

Study Registration for the KPU Study Registry

1. The title or name of the experiment (for listing the experiment in the registry).

Pre-Registered Field Test of an ‘Enchantment—Psi’ Loop

2. The name, affiliation, and email address for the lead experimenter(s) for the study.

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3. A short description or abstract of the purpose and design of the experiment.

Lange and Houran (2021) conducted a large-scale online survey to examine ‘situational-enchantment’ as a special mental state that is conducive of psi-related or exceptional human experiences (EHEs). After establishing the reliability and scalability of all measures via Rasch scaling, respondents were randomly assigned to either a Training set ($n = 471$) or Validation set ($n = 236$). Competitive testing with path analysis on the Training set found that the best-fitting model affirmed our prediction of a self-reinforcing loop between Enchantment and EHEs (psi), which was mediated by a link between Transliminality and Paranormal Belief, and this solution was accompanied by excellent model fit. This same pattern was fully replicated in the Validation set, thereby establishing the finding’s empirical stability. The results supported the hypothesis that enchantment collectively acts as an aftereffect, example of, and catalyst for EHEs and putative psi.

The present research is a confirmatory study that aims to conceptually replicate Lange and Houran’s (2021) findings of an ‘enchantment-psi’ loop. Thus, we hypothesize that experimental psi outcomes will be significantly influenced by the combination of ‘Paranormal Belief × Transliminality × Situational-Enchantment.’ Specifically, hit rates associated with an ‘enchanted’ condition are expected to be significantly higher than those associated with a ‘dis-enchanted’ condition.

PHASE I.

First, participants will complete online versions of the Revised Transliminality Scale (Lange, Thalbourne et al., 2020) and Rasch version of Tobacyk’s Revised Paranormal Belief Scale (Lange, Irwin, & Houran, 2000), as well as standard demographic questions. Second, the study’s PIs have helped to develop a simple Android application

that conducts 'psi testing' trials (i.e., a 'psi-app') based on the use of traditional esoteric four-elemental symbols (i.e., Earth, Air, Fire, and Water), which trains participants to associate certain images and feelings with the elemental symbols used for the psi trials (cf. Tart, 1976). Participants will be asked to conduct (a) two baseline psi sessions (of six trials each) and (b) two training sessions before participating in Phase II of the experiment.

Induction Process

Completable as a 'Google Form' — and available via smartphone or web — the induction process for the psi-app involves rotating the participant through three 60-second repetitions of each element (Air, Water, Fire, Earth) where for each element:

- a. The participant is instructed on stillness and breathing for approximately 60-seconds.
- b. The participant is (for any given element) instructed to see the appropriate triangle while visualizing a scene that emphasizes tactile and visual elements associated with the said element (e.g., for the fire triangle, participants are instructed to see a fire in a fireplace, while trying to "feel" the dry heat coming from the flames). This exercise lasts 60-seconds, at which time the participant rotates to the next element.

Psi Test

Designed in a Google Form format utilizing natural randomization and blind-logic switch features, the current psi measure can be characterized as a double randomized card draw from four possible choices. However, the current test differs from the classic Zener card format in several ways. For example, and unlike previous psi tests, the user interacts with the psi trial in two ways. First, the user selects each trial from a set of four unmarked trial options. In each case the order of presentation is randomized. Thus, the user blindly selects one of four trials, each of which contains a different random, computer-selected target. This will serve as an unconscious measure of trial selection, where probability would dictate over several trial sessions that p (any targeted element) should approximate 0.25 in terms of the computer-selected psi target (see Figure 1)

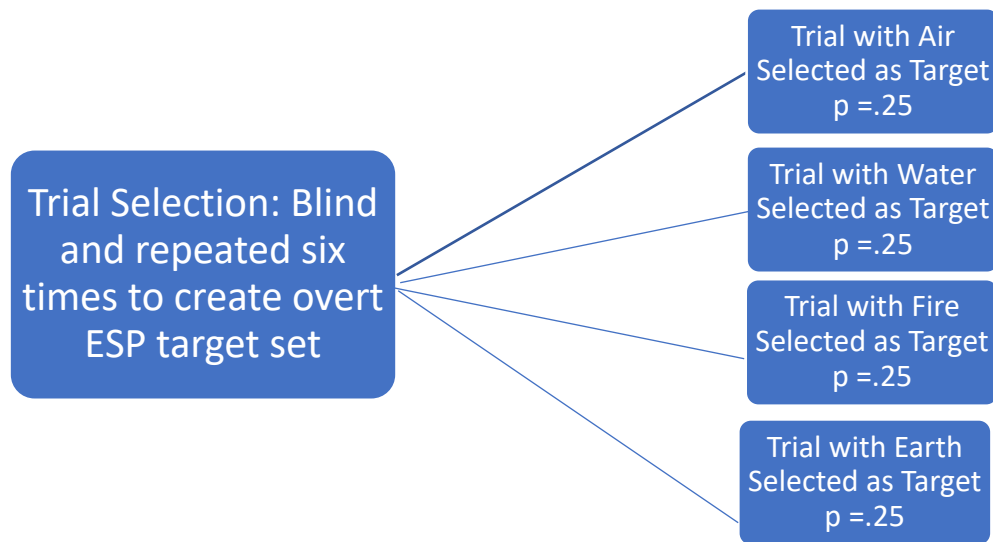
This blind trial selection ensures that there is no overlapping selection of a trial, as each selection of a trial is selected from four trials independent of the other four sample trial selections. Second, it blindly allows the sum of six target selections to represent a random presentation of the ESP target elements. As such, a participant can blindly select a set of six trials which may contain a balance of ESP target elements (all four elements equally represented, taking into account six trials), or a noted increase in ESP targets in one or more particular elements (e.g. four blindly selected ESP targets which are fire, and two which are water). This set selection technique provides two principal benefits. First, it ensures that the ESP target representation is truly varied and random,

representing all permutations (with replacement) of lesser or greater amounts of individual elemental targets. This in turn makes it difficult to predict any form of a reliable pattern of what the ESP target is.

The above blind self-selection of targets serves as a further means to examine two exploratory hypotheses, it allows us to examine if differences in the ability to engage in our induction method of each element has an unconscious effect in terms of whether or not the participant unconsciously selects ESP targets that are associated (or inversely associated) with elemental induction techniques that were more or less difficult for the participant. Further, using standard zodiacal assignment of the elements with birth signs, we can test if any significant unconscious selection effects are produced simply from the zodiacal birth sign of the participant.

Through the above process, the participant will cycle through six independent trials of overt ESP, where the job of the participant is to correctly guess which of the four elements (in the trial they blindly selected), was the target.

Figure 1. Blind Trial Selection of ESP Elemental Target



The psi-app test was designed to be optimized for mobile devices and thus enabled for easy use on smartphones or tablets. To both investigate and control for mood and environmental factors, several initial questions are asked pre-trial. These include 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.

Once selecting their trial, participants are next instructed as follows: "Using your instinct or intuition, please select which symbol below you think the computer has secretly selected as the "target"? That is, participants are asked to use their base intuition or gut feelings to attempt to select the target element.

Each trial has two additional Likert questions to gauge engagement during each psi selection task. First, participants are asked "To what extent do you feel that your chosen answer is correct?" and respond on a 4-point forced-choice Likert scale where 1 = Not at all certain, and 4 = very certain. Second, participants are asked "How focused were you on selecting the correct element?" and respond on a 7 point Likert scale ranging from 1 = I had much difficulty focusing, to 7 = I was very focused. The former question is designed to assess certainty in their psi/guessing response, while the latter question addresses general focus or involvement in the trial process.

Notably, the psi-app test as currently designed only administers six trials per session, thus analyzing responses at the individual participant level will require at least two separate sessions to analyze at a participant level, noting the typically small effect sizes for psi. However, it is expected that participants will contribute multiple trials over a course of time, noting environment, mood, concentration, implicit trial selection based on elemental affinity, and success in actual trials for each psi-app series.

PHASE II

Once participants have completed initial measures and training on the ESP app, participants will be randomly divided into two conditions that will be exposed to two separate serial experimental conditions. For ease of understanding, we note that participant groups will be randomly assigned to two conditions that counterbalance which specific condition (e.g., A or B first) they are exposed to first to appropriately control for order effects.

- *Condition A* has participants experience an 'immersive' paranormal tour at an indoor location that is known for recurrent anomalous phenomena (Laythe & Houran, 2019). Moreover, studies show that lay-people often feel enchantment during these excursions (Drinkwater et al., 2020; Holloway, 2010; Houran et al., 2020). A seasoned parapsychologist familiar with the site (but experimentally blind to our hypotheses) will be the tour conductor. The walking tour will last approximately one-hour and highlight both the lore and empirical research associated with the site. After the tour, participants will complete the

Enchantment-ACL measure while on site (Houran et al., 2020). Finally, participants will complete two sessions of six trials on the psi-app test.

- *Condition B* has participants visit a 'dis-enchanted' hotel conference room purposely stripped of decoration. A facilitator (experimentally blind to our hypotheses) will first show the group a twenty minute video that purports to debunk psi phenomena. This presentation is publicly available on YouTube and features prominent skeptic James Randi who belittles the idea of paranormal experience in the video (see: shorturl.at/cdgBV). After the video, all participants will complete the Enchantment-ACL measure (Houran et al., 2020). The environmentally-dull setting combined with the long and dismissive video presentation is intended to minimize the participants' levels of enchantment. Then, the facilitator will ask participants to complete two sessions of 6 trials on our ESP application.

4. A statement or list of the specific hypothesis or hypotheses being tested, and whether each hypothesis is confirmatory or exploratory.

We hypothesize that: (a) Condition A will elicit significantly higher scores on Situational-Enchantment than Condition B, (b) Condition A will show significantly higher hit rates than Condition B, and (c) Enchantment scores will positively correlate with hit rates on the psi-app task. Secondary exploratory analysis will involve (d) comparison of psi-app condition scores from initial trials assigned, (e) the effect of visualization training (if any) on participants' scores, and (f) theoretical changes in time logged environmental data collected in Condition A as a result of participants experiences.

5. The planned number of participants and the number of trials per participant.

We expect to recruit approximately 60 to 80 subjects who agree to complete both phases of the experiment. These subjects will be assigned to four groups of approximately 6-8 participants as they are guided through both conditions over approximately a 3.5-hour process with multiple sessions of participants in these groups of six to eight participants over three days.

6. A statement that the registration is submitted prior to testing the first participant or indicating the number of participants tested when the registration (or revision to the registration) was submitted.

Testing will be scheduled from June 15 through July 15, 2022. It is planned that testing will not commence until after registration.

The following additional information is needed for studies that include confirmatory analyses:

7. Specification of all analysis decisions that could affect the confirmatory results, including: the specific statistical test for each confirmatory hypothesis, whether the test is one-sided or two-sided, the criterion for acceptable evidence, any transformations or adjustments to the data, any criteria for excluding or deleting data, and any corrections for multiple analyses. Checklists and examples for registering classical analyses, permutation and bootstrap analyses, Bayesian analyses, and classification analyses are provided in the statistics registration document.

This is a confirmatory study that aims to conceptually replicate Lange and Houran's (2021) findings of an 'enchantment-psi' loop using path analyses of survey data. For the principal analysis (condition A means on PSI v condition B) a repeated measures *t*-test will be used or depending on intercorrelation (i.e., Pearson correlation, where variables as I.V.s should not significantly correlate, with a standard $p > .05$ criteria) between related variables, a 2 (High Transliminality/ Low Transliminality) X 2 (High Paranormal Belief/ Low Paranormal Belief) X 2 (Haunted Condition/ Non-haunted Condition) ANOVA with psi-app scores as the dependent variable will be used to detect hypothetical significant effects. High and Low conditions will be addressed with a median split of scores with both of these Rasch scaled measures.

It has been our research tradition to apply two-tailed tests even with confirmatory studies. Understanding that this cuts alpha between two tails, it generally represents a more conservative test for confirmatory analysis. As such all analyses, confirmatory or otherwise, will remain two-tailed, at a standard alpha of .05.

8. The power analysis or other justification for the number of participants and trials.

Standard power analysis where $p = .8$, $\beta = .2$, and $\alpha = .05$ for detecting a 3% change in means recommends 16 participants per group for an independent samples *t*-test. We project approximately double this in participation, indicating sufficient power to test principal hypotheses as individual *t*-tests. Further data will be screened for skew and kurtosis, via standard descriptive analysis in JASP, using the appropriate cutoffs of +/- 2 for skew, and +/- 7 for kurtosis. If necessary, use of a log function will be used to make data analyzable by standard parametric statistics defined above. If data will not conform to parametric analysis, spearman rho correlations along with binomial analysis will be used instead.

Data will be excluded from analysis if the participant does not fully complete at least one full session of six trials. The application in aggregate remains analyzable at the group level of trials but may hamper individual analysis of repeated trials if participants have been inconsistent in completing the psi-app test. However, we will note that, unlike previous ESP methods, variables are included with each individual trial which assesses both investment in the task and difficulty in performing it. As such, these variables (aside from their possible exploratory value), will confidently serve as manipulation check data with regards to investment in the ESP trial process.

All variances of this nature will be clearly reported in the participant and results section of the upcoming paper.

9. The methods for randomization in the experiment. If a pseudorandom generator is used, specify how and when the seed(s) will be obtained.

Subjects will be randomly assigned to either the haunted then control condition, or control condition then haunted condition to account for potential order effects. However, participants will be allowed to assign themselves to their own time slot, which is a necessity for group participation. Notably, this creates a quasi-random assignment of participants, but notably this will occur across six individual classes for recruitment at two different institutions.

With regards to the psi-app, target randomization occurs both from the participant (by selecting a blind trial), as well as the Google's randomizing feature intrinsic in the software. This is a pseudorandom generator, which is simply switching the order of presentation to ensure a random selection of a trial.

10. A detailed description of the experimental procedure.

Phase I. The principal investigator will (in agreement with professors volunteering their students) provide a 20-minute video in which the goals and purposes of the study will be explained while explaining the process of the procedure. Those who agree to participate will be asked to complete informed consent and several preliminary measures on a secure online survey form. A further link will be provided for our ESP application which participants can download onto any android phone. Both the online survey form and application will not collect personal information or data from participants beyond what is specifically asked, and data is secured by multiple password protection in order to protect participants' privacy to the best of our ability.

Once participants have completed preliminary measures, they will be randomly assigned to one of two conditions which involve visiting Condition A and then Condition B (Alpha group) or Condition B followed by Condition A (Beta group). Participants will be transported by volunteers from a safe common location and taken to both Conditions A and B. This is to ensure ease of access to participants as both sites are in small-town rural locations which may be difficult for some participants to arrive at.

Regarding each Condition, all participants when exposed to Condition A will be taken to a known haunted location and will be provided a tour of five different areas, where both stories, history, and actual research based on this location will be shared with participants. Each of these areas will be running MESA 3.0 (Laythe et al. 2022) which will be sampling real-time environmental data during the duration of the tours. Once completed, participants will be taken to the dining room, known to be a neutral spot in the location, and asked to independently complete one psi-app trial on their phones.

Once all participants have completed their psi-app trial, they will be driven to the second location, approximately 20 minutes away from the haunted location. Once there, participants will be given 20 to 25 minutes to go to the bathroom, and snacks and refreshments will be available to them. At this time participants will be taken to the undecorated room and shown the manipulation video. Per the last condition, once completed, each participant will be asked to independently complete one psi-app trial on their phones. Finally, participants will be driven back to their cars via van service.

Finally, for groups where this condition is reversed, snacks and refreshments will be available in Condition A before being provided a tour, ensuring equal treatment and benefits in both conditions. Participants will be given contact information for the principal investigators should any positive or negative effects occur as a result of the manipulations and encouraged to contact us should any perceived difficulties arise.

11. References

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