



## Development of a Dual-Mode Application for Psi Research

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**Abstract** – We present the development and pilot evaluation of the Immersive Psi Test (IPT), a dual mode application for research on anomalous cognition that integrates forced choice measurement with AI supported narrative immersion to enhance ecological engagement. The IPT combines five image-based forced choice trials (“explicit psi”) with ten covert narrative decisions (“implicit psi”), using normed “enchanted” (high emotion and numinosity) and “disenchanted” (low emotion and numinosity) photographs to influence aesthetic-transformational experience. Enchantment Manipulation checks confirmed strong valence separation ( $d = 3.63$ ) and broadly acceptable randomization, with only minor deviations in one trial. In a convenience-sample pilot study ( $N = 126$ ), explicit psi performance with image selections did not exceed chance, whereas implicit psi via narrative choices in the enchanted condition produced a very small but statistically significant deviation above chance ( $p = .016$ ;  $h = 0.09$ ). Measures of transliminality and encounter proneness correlated as expected ( $\rho = .52$ ) but neither predicted psi outcomes in our sample. These findings demonstrate the operational feasibility of the IPT framework and provide potential evidence of condition-specific implicit psi effects. Reliance on a convenience sample limits generalizability, so the outcomes should be regarded as a proof-of-concept versus confirmatory evidence. Future research should employ preregistered designs, stratified sampling, and enhanced randomization controls to determine whether observed effects reflect genuine anomalies or methodological artifacts.

**Keywords:** immersive testing, instrumentation, liminality, narrative engagement, psi

The publication of new research protocols, conceptual frameworks, and methodological recommendations is increasingly recognized as valid and valuable scholarly contributions. This reflects a broader movement within open science to prioritize transparency, reproducibility, and cumulative theory-building (Bandrowski et al., 2023; Mello et al., 2020; Springer Nature Research Communities, 2021). Such innovation is particularly salient in parapsychology, where the phenomena under study – including ostensible nonlocal perception, mind-matter interactions, and firsthand accounts of anomalous experiences – intersect with foundational questions about the nature and limits of consciousness (Wahbeh et al., 2022). Numerous authors have therefore advanced guidelines and frameworks for activities in this context (e.g., Baker & O’Keeffe, 2007; Houran, Maraldi et al., 2025; Lange, 2017; Laythe et al., 2021; Thomas et al., 2026; Zemel & Wahbeh, 2025), which emphasize the importance of structured, ethical, and reflexive approaches. Moreover, parapsychology has long served as a proving ground for procedural controls, analytical rigor, and sophisticated technologies that have influenced research standards in broader scientific domains (e.g., Bierman et al., 2016; Kennedy, 2016; Morris, 2001; Pooley, 2025; Sheldrake, 1998; Watt & Nagtegaal, 2004).

We aim to extend this tradition with a novel framework to investigate *psi* – i.e., anomalous process(es) of apparent information acquisition or influence that ostensibly resist description by known physical or biological mechanisms (for a review, see Cardena, 2018). *Psi*’s controversial status aside, its potential to reshape our understanding of perception and consciousness makes it a legitimate target for scientific inquiry. Several mainstream journals across different disciplines have published parapsychological research (e.g., Bem et al., 2015; Escolà-Gascón et al., 2022; Kekecs et al., 2023; Rabeyron & Watt, 2010; Radin, 2025; Walleczek et al., 2025) although investigating *psi* as a testable hypothesis is not synonymous with asserting its ontological reality (Schooler et al., 2018). Careful, methodologically diverse studies are therefore essential to determine whether positive findings reflect genuine anomalies or arise from experimental or analytical artifacts. To that end, we developed a dual-mode application that combines the precision of objective scoring with the experiential richness of immersive, free-response environments that presumably support *psi*. This scalable design is easy to replicate across settings and populations and advances *psi* methodology in line with open-science principles of transparency, reproducibility, and theoretical integration.

The primary contribution of this work is the development and pilot validation of a research protocol rather than hypothesis testing. Accordingly, we pursue three objectives: (1) articulate the theoretical and empirical rationale for a hybrid “forced-choice × immersive” *psi* application; (2) detail the system’s technical architecture – covering design parameters, scoring algorithms, and implementation procedures – in a way that ensures full transparency and enables reliable

replication and adaptation in future studies; and (3) present pilot data evaluating the application's operational feasibility and producing exploratory psi estimates for use in subsequent power calculations. These results also offer preliminary insights into the strengths and limitations of our hybrid model, thereby informing recommendations for its refinement and broader application. The remainder of the paper is therefore structured to address these three objectives in order, guiding the reader from theoretical rationale to technical specification and finally to pilot evaluation.

### ***1. Background: Rationale for a Dual-Mode Application for Psi Research***

Forced-choice paradigms have long been favored for their clear scoring rules and the deliberately high perceptual contrast built into their target sets – most famously the Zener cards, which were explicitly designed to minimize ambiguity among symbols. Their straightforward statistics and strong cross-laboratory replicability further enhance experimental credibility and help to address field-level skepticism (Radin, 1997; Storm et al., 2012). Meta analytic summaries likewise show small but reliable forced choice effects: Honorton and Ferrari (1989) reported a combined  $z = 11.41$  (trial based mean  $ES \approx .02$ ), with larger effects when studies used selected participants, individual testing, trial by trial feedback, and short response to target intervals; Storm and Tressoldi (2023) similarly found a small average effect (a few hundredths of a standardized effect) and concluded that forced choice designs produce consistent but modest effects relative to free response protocols such as used in ganzfeld (i. e., sensory deprivation) and remote viewing (RV) studies.

Free-response protocols trade the objectivity of forced-choice designs for greater ecological validity by immersing participants in “high-entropy” stimuli – complex, distinctive, surprising, or information-rich targets – using the term in a psychological sense rather than its thermodynamic one. In the ganzfeld, for instance, a “receiver” in sensory reduction describes impressions a “sender” attempts to transmit; in RV a percipient describes a hidden or distant target and independent judges match descriptions to targets. Ganzfeld programs with rigorous controls – automated selection, blind judging, and detailed logging – reported above chance performance and suggested that dynamic targets (video clips) increase hit rates compared with static images (Honorton et al., 1990). Subsequent reviews and meta analyses qualified those findings by highlighting heterogeneity across labs and sensitivity to procedural details (Hyman, 1985; Milton & Wiseman, 1999). Recent work has moved toward standardized free response evaluation to support efficiency, consistency, and objectivity, including preliminary artificial intelligence (AI) based scoring methods (e. g., Mossbridge et al., 2025), but challenges of judging consistency and interpretive bias persist (Hyman & Honorton, 1986; Milton & Wiseman, 1999).

Stimulus salience and affective relevance also emerge repeatedly as plausible moderators across protocols. Bem (2011) reported small but significant retroactive effects that were larger for affectively salient targets, implying that motivational relevance or attention capturing content may amplify reported effects. Many large, preregistered replications; however, failed to reproduce Bem's findings, and critics have pointed to analytic flexibility, publication bias, and confounds as alternative accounts (Galak et al., 2012; Ritchie et al., 2012; Simmons et al., 2011; Wagenmakers et al., 2011). Meta analyses confirm that affective stimuli tend to show larger effects but also show that differential attention, arousal, expectancy, and post hoc analytic choices can mimic psi like outcomes. Thus, affective or numinous imagery should be treated as a testable moderator, not a confirmed mechanism.

Both forced-choice and free-response literatures converge on concrete methodological safeguards: predefine and balance target sets (dynamic vs. static; high vs. low affective salience), automate selection and judging where feasible, preregister analytic plans, and pursue high powered direct replications to separate true target dependent modulation from artifacts such as selective reporting or attention/arousal confounds (Bem, 2011; Honorton et al., 1990; Hyman, 1985). Theoretically, if target features reliably influence psi effects, models must allow receiver-target interactions in which dynamic complexity and affective relevance alter attentional, motivational, or intersubjective coupling; until stringent, preregistered replications demonstrate such modulation, ordinary psychological mechanisms remain viable explanations (Hyman, 1985; Milton & Wiseman, 1999). Recent RV work reinforces this pragmatic stance. Specifically, Tressoldi and Katz (2023) reported a robust average effect and noted that richer, higher bandwidth targets – dynamic video clips and complex scenes – are associated with larger effect sizes; earlier work similarly reported greater perceivability for dynamic versus static targets (Lantz et al., 1994).

Evidence for the influence of numinous or high valence targets is likewise suggestive but sparse: only a few studies have examined target interest or contextual salience (Katz et al., 2021), and Krippner et al. (2019) tested light versus dark conditions while probing whether targets construed as more numinous produced different accuracy patterns, reporting results that justify systematic valence investigations. Tressoldi and Katz (2023) emphasized that procedural variables – interviewer presence, outbound agents, participant selection, and scoring/judging – often correlate with target properties and can inflate or masquerade as target effects. Consistent with this broader pattern, Watt's (1996) three-experiment series found no reliable advantage for emotionally charged targets in forced-choice ESP tasks: emotional versus neutral images produced equivalent scoring once response biases were controlled, and exploratory analyses using participants' own emotionality ratings likewise showed minimal differentiation.

Complementing these findings, Parker et al.'s (1998) ganzfeld work suggests that spontaneous emotional shifts or “aha” reactions during the session – not the emotional content of the targets per se – tend to accompany successful trials. Perhaps the most parsimonious conclusion is that effective psi targets are vivid, distinctive, and moderately complex – whereas the idea that numinous or high-valence content alone boosts psi performance remains plausible but unsubstantiated. Resolving this question will require preregistered, well-powered manipulations of dynamism and valence with strict controls for judging, monitoring, and participant selection (Katz et al., 2021; Tressoldi & Katz, 2023).

Ideal forced-choice targets are therefore clearly discrete items that map directly onto response options – for example, labeled static images, short single-event video clips, predefined object sets, or categorical locations. Emotional or dynamic stimuli should be categorized in advance (e.g., high vs low valence or dynamic vs static) so that responses fall into objective categories, and complex scenes should be reduced to a small set of pre-specified salient features (faces, water, motion) scored as presence/absence items. Considerable evidence shows that visual stimuli – such as certain paintings, photographs, or digital media – can carry intensely evocative qualities and, in some cases, elicit a sense of numinosity or enchantment in viewers (Houran et al., 2026). To clarify, “enchantment” denotes a distinctive mental state marked by dissonance and ontological shock, arising when ordinary waking experience is abruptly disrupted by a profound, meaning-laden awareness that evokes a transcendent sense of connection to an “ultimate reality” (see e.g., Drinkwater et al., 2022). Protocols might further mechanize randomization and recording, test participants individually, and use blinded – preferably automated or AI-assisted – scoring with a preregistered analysis plan to support consistency and objectivity. Studies should be powered for small effects and orthogonally manipulate dynamism and valence while controlling attention and arousal so any performance modulation can be attributed to stimulus–protocol interactions rather than judging bias, analytic flexibility, or selective reporting.

## ***2. Methodology: Development of a Dual-Mode Application for Psi Research***

The forced-choice and free-response literatures collectively suggest several practical prescriptions: (1) use forced choice scoring when targets can be discretized into low ambiguity, well balanced alternatives (high quality  $k$  choice sets or objectively coded feature bins), (2) automate randomization and recording, (3) predefine and preregister the analytic plan, and (4) control examiner, judging, and feedback procedures to remove experimenter and selection confounds. To balance precision with immersive engagement, we therefore created a scalable,

hybrid forced-choice framework that use AI-generated narratives with both visual and thematic contents that adapt to participants' selections. These narratives notably feature photographic images with proven immersive and transformative potential (Houran & Laythe, 2026), seamlessly integrated into a structured, selectable response format.

Advances in large language models (LLMs) – i.e., highly developed AI systems trained to understand and generate human-like text – and adaptive testing environments have thus enabled the simulation of emotionally engaging scenarios or exploratory settings while preserving the methodological control of traditional forced-choice designs. We argue that this fusion generally enhances participant engagement, reduces fatigue (Hyman, 1985), and leverages affective cues that are hypothesized to facilitate anomalous cognition (Targ, 2012), all without sacrificing scoring objectivity or statistical power. Our hybrid model thus merges three core components: (1) the unambiguous response options of forced-choice testing, (2) the experiential depth of immersive storytelling aligned to participants' idiosyncratic preferences in certain respects, and (3) the adaptability and scalability of AI-guided vignettes.

This framework allows participants to engage with a branching narrative modeled on the classic *Choose Your Own Adventure* gamebooks, which present stories in the second person and invite readers to assume the role of the protagonist by making decisions that shape the character's actions and the unfolding plot (Montgomery & Packard, 1979–1998). Each decision point presents intuitive or affective cues followed by five structured options, one of which our system randomly and covertly designates as a “correct hit” (i.e., the psi target). This design retains the advantages of a forced-choice paradigm – such as clear scoring, standardized stimulus presentation, precise control over sensory and symbolic elements – while also offering the cognitive engagement and motivational benefits of a semi-naturalistic, interactive, and aesthetic media experience (cf. Annett et al., 2016; Houran et al., 2026). In fact, it reflects principles of “gamified” platforms that transform everyday interactions into motivating, rewarding, and immersive experiences (Buckley & Doyle, 2016; Jaramillo-Mediavilla et al., 2024; Li et al., 2024).

The present “Immersive Psi Test” (IPT) application extends Laythe and Robert's (2022) original mobile test design and unfolds as a second-person narrative experience lasting ≤ 10-minutes. Participants receive the following instructions and priming for the current protocol:

Welcome to the “Choose Your Own Paranormal Adventure.” We selected you to participate because you scored as a highly sensitive or intuitive person that might have psychic-type abilities. Therefore, we want you to use your “psychic intuition” to complete five simple tasks involving a series of photographs that help to create a mystical story in which you will choose from different “portals” depicted by photographs on the screen. Please use your powerful imagination as you read each question and then use your intuition to

select a specific photograph as directed. Each time you choose a photograph, you will be “transported” to that location, where you will get to explore two areas via text description, and then you will return to another task involving another photograph selection. It’s fun and only takes about 10 minutes to finish. You have been transported to a place where five portals appear. One portal has been secretly chosen by the spirit in the machine. Focus for a moment, breathe, and prepare to select the portal you sense is the target.

As the AI-generated story progresses, the application dynamically adapts subsequent narrative branches based on participants’ prior selections, creating an immersive experience while preserving analytic tractability through its forced-choice structure. Note that the narrative language embedded in the instructions (e.g., references to “portals,” “transportation,” and “the spirit in the machine”) serves as a gamified framing device intended to enhance engagement and immersion. This framing encourages participants to rely on intuition and imaginative focus rather than deliberate analytical reasoning; a strategy commonly used in experimental paradigms designed to elicit intuitive responding. Importantly, these narrative elements function as procedural prompts rather than theoretical claims about the mechanism underlying the task, and the wording was presented identically to all participants to maintain standardized conditions. The IPT therefore combines experimental control with an immersive narrative context designed to sustain attention and motivation during the brief testing session.

The following subsections detail the construction and coding aspects of the IPT application, as well as related validation of randomness involving both boot-strap and pilot sample analysis. We collected data on selection accuracy against the AI’s hidden sequence and response times (in milliseconds) at each decision node for the psi trials. This combination of behavioral and subjective measures permits rigorous statistical analysis while providing insight into how immersive features impact both putative psi performance and the user experience.

### *2.1 IPT Procedural Flow*

We built the IPT application to support a range of functionalities as needed, including: (1) administration of psychometric measures to screen for inclusion/exclusion criteria or to collect psychological data for covariates of psi performance (e.g. Baptista et al., 2015), (2) an alternative research task for participants not meeting inclusion criteria, and (3) both “explicit” and “implicit” indices of putative psi. Explicit Psi refers to conscious, reportable parapsychological-like experiences, e.g., someone who knowingly claims to instigate mind-matter interactions, intentionally used a psychic technique, or can verbally describe the content and context of a precognitive vision. These experiences are accessible to the person’s awareness and can

be directly measured with self-report, structured interviews, or tasks that invite participants to intentionally use or report their claimed ability. In contrast, Implicit Psi denotes ostensible parapsychological effects that occur outside conscious awareness or intention. People do not necessarily notice these effects or label them as “psychic or paranormal.” Instead, it manifests as subtle patterns in cognition or behavior (shifted choices, reaction-time differences, or statistical deviations from chance) that may require indirect measures or careful analysis to detect (e.g., Bem, 2011; Radin, 2006).

Standardized image databases are readily available (e.g., Bendall et al., 2025; Kurdi et al., 2017; Lang et al., 1995; Marchewka et al., 2014), but the IPT uses a series of 25 “enchanted” and 25 “disenchanted” images that Houran and Laythe (2026) carefully curated from royalty-free sources and subsequently normed either to exhibit or lack six environmental gestalt effects (cf. Houran et al., 2023) that foster psychological absorption, such as *Affordance* (“This image is full of interesting possibilities that I might like to explore”), *Ambiguity & Threat* (“This image makes me feel anxious or uncomfortable, as if I’m on high alert”), *Atmosphere* (“This image definitely has an overall emotion or mood to it”), *Immersion & Presence* (“This image totally grabs my attention”), *Legibility* (“This image has a layout and details that are easy for me to remember”), and *Memory & Associations* (“This image has colors, symbols, objects, or a sense of time with personal meaning to me”). These collective features aimed to stimulate immersive-aesthetic experiences (Houran et al., 2026) in participants assigned to the IPT’s Enchanted-stimuli condition.

Specifically, the Enchanted images comprised five distinct thematic “scenes”: (1) *Majestic space* (i.e., Mountain, Desert, Woodlands, Body of Water, Cave), (2) *Haunted space* (i.e., eerie House, Cemetery, Woods, Swamp, Lonely Road), (3) *Sacred space* (i.e., Meso-America Ruin, Medieval Church, Earth-Power Spot, Ancient Greek Temple, Mosque Library), (4) *Historical space* (i.e., Ancient Rome, Great Wall of China, Stonehenge, Royal Palace, Easter Island), and (5) *Happy space* (buildings or other common structures exhibiting human face pareidolia, cf. Wang et al., 2022). In contrast, the Disenchanted images involved (1) *Outdoor space* (i.e., familiar landscapes, including fields or creeks), (2) *Residential space* (i.e., normal housing neighborhoods), (3) *Industrial space* (i.e., everyday warehouses or parking lots), (4) *Community space* (i.e., common areas in towns and cities), and (5) *Commercial space* (i.e., outside facades of malls or office buildings). For discussions about how such image contents relate to enchantment, Jungian archetypes, and general aesthetic experience, see the works of Houran and colleagues (Houran et al., 2026; Houran & Laythe, 2026).

Technical validation of the IPT also included cross-checking the accurate collection of participants’ informed consent, demographic information, and psychometric data on “bound-

ary-thinness” and “encounter proneness,” the latter of which feature in “Part 3: Viability of a Dual-Mode Approach to Psi Testing.” Of course, researchers can substitute or add other standardized measures in transpersonal psychology or parapsychology for different research designs (see e. g., Goulding & Parker, 2001; MacDonald et al., 1995, 1999a, 1999b). For example, we plan a larger study to assess the psi performance of encounter-prone individuals – defined here as those who meet one-standard deviation (SD) thresholds on certain screening variables. Participants falling below these thresholds (or alternative scoring criteria, as needed) are routed to an auxiliary questionnaire track, whereas those who meet the inclusion criteria advance to the full IPT protocol. Individuals are given a context story and randomly assigned either to an “enchanted or disenchanting” stimuli condition, which comprised a five-trial test of putative psi using five fixed-stimulus photographs tailored to the respective condition. Between each picture selection, the participant is shown two narratives where they are allowed to select a physical direction to move in their immersive story, i. e., “ahead, behind, left, and right” choices, with the corresponding narrative following from the specific picture the participant selected. The testing protocol concludes after five psi trials (with two picture targeted narrative choices in between each trial).

## *2.2 Application Construction and Method*

The IPT is delivered in HTML to enable efficient, web-based, and highly scalable administration. We built the program in Streamlit, hosted the code on GitHub, and configured the application to submit data to an Amazon S3 bucket, where it was saved as a CSV file for analysis. All three were password protected for extreme data protection (including individual dual verification, encryption, and passwords) regarding the data submission to the .csv residing in the Amazon S3 bucket. Because public release of the IPT’s full code could inadvertently reveal some key aspects of its workings to informed study participants, its access is restricted to qualified researchers upon written request.<sup>1</sup>

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<sup>1</sup> “Qualified researcher” refers to an investigator with appropriate academic or professional credentials – typically someone affiliated with a university, research institute, or comparable organization – who has experience conducting human-subjects research and a legitimate scholarly interest in the IPT. Access is granted only upon written request, and recipients must agree to maintain the confidentiality of the code and protect the intellectual property it embodies, including refraining from sharing or publicly posting any sensitive implementation details.

With the assistance of ChatGPT-5 (OpenAI, 2025), we constructed a Python code that integrates a principal .py file containing initial scales and demographics, logic switches based on future application for participants meeting sufficient scoring on the accompanying psychometric measures (see below), and the remaining coding in which (1) participants are selected either for psi testing trials, based on psychometric inclusion criteria, (2) presentation (in randomized order) of either five sub-sets of five Enchanted images or five Disenchanted images (50 images total), (3) secret selection by the program using Python’s “random” function which generates quasi-random functions using Python’s Mersenne Twister RNG, with standard OS entropy initialization for each run of one of the five images presented as the target, across the five trials, and (4) collection of both the IPT’s and participants’ selections to calculate matches or psi “hits.”

Further, the application leveraged additional .py files to present the AI-generated narratives based on each individual target image between each five-image psi selection trial. This process inserts two narrative-based paragraphs in which the participant is given a description of the “portal” (i. e., image) they selected and were constructed under the narrative premise that the participant had stepped “into” the image. These narrative interjections represent two exposures between each “explicit” five-picture selection psi test, creating an overall narrative and 10 total narrative choices. Each narrative presented provides participants with a choice to “move ahead, backwards, left, or right.” Both files facilitated logging the participant’s choice to move per one of these four directions, *and* the program’s secret selection of a direction using the above-described Python “random” function to test for Implicit Psi.

AI-generated narratives associated with each image – representing eight descriptions based on each individual image totaling 400 narratives (25 enchanted images and 25 disenchanted images  $\times$  8 narratives) – were pre-specified using ChatGPT-5 and stored within a .csv for the programs to access. These were created by feeding target images to the AI program and having it first describe the image for itself using appropriate detail in written terms so that it could use its LLM to generate suitably detailed and engaging narratives. We note here the growing integration of AI both within parapsychological research (e. g., Greyson et al., 2025; Houran et al., 2025; Houran & O’Keeffe, 2025; Mossbridge et al., 2025; O’Keeffe et al., 2024) and, more broadly, in efforts to detect and counter misinformation on frontier science topics (Impey et al., 2025) – two domains that together highlight AI’s expanding role in advancing methodological rigor and safeguarding knowledge.

Considering AI’s current strengths and weaknesses, we purposefully elected to pre-generate the narratives for several reasons. *First*, we wished to avoid additional calls from the program to another third-party party service, thus minimizing occasional code glitches depending on the load and network availability of the AI program. *Second*, and more importantly, ChatGPT-5 (or

any similar system for that matter) shows imperfect performance, particularly with regards to repetitive or looped generation of material based on static parameters, i. e. conflicts between standard if/then looping code within the AI architecture versus the vector matrix process of the LLM.

LLMs also can occasionally exhibit “drift,” meaning they can generate misaligned content based on k-temperature [i. e., a sampling scheme that first restricts next-token candidates to the top k highest-probability tokens and then applies a temperature scaling to those tokens’ probabilities before sampling, allowing simultaneous control of candidate diversity (k) and randomness (temperature)] and other related variables, as well as low cosign returns on its *n*-dimensional matrix. As a result, the IPT’s current iteration avoids the potential confound of AI providing non-image-oriented narrative, keeping any potential error variance due to “drifted” narrative, or failed calls to the AI controlled for. As such, the pre-generated narratives from AI, having used a consistent method and process, holds error variance constant within a known set of pre-generative narratives, immune from additional error variance being contributed due to spontaneous AI generation.

To recap, the results above reflect two types of psi tests. In the Explicit Psi test, participants view a series of five images – each either “enchanted” or “disenchanted” and rendered in high immersive quality – and select one across five trials (chance hit rate: 20%, or 1 in 5). In the Implicit Psi test, two short text narratives appear between each explicit trial, repeated five times; in each narrative, the participant chooses a direction twice from four options (chance hit rate: 25%, or 2.5 out of 10 trials). In both tests, the program secretly pre-selects a target – a picture or a direction – *before* the participant responds. This selection is never disclosed. A “hit” occurs when the participant’s choice matches the program’s pre-selected target; a “miss” occurs when it does not.

### *2.3 Checks for Randomness of Target Selection*

Credible tests of putative psi require the random-selection of target stimuli and other related stimulus issues. To reiterate, all random selections for the IPT used the quasi-random Python “random” function noted earlier. Below we report the results of randomization analyses using the pilot data ( $N = 126$ ) from “Part 3: Viability of the Dual-Mode Application for Psi Research.”

#### **2.3.1 Enchanted versus Disenchanted Conditions**

As previously outlined, participants were randomly assigned either an Enchanted-stimuli or Disenchanted-stimuli condition and then directed to choose from one of five different sets of

five images associated with the particular testing condition. This produces a  $p = .5$  probability of participants' assignment either to the Enchanted or Disenchanted condition.

Across the sample, 65 of 126 cases (51.6%) were assigned to the Enchanted condition and 61 (48.4%) to the Disenchanted condition. Binomial testing indicates that the observed proportion of E trials did not differ significantly from the expected chance level of .50,  $p = .79$ , supporting that the set assignments are consistent with a 50/50 distribution of Enchanted versus Disenchanted conditions.

### 2.3.2 Computer Selection for Explicit Psi

Again, once a sub-condition had been selected, five images serve as the stimuli for a five-trial test of Explicit Psi, where it would be expected that each application-selected target would be chosen with equivalent probability across each trial. Ergo, each application-selected image across a sample should be roughly equivalent to 20% (or within CI expectations) for each of the five images representing one trial across the sample.

Across the five Explicit Psi trials, we tested whether the application-selected target position (values 1–5) in each trial was consistent with a uniform random distribution (expected  $p = .20$  for each position). For each of the five trials, a chi-square goodness-of-fit test compared the observed frequencies of target positions to the expected equal frequencies, with Cramér's  $V$  (reported hereafter as  $V$ ) used to quantify effect size.

For Trial 1, the distribution of target positions did not differ significantly from uniform,  $\chi^2(4, N = 126) = 2.02, p = .733, V = .06$  (counts: 1 = 23, 2 = 26, 3 = 22, 4 = 31, 5 = 24). The same was observed for Trial 2,  $\chi^2(4, N = 126) = 1.62, p = .805, V = .06$  (1 = 26, 2 = 23, 3 = 29, 4 = 27, 5 = 21); Trial 3,  $\chi^2(4, N = 126) = 6.30, p = .178, V = .11$  (1 = 20, 2 = 28, 3 = 17, 4 = 31, 5 = 30); and Trial 4,  $\chi^2(4, N = 126) = 1.78, p = .777, V = .06$  (1 = 25, 2 = 25, 3 = 27, 4 = 20, 5 = 29). In contrast, Trial 5 showed a statistically significant deviation from the expected uniform distribution,  $\chi^2(4, N = 126) = 11.38, p = .023, V = .15$ , with relatively fewer "1" selections ( $n = 13$ ) and more "2" selections ( $n = 36$ ) than expected (other counts: 3 = 27, 4 = 22, 5 = 28).

To evaluate the overall pattern across the full IPT protocol, we pooled all five trials (Trial 1–Trial 5) into a single analysis of 630 computer selections. The combined distribution of target positions (1 = 107, 2 = 138, 3 = 122, 4 = 131, 5 = 132) did not differ significantly from a uniform random distribution,  $\chi^2(4, N = 630) = 4.62, p = .329, V = .04$ , indicating that, in aggregate, (noting the aberrant behavior of Trial 5) the application's target assignments were consistent with equal random selection among the five positions.

### 2.3.3 Computer Selection for Implicit Psi

Between each picture trial are two narratives presented with four options of which the IPT also secretly selected a “direction,” i.e., when the participant is directed to move “forward, backward, left or right” at certain decision points in the immersive storyline. This represents 10 application-selected choices where each option within each narrative should also be roughly equivalent to 25% for each direction choice within the sample.

For each of the 10 narrative four option choices we examined whether the four possible target values (1–4) followed a uniform distribution ( $p = .25$ ) using chi-square goodness-of-fit tests. Results indicate that most variables showed no statistically significant deviation from uniformity: Narrative 1a (counts: 1 = 32, 2 = 24, 3 = 37, 4 = 33),  $\chi^2(3, N = 126) = 2.83, p = .42, V = .09$ ; Narrative 2a (1 = 27, 2 = 27, 3 = 32, 4 = 40),  $\chi^2(3, N = 126) = 3.59, p = .31, V = .10$ ; Narrative 2b (1 = 33, 2 = 28, 3 = 36, 4 = 29),  $\chi^2(3, N = 126) = 1.30, p = .73, V = .06$ ; Narrative 3a (1 = 39, 2 = 34, 3 = 29, 4 = 24),  $\chi^2(3, N = 126) = 3.97, p = .27, V = .10$ ; Narrative 3b (1 = 33, 2 = 32, 3 = 32, 4 = 29),  $\chi^2(3, N = 126) = 0.29, p = .96, V = .03$ ; Narrative 4a (1 = 25, 2 = 34, 3 = 36, 4 = 31),  $\chi^2(3, N = 126) = 2.19, p = .53, V = .08$ ; Narrative 4b (1 = 35, 2 = 29, 3 = 31, 4 = 31),  $\chi^2(3, N = 126) = 0.60, p = .90, V = .04$ ; Narrative 5a (1 = 30, 2 = 33, 3 = 33, 4 = 30),  $\chi^2(3, N = 126) = 0.29, p = .96, V = .03$ .

In contrast, two variables showed statistically significant deviations from the expected uniform distribution: Narrative 1b (1 = 44, 2 = 31, 3 = 35, 4 = 16),  $\chi^2(3, N = 126) = 12.98, p = .005, V = .19$ , and Narrative 5b (1 = 45, 2 = 27, 3 = 23, 4 = 31),  $\chi^2(3, N = 126) = 8.73, p = .033, V = .15$ , indicating moderate deviations from equal selection probabilities for those specific directional phases.

We pooled the 10 narrative variables into a single analysis (total  $N = 1,260$  computer choices; counts: 1 = 343, 2 = 299, 3 = 324, 4 = 294) to examine the overall pattern across all directional selections. A chi-square goodness-of-fit test again compared the observed frequencies to a uniform distribution with equal expected probabilities for each of the four target values. The pooled distribution did not differ significantly from uniform,  $\chi^2(3, N = 1,260) = 4.96, p = .18, V = .04$ , indicating that in aggregate the IPT application’s directional target assignments are consistent with approximately equal random selection among the four options.

### 2.4 Checks for Randomness of Image Presentation

Below we describe the procedures used to validate that display order of the stimulus images did not introduce systematic bias into the IPT. We first summarize the stimulus selection and norming that produced the two stimulus classes used in the task. Next, we detail the randomization algorithm and present statistical tests (contingency tables, chi-square tests of independence,

and  $V$  applied to each trial and to the pooled placements to confirm that image identity was independent of screen position or to quantify any small departures from ideal randomness.

### 2.4.1 Enchanted and Disenchanted Images

The IPT was designed to test our primary hypothesis that immersion and situational-enchantment enhance psi functioning, as based on prior work (Houran et al., 2024; Lange et al., 2023; Lange & Houran, 2021). Note that Houran and Laythe (2026) confirmed the differences in the Enchanted and Disenchanted themed photographs, where participants rated 50 images as “enchanted” and 50 pictures as “disenchanted” using a six-item modified version ( $\alpha = .77$ , score range = 6–24) of the Visitor Experience Questionnaire (VEQ; Houran et al., 2023) to index the six environmental gestalt effects specified earlier.

We then selected from Houran and Laythe’s (2026) normed collection of photographs the 25 highest-rated “enchantment” images for the Enchanted category and 25 of the lowest-rated “disenchantment” items for the Disenchanted category in our IPT protocol. Across images, those in the Enchanted condition (E;  $n = 25$  images, total ratings  $N_E=387$ ) received markedly higher ratings ( $M = 18.83$ ,  $SD = 1.13$ ) on environmental gestalt effects than images in the Disenchanted condition (D;  $n = 25$  images, total ratings  $N_D=427$ ;  $M = 14.07$ ,  $SD = 1.47$ ). An independent-samples Welch’s t-test on image-level means demonstrates strong statistical significance,  $t(45.10) = 12.83$ ,  $p < .001$ , 95% *CI* for the mean difference [4.02, 5.51],  $d = 3.63$ .

### 2.4.2 Psi Image Presentation Order

To avoid a selection bias, the IPT randomly shuffles the presentation order of the displayed image set. Thus, across five trials in aggregate, the displayed position order (1, 2, 3, 4, 5) of any given image position should be approximately 20%. We evaluated the effectiveness of the image-layout randomizer by treating display position and image index as two categorical variables and checked whether they were independent for each trial. For each layout variable (Trial 1 through Trial 5), we parsed the stored permutation (e.g., [1, 2, 0, 3, 4]) into five positions (Position 1–5 on the screen) and five image indices (0–4). A  $5 \times 5$  contingency table was then constructed for each trial, where rows represented screen position and columns represented which image index appeared in that position. Under the assumption of a properly functioning randomizer, image index should be independent of position, such that each image is equally likely to appear in any position. This was tested with chi-square tests of independence for each trial ( $df = (5 - 1) \times (5 - 1) = 16$ ), using  $V$  as the effect size. Finally, we pooled all five trials into a single  $5 \times 5$  table (collapsing across Trials 1 through 5) and repeated the same analysis to assess the overall performance of the layout randomizer across the entire psi testing series.

Across individual trials, most layout indices were consistent with random image placement. For Trial 1, the association between screen position and image index was not statistically significant,  $\chi^2(16, N = 630) = 17.86, p = .332, V = .08$ , indicating no meaningful positional bias in the first trial's layouts. Similarly, Trial 3 showed no evidence of dependence between position and image index,  $\chi^2(16, N = 630) = 10.48, p = .841, V = .06$ , and Trial 5 was likewise nonsignificant,  $\chi^2(16, N = 630) = 18.89, p = .274, V = .09$ . In these three trials, the observed distributions of images across positions were consistent with the pattern expected from an unbiased randomization process.

Two trials showed statistically detectable, though small, deviations from perfect positional randomness. For Trial 2, there was a significant association between screen position and image index,  $\chi^2(16, N = 630) = 28.97, p = .024, V = .11$ . Likewise, Trial 4 yielded a significant chi-square,  $\chi^2(16, N = 630) = 41.90, p < .001, V = .13$ . These results suggest that, in Trials 2 and 4, certain images occurred in particular positions somewhat more (or less) often than would be expected under strict positional independence. However, the effect sizes were rather small ( $V \approx .11-.13$ ), indicating modest deviations rather than strong or systematic ordering biases.

When all five trials were pooled into a single analysis (combining Trial 1 through Trial 5) into one  $5 \times 5$  table of position by image index ( $N = 3,150$  placements), the overall pattern showed a statistically significant but small association between screen position and image identity,  $\chi^2(16, N = 3,150) = 36.37, p = .003, V = .05$ . Thus, aggregated across all trials, the layout randomizer produced distributions that are very close to, but not perfectly indistinguishable from, what would be expected under ideal positional independence. The statistically significant result is driven primarily by subtle, small-effect deviations (notably in Trials 2 and 4), rather than a systematic lack of randomization on a practical level.

### *2.5 Operationalization of Implicit Psi via Narrative Decision Points*

The IPT's 10 narrative decision points – each offering participants a choice among four neutral directions (“ahead, behind, left, or right”) embedded directly in the second-person storyline – were deliberately constructed to operationalize Implicit Psi as low-pressure, non-conscious deviations from chance. Unlike the five explicit image-selection trials, where participants are overtly primed to “use your psychic intuition” on designated portals, the directional choices are presented solely as natural story-progression moves with no mention of testing, scoring, or paranormal performance. This covert framing leverages the immersive, gamified format to elicit automatic, intuitive selections while participants remain unaware

that their responses are being evaluated against a hidden random target. By design, the narratives were pre-generated with balanced, thematically equivalent descriptions across all four options (verified through internal consistency checks), eliminating systematic differences in aesthetic appeal, emotional valence, or narrative plausibility that might otherwise guide choices (see e.g., Delanoy & Solfvín, 1996).

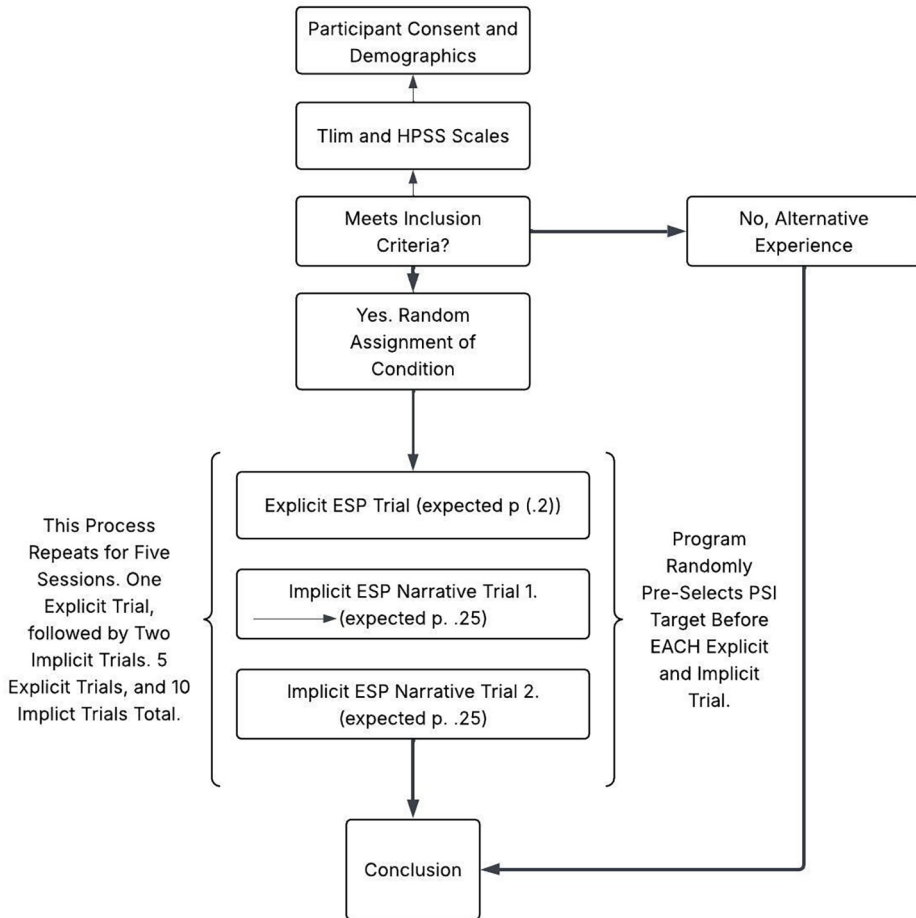
We explicitly recognize that above-chance performance on these points could reflect non-psi mechanisms, including unconscious aesthetic preferences (e.g., favoring “forward” movement in adventurous contexts), implicit demand characteristics (e.g., participants unconsciously aligning choices with the “enchanted” framing), or subtle priming from preceding imagery and story elements. However, several safeguards reduce these alternatives: (a) true randomization of targets via the Mersenne Twister (with pooled chi-square tests confirming overall uniformity despite minor trial-level deviations), (b) absence of trial-by-trial feedback or experimenter cues, and (c) the condition-specific pattern observed only in the enchanted arm – precisely where immersive engagement was hypothesized to facilitate anomalous cognition rather than ordinary biases. These features arguably position the narrative decisions as a cleaner probe of Implicit Psi than traditional forced-choice tasks, while still allowing future preregistered replications to adjudicate residual confounds through counterbalanced options and explicit bias probes. Figure 1 provides a schematic overview of the IPT workflow, illustrating the separation between the Explicit Psi path (conscious image selections) and the Implicit Psi path (covert narrative direction choices), along with the key randomization points.

### ***3. Pilot Study: Viability of the Dual-Mode Application for Psi Research***

Pilot studies are critical in the development of new approaches by ensuring that designs or tools operate as intended, thereby supporting the practical and reliable collection or analysis of data (Westlund & Stuart, 2017). Our goal therefore was to validate that the IPT functioned as designed for actual practice and in further preparation for a large, preregistered study of “enchanted psi” to be reported separately. This latter research tests the hypothesis that putative psi performance is optimized when high-transliminality or thin-boundary individuals (i.e., “exceptional subjects”) engage with stimuli or settings that are associated with numinosity or a sense of enchantment (cf. Houran et al., 2024; Lange et al., 2023; Lange & Houran, 2021). In this pilot, however, these psychometric variables were not used as exclusion criteria; instead, we collected them to confirm the functionality of the measures and to explore their general correlations with psi performance.

**Figure 1**

*Schematic diagram of the Immersive Psi Test's (IPT) dual-mode workflow, showing the explicit psi path (conscious image selections), the implicit psi path (covert narrative direction choices), and the key randomization points.*



We report all results obtained in this pilot phase for illustration purposes, but no specific hypotheses are advanced. Our pilot study's design, analysis, and research materials were not preregistered, but the protocol was reviewed and approved by the Ethics Committee at

Integrated Knowledge Systems. Moreover, we strived to follow the Journal Article Reporting Standards (Kazak, 2018) and thus describe how we determined our research samples, all data exclusions (if any), specific research questions, applicable manipulations, and all measures and data abstractions.<sup>2</sup>

Some empirical evidence also suggests that experimenter expectancy, belief in psi, and even unconscious processes can influence outcomes in psi research (e.g., Kennedy & Taddonio, 1976; Smith, 2003). To address this issue, we note that the IPT protocol did not require any author-participant interaction, and the authors rated their *a priori* belief in the pilot study's success as "3" on a four-point scale (4 = strong belief in the success of the experiment, 3 = moderate belief, 2 = moderate non-belief, 1 = strong non-belief) – a rating that reflected cautious optimism rather than strong conviction, driven more by concerns over the technology's stability than by doubt about Lange and Houran's (2021) basic "enchanted psi" concept.

### 3.1 Participants

We recruited 126 participants through the Cloud Research platform (i.e., an online participant-recruitment and data-collection platform used to obtain high-quality, pre-screened study samples) to complete the psi test component of the IPT protocol, emphasizing that this pilot effort served as an essential precursor to a larger main study of participants profiling exclusively as ostensible "exceptional subjects," i.e., those who simultaneously score "> one-SD" on the Revised Transliminality Scale and "> the mean" on the Haunted People Syndrome Screener measures as described below. Our convenience sample was compensated for their participation but not screened for any psychometric-based inclusion/exclusion criteria. Ages ranged broadly, with a mean age of 37.4 years ( $SD = 12.6$ ). Gender distribution was balanced, with 48.4% identifying as female ( $n = 61$ ), 47.6% as male ( $n = 60$ ), and 4.0% as non-binary ( $n = 5$ ). Participants reported a range of ethnic backgrounds. The majority identified as White/European (67.5%,  $n = 85$ ), followed by Black/African American (11.9%,  $n = 15$ ), Asian/Pacific (9.5%,  $n = 12$ ), and Hispanic/Latino (7.9%,  $n = 10$ ). A small number identified as Middle Eastern/Arab or mixed heritage (0.8%,  $n = 1$ ) or other/multiracial categories (1.6%,  $n = 2$ ). One participant (0.8%) did not disclose ethnicity.

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<sup>2</sup> The raw pilot data are available as a Supplementary Materials file:  
[https://www.anomalistik.de/images/pdf/zfa/supp\\_mat/JAnom26-1\\_Laythe-Houran\\_Supplemental-Data.csv](https://www.anomalistik.de/images/pdf/zfa/supp_mat/JAnom26-1_Laythe-Houran_Supplemental-Data.csv)

### 3.2 Psychometric Measures

*Revised Transliminality Scale* (RTS; Lange et al. 2000) is a 17-item, T/F, Rasch (1960/1980) scaled measure of “hypersensitivity to psychological material originating in (a) the unconscious, and/or (b) the external environment” (Thalbourne & Maltby, 2008, p. 1618). The items specifically span magical ideation, mystical experience, absorption, hyperesthesia, manic experience, dream interpretation, and fantasy proneness, all of which share a common underlying factor. Transliminality is thus a perceptual-personality variable that incorporates Hartmann’s (1991) mental boundary construct and the notion of sensory processing sensitivity (Aron et al., 2012). RTS scores ( $M = 25$ ,  $SD = 5$ ) – with a Rasch reliability of .82 (Lange et al., 2000), retest reliability of .88 over an average of seven weeks (Thalbourne, 2000 – consistently predict different anomalous experiences, syncretic cognitions, and lower physiological thresholds (Evans et al., 2019; Irving et al., 2024; Ortega et al., 2025; Rosen et al., 2023; Roxburgh et al., 2024; Swami et al., 2024). Transliminality also correlates positively with both paranormal belief and putative psi performance (e.g., Thalbourne & Houran, 2003; Thalbourne & Storm, 2012; Ventola et al., 2019).

*Haunted People Syndrome-Screener* (HPSS; Lange & Houran, 2024) consists of six items to be rated four-point Likert scales anchored by “Strongly Disagree” (scored 0) and “Strongly Agree” (scored 3). These cover the presence of recurrent anomalous experiences and four of the five recognition patterns of an “encounter-prone” psychometric profile (Laythe et al., 2021, 2022), i.e. (1) Thin Boundary Functioning, (2) Dis-ease States, (3) Perceptual Contagion (i.e., covering both event flurries and diverse perceptions), and (4) Sense-Making Attributions (i.e., narrative reality based on general ideological beliefs). The Rasch-scaled scores (reliability = .80) range from 37.1 to 71.2, with a mean of 50 and standard deviation = 10. HPSS scores also strongly and positively predict scores on the Survey of Strange Experiences (attenuation corrected correlation = 0.78,  $p < .001$ ). Notably, an encounter-prone profile maps directly onto participant characteristics consistently associated with elevated psi performance across multiple experimental paradigms, insofar as Baptista et al. (2015) found that individuals with prior anomalous experience, psi-conducive beliefs, and mental discipline practice produced significantly higher hit rates than unselected participants in ganzfeld studies, and that analogous selection effects were replicated in forced-choice ESP databases, underscoring the value of HPSS scores as an theoretically grounded inclusion criterion for psi research.

### 3.3 Procedure

We refer readers to the previous section for specific details of the survey and procedure. Here we reiterate that after informed consent and demographics collection, participants completed the

HPSS and transliminality measures but were automatically routed to the psi testing part of the protocol. Participants were randomly assigned to either an Enchanted-Stimuli or Disenchanted-Stimuli testing condition. The Enchanted-Stimuli Condition instructs participants to read detailed descriptions of five types of “enchanted” geographies (i. e., Majestic, Haunted, Sacred, Historical, or Happiness) and then select “*Which location sounds to you as the most intriguing to visit.*” The IPT then populates the images that correspond to the participant’s selection. The Disenchanted-Stimuli Condition similarly directs participants to read detailed descriptions of five types of “everyday” geographies (i. e., Basic Garden, New House, Warehouse, Mile Marker, or Worn Building Exterior) and then indicate “*Which location sounds to you as the most boring to visit.*” The IPT then populates the corresponding images to match the “disenchanted” selection. This process aims to tailor the testing stimuli to each participant’s expectations about the enchanting or disenchanting qualities of specific environments.

During the IPT, a participant engages with a storyline from ChatGPT-5 (OpenAI, 2025) that has the user choose one out of five stimulus pictures within their preferred enchanted category (e. g., the Haunted or Majestic setting) or the disenchanted category they deemed most mundane (e. g., the Residential or Industrial setting), with one being randomly and covertly selected by the AI program in real-time as the “psi target.” This selection process repeats five times during the evolving storyline, thus yielding a five-trial test of putative psi with an expected score of 1/5 or 20%. We designed this efficient and scalable AI-facilitated narrative format to mimic the perceptual or experiential features of immersive-type experiences involving “uncanny” contents or contexts (Annett et al., 2016; Hill et al., 2018; Houran et al., 2023) but without the logistical or methodological drawbacks of fieldwork studies or free-response designs.

Between each image selection psi task, the IPT produced two narratives with a four choice option of “direction” (“ahead, behind, left, or right”) which the computer also randomly and covertly selected, to create either an immersive storyline for (1) an Enchanted-Stimuli Condition, where positive descriptors are used along with a set of emotionally-laden settings (i. e., Majestic Landscape, Haunted House, Sacred Space, Historical Landmark, or Happy-Face Buildings via pareidolia) versus (2) the Disenchanted-Stimuli Condition involving mundane descriptors for commonplace settings (i. e., Basic Garden, New House, Warehouse, Mile Marker, or Worn Building Exterior). This implicit psi test carries a random expectation of 2.5/10 or 25%.

### 3.4 Results

The analyses below address three issues central to protocol validation: (1) whether the randomization and stimulus-assignment procedures functioned as intended; (2) whether partic-

ipants in the enchanted and disenchanted conditions performed differently; and (3) whether either condition produced psi scores reliably above chance. Each subsection pairs the primary statistical result with a plain-language interpretation to aid accessibility. Note that all analyses and interpretations concerning Implicit Psi are strictly exploratory and are intended solely for hypothesis generation rather than for claiming reliable detection of anomalous effects.

### 3.4.1 Preliminaries

Our analysis only examines hit rate on the IPT as a function of Enchanted vs. Disenchanted images and reinforcing narratives, given that we did not screen participants for higher scores on the HPSS and RTS. Given previous work with enchantment, transliminality, and putative psi (Houran et al., 2024; Lange et al., 2023; Lange & Houran, 2021), we would expect elevated levels of both transliminality and encounter-proneness in conjunction with an enchanted environment to produce psi scores beyond chance-levels. We again do not specify hypotheses, noting that any significant effects would imply that situational-enchantment alone is (in part) an independent variable (regardless of one's inherent traits or abilities) which modulates psi scoring. Finally, understand that we are applying a broad analysis across all Enchanted or Disenchanted conditions, leaving potential differences in each of the five subsets for future scrutiny and a larger sample.

### 3.4.2 Explicit vs Implicit Psi Scores Relative to Enchanted and Disenchanted Images

Analysis revealed that the summed psi scores were not normally distributed. Specifically, Shapiro-Wilk tests showed that Explicit Psi scores deviated substantially from normality in the full sample,  $W(126) = 0.83, p < .001$ , and Implicit Psi likewise departed from normality,  $W(126) = 0.93, p < .001$ . Parallel Shapiro-Wilk tests within the Enchanted (E) and Disenchanted (D) conditions also indicated non-normality for both Explicit and Implicit Psi scores (all  $p$ 's  $\leq .003$ ). Given the former, subsequent analysis employed Mann-Whitney U tests were used as the primary between-groups analyses, with  $U$ , standardized  $z$ , exact two-tailed  $p$  values, and effect sizes reported as  $r$ .

For Explicit (conscious) Psi performance, participants in the Enchanted condition had a mean hit rate of  $M = 0.89, SD = 0.81$  (med. = 1, IQR = 0–1,  $n = 65$ ), whereas those in the Disenchanted condition had a hit rate of  $M = 0.97, SD = 0.80$  (med. = 1, IQR = 0–1,  $n = 61$ ). A Mann-Whitney U test indicated that Explicit Psi scores did not differ significantly between the E and D conditions,  $U = 1873.00, z = -0.57, p = .57, r = .05$ . Thus, there was no evidence that the global Enchanted versus Disenchanted manipulation influenced Explicit Psi performance in our pilot sample with an open distribution of HPSS and RTS scores.

For Implicit (non-conscious) Psi performance, the participants in the Enchanted condition had a mean hit rate of  $M = 2.97$ ,  $SD = 1.77$  (med. = 3, IQR = 2–4,  $n = 65$ ), whereas participants in the Disenchanted condition had a hit rate of  $M = 2.43$ ,  $SD = 1.43$  (med. = 2, IQR = 1–3,  $n = 61$ ). Although the Enchanted group showed somewhat higher Implicit Psi scores descriptively, a Mann–Whitney U test indicated that this difference was not statistically significant,  $U = 1660.50$ ,  $z = -1.61$ ,  $p = .11$ ,  $r = .14$ . These results indicate a small but nonsignificant tendency toward increased Implicit Psi performance in the Enchanted condition.

### 3.4.3 Aggregated Psi Scores Relative to Chance Expectations

Because psi performance was recorded as “counts of hits” over a fixed number of trials (five explicit trials and 10 implicit trials per participant), we treated each trial as a Bernoulli event (hit vs. miss) and used exact binomial tests to compare observed hit rates against their theoretical chance levels. For Explicit Psi, chance was defined as  $p_0 = .20$  (one hit in five trials on average). For Implicit Psi, chance was defined as  $p_0 = .25$  (2.5 hits in 10 trials on average). Within each condition (Enchanted vs Disenchanted) and in the total sample, we summed hits across participants and divided by the total number of trials to obtain an overall hit rate  $\hat{p}$ . We then conducted one-sided exact binomial tests with the directional alternative  $H_1: p > p_0$  (“above-chance”), and we report effect sizes as Cohen’s  $h$ .

For Explicit Psi, in the Enchanted (E) condition, participants produced 58 explicit hits across 325 trials, yielding an overall hit rate of  $\hat{p} = .18$  (95%  $CI$  [.14, .22]). A one-sided exact binomial test indicated that this rate did not exceed chance, exact  $p = .85$ , Cohen’s  $h = -0.06$ , suggesting psi performance was slightly below but statistically indistinguishable from the expected .20 hit probability. In the Disenchanted (D) condition, participants had 59 hits across 305 trials  $\hat{p} = .19$ , 95%  $CI$  [.15, .24], with no evidence of above-chance performance, exact  $p = .64$ ,  $h = -0.02$ . Collapsing across conditions, the total sample showed 117 explicit hits out of 630 trials,  $\hat{p} = .19$ , 95%  $CI$  [.16, .22], again consistent with chance, exact  $p = .83$ ,  $h = -0.04$ . Thus, Explicit Psi performance was not significantly above-chance in either condition or in the combined sample.

For Implicit Psi, E participants produced 187 hits across 650 trials, corresponding to an overall hit rate of  $\hat{p} = .29$ , 95%  $CI$  [.25, .32]. This rate was significantly above the chance expectation of .25, exact one-tailed binomial  $p = .016$ , Cohen’s  $h = 0.09$ , indicating a very small but reliable elevation in Implicit Psi performance within the Enchanted condition. This magnitude nonetheless falls below conventional small-effect benchmarks ( $h = 0.20$ ). For comparison, this is in the range of effect sizes commonly observed in implicit cognition paradigms and subliminal priming studies (e.g.,  $h \approx 0.05$ – $0.15$ ; Greenwald et al., 2003), as well as prior forced-choice psi meta-analyses (Honorton & Ferrari, 1989; Storm et al., 2012). The result is therefore consistent

with the modest, statistically fragile effects typical of anomalous cognition research and should not be over-interpreted on the basis of this single pilot sample.

In contrast, the D participants had 148 hits across 610 trials,  $\hat{p} = .24$ , 95% CI [.21, .28], which did not differ from chance, exact  $p = .68$ ,  $h = -0.02$ . When all participants were combined, there were 335 implicit hits out of 1,260 trials,  $\hat{p} = .27$ , 95% CI [.24, .29], yielding a nonsignificant trend for above-chance performance, exact  $p = .10$ ,  $h = 0.04$ . Overall, these binomial tests suggest that Implicit Psi scores were significantly above-chance only within the Enchanted condition, whereas the Disenchanted condition and the full sample did not show statistically reliable above-chance implicit performance.

#### 3.4.4 Boundary-Thinness, Encounter-Proneness, and Response Time Relative to Explicit Psi Scores

Spearman rank-order correlations were computed among scores on the HPSS (encounter-proneness), RTS (boundary-thinness) Explicit Psi, Implicit Psi, and average Explicit Psi Response Time. Because these variables had non-normal distributions, Spearman's  $\rho$  was used as a nonparametric measure of association. All correlations reported here are unattenuated and based on  $N = 126$  ( $df = 124$ ).

There was a moderately strong and positive association between HPSS and RTS scores [ $\rho(124) = .52$ ,  $p < .001$ ], which replicates Laythe et al.'s (2018) core finding that boundary-thinness correlates with haunt-type or encounter experiences. In contrast, HPSS scores were not related to Explicit Psi ( $\rho = -.14$ ,  $p = .11$ ), Implicit Psi ( $\rho = .02$ ,  $p = .78$ ), or Explicit Psi Response Time ( $\rho = .10$ ,  $p = .27$ ). Transliminality, contrary to other evidence (Ventola et al., 2019, pp. 157–160) likewise showed no significant correlations with Explicit Psi ( $\rho = .06$ ,  $p = .51$ ), Implicit Psi ( $\rho = -.01$ ,  $p = .89$ ), or Explicit Psi Response Time ( $\rho = .15$ ,  $p = .10$ ). Explicit and Implicit Psi scores also were unrelated,  $\rho(124) = -.01$ ,  $p = .88$ , and neither index of putative psi showed a meaningful association with Explicit Psi time (Explicit:  $\rho = .03$ ,  $p = .74$ ; Implicit:  $\rho = -.01$ ,  $p = .92$ ). Overall, aside from the expected strong linkage between transliminality and HPSS scores, psi performance and response latency were not detectably correlated with trait scores or with each other in this pilot sample.

## 4. Conclusions, Caveats, & Future Directions

### 4.1 Conclusions

The IPT performed as designed. Randomization checks were broadly satisfactory, stimulus valence separation was large and reliable, and the protocol engaged participants within its intended time frame. Pilot psi results were mixed: Explicit Psi performance was at chance across both conditions, whereas Implicit Psi in the E condition showed a small above-chance deviation.

Aggregate trends for the whole sample leaned toward significance ( $p \approx .10$ ), driven primarily by the performance in the E group. Ancillary analyses provided no evidence that putative psi was significantly influenced by the psychometric variables measured here. Scores on Encounter-proneness (via the HPSS) and boundary-thinness (via the RTS) were positively correlated as expected ( $r = .52$ ), but neither HPSS, RTS, nor Elapsed Time showed reliable associations with IPT scores.

Because the pilot intentionally sampled typical-range scores rather than “exceptional subjects” (i.e., high scorers on RTS or HPSS), our pilot data do not robustly adjudicate hypotheses about moderation by trait susceptibility to, or ability for, psi-type phenomena (cf. Rock et al., 2023, Table 1, p. 14). These collective outcomes are therefore best understood as proof-of-concept findings from a convenience sample not screened for the trait profile targeted in the planned main study; they should not be interpreted as confirmatory evidence of psi.

### 4.2 Caveats and Considerations

Interpretively, the disconnect between null Explicit Psi (image-based) performance and positive Implicit Psi (narrative-based) performance suggests a plausible mechanism in which the E-related pictorial context frames participant experience while explicit selection pressure suppresses performance. In this account, covert narrative choices – made without participants’ awareness that they are being evaluated for psi – allow low-pressure, intuitive responses to manifest more clearly. This pattern aligns with prior parapsychological findings: relaxed, passive attention states (rather than effortful concentration) are associated with higher psi performance in ganzfeld experiments (Honorton, 1977; Honorton & Harper, 1974), with theoretical discussions of an “effort paradox” in anomalous cognition (Braud, 2003), and with ethnographic observations that ritual magic practitioners often view excessive conscious striving as counter-productive (Luhrmann, 1989).

However, this interpretation must be tempered by an important caveat. Statistically significant above-chance performance in a covert decision task is consistent with – but does not confirm – anomalous cognition. Similar patterns could arise from unconscious response biases (e.g., preferences for particular narrative directions), demand characteristics, differential attentional or working-memory demands across task formats, or systematic non-randomness in target assignment. The present design cannot adjudicate among these possibilities. Accordingly, we use the term “implicit psi” as a descriptive label for above-chance performance on the covert measure, not as a claim that the effect is free from conventional explanations. Disentangling genuine anomalous cognition from these alternatives will require preregistered, double-blind protocols with explicit bias-detection checks and orthogonal control conditions.

Beyond these interpretive considerations, several methodological limitations also warrant attention. A small number of individual trials showed minor departures from perfect randomness; even slight systematic patterns could influence sensitive significance tests and therefore require close monitoring in future confirmatory work. Presentation-order tests reached significance in the large aggregate sample despite a negligible effect size – likely a consequence of sample size – so this should be treated as a minor technical flag rather than evidence of substantive bias, though it still motivates tighter randomization controls. The pilot sample also did not specifically recruit high scorers on the RTS or HPSS, limiting strong inferences about trait moderation. Finally, the exploratory and underpowered nature of several comparisons means that observed effect sizes, particularly for Implicit Psi, should be considered provisional and in need of preregistered replication. Consequently, the psi-related analyses are best interpreted as proofs-of-concept demonstrating the feasibility of collecting larger samples for high-powered, confirmatory designs.

### *4.3 Future Directions*

The IPT advances psi methodology by providing a scalable, open-science-aligned framework that merges forced-choice precision with narrative immersion. If the Implicit Psi signal observed here replicates under preregistered conditions with samples recruited for high boundary-thinness and encounter-proneness, the findings would support a context-dependent dissociation between Explicit and Implicit Psi responding – a pattern with implications for models of attention, anomalous cognition, and consciousness. Null replication, equally, would clarify the boundaries of the protocol and rule out several methodological confounds. Either of these outcomes advances cumulative knowledge. Future work should (1) preregister primary and secondary hypotheses; (2) employ stratified sampling targeting high transliminality and

encounter-proneness; (3) strengthen randomization with block-randomization diagnostics run prior to data collection; (4) include within-subject cross-over designs to directly compare explicit and implicit response formats while controlling for demand characteristics and arousal; and (5) include sensitivity analyses (e.g., variance-subtraction, robustness checks) to quantify how minor non-randomness possibly affects primary inferences.

### ***5. General Discussion***

We support diverse experimental tools and designs over a single methodological standard (cf. Wertz, 2025); therefore, our first-generation application is intended to complement – not replace – other testing approaches for putative psi. As Morse (2003) observed, convergent validity improves when mixed or multiple methods are used because findings from varied approaches tend to be more robust than those based on a single technique. This principle is especially relevant in experimental psi research where the elusive, situational, and person-sensitive nature of the phenomena argues for methodological pluralism. We implemented that philosophy in our IPT application, which appears to work as designed: the protocol proved operationally feasible, engaged participants, produced interpretable data, and functioned as an effective platform for both exploratory observation and preregistered follow-up testing. Importantly, the IPT illustrates a methodological innovation in a dual-mode design that merges the objectivity of forced-choice scoring with the ecological richness of narrative immersion; this hybrid approach thus parallels earlier advances such as the ganzfeld procedure but extends them into scalable digital environments aligned with open-science principles. By combining transparent scoring rules, automated randomization, and preregistered analytic potential with genuine participant engagement and affective salience, the IPT directly addresses several long-standing criticisms and limitations of traditional parapsychological protocols.

Mayer (2024) and Houran (2024) have similarly endorsed methodological flexibility in psi research. Mayer proposed a multi model, multi method approach in which contrasting theoretical frameworks (e.g., quantum informed vs. metaphysical accounts) prescribe different experimental tactics and a shared reliance on naturalistic mixed measures (e.g., behavioral logs and random number generators) tied to clearer theory to design mapping. Houran framed the trade off as tightly controlled “Trojan Horse” experiments versus ecologically valid “Trojan Mice” field studies, defending lower control, real world tests as productive sources of hypotheses for rigorous follow up. Together these perspectives trace parapsychological research from classical laboratory work to multi sensor field initiatives and point to a practical workflow: use open, multimodal observation to surface signals and modulators, then subject promising patterns to preregistered,

sensor rich experiments that isolate mechanisms and boundary conditions while employing contemporary safeguards such as registered reports and improved statistical practice, as well as remain attentive to experimenter and expectancy effects (cf. Wiseman & Schlitz, 1997). Reciprocal flexibility is arguably the most efficient path to scientific clarity on psi related phenomena.

We would expect that both (1) marked shifts in scores and (2) beyond chance level scores associated with our IPT's dual mode approach will correspond to an interactionist effect, i.e., positive results are more consistent or stronger when thin boundary individuals engage with enchanted stimuli. This prediction follows from prior findings consistent with the theorized success formula of “Transliminality  $\times$  Paranormal Belief  $\times$  Situational Enchantment” (Houran et al., 2024; Lange et al., 2023; Lange & Houran, 2021), which challenges the prevailing assumption that factors such as *paranormal belief* (the classic “sheep-goat effect”; Storm & Tressoldi, 2017), *thin mental boundaries* (Thalbourne & Storm, 2012), or *numinous target stimuli* (Krippner et al., 2019) are, on their own, sufficient to consistently produce positive psi outcomes. This interactionist prediction is further supported by Baptista et al.'s (2015) meta-analytic evidence that participant selection – particularly combinations of prior anomalous experience, psi-conducive belief, and mental discipline practice – is the dominant moderator of effect size across multiple psi paradigms, and is directly anticipated by Parker et al.'s (1998) ganzfeld findings, in which psi-hitting was jointly predicted by paranormal experience, sheep-goat belief, magical ideation, feeling-type personality, and emotional target characteristics, with no single factor sufficient on its own. Reliable psi outcomes, it seems, emerge at the intersection of the right person, the right mindset, and the right experimental context. The IPT framework thus aims to enhance experimental rigor in the study of potentially low probability, high noise phenomena with its automated instrumentation, standardized blinding procedures, and robust statistical controls to minimize bias and maximize reproducibility.

Beyond parapsychology, the IPT contributes to wider debates on cognition and consciousness. The putative Implicit Psi effects observed here resonate with research on unconscious information processing, attentional modulation, and narrative engagement, suggesting that immersive testing may serve as a novel platform for probing subtle cognitive biases and anomalous experiences. Translationally, similar immersive designs could be adapted to study altered states, ecological decision making, or implicit bias, thereby further situating psi research within mainstream psychological inquiry. Future work should certainly prioritize preregistered, multi lab replications with stratified sampling of high-transliminal participants, tighter randomization controls, and integration of psychophysiological measures – such as electroencephalogram (EEG), heart rate variability (HRV), or functional magnetic resonance imaging (fMRI) – to probe underlying mechanisms (e.g., Gosseries et al., 2024). Multiple data pipelines and collab-

orative infrastructures will be essential to determine whether implicit deviations reflect genuine anomalies or procedural artifacts. Regardless of outcome, our IPT offers a replicable, transparent, and engaging framework that can help to bridge methodological rigor with a reasonable degree of ecological validity. It is therefore a pragmatic, alternative approach for researching potential mediators, moderators, or outcomes of immersive-type experiences (psi oriented or not) without the many hurdles associated with field-based designs.

If psi phenomena ultimately prove robust, replicable, and causally interpretable, the implications for theories of mind would be profound (for discussions on these criteria, see e.g., Houran et al., 2017, 2018). The dominant view of consciousness as strictly brain bound would be seriously challenged, demanding renewed attention to alternative frameworks – such as neutral monism, panpsychism, and information centric models – that accommodate so-called “nonlocal or extended” aspects of sensation and perception (Wahbeh et al., 2022). Such a paradigm shift would necessitate revisions to cognitive and neuroscientific theory, stimulate the development of new experimental ontologies that integrate subjective experience with objective measurement, and catalyze interdisciplinary research spanning philosophy, neuroscience, physics, and information science (Vernon, 2020). Beyond these conceptual ramifications, empirical validation of psi would transform how perception, agency, and the boundaries-of-self are understood, opening pathways to novel technologies and interventions grounded in expanded models of mind (Williams, 2013). Such evidence would oblige science to broaden its explanatory framework – conceiving consciousness as potentially extending beyond individual brains – and, in doing so, to reconsider the ethical, technological, and existential dimensions of what it means to be human (Friedman et al., 2021).

Taken altogether, we propose that the IPT is not merely a tool for parapsychological research but a working model for a new class of experimental instrumentation capable of probing questions that traditional paradigms cannot always access. By fusing methodological rigor with the capacity for immersive engagement, the present AI-supported technology provides a scalable platform that can both generate exploratory signals and support preregistered confirmatory tests. Whether or not future replications confirm the small Implicit Psi effects observed here, the IPT advances the field by offering a transparent, adaptable framework for cumulative science and by demonstrating how innovative methodologies can expand the empirical reach of consciousness research itself. In this sense, the IPT can help to reframe research on putative psi not at the fringe, but the frontier (cf. Houran & Bauer, 2022) – inviting the wider scientific community to pursue, with an appropriate balance of caution and openness, the kinds of experimental challenges that will determine the mechanisms and limits of human cognition and the broader mind.

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## ***Erweiterte deutsche Zusammenfassung***

### **Entwicklung einer Dual-Mode-Anwendung für die Psi-Forschung**

Wir stellen die Entwicklung und Pilotevaluierung des Immersive Psi Test (IPT) vor, einer Dual-Mode-Anwendung zur Erforschung anomaler Kognition. Die IPT integriert Forced-Choice-Messungen mit KI-gestützter narrativer Immersion, um das ökologische Engagement zu verbessern. Er wurde konzipiert, um eine seit langem bestehende methodologische Spannung in der Parapsychologie zwischen der Objektivität von Forced-Choice-Paradigmen und der Erfahrungsvielfalt von Free-Response-Protokollen wie Ganzfeld und Remote Viewing anzugehen. Durch die Einbettung strukturierter, objektiv bewerteter Antwortoptionen in eine spielerisch gestaltete narrative Umgebung in der zweiten Person, die den klassischen *Choose Your Own Adventure*-Büchern nachempfunden ist, versucht der IPT, die Stärken beider Ansätze zu vereinen. Die Anwendung wurde in Python unter Verwendung von Streamlit erstellt, auf GitHub gehostet und so konfiguriert, dass die Daten an einen sicheren Amazon S3-Bucket übermittelt werden. Das große Sprachmodell (LLM) ChatGPT-5 wurde verwendet, um 400 immersive narrative Passagen vorab zu generieren – acht für jeden der 50 fotografischen Reize in zwei experimentellen Bedingungen. Die Vorabgenerierung wurde gegenüber Live-Abfragen bevorzugt, um die Varianz aufgrund von LLM-Drift und Netzwerkinstabilität zu vermeiden.

Der IPT operationalisiert zwei unterschiedliche Indizes für mutmaßliches Psi. Explizites Psi wird anhand von fünf bildbasierten Forced-Choice-Durchgängen erfasst, in denen die Teilnehmenden angewiesen werden, mithilfe ihrer psychischen Intuition ein verdeckt vorausgewähltes Zielbild aus fünf Bildern zu identifizieren (Zufallswahrscheinlichkeit = 20 %). Implizites Psi wird anhand von zehn verdeckten narrativen Entscheidungspunkten erfasst, die zwischen den expliziten Durchgängen verstreut eingefügt sind. Dabei wählen die Teilnehmer eine Bewegungsrichtung – vorwärts, rückwärts, links oder rechts – als natürlichen Handlungsverlauf,

ohne zu wissen, dass diese Entscheidungen anhand eines versteckten, zufällig ausgewählten Zielbildes bewertet werden (Zufallswahrscheinlichkeit = 25 %). Diese Dual-Mode-Architektur ermöglicht die gleichzeitige Messung bewusst-intentionaler und unbewusst-spontaner psi-ähnlicher Effekte innerhalb einer einzigen, etwa 10-minütigen Sitzung.

Die Teilnehmenden wurden per Zufall entweder der „Enchanted“-Bedingung zugewiesen, die 25 Fotos mit hoher Valenz umfasste, die auf die Erzeugung psychologischer Absorption und Numinosität in sechs Gestaltdimensionen der Umgebung normiert waren, oder einer „Disenchanted“-Bedingung, die 25 Fotos mit niedriger Valenz von alltäglichen Umgebungen umfasste, zugeteilt. Die Stimuli stammten aus einer normierten Sammlung von Houran und Laythe (2026). Der Valenzunterschied zwischen den Bedingungen war groß und statistisch abgesichert ( $t[45,10] = 12,83$ ,  $p < 0,001$ ,  $d = 3,63$ ). Randomisierungskontrollen mittels Chi-Quadrat-Anpassungsgütetests bestätigten, dass die Zielzuordnungen im Großen und Ganzen einer Gleichverteilung entsprachen, trotz geringfügiger Abweichungen in einem expliziten Versuch (Versuch 5,  $p = 0,023$ ,  $V = 0,15$ ) und bei zwei narrativen Variablen (Narrative 1b und 5b), die als technische Aspekte für zukünftige konfirmatorische Untersuchungen vermerkt sind.

In einer Pilotstudie mit einer Convenience-Stichprobe ( $N = 126$ ), die über die CloudResearch-Plattform rekrutiert wurde, wiesen die Teilnehmenden ein breites Altersspektrum auf ( $M = 37,4$  Jahre,  $SD = 12,6$ ) mit ausgewogenem Geschlechterverhältnis und unterschiedlichem ethnischem Hintergrund. Die Teilnehmenden wurden nicht auf psychometrische Einschlusskriterien überprüft, jedoch wurden Daten zur Transliminalität (Revised Transliminality Scale; RTS) und zur Neigung zum Kontakt mit übersinnlichen Phänomenen (Haunted People Syndrome Screener; HPSS) erhoben, um die Funktionalität der Instrumente zu bewerten und vorläufige Korrelationen mit der Psi-Leistung zu untersuchen.

Die Ergebnisse zeigten einen deutlichen Unterschied zwischen den beiden Psi-Indizes. Die explizite Psi-Leistung übertraf weder in der Bedingung „Enchanted“ (Trefferrate = 0,18, exakter Binomialtest  $p = 0,85$ ,  $h = -0,06$ ) noch in der Bedingung „Disenchanted“ (Trefferrate = 0,19, exakter Binomialtest  $p = 0,64$ ,  $h = -0,02$ ) oder in der Gesamtstichprobe (Trefferrate = 0,19, exakter Binomialtest  $p = 0,83$ ,  $h = -0,04$ ) den Zufallserwartungswert. Im Gegensatz dazu erzielte die implizite Psi-Leistung in der „Enchanted“-Bedingung eine Trefferquote von 0,29 gegenüber einer Zufallserwartung von 0,25 und erreichte statistische Signifikanz bei einem einseitigen exakten Binomialtest ( $p = 0,016$ , Cohen's  $h = 0,09$ ). Obwohl dieser Wert unter den üblichen Schwellenwerten für kleine Effekte ( $h = 0,20$ ) liegt, ist er konsistent mit Effekten, die in Paradigmen impliziter Kognition und in früheren Forced-Choice-Psi-Metaanalysen beobachtet wurden. Weder die „Disenchanted“-Bedingung (Trefferquote = 0,24, exaktes  $p = 0,68$ ) noch die kombinierte Stichprobe (Trefferquote = 0,27, exaktes  $p = 0,10$ ) erreichten das Signifikanzniveau

für implizites Psi. Spearman-Korrelationen bestätigten den erwarteten moderaten Zusammenhang zwischen Transliminalität und Neigung zum Kontakt mit übersinnlichen Phänomenen ( $\rho = 0,52, p < 0,001$ ) und replizierten damit frühere Befunde. Allerdings sagte keine der beiden Messgrößen in dieser unselektierten Stichprobe explizites Psi, implizites Psi oder die Reaktionslatenz voraus, und die beiden Psi-Indizes korrelierten untereinander nicht ( $\rho = -0,01$ ), was darauf hindeutet, dass sie funktional unabhängige Prozesse widerspiegeln.

Die Distanzierung zwischen nullwertigem explizitem Psi und über dem Zufallsniveau liegendem implizitem Psi in der „Enchanted“-Bedingung steht theoretisch im Einklang mit Ganzfeld-Befunden, die darauf hindeuten, dass entspannte, passive Aufmerksamkeitszustände – und nicht etwa bewusstes, angestregtes Streben – mit einer höheren Psi-Leistung assoziiert sind. Sie deckt sich auch mit weiterführenden theoretischen Diskussionen über ein Anstrengungsparadoxon in der anomalen Kognition. Die verdeckte Gestaltung narrativer Entscheidungspunkte könnte intuitive Reaktionen ohne Leistungsdruck ermöglichen ohne die Leistungseinträchtigung, die den Erfolg bewusst gesteuerter Versuche niederhält. Diese Interpretation ist jedoch vorläufig: Überzufällige Leistungen bei verdeckten Entscheidungen könnten auch unbewusste Antwortverzerrungen, Erwartungseffekte oder unterschiedliche Aufmerksamkeitsbelastungen widerspiegeln, und das vorliegende Versuchsdesign kann nicht zwischen diesen Alternativen unterscheiden. Der Begriff „implizites Psi“ wird daher deskriptiv und nicht als mechanistische Behauptung verwendet.

Diese Ergebnisse sollten als Proof-of-Concept-Ergebnisse einer unselektierten Stichprobe und nicht als konfirmatorischer Psi-Nachweis betrachtet werden. Die Studie wurde nicht vorab registriert und zielte nicht an das Profil hoher Transliminalität und hoher Neigung zum Kontakt mit übersinnlichen Phänomenen ab, von dem theoretisch angenommen wird, dass es die Leistung optimiert. Zukünftige Forschungen sollten vorab registrierte Designs mit geschichteter Stichprobenziehung von begabten Probanden, verbesserten Block-Randomisierungsdiagnostiken, intrasubjektiven Crossover-Vergleichen expliziter und impliziter Formate, psychophysiologischen Messungen zur Untersuchung zugrunde liegender Mechanismen sowie Sensitivitätsanalysen zur Quantifizierung des Einflusses geringfügiger Randomisierungsunregelmäßigkeiten verwenden. Das IPT-Framework steht qualifizierten Forschern auf schriftliche Anfrage zur Verfügung und ist darauf ausgelegt, transparente, reproduzierbare und kumulative Wissenschaft zu anomaler Kognition innerhalb einer skalierbaren, Open-Science-orientierten Architektur zu unterstützen.

*Schlüsselbegriffe:* immersives Testen, Instrumentalisierung, Liminalität, narrative Einbindung, Psi