

Confirmatory Study of Anomalous Experiences in Enchanted Spaces

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Abstract – This pre-registered study tested the concept of an ‘enchantment–psi loop’ via distinct immersive visits to sacred, haunted, and augmented reality environments. In particular, we specified four hypotheses based on the premise that anomalous experiences and cognitions would significantly shift by applying a Paranormal Belief \times Transliminality \times Enchantment formula. A vetted sample of thin-boundary participants ($n = 22$) organized into small tour groups completed measures of environmental features, real-time encounter experiences, enchantment levels, and a computerized test of putative psi after counterbalanced exposure to each of the three ‘enchanted’ conditions, as well as paired testing sessions within a purposely ‘disenchanted’ environment. Our hypotheses received mixed support. Consistent with predictions, participants’ scores on both encounter experiences and psi performance increased in the enchanted vs. disenchanted conditions, though situational-enchantment levels correlated positively with encounter experiences and negatively with putative psi. Participants also tended to have above-chance scores in the enchanted conditions, but many of our predicted effects did not reach statistical significance. Tangential analyses revealed that both encounter experiences and putative psi were also influenced differentially by various emotional (i. e., feelings of happiness), motivational (i. e., attentional focus), and environmental (i. e., sentimentality

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and presence) factors. The results lend credence to aspects of the enchantment-psi loop yet indicate the need for future research to clarify important nuances or complexities with the model that likely affect the reliability or robustness of its predictions.

Keywords: enchantment – immersive experiences – interactionism – liminality – psi

Konfirmatorische Studie über außergewöhnliche Erfahrungen in „verwunschenen“ Räumen

Zusammenfassung² – Diese vorab registrierte Studie testete das Konzept einer „Verzauberungs-Psi-Schleife“ durch verschiedene immersive Besuche in heiligen, „verwunschenen“ und Augmented-Reality-Umgebungen. Insbesondere haben wir vier Hypothesen aufgestellt, die auf der Annahme basieren, dass sich anomale Erfahrungen und Kognitionen durch die Anwendung einer Formel Paranormale Glaubensvorstellungen \times Transliminalität \times Enchantment (Verzauberung) signifikant verändern würden. Eine geprüfte Stichprobe von Teilnehmenden mit „dünnen Grenzen“ (thin-boundary) ($n = 22$), wurde in Gruppen eingeteilt, die in ausgeglichener Exposition je-weils zu drei Orten mit „verzauberten“ Bedingungen und drei Orten mit absichtlich „entzauberten“ Umgebungsbedingungen fuhren, um Testsitzungen durchzuführen. Dort schätzten sie Umgebungsmerkmale, Echtzeit-Begegnungserfahrungen³ sowie „Verzauberungsgrade“ ein und absolvierten einen computergestützten Psi-Test. Unsere Hypothesen wurden in unterschiedlichem Maß bestätigt. In Übereinstimmung mit den Vorhersagen erhielten wir höhere Werte der Teilnehmenden sowohl bei den „Begegnungserfahrungen“ als auch bei der Psi-Leistung unter den „verzauberten“ Bedingungen im Vergleich zu den „entzauberten“ Bedingungen, wenngleich der Grad der Situationsverzauberung positiv mit den Begegnungserfahrungen und negativ mit der vermuteten Psi-Leistung korrelierte. Die Teilnehmenden hatten unter den „verzauberten“ Bedingungen auch tendenziell überdurchschnittliche Werte, aber viele der von uns vorhergesagten Effekte erreichten keine statistische Signifikanz. Tangentiale Analysen ergaben, dass sowohl Begegnungserfahrungen als auch mutmaßliche Psi-Leistungen von verschiedenen emotionalen (d. h. Glücksgefühlen), motivationalen (d. h. Aufmerksamkeitsfokus) und umweltbezogenen (d. h. Sentimentalität und Präsenz) Faktoren unterschiedlich beeinflusst wurden. Die Ergebnisse verleihen Aspekten der „Verzauberungs-Psi-Schleife“ Glaubwürdigkeit, weisen jedoch auf die Notwendigkeit zukünftiger Forschung hin, um wichtige Nuancen oder Komplexitäten des Modells zu klären, die wahrscheinlich die Zuverlässigkeit oder Robustheit seiner Vorhersagen beeinflussen.

Schlüsselbegriffe: Verzauberung – immersive Erfahrungen – Interaktionismus – Liminalität – Psi

2 Eine erweiterte deutsche Zusammenfassung befindet sich am Ende des Artikels auf den Seiten 425–426.

3 Damit sind Erfahrungen der Teilnehmenden an den verschiedenen Orten gemeint, die von ihnen als Begegnungen mit Entitäten (Geistern oder anderen Wesenheiten) interpretiert wurden (Anm. des Übersetzers).

Some spaces are perceived as more uncanny and enchanted than others (e.g., Puhle & Parker, 2021) – an observation that equally applies to individuals (e.g., Cardeña et al., 2014). Our research therefore has adopted a system or biopsychosocial view that models anomalous experiences and psi-type cognitions [or what Rhea White (1990) termed exceptional human experiences: EHEs] as an interactionist phenomenon emerging from the “right people in the right settings” (Laythe et al. 2018, p. 210; cf. Houran et al., 2023; Laythe et al., 2021). Specifically, we propose that EHEs often are not random occurrences but rather predictably manifest during conditions of thin (or loose) mental boundary functioning. This idea is exemplified by Lange and Houran’s (2021) hypothesis of an ‘enchantment-psi loop,’ i.e., the formula of ‘Transliminality × Paranormal Belief × Situational-Enchantment’ for stoking anomalous experiences that might be parapsychological in nature. Transliminality and Paranormal Belief are mutually-reinforcing constructs (Thalbourne & Houran, 2003; Thalbourne & Storm, 2012) that are familiar to most researchers in consciousness studies, but situational-enchantment is a newly developed concept from a psychometric perspective and so deserves clarification.

Situational-enchantment denotes a complex arousal state involving absorption within a melee of ‘pleasant’ ideations and emotions (e.g., excitement, surprise, awe, and wonder), simultaneously mixed with more ‘unpleasant’ ideations and emotions (e.g., uneasiness, disorientation, tension, and unpredictability). This happens when a person environment interaction disrupts an individual’s normal waking experience with a sudden, unexpected, or profound awareness and seeds a transformative feeling of connection to a ‘transcendent agency or ultimate reality’ (for a review and discussion, see Drinkwater et al., 2022; cf. Houran et al., 2022).⁴ But note that this experience ostensibly follows a process that begins with uncomfortable dissonance and gradually culminates in an uplifting sense of personal transformation (Drinkwater et al., 2022). Consequently, these mixed emotions do not define a calm, relaxed, or simple internal attention state but rather underscore a psychological experience rooted in ‘ontological shock.’ Enchantment is nevertheless a normal part of the human condition and emerges when science or practical knowledge have little utility (Bennett, 2001). It can therefore be invoked in many scenarios, such as delighting in art or nature, as well as participating in other kinds of immersive experiences that markedly alter people’s perceptions or notions of reality (Lamont, 2017; Lange et al., 2022; van Elk et al., 2016).

4 Drinkwater et al. (2022) further argued that the situational-enchantment construct – which qualitatively parallels the ideas of numinosity (Lönneker & Maercker, 2021), extraordinary architectural experiences (Bermudez, 2015), ontological shock (Mack, 1994), (spiritual) awakenings (Corneille & Luke, 2021; Taylor, 2012), absolute unitary experiences (Jones, 2004), and ‘Stendhal syndrome’ (Guerrero et al., 2010) – subsumes and extends the epistemic emotion of mere ‘awe’ (cf. Schaffer et al., 2023). Readers are also encouraged to consult Murly (2022) for a discussion on the concepts of Oneness vs Nothingness relative to religio-spiritual experiences.

In a conceptual replication, Lange et al.'s (2023) preregistered study examined hit rates on a mobile test of putative psi (Laythe & Roberts, 2022) that was administered after participants experienced two competing conditions in counter-balanced order: (a) an "enchanted" immersive tour in a "haunted" house museum versus (b) a "disenchanted" outdoor tent session with a video that aimed to debunk the paranormal. Their convenience sample of 33 volunteers also completed standardized measures of transliminality (TLIM) and paranormal belief (PB), which were converted to high- and low-measurements as co-variates to the hit rates. Consistent with Lange and Houran's (2021) concept of an enchantment-psi loop, the results showed that high levels of both TLIM and PB, as well as the 'haunted/enchanted' versus 'skeptical/disenchanted' conditions significantly shifted overall correct hit rates and above-chance performance. In the majority of analyses these effects represented more than a 10% shift in both hit rate and tests against average psi-guessing rate. These results strongly support an interactionist model and further suggest that the state of situational-enchantment can spawn the equivalent of 'psychic openings' (Greyson, 1983; Storm & Goretzki, 2020, 2021) virtually on-demand.

The Present Study

Extending the above literature, we developed a two-stage, confirmatory protocol (Houran & Laythe, 2023) to examine more rigorously the predictive validity and practical utility of Lange and Houran's (2021) concept of an enchantment-psi loop, i.e., the formula of 'Translinality \times PB \times Situational-Enchantment' for generating successive anomalous experiences that might involve putative psi, i.e., transfers of information ostensibly outside the known sensory capabilities of humans (see e.g., Cardeña, 2018). A repeated measures design thus assessed real-time enchantment levels, contextual and environmental influences, encounter experiences, and psi scores in thin-boundary individuals (i.e., high TLIM and PB trait levels) who were exposed to a series of (a) 'Enchanted Conditions-A' in which they were immersed within separate sacred, haunted, and augmented spaces to fuel a sense of enchantment balanced with (b) 'Disenchanted Conditions-B' involving a psychologically dull environment coupled with skeptical presentations intended to undermine a sense of enchantment. We tested four planned hypotheses:

- H1: Conditions-A will produce significantly higher scores on the Psi Test, Survey of Strange Events, and Enchantment-Adjective Checklist than Conditions-B.
- H2: Conditions-A will produce above-chance scores on the Psi Test compared to chance-level scores in Conditions-B.
- H3: Scores on the Psi Test will positively correlate with scores on the Survey of Strange Events and Enchantment-Adjective Checklist.

- H4: Scores on the Visitor Experience Questionnaire (i. e., environmental Affordance, Ambiguity, Presence, and Sentimentality) will positively correlate with scores on the Psi Test, Survey of Strange Events, and Enchantment-Adjective Checklist.

Method

Transparency and Openness

This study was approved by the Institutional Review Board (IRB) of Integrated Knowledge Systems. Below we describe how we determined our research samples, all data exclusions (if any), specific research questions, applicable manipulations, and all measures and data abstractions, and we strived to follow the Journal Article Reporting Standards (JARS) (Kazak, 2018). This study's design, analysis, and research materials were pre-registered (<https://osf.io/czxf>) with the Open Science Framework (OSF) (Houran & Laythe, 2023) and conceptually replicate and extend the procedures used in Lange et al. (2023). We also subsequently deposited the raw data used in this study in our OSF entry.

Changes to the Preregistration

We modified our preregistered design in four necessary ways after gaining approval from the funding organization. *First*, pilot tests of the field study protocol with participants revealed that the repeated physical action of completing questionnaires often caused survey fatigue which undercut positive moods in Condition A (enchantment). Therefore, we opted for an independent baseline approach to measure variables associated with Condition B (disenchantment). Specifically, three 'paranormal advocates' – who were separate from our main sample – independently assessed the disenchantment setting for situational-enchantment, encounter experiences, and environmental Gestalt variables (i. e., Affordance, Ambiguity, Presence, and Sentimentality). Their averaged ratings (cf. Appendix A) served as the baseline for comparing the participants' responses across these same measures for Condition A (Enchantment). *Second*, as we explain in detail below, our recruitment and retention process produced less suitable participants than our planned sample size ($n = 50$). Power analysis to justify the sample size with $\alpha = .05$ and β set to $.80$ for an equivalence proportions test recommends a sample of 42 or more participants, which is below our target number that would have helped to mitigate against possible attrition of participants, in addition to using a small financial compensation for those in attendance (Resnik, 2015). *Third*, counterbalancing was limited to alternating between enchanted and disenchanted conditions; logistical constraints with group transportation to the

different testing locations did not allow us to control for the order in which participants visited the sites. And *fourth*, the use of facilitators fully blinded to the hypotheses proved infeasible given challenges with identifying suitable individuals for the roles. This means that the psi and psychological testing was at times facilitated by people with basic knowledge of the hypotheses being explored. That said, the critical factor here was fostering an open and receptive ‘mindset and attitude’ in participants, regardless of its source, so any potential sensory cuing would only enhance the (dis)enchantment conditions. However, the psi testing never involved the facilitators, so there was sensory cuing or leakage to artificially influence the results.

Participants

Data derived from a sample ($n = 22$) comprised of 2 men and 20 women ($M_{\text{age}} = 46.13$, $SD = 15.34$, range = 19 to 73) selected from a Stage 1 recruitment drive. With the assistance of the Institute for the Study of Religious and Anomalous Experience (ISRAE), we used social media first to target prospective participants who were (a) within one hour of the study location, and (b) members of paranormal organizations or online interest groups. Respondents completed several online surveys (described below) via a Google form nested on the ISRAE website. Further, as part of the informed consent, participants were told that “You may be asked to participate further in a face-to-face study with several parapsychologists.” No financial compensation was offered at this stage.

Screening for the field study involved vetting the Stage 1 participants’ TLIM and PB scores. We emailed invitations for those who scored higher than one standard deviation on both measures (i.e., those profiling as ‘thin boundary’ or ‘encounter prone’ individuals; cf. Laythe et al., 2018) to participate in the Stage 2 testing, as Rock et al.’s (2023) meta-analysis showed that the use of ‘exceptional subjects’ (i.e., ostensible psychics or sensitives) produced sharply increased psi effects in controlled studies over the use of participants from the general population. Respondents were further screened for good physical health, no pre-existing medical or psychiatric conditions, and a commitment to a three-hour field trip involving immersive experiences at three different settings. This vetting process ultimately yielded our sample of 22 suitable participants, representing those who initially signed-up ($n = 106$) minus those who were screened out ($n = 45$) thereby leaving a pool of 61 potential participants, of which 36 participants ultimately registered, and of those, 22 showed up at their assigned times to participate. This sample size was unfortunately lower than our intended sample of 50 and the recommended sample of 42 per the power analysis. We wanted to restart the recruitment process to reach our intended sample size, but this was infeasible due to a lack of resources, as well as challenges with scheduling access to the testing locations.

Sample size is a critical issue as smaller numbers can introduce serious limitations (Lakens, 2022). However, the study proceeded since it sought to confirm *process*-oriented information with putative psi functioning as opposed to a *proof*-oriented design (cf. McClenon, 2024). As such, our study aimed to show new effects within a system but not explicitly quantify population parameters. Anderson and Vingrys (2001) further explained that "... many of the psychophysical and neurophysiological studies reported in major journals likewise fit this category. Typically, such studies use small numbers of participants and show that all those tested demonstrate the investigated effect. It could be argued that studies using small sample sizes are not meant to quantify general performance within a population but merely to document the existence of an effect, and so the number of participants is less important" (p. 1411). At the very least, we offer our procedure and results as a useful proof-of-concept to guide future research and theory.

Measures

1. The Rasch (1960/1980)-based, 16-item version (Lange, Irwin et al., 2000) of the original *Revised Paranormal Belief Scale* (RPBS). This psychometric revision remedies the original 26-item, Likert-based RPBS (Tobacyk, 1988, 2004) that has an artificial seven-factor structure due to differential item functioning, i. e., sex and age response biases. Once these measurement issues are corrected, Lange, Irwin et al. (2000) showed that the RPBS comprises only two, moderately correlated belief subscales that seemingly reflect different issues of control. Specifically, 'New Age Philosophy' (11 items, Rasch reliability = .90) appears related to a greater sense of control over interpersonal and external events (e. g., belief in psi), whereas 'Traditional Paranormal Beliefs' (5 items, Rasch reliability = .74) seem more culturally-transmitted and beneficial in maintaining social control via a belief in magic, determinism, and a mechanistic view of the world. The Rasch-RPBS has a mean of 25 ($SD = 5$) for both subscales and several studies support their construct validities (Houran et al., 2000, 2001; Houran & Lange, 2001).
2. *Revised Transliminality Scale* (RTS: Lange, Thalbourne et al., 2000) is a 17-item, T/F, Rasch scaled measure of "hypersensitivity to psychological material originating in (a) the unconscious, and/or (b) the external environment" (Thalbourne & Maltby, 2008, p. 1618). This perceptual-personality variable thus parallels Hartmann's (1991) boundary construct and also the notion of sensory-processing sensitivity (Aron & Aron, 1997). The Rasch reliability is .82, and RTS scores ($M = 25$, $SD = 5$) consistently predict different syncretic cognitions, anomalous experiences, and lower sensory thresholds (for reviews, see Evans et al., 2019; Lange et al., 2019).

3. *Enchantment-Adjective Checklist* (Enchantment-ACL: Houran et al., 2022) is a novel 21-item (T/F), Rasch measure of five interconnected themes that qualitative research found to define experiences of situational-enchantment: Emotional, Sensorial, Timeless, Rational, and Transformative. Preliminary analyses indicate that scores ($M = 50$, $SD = 15$) have good internal reliability (Rasch reliability = 0.82) and positive correlations with people's global ratings of perceived enchantment ($r = 0.51$, $p < .001$).
4. *Survey of Strange Events* (SSE: Houran, Lange et al., 2019; Houran, Laythe et al., 2019) is a 32-item, T/F, Rasch scaled measure of the overall perceptual intensity (or depth) of a ghostly episode via a checklist of anomalies inherent to these anomalous experiences. The Rasch reliability is 0.87, with higher scores ($M = 50$, $SD = 10$) corresponding to a greater number and intensity of anomalies that define a percipient's encounter experience. Supporting the SSE's construct and predictive validities, Houran, Lange et al. (2019) found that the phenomenology of "spontaneous" accounts (i. e., ostensibly sincere and unprimed) differed significantly from control narratives deriving from "primed conditions, fantasy scenarios, or deliberate fabrication." Follow-up studies with the SSE further support its value for content analyses of qualitative reports (for an overview and discussion, see: Houran et al., 2021).
5. *Visitor Experience Questionnaire* (VEQ: Houran et al., 2023a). This is an 18-item, Classical Test Theory-derived measure of four environmental Gestalt variables that define settings associated with paranormal-type experiences (Jawer et al., 2020): (a) *Affordance* (three items, $M = 7.5$, Cronbach's $\alpha = .23$: a possibility for action provided by the environment or the degree of interaction between the surrounding space and the visitor), (b) *Ambiguity* (six items combine "Legibility" and "Ambiguity-Threat," $M = 15$, Cronbach's $\alpha = .66$: a risk assessment in terms of a visitor's feelings of comfort or discomfort within the surrounding space), (c) *Presence* (six items that combine "Atmosphere" and "Immersion-Presence," $M = 15$, Cronbach's $\alpha = .82$: the extent to which the visitor feels physically present within – and totally focused on – the surrounding space), and (d) *Sentimentality* (three items, $M = 7.5$, Cronbach's $\alpha = .56$: the surrounding space contains colors, symbols, textures, objects, sounds, odors, or a sense of time with personal meaning to the visitor). Each variable is rated on four-point Likert scales anchored by "Strongly Disagree" (scored '1') and "Strongly Agree" (scored '4'). Preliminary research in actual field settings indicate the tool has adequate psychometric properties from a Classical Test Theory perspective and that higher Gestalt ratings significantly correlate (r 's range = .43 to .48, $p < .05$) with the contents and features of corresponding altered-anomalous experiences reported under naturalistic conditions.

6. *Mobile Psi Test* (or Psi-App: Laythe & Roberts, 2022) is a smart-phone application (or 'app') for quick and convenient in-field testing of putative psi that features traditional esoteric four-elemental symbols (i. e., Earth, Air, Fire, and Water) as target stimuli. It was designed to train participants to associate certain images and feelings with the elemental symbols used in the experimental trials. It uses natural randomization and blind-logic switch features within a Google Form format to administer a double-randomized card draw from four possible choices. First, the user selects a 'trial' from a set of four unmarked options that are in random order. Each trial has eight runs in which participants try to correctly guess which of the four elements is the 'target.' To both investigate and control for mood and environmental factors, several initial questions are asked pre-run, i. e., the participant's *specific location*, and four 4-point forced-choice Likert questions that assess mood (i. e., "I am feeling anxious or stressed" and "I am feeling happy") and *environmental distraction* (i. e., "It is noisy or crowded where I am taking my test" and "I feel that I can concentrate"). Notably, Google Forms automatically timestamps survey entries, and with participant-provided location latency between tests and locations can automatically be coded. Note that Laythe et al.'s (2024) bootstrap tests of the Psi-App using a sample of 1,000 showed that the achieved bootstrap mean did not significantly differ from the expected value of the test ($n = 999$, 1.696 to expected 1.75, $t = -1.55$ $p = .12$). Their further analysis revealed equivalency across all potential 'test selection' conditions. Thus, the Psi-App appears to be robust in guarding against selection errors due to the makeup of the test itself. We also emphasize that the psi testing in the present study was completed under observed conditions at all times, and no participant took more than eight minutes to complete the Psi-App, which makes either calculations or deconstruction of its workings highly unlikely.

Immersive Settings

The use of three distinct testing environments known for awe or enchantment aimed to strengthen the convergent validity of our protocol, as the use of mixed or multiple methods to study a phenomenon produces results that are more robust and compelling than single-method studies (Morse, 2003). These sites included (a) 'sacred' space (Bermudez, 2015), (b) 'haunted' house (Houran et al., 2022), and (c) 'augmented' reality (van Elk et al., 2016). We used confidential locations in Waco, Texas (USA) for the mutual convenience of the researchers and participants, although these sites had not been previously publicized for paranormal tourism (cf. Houran et al., 2020):

1. *Sacred Space*: This was a historical Catholic church built in 1931, with the consecration of its altar on 2 April 1933. In later years the walls were decorated with paintings, almost

life size, representing the Stations of the Cross, the glorification of St. Francis, and scenes of the arrival, predication, and martyrdom of the first Franciscan Missionaries in Texas. Thus, this church is filled with stark art and iconography that can reasonably be interpreted within the context of mystical tradition. It is important to note that this location is arguably an aesthetically-interesting environment regardless of an individual's religious orientation.

2. *Haunted House*: This was a historic house museum with a quiet reputation for 'paranormal activity' as documented by many credible witness reports per the third author's [C.L.] research. For instance, a docent said that an exterminator recently came to spray bugs. While in the upstairs bedroom he saw a woman in a white nightgown laying on the bed in one of the children's bedrooms. The docent showed the man a picture of Emma McCulloch, the past owner of the historic residence and long deceased, who was confirmed as the person that he saw on the bed. Appendix C gives the SSE mapping of anomalous phenomena documented during informal field investigations or excursions conducted at the site between 2020–2023. The Rasch scaled score of 47.3 ($SE = 2.9$) indicates that this location has a 'haunt intensity' that is slightly below-average per Houran, Lange et al.'s (2019) benchmarks.
3. *Augmented Reality*: This was a multimedia video entitled "An Epic Journey From Earth to the Edge of the Universe"⁵ which is similar to van Elk et al.'s (2016) awe-inducing video stimulus that simulates the visual experience associated with the well-known 'overview effect,' i. e., a state of awe with self-transcendent qualities, precipitated by the particularly striking visual stimulus of personally experiencing the Earth from space, which induces appreciation and perception of beauty, unexpected and even overwhelming emotion, and an increased sense of connection to other people and the Earth as a whole (Yaden et al., 2016). In this animation, viewers launch from the ESO Supernova Planetarium & Visitor Centre, rise above Garching, and then Munich and the Earth itself. The viewer accelerates out of the Solar System and then the Milky Way, finally revealing vast numbers of galaxies. The video was presented to participants on a standard size laptop computer within the darkened dining room of an aesthetic historic house with no known history of anomalous phenomena.
4. *Disenchanted (Control) Setting*: Besides the three 'enchanted' spaces, we used a plain, white passenger cargo van both to transport the participants to the various sites and serve as the disenchanted condition for the comparative psi testing. Understand that our goal also was to investigate the participants' Psi-App scores while they were immersed within a

5 This is an extended version of the animation "ESO Supernova to the end of the Universe" (<https://www.eso.org/public/videos/eso1813f/>): ESO/L. Calçada/M. Kornmesser/spaceengine.org. Music: Jennifer Athena Galatis.

distinctly bland or boring environment, which meant drastically different environmental features and a psychological set compared to the three ‘enchanted’ settings.

Procedure

Following the recruitment and screening in Stage 1 (see Participants section), Stage 2 involved exposing our thin boundary sample to the three enchanted spaces using a serial format. Each site was paired with a different ‘skeptical’ (or control) experience designed to disenchant the participants (cf. Lange et al., 2023). This process was constant for participants, in which an ‘enchanted’ condition was always followed by a ‘disenchanted’ condition. However, the order in which of the three enchanted sites/conditions varied as a function of the limited availability of particular testing sites. Once at a site, the participants experienced the following experimental conditions in counter-balanced order:

- *Enchanted–Condition A*: Participants first assessed environmental Gestalt variables via the VEQ before embarking on an ‘immersive experience’ within an indoor location that previous research showed can stoke altered-anomalous experiences and a sense of enchantment (cf. Bermudez, 2015; Holloway, 2010; Houran et al., 2020, 2022; van Elk et al., 2016). A person familiar with the site (but not experimentally-blinded to the hypotheses) facilitated the approximately 30-minute immersive session. Immediately after, participants completed one trial of seven runs for convenience (versus the usual eight runs) on the Psi-App as described earlier along with measures of Encounter Experiences and Situational-Enchantment.
- *Disenchanted–Condition B*: Participants were first exposed to a ‘skeptical experience’ in a control setting that was designed to be disenchanting. We varied the facilitated exercise that was paired with an immersive site to ensure novelty and impact. Specifically, sessions involved either (a) a 10-minute video titled “Ghosts Aren't Real: 4 Scientific Explanations for Paranormal Activity” that aimed to debunk the paranormal (SciShow, 2019), (b) a group reading of an influential lay article (Reber & Alcock, 2019) that argued against even the possibility of psi, or (c) a focus group discussion about key research on null experiments (e.g., Kekecs et al., 2023) and cognitive deficits (e.g., Dean et al., 2022). Each skeptical exercise was designed to challenge the validity of psi in the participants’ minds. Thereafter, participants completed one trial of seven runs of the Psi-App.

This approach creates a repeated measures ($n = 22$) 3 ENCHANTED (augmented, haunted, sacred) \times 3 DISENCHANTMENT MANIPULATION (group reading, debunking video, focus group) \times 2 (DIS)ENCHANTED ORDER (first, last) design where LOCATION and (DIS)

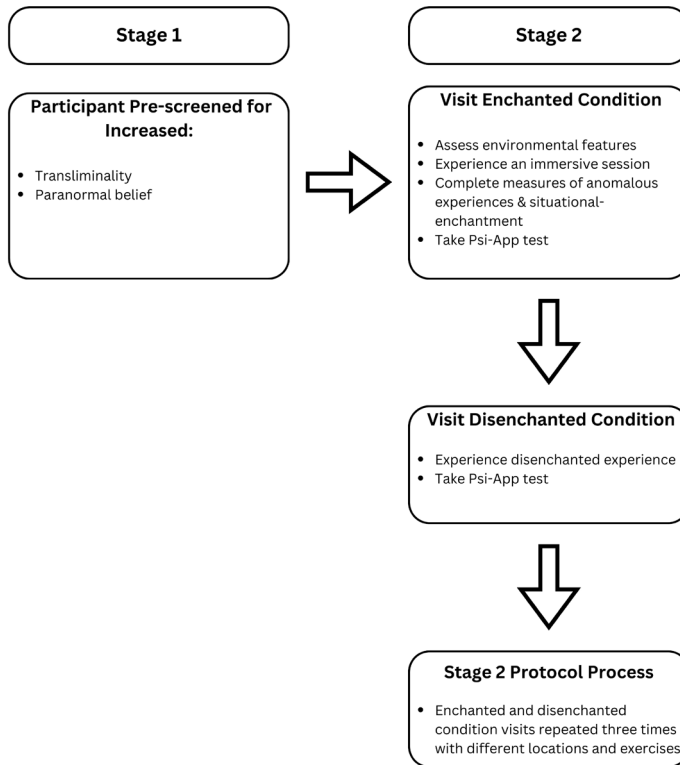


Figure 1. Flow Diagram of the Field Study Procedure.

ENCHANTED ORDER are partially randomized across the six field trips. In particular, scheduling limitations prevented us from implementing a fully-crossed design that would enable tests for potential order effects of location or time of day. However, we reiterate that participants always experienced an enchanted session before a disenchanted session, thus ensuring that at least the two '(dis)enchanted' conditions were presented in counter-balanced order. Immediately after each immersive '(dis)enchanted' session, the participants completed the Psi-App test. And for each 'enchanted' condition, the participants also completed the VEQ, SSE, and Enchantment-ACL measures. Figure 1 outlines the full process to give readers added clarity.

	Agg. <i>M</i>	Agg. <i>SD</i>
Global Transliminality	28.06	3.74
Global NAP	30.23	5.83
Global TPB	34.85	7.74
Condition SSE	38.34	7.45
Condition ACL	40.01	11.36
Condition Affordance	9.85	3.42
Condition Ambiguity	9.59	4.76
Condition Memory	6.20	3.48
Condition Atmosphere	16.17	6.89

Table 1. Aggregated Means and Standard Deviations for the Main Psychometric Variables.

Results

Preliminaries

Table 1 gives the descriptives for the study variables. Overall, the participants scored below-average on the SSE and Enchantment-ACL across the enchanted conditions. The VEQ subscales instead showed differential results, with participants scoring below-average on environmental Ambiguity and Sentimentality versus above-average on Affordance and Presence, but across all conditions the SSE scores correlated positively with Transliminality ($r = .61, p < .01$) but not Paranormal Belief ($r_{\text{NAP}} = .14, ns$ and $r_{\text{TPB}} = -.25, ns$). The aggregated correlation between Transliminality and SSE scores replicates prior research with ritual magic practitioners (r 's = .58 to .61, $p < .01$; Laythe et al., 2024), as well as shows a greater magnitude than previously found with self-reported percipients of haunt-type experiences (r 's = .41 to .44, $p < .0005$; Laythe et al., 2018). Interestingly, the positive associations between SSE scores and Transliminality showed differential effect sizes by enchanted condition, with a significant relationship for the augmented reality session ($r = .54, p < .01$) versus non-significant effects for the sacred space ($r = .12, ns$) and haunted house ($r = .38, ns$). Likewise, we observed significant differences in Enchantment-ACL and SSE scores across the enchanted conditions, as reported below in Hypothesis 1. We refer readers to the full correlation matrices parsed by enchanted condition provided in Appendix B.

	Enchanted Conditions <i>ESP</i>		Disenchanted Conditions <i>ESP</i>		<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
AUGMENTED	1.52	0.95	1.70	1.03	-0.60	0.55
SACRED	1.91	1.44	1.86	0.99	0.13	0.89
HAUNTED	2.13	1.18	1.91	1.28	0.59	0.56
AGGREGATE	1.85	1.19	1.82	1.10	-1.20	0.23
		<i>SSE</i>				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
AUGMENTED	34.74	8.24	24.97	3.77	3.49	0.07
SACRED	39.15	5.43	24.97	3.77	5.75	0.03
HAUNTED	41.13	6.73	24.97	3.77	6.20	0.03
AGGREGATE	38.34	6.80	24.97	3.77	5.11	0.04
		<i>ACL</i>				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
AUGMENTED	41.27	7.96	9.67	5.19	9.18	0.01
SACRED	48.86	11.35	9.67	5.19	10.20	0.01
HAUNTED	33.95	11.18	9.67	5.19	6.34	0.02
AGGREGATE	41.36	10.16	9.67	5.19	5.57	0.01

Table 2. Psi-App Results across the Enchanted and Disenchanted Conditions.

H1: Conditions-A will produce significantly higher scores on the Psi Test, Survey of Strange Events, and Enchantment-Adjective Checklist than Conditions-B.

Table 2 shows that this hypothesis was partially supported. The participants completed psi testing within both enchanted and disenchanted settings, although we had to calculate mean comparisons of the participants’ SSE and Enchantment-ACL scores against the independent baseline scores for these variables in the disenchanted environment (cf. Appendix A). In terms of putative psi, the sacred and haunted spaces elicited higher mean Psi-App scores than the disenchanted setting though these differences did not reach statistical significance (*t*’s = -.60 to .59). Likewise, the aggregated mean score on the Psi-App across the enchanted conditions (*M* = 1.85) slightly exceeded that for the disenchanted condition (*M* = 1.82) but again this difference was non-significant (*t* = -1.197 *p* = .23). However, we consistently observed statistically significant differences between the participants’ SSE and Enchantment-ACL scores in

the enchanted conditions compared to the independent baseline ratings of the disenchantment condition. In other words, as hypothesized, the participants tended to show higher levels of putative psi, encounter experiences, and a sense of enchantment while immersed across the three enchanted conditions compared to the disenchanted condition, albeit these differences did not always reach statistical significance.

Readers might be curious about the more striking anomalous experiences reported during the Conditions-A immersive sessions. For instance, one participant at the haunted house was unable to walk up a prominent staircase because she felt “blocked” by something. Separately, a Hispanic mother and son described a “negative energy” in one of the haunted rooms as if someone telling them, “You don’t belong here.” Another participant conveyed an overwhelming need to cough in a room where a child of the original owners reportedly died of tuberculosis. In this same room a group of four other participants described feeling “pins and needles” in their arms, chills, and a heaviness in their chests. One of our experimentally-blinded research assistants also stated that his throat and jaw tightened up in this room. On another occasion, a young Hispanic female was late to the experimental proceedings because she went to the wrong study location. In particular, she experienced an “intense urge” to go to the sacred space (i. e., the historic church) even though this location was neither communicated to her as our designated meeting place nor disclosed as one of the immersive testing sites.

Enchantment Conditions	<i>Expected</i>	<i>t-test two-tailed</i>				<i>t-test one-tailed</i>		<i>Wilcoxon</i>	
		<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>	<i>W</i>	<i>p</i>
ENC AUGMENTED	1.75	1.52	0.95	-1.16	0.26	-1.14	0.13	109	0.39
ENC SACRED	1.75	1.91	1.44	0.54	0.59	0.52	0.3	129	0.8
ENC HAUNTED	1.75	2.13	1.18	1.55	0.14	1.51	0.07	86	0.12
Disenchantment Conditions	<i>Expected</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>	<i>W</i>	<i>p</i>
DIS AUGMENTED	1.75	1.7	1.03	-0.22	0.83	-0.23	0.59	96	0.76
DIS SACRED	1.75	1.86	0.99	0.54	0.6	0.52	0.3	113	0.68
DIS HAUNTED	1.75	1.91	1.28	0.61	0.55	0.59	0.28	131	0.85

Table 3. Psi-App Results by Experimental Condition.

H2: Conditions-A will produce above-chance scores on the Psi Test compared to chance-level scores in Conditions-B.

As a cross-check and built-in replication, we analyzed hit rates on the Psi-App separately for each enchanted condition (see Table 3). We conducted several means tests in this analysis, using both one- and two-tailed t-tests and Wilcoxon sign tests, noting that our previous work justified the use of one-tailed tests as confirmatory. On the other hand, some readers might recommend more conservative analyses or rank-order results. Given the small sample size, we provide all three options and allow the reader to deem which statistical approach is the most appropriate. Moreover, we think it is important to fully document the results for a generalist audience with varying levels of statistical knowledge, while at the same time avoiding any selective presentation of the outcomes in favor of our hypotheses.

Most of the Psi-App outcomes were non-significant using two-tailed tests, but we observed predicted and noticeable mean shifts from the expected average of 1.75. For the enchantment conditions, the psi scoring within the augmented reality condition was below-chance ($M = 1.52$, $t = -1.16$, $p = .26$; $W = 109$, $p = .39$; -13% shift from expected), whereas both the sacred space ($M = 1.91$, $t = .54$, $p = .59$; $W = 129$, $p = .8$; 9% shift from expected) and haunted house showed above-chance shifts, with the latter approaching significance ($M = 2.13$, $t = 1.55$, $p = .14$; $W = 86$, $p = .12$; 22% shift from expected). The one-tailed tests were in bulk, likewise non-significant, though we emphasize a conceptual replication of Lange et al. (2023) in that we obtained highly suggestive results with Psi-App scoring while participants were immersed within the haunted house condition ($t = 1.52$, one-tailed, $p = .07$).

Further, as compared to the above, the participants did underperform on the Psi-App task while in the disenchantment conditions. Specifically, the augmented reality condition yielded below expected values ($M = 1.7$, $t = -.22$, $p = .83$; $W = 96$, $p = .76$; -2% shift from expected), but the sacred space was slightly above ($M = 1.86$, $t = .54$, $p = .60$; $W = 113$, $p = .68$; 6% shift from expected), similar to the haunted house expected values condition ($M = 1.91$, $t = .61$, $p = .55$; $W = 131$, $p = .85$; 9% shift from expected). For disenchantment conditions, all one-tailed tests were similarly non-significant (t 's = $-.23$ to $.59$). In summary, we did not obtain statistical significance though our sample size was arguably large enough to show the predicted effects. Indeed, the enchantment conditions—notably the augmented reality (-13%) and haunted house (22%) – showed strong shifts away from chance expectations, and in all cases, the difference in scoring was greater in the enchantment compared to the disenchantment conditions, i. e., Augmented Reality = -13% versus -2%; Sacred Space = 9% versus 6%; and Haunted House = 22% versus 9%.

H3: Scores on the Psi Test will positively correlate with scores on the Survey of Strange Events and Enchantment-Adjective Checklist.

This hypothesis also received mixed support. We computed aggregate correlations to obtain omnibus associations between these variables while collapsing the experimental conditions. Psi-App results showed the predicted positive (though small and non-significant) correlation with SSE scores ($r = .10, n = 66, p = .41$), but a significant and unexpectedly negative association with Enchantment-ACL scores ($r = -.24, n = 66, p < .01$). Appendix B gives the correlations between all study variables specifically parsed by the three enchanted conditions. Reiterating the restriction of sample size on statistical significance, we urge readers to note especially the reported effect sizes and directionalities. The augmented reality condition stands out among the three enchanted conditions in that the Psi-App results showed the expected consistently positive associations of medium effect size (Cohen, 1992) with both SSE and Enchantment-ACL scores. But the correlation matrix shows that these trends are reversed for both the sacred space and haunted house conditions.

		1	2	3	4	5	6
1	Psi-App hit rate						
2	SSE (condition)	0.10					
3	Enchantment ACL	<u>-0.24</u>	<u>0.35</u>				
4	VEQ Affordance	-0.02	0.22	0.14			
5	VEQ Sentimentality	-0.04	<u>0.51</u>	<u>0.48</u>	<u>0.47</u>		
6	VEQ Presence	0.06	<u>0.46</u>	<u>0.25</u>	<u>0.69</u>	<u>0.65</u>	
7	VEQ Ambiguity	0.04	<u>0.43</u>	-0.07	<u>0.63</u>	<u>0.24</u>	<u>0.64</u>

Note: bold and underline = $p < .01, n = 66$

Table 4. Correlations between Environmental Gestalt Variables, Psi Performance, Encounter Experiences, and Situational Enchantment.

H4: Scores on the Visitor Experience Questionnaire (i. e., environmental Affordance, Ambiguity, Presence, and Sentimentality) will positively correlate with scores on the Psi Test, Survey of Strange Events, and Enchantment-Adjective Checklist.

The final and exploratory hypothesis also received mixed support. We again computed aggregate correlations to obtain omnibus associations between these variables while collapsing the experimental conditions. Contrary to predictions, the aggregated Psi-App results showed near zero-order correlations with the VEQ subscales (see Table 4). However, Enchantment-ACL

scores did show medium-sized correlations (Cohen, 1992) with environmental Sentimentality and Presence. Conceptually replicating prior research (Houran et al., 2023), we also observed similar associations between these two VEQ subscales and SSE scores, along with the subscale of Ambiguity.

Appendix B provides specific associations parsed by each enchantment condition. With respect to the augmented reality condition, environmental Affordance, Sentimentality, Presence, and Ambiguity all significantly correlated with SSE scores (r 's = .47 to .69, p 's < .05), whereas only Presence and Ambiguity significantly correlated to the Enchantment-ACL (r 's .48 to .49, p 's < .05). For the sacred space condition, all four VEQ subscales did not significantly correlate with SSE scores (r 's = -.19 to .41, ns), whereas Enchantment-ACL scores were only significantly related to Sentimentality in this condition ($r = .47, p < .05$). Finally, in the haunted house condition only Sentimentality and Ambiguity significantly correlated with the SSE (r 's = .44 to .47, $p < .05$), and, similar to the sacred space condition, Sentimentality significantly correlated with SSE scores ($r = .61, p < .01$).

Post-Hoc Analyses: Context Effects with the Psi-App Scores

Given the controversial nature of psi phenomena, readers might appreciate more details about the participants' stated attitudes and emotions during the Psi-App testing. With respect to the participants' potential boredom, test fatigue, appraisal of the Psi-App, or mood effects, Appendix B presents the interrelationships between indices of mood, environment, and Psi-App results. We again urge readers to focus on the effect sizes and directions in the spirit of model-building and theory formation. Particularly, anxiety and putative psi outcomes across the conditions were mildly but non-significantly related (r 's = -.22 to .32), and similar small relationships between perceived happiness (r 's .10 to .25, ns), and concentration (r 's -.20 to .14, ns). Psi-App results also showed differential and non-significant correlations with self-rated focus on the psi task (r 's = -.14 to .30, ns) and perceived environmental 'noisiness' (r 's = -.26 to -.35, ns). Relatedly, scores on the Enchantment-ACL also varied widely across the three enchantment conditions (r 's -.45 to .32).

These results collectively suggest that the participants' situational moods and environmental factors contributed to the shifts in Psi-App scores across the testing conditions. Further, and in alignment with Laythe and Roberts (2022), these shifts in putative psi performance shifted in some cases by as much as 10% with focused attention on the Psi-App ($r = .22, ns$). We should also emphasize that Lange et al.'s (2023) study of the 'enchantment-psi loop' model similarly produced a significant 7% positive shift from expected scoring for high transliminals in a haunted setting ($p = .03$) but not for other settings or low transliminals. In sum, we deem these

relationships to be highly interesting, as the overall effect of any of the above variables should be approximately 0, but now replicate in this study.

Discussion

Large-scale psi studies published in mainstream journals sometimes report results suggestive of psi (e.g., Escolà-Gascón et al., 2022), whereas others yield null findings (e.g., Kekecs et al., 2023). Skeptical authors often explain extra-chance findings in terms of procedural or analytical artifacts but experimental parapsychologists caution that non-significant psi results are to be expected with underpowered samples of unselected participants who complete forced-choice tasks in a normal, waking state of consciousness (for a discussion of psi conducive testing conditions, see: Tressoldi & Storm, 2021). The present findings lend some credence to aspects of this latter view. Our unexpectedly low sample size likely prevented the overall hit rate on the Psi-App from reaching statistical significance. But we nonetheless detected the predicted shift towards positive psi outcomes when participants were tested under presumably enchanted vs disenchanting conditions. Further, the participants reported significantly more situational-enchantment and real-time encounter experiences during the enchanted conditions compared to baseline metrics for the disenchanting condition. Our study is hence less proof-oriented and more process-oriented with respect to putative psi-functioning, thereby paralleling McClenon's (2024) studies under real-world conditions. These cumulative results thus conceptually replicate and extend the growing empirical evidence (Lange et al., 2023; Lange & Houran, 2021) for an enchantment-psi loop.

But our findings did not affirm an enchantment effect as strictly conceptualized by Lange and Houran (2021; Lange et al., 2023). To clarify, scores on the Psi-App certainly increased when participants were immersed within enchanted vs disenchanting conditions yet real-time scores on situational-enchantment did not enhance psi scoring ($r = -.24, p < .01$). This implies that the participants' reported levels of enchantment at the 'enchanted' sites undermined their putative psi-functioning in apparent contradiction to the enchantment-psi loop model. However, there might be critical nuances to consider here. Notably, the aggregated average score on the Enchantment-ACL measure was notably below-average (cf. Table 1), meaning that the participants did not fully experience a sense of enchantment at the ostensibly enchanted sites but instead were within the early stages of this mental state. Houran et al.'s (2022, p. 221) psychometric work on the situational-enchantment construct found that lower levels of enchantment are defined by an unsettling experience of ontological shock (e.g., strong sense of 'awareness, surprise, and being lost-in-the-moment'), while higher levels of enchantment involve more pleasant feelings and openness (e.g., strong sense of 'inspiration, dreaminess, and joy'). We thus suspect that the inverse correlation between psi results and enchantment

scores was related to our participants not being sufficiently enchanted to stoke an ostensible psychic-opening.

The obvious question thus arises, “*What variable(s) were consistently correlated with higher Psi-App scores, if not a sense of enchantment?*” Closer inspection of Appendix B reveals that only the participants’ (a) ‘global vibes (positive) of a setting’ and (b) ‘feelings of happiness’ replicated across all three enchanted conditions, though the effect sizes varied and none were statistically significant. These patterns align with our prior interpretation about the potential suppression of the enchantment-psi loop. But interestingly, the exact opposite trends were found for the participants’ SSE scores, albeit again the effect sizes varied and did not reach significance. Moreover, we reiterate that the SSE and Enchantment-ACL scores were moderately and significantly related ($r = .35, p < .01$). Therefore, we arguably confirmed an enchantment-psi loop effect for ‘subjective’ encounter experiences but not for ‘objective’ psi outcomes. Yet in both cases the results were clearly influenced by the person-environment interaction. If validated by additional studies with stronger controls and statistical power, this would imply that the enchantment-psi loop model yields different psi-type manifestations or outcomes depending on the stage (or level) of enchantment in which percipients are situated (cf. Drinkwater et al., 2022). To be sure, there are likely nuances or complexities involved that mean not all ‘enchanted’ spaces will induce anomalous experiences or cognitions and/or not all people will experience anomalous experiences or cognitions at certain enchanted spaces.

Taken altogether, we hypothesize that Psi-App results in the present study might have been bolstered by using (a) participants with higher transliminality levels, (b) longer immersive sessions at each enchanted setting to provide participants ample time to reach more advanced levels of enchantment, (c) a stronger wash-out stage to mitigate against disorientation or saturation effects from multiple site visits, (d) testing conditions that better matched the participants’ personal preferences or expectations for enchanted environments, or (e) a psi task that involved a free-response versus forced-choice format. Our results and conclusions have other important caveats aside from the issue of statistical power constraints with smaller samples (Hoenig & Heisey, 2001; Lenth, 2001; van Tilburg & van Tilburg, 2023). *First*, the full mechanism(s) behind ‘enchanted spaces’ are unclear, though likely include the role of various emotional or psychological states stirred by Gestalt variables associated with certain architectural or aesthetic features (Houran et al., 2023a; Jawer et al., 2020). *Second*, our sample was almost entirely comprised of female participants, so gender effects remain a possibility to be tested in future research. Lange and Houran’s (1998, 1999) path analyses indeed implicated gender as a significant moderator of anomalous experiences. *Third*, the source or catalyst of the diverse array of subjective and objective (S/O) anomalies reported across the three enchanted conditions merits further scrutiny. For instance, successive altered-anomalous experiences within or across participants could result either from heightened perceptual sensitivities that

define transliminal individuals (Evans et al., 2019), or perceptual contagion associated with suggestion-expectancy effects (Lange & Houran, 2001). A hybrid model is also possible given some research suggesting there is a tendency for emotional harmonization within groups of people (Hatfield et al., 1993). *Lastly*, it might be that some enchanted spaces involve currently unknown or poorly understood physical stimuli that can affect individuals' attitudes, perceptions, or behaviors (cf. Dagnall et al., 2020).

The present findings likewise suggest many avenues for future research directions. Most importantly, our results support parapsychological studies featuring real-world, immersive stimuli or settings as opposed to 'sanitized' laboratory settings that have traditionally dominated much of experimental parapsychology (Cardena, 2018; Parker & Brusewitz, 2003; Vernon, 2021). Indeed, other researchers have similarly endorsed an interactionist 'environment-person' view of psi-type phenomena (e.g., Ironside & Wooffitt, 2019; Rabeyron, 2023). But this perspective does not suggest that all 'sacred, augmented, or haunted spaces' are equally or sufficiently imbued with the characteristics needed to produce higher-levels of enchantment and an associated array of anomalous perceptions or cognitions. Individuals also vary in their degree of encounter-proneness and hence their presumed psi-conduciveness. Still, we showed that even small samples of the right type of participants can demonstrate shifts in phenomenology and performance as predicted by the enchantment-psi loop model. Accordingly, we expect more reliable and robust outcomes from fresh studies using larger samples of markedly thin-boundary participants who are tested for putative psi in ways that do not disrupt their capacity for strong psychological absorption within carefully curated 'enchanted' environments. Such studies are under active development, and we intend to publish the results as they become available.

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*Appendix A.***Independent benchmarks for the disenchanting (control) condition**

Experiential Variable	Range	Panelist's Averaged Score
Survey of Strange Events (SSE)	<i>M</i> = 50 range = 22.3–90.0	24.97
Enchantment-ACL	<i>M</i> = 50 range 6–86	9.67
Environmental Gestalt Variables (VEQ)		
<i>Affordance</i>	<i>M</i> = 7.5 range = 3–12	5.33
<i>Ambiguity</i>	<i>M</i> = 15 range = 6–24	10.00
<i>Presence</i>	<i>M</i> = 15 range = 6–24	8.00
<i>Sentimentality</i>	<i>M</i> = 7.5 range = 3–12	5.33

Appendix C.

Case-level Survey of Strange Events mapping of anomalies documented at the ‘haunted’ house from 2020–2023.

	True = 1 False = 0
Anomalous Subjective Experiences	
1. I saw with my naked eye a non-descript visual image , like a fog, shadow or unusual light	1
2. I saw with my naked eye an “obvious” ghost or apparition – a misty or translucent image with a human form	0
3. I saw with my naked eye an “un-obvious” ghost or apparition – a human form that looked like a living person	1
4. I smelled a mysterious odor that was <i>pleasant</i>	0
5. I smelled a mysterious odor that was <i>unpleasant</i>	0
6. I heard mysterious sounds that could be recognized or identified, such as ghostly voices or music (with or without singing)	0
7. I heard on an audio recorder mysterious sounds that could be recognized or identified, such as ghostly voices or music (with or without singing)	1
8. I heard on an audio recorder mysterious “mechanical” or non-descript noises, such as tapping, knocking, rattling, banging, crashing, footsteps or the sound of opening/ closing doors or drawers	0
9. I had a <i>positive</i> feeling for no obvious reason, like happiness, love, joy, or peace	1
10. I had a <i>negative</i> feeling for no obvious reason, like anger, sadness, panic, or danger	1
11. I felt odd sensations in my body, such as dizziness, tingling, electrical shock, or nausea (sick in my stomach)	1
12. I had a mysterious taste in my mouth	0
13. I felt guided, controlled or possessed by an outside force	0
14. I saw beings of divine or evil origin, such as angels or demons	0
15. I saw folklore-type beings that were not human, such as elves, fairies, or other types of little people”	0
16. I communicated with the dead or other outside force	0
17. I had the mysterious feeling of being watched, or in the presence of an invisible being or force	1
18. I had a sense of déjà vu, like something was strangely familiar to me about my thoughts, feelings or surroundings	0

Anomalous Physical Events	
19. I felt a mysterious area of <i>cold</i>	0
20. I felt a mysterious area of <i>heat</i>	0
21. I experienced objects disappear or reappear around me	0
22. I saw objects moving on their own across a surface or falling	0
23. I saw objects flying or floating in midair	0
24. Electrical or mechanical appliances or equipment functioned improperly or not at all, including flickering lights, power surges or batteries "going dead" in electronic devices (e. g., camera, phone, etc.)	0
25. Pictures from my camera or mobile device captured unusual images, shapes, distortions or effects	0
26. Plumbing equipment or systems (faucets, disposal, toilet) functioned improperly or not at all	0
27. I saw objects breaking (or discovered them broken), like shattered or cracked glass, mirrors or housewares	0
28. I heard mysterious "mechanical" or non-descript noises, such as tapping, knocking, rattling, banging, crashing, footsteps or the sound of opening/closing doors or drawers	1
29. I felt a breeze or a rush of wind or air, like something invisible was moving near me	0
30. Fires have started mysteriously	0
31. I was mysteriously touched in a <i>non-threatening</i> manner, like a tap, touch or light pressure on my body	0
32. I was mysteriously touched in a <i>threatening</i> manner, such as a cut, bite, scratch, shove, burn or strong pressure on my body	0
TOTAL	8

Erweiterte Zusammenfassung

Ziel: Bei dieser vorab registrierten Studie handelte es sich um eine konzeptionelle Replikation, die das Konzept einer „Verzauberungs-Psi-Schleife“ durch verschiedene immersive Besuche verschiedener Orte testete, die als *heilig* (d. h. eine mystische katholische Kirche), als *Spukorte* (d. h. ein privates Museum, das eine Geschichte paranormaler Phänomene zeigt) und in Annäherung als eine *Augmented Reality* (d. h. ein Videoerlebnis, das den klassischen Übersichtseffekt verstärken soll) angesehen werden. Insbesondere haben wir vier Hypothesen formuliert, die auf der Annahme basieren, dass anomale Erfahrungen und Erkenntnisse durch die Anwendung einer Formel „Paranormaler Glaube x Transliminalität x Verzauberung“ deutlich zunehmen würden.

Methode: Aus Gründen der Verfahrensfreundlichkeit befanden sich die Testumgebungen alle in relativ großer Nähe zueinander. Wir haben eine geprüfte, d.h. mit der Revised Transliminality Scale getestete Stichprobe von Teilnehmenden mit „dünnen Grenzen“ (thin-boundary) ($n = 22$) in kleinen Reisegruppen organisiert, die dann Einschätzungen von Umgebungsmerkmalen (gemessen anhand des Visitor Experience Questionnaire), „Begegnungserfahrungen“ in Echtzeit (gemessen durch den Survey of Strange Events), „Verzauberungsgrade“ (gemessen durch die Enchantment Adjective Checklist) vornahmen und einen computergestützten Test des mutmaßlichen Psi (gemessen durch die „Psi-App“ von Laythe und Roberts) nach ausgeglichener Exposition gegenüber jeder der drei „verzauberten“ Bedingungen sowie paarweise Testsitzungen in einer absichtlich „entzauberten“ Umgebung absolvierten.

Ergebnisse: Unsere Stichprobengröße war geringer als erwartet, und unsere Hypothesen wurden in unterschiedlichem Maß bestätigt. In Übereinstimmung mit den Vorhersagen stiegen sowohl die Punktzahlen der Teilnehmenden bei Begegnungserfahrungen als auch bei der Psi-Leistung sowohl unter der „verzauberten“ als auch der „entzauberten“ Bedingung, obwohl der Grad der situativen Verzauberung positiv mit Begegnungserfahrungen in Echtzeit korrelierte ($r = 0,35, p < 0,01$) und negativ mit Psi-Leistung in Echtzeit ($r = -.24, p < .01$). Die Teilnehmenden erzielten unter den „verzauberten“ Bedingungen tendenziell auch überdurchschnittliche Ergebnisse, viele der vorhergesagten Effekte erreichten jedoch keine statistische Signifikanz. Tangentiale und explorative Analysen ergaben, dass sowohl Begegnungserfahrungen als auch mutmaßliches Psi auch unterschiedlich von verschiedenen emotionalen (d.h. Glücksgefühlen), motivierenden (d.h. Aufmerksamkeitsfokus) und Umgebungs- (d.h. Sentimentalität und Präsenz) Faktoren beeinflusst wurden. Diese Ergebnisse stimmten jedoch offensichtlich nicht mit früheren Spekulationen oder Untersuchungen überein. Daher bleibt ihre Stabilität oder Bedeutung ungewiss und bedarf künftiger Untersuchungen.

Schlussfolgerungen: Insgesamt verleihen unsere Ergebnisse Aspekten der Verzauberungs-Psi-Schleife-Formel Glaubwürdigkeit, weisen jedoch auf einen dringenden Bedarf für zukünftige Forschung hin, um wichtige Nuancen oder Komplexitäten mit dem Modell zu klären, die wahrscheinlich die Zuverlässigkeit oder Robustheit seiner Vorhersagen beeinflussen. Eine Hauptverwechslung in diesem Zusammenhang könnte die genaue kognitive oder emotionale Denkweise einer Person sein, die sich mit zunehmender Situationsverzauberung verändert, und daher könnten niedrigere Verzauberungsgrade die empirische Psi-Leistung behindern. Dennoch wird erwartet, dass neue Studien, die die hier eingesetzten grundlegenden Herangehensweisen anwenden, sowohl konzeptionelle als auch empirische Bedeutung für psychologische Standardmodelle sowie für Arbeitshypothesen in der transpersonalen Psychologie und Parapsychologie haben werden.