description changed between positive and negative FP experiences, duration and associated auditory hallucinations remained similar. However, they were different between patients. Perhaps duration and associated sensations remain stable within individuals but may differ between individuals. Future research should work to address this gap in understanding.

Each patient expressed some confusion when asked to determine if their FP experience was a unique FP experience or had an associated visual hallucination. It is likely that visual and auditory hallucinations are often accompanied by feelings of presence, although they can occur separately as well, in both healthy populations and those with schizophrenia. It may be possible that hallucinations with a feeling of presence are related to higher severity and distress of symptoms, although this must be investigated further.

Discussion

Felt Presence (FP) is an experience in which an individual feels the presence of a human, or being, without them actually being present. The presentation of FP is extremely varied in description, duration, and distance from the individual. These studies confirm the variability of presentation in both large survey and detailed narratives from patients with schizophrenia or schizoaffective disorder. However, some trends and commonalities were discovered.

FP appears to be extremely common in both those with schizophrenia/schizoaffective disorder and those at high-risk for psychosis. Experiencing more FP, and associated distress, is associated with a higher risk for psychosis. Therefore, it is important to further probe these experiences in a clinical setting. However, presentation of FP in a high-risk (HR) group may be different than that in those with schizophrenia/schizoaffective disorder. The HR group experienced control over their FP and alterations in perception of time during the FP. Patients interviewed endorsed neither of these aspects of their FP experience. However, this may be because they were not explicitly asked about these experiences.

It is interesting to note that there were no extreme differences between psychosis risk groups regarding understanding the presence as something negative vs positive. One possible reason for this may be that individuals have multiple FP, and some are understood as negative, while others are regarded positively. On the general survey, more than 50% of those who understood their FP as a ghost or bad spirit also understood their FP as an angel or good spirit. This finding is further supported by the interviews conducted with patients diagnosed with schizophrenia or schizoaffective disorder; all patients endorsed experiencing both a positive and negative felt presence. However, these results must be interpreted cautiously due to the small sample size. Nevertheless, it is important to consider both positive and negative FPs in future

investigations. As described in Study 2, positive and negative FP may present differently, and therefore descriptions and sensations associated with the FP must be collected and analyzed separately.

The general endorsement of positive FP is important to note as it is somewhat distinct from what is colloquially thought of regarding anomalous perceptions: that anything anomalous is negative. These anomalous perceptions bring comfort to individuals, both patients and healthy survey participants. This demonstrates that it is important to not only probe negative experiences with a felt presence, and the distress associated with it. Positive experiences, as well as positive feelings such as warmth or comfort, should also be explicitly questioned.

There are some important limitations to consider. It is possible that people have differing understandings and definitions of felt presence, as seen in the differentiation between hallucinations and FP in interviews. Therefore, people may not endorse experiencing a FP because they are unsure of the definition. Additionally, they may be afraid of stigma associated with FP, although this is less likely due to the anonymity of the survey. Another limitation of the study is that all characteristics of the FP were not investigated - the characteristics questioned were limited by the thoughts of the investigators, who had not experienced FP themselves. It is possible that there are other characteristics of FP that differentiate between the high and low psychosis risk groups that were not investigated. The narratives collected regarding felt presence aimed to reduce this possibility in future work.

Another important limitation in this study is that survey participants were not asked to describe their experiences associated with the FP for separate FPs. The narratives by patients demonstrate that there may be important characteristic differences between positive and negative

FP. Therefore, future investigations should aim to investigate the presentation of positive and negative FP separately.

This preliminary systematic investigation into FP demonstrates that FP is a relatively common phenomenon that presents with a multitude of differing characteristics both within and between people. Additionally, some of these characteristics are different between high and low risk groups, such as touch and perception of time. Future studies should both confirm these results and further probe differences in location of FP between groups.

Table One*Demographic Characteristics*

Number of Participants	202
Mean Age (SD)	36.86 (17.60)
Percent Female	58.90%
Years of Completed Education (SD)	16.53 (2.87)
Ethnicity/Race % (number)	
Percent Hispanic/Latinx	6.4% (13)
percent African American/Black	4.95% (10)
Percent Asian	18.8% (38)
Percent White	56.9% (115)
Percent Native American	0.495% (1)
Percent "Other"	12.3% (25)
Religious Affiliation % (number)	
Atheist/Agnostic	34.6% (70)
Christian (catholic, protestant, orthodox, mormon)	31.68% (64)
Muslim	1.98% (4)
Jewish	3.96% (8)
Hindu	9.9% (20)
Buddhist	0.99% (2)
Other/prefer not to answer	14.35% (29)
Full time Employed/student	74.25% (150)
Percent Live alone	19.8% (40)
Percent Live with roommates/friends	11.38% (23)
Percent Living with Family	36.1% (73)
Percent living in USA	78.2% (158)
Percent High Risk for Psychosis	36.1% (73)

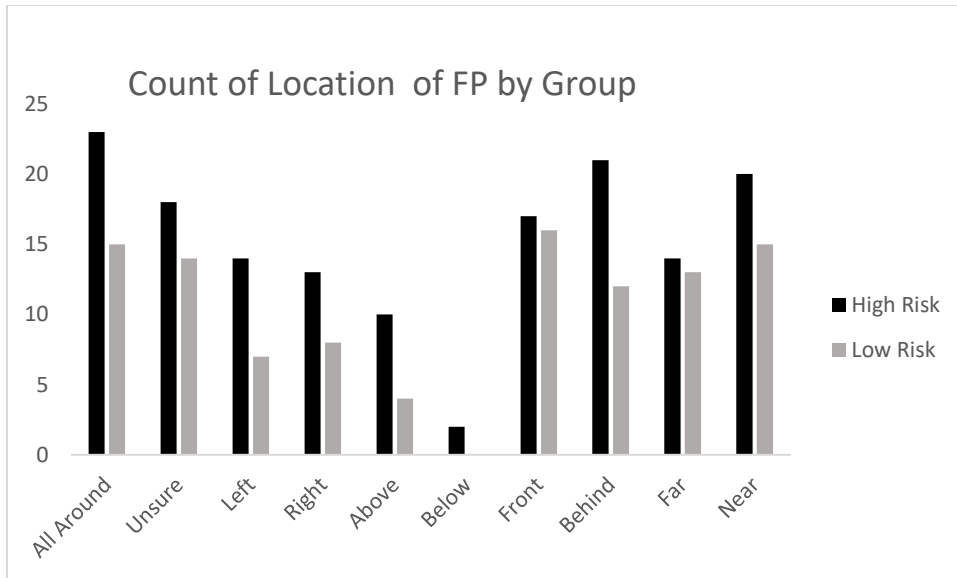


Figure 1. Differences in Location of Felt Presence by Group

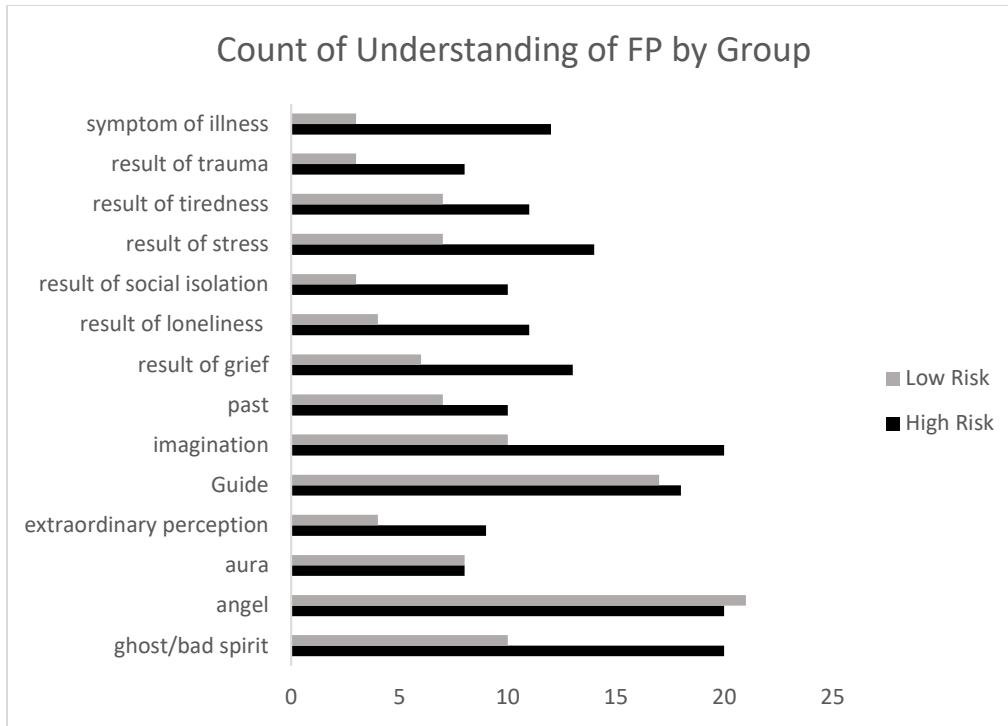


Figure 2. Differences in the Understanding of Felt Presence by Group

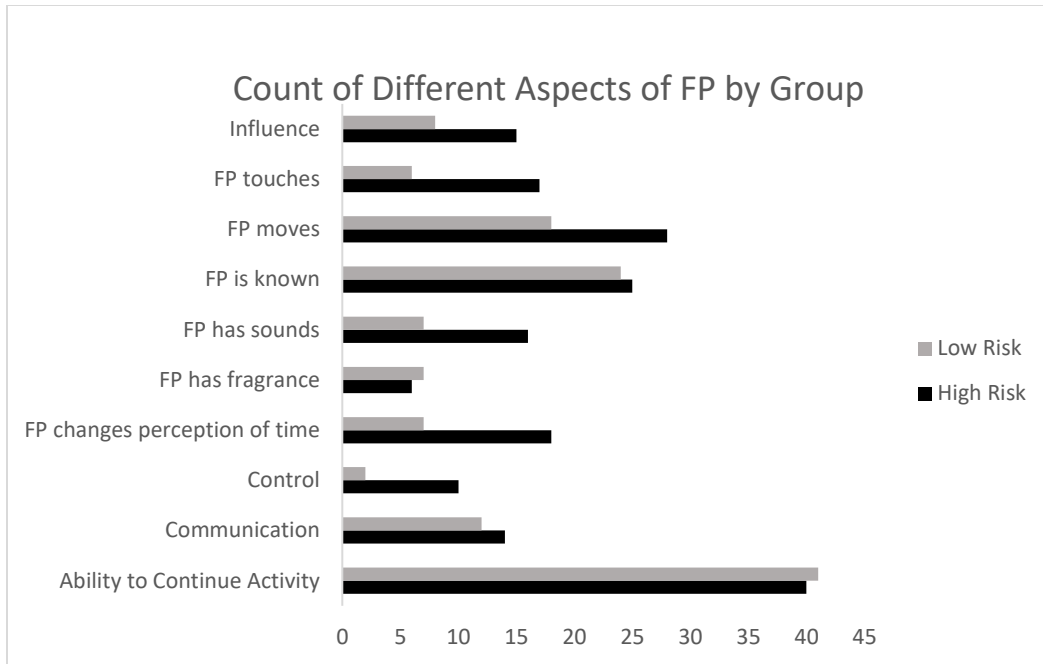


Figure 3. Differences in Presentation of Felt Presence by Group

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