

**Title** A telephone telepathy study: Does genetic relatedness influence psychic abilities?

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**Summary**

Psychic abilities, like many other physical and intellectual traits, appear to run in families. As a result of scientific research, we now understand that genetics influence physical and intellectual abilities. But do psychic abilities have a genetic component as well? Within the professional psychic community, anecdotal evidence is often heard suggesting that intuitive abilities pass from one generation to the next. However, little scientific evidence exists for the presence of a hereditary component to psychic abilities. This study addresses this gap through the first large-scale investigation of genetic influences on the accuracy of telepathic predictions in individuals varying in degree of familial - and therefore genetic - relationship. This proposal is the first step in a long-term research plan to elucidate genetic influences on psychic abilities.

Telepathy, or mind-to-mind communication, is a common experience. In a recent study of 899 people, 67% of participants reported having a telepathic experience [1]. There is also strong evidence demonstrating that telepathy can be reliably observed and replicated [2–4]. Telephone telepathy is a form of mind-to-mind communication in which an individual experiences thinking of someone for no apparent reason who then unexpectedly calls on the telephone. Or an individual might hear the phone ring and immediately know who is calling without the use of any rational means. Are these experiences just a matter of coincidence or selective memory? Or do they reveal a genuine telepathic connection between people? The majority of telephone telepathy research has been conducted by Rupert Sheldrake and his colleagues. Reported odds against chance range from 1 in a 100 to 1 in  $1 \times 10^{19}$ , providing scientific evidence for telepathic communication [5, 6]. However, studies to date have not explored if individuals experiencing this type of psychic ability share genetic similarities.

The objective of this proposal is to evaluate whether genetic relatedness influences telepathic abilities. This study will take advantage of the reported common experience of telephone telepathy coupled with smartphone technological improvements to conduct a large-scale study evaluating if familial link (e.g., first cousins; half-siblings; siblings; identical twins) influences the strength of the telepathic link. Towards our goal, we propose the following specific aims to be undertaken in 300 participants:

**Aim 1. Accuracy (confirmatory and exploratory hypotheses)**

Measure the accuracy of predictions during telephone telepathy. Approach: Participants will be grouped into 100 unique triads (i.e., 3 individuals varying in relatedness). An automated system will randomly choose one of two experimental paths (A or B):

### 1a. Path A

The server will: 1) simultaneously call the 3 members, 2) ask each to predict if and with whom they will be connected, and 3) randomly connect 2 members. Each triad will participate in 6 trials resulting in 1,800 prediction responses (3 responses x 6 trials x 100 triads).

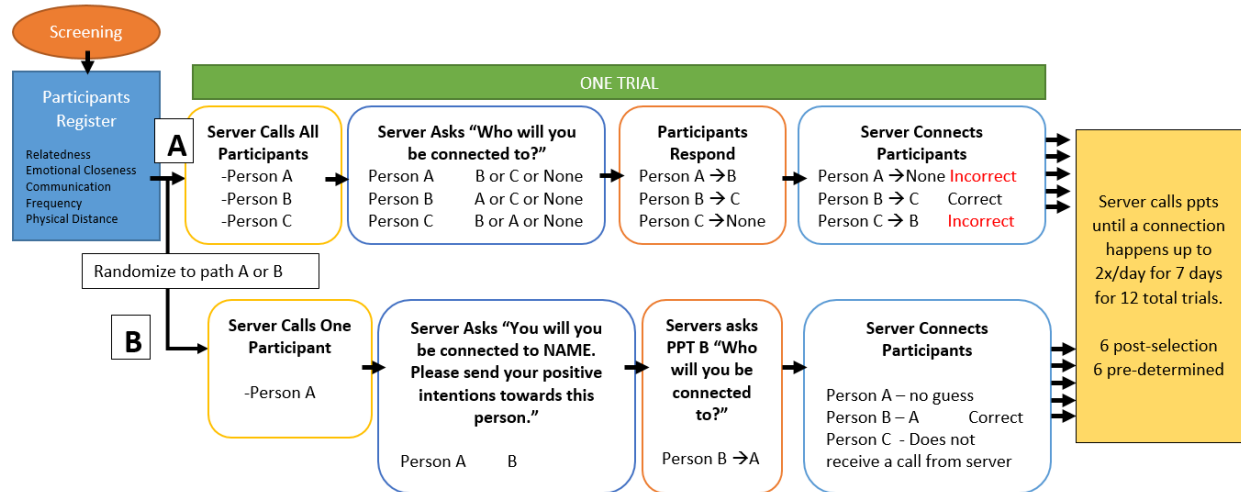
*Confirmatory Hypothesis:* Participants will correctly choose whom they will be connected to more often than expected by chance (i.e., over 600 correct predictions). A one-tailed  $p$ -value of 0.05 will be considered significant.

### 1b. Path B

The server will: 1) call 1 person of the triad (e.g. Person A), 2) they will tell Person A that they will be connected to Person B and to please send their positive intention and focused attention to that person; 3) The server will then connect to Person B and ask them to select who they think they will be connected to (Person A, C or no one); 4) Once Person B has made their selection, the server will connect Person A and B. Each triad will participate in 6 trials resulting in 600 prediction responses (1 responses x 6 trials x 100 triads) out of 1,800 potential responses.

*Confirmatory Hypothesis:* Participants will correctly choose whom they will be connected to more often than expected by chance (i.e., over 200 correct predictions). A one-tailed  $p$ -value of 0.05 will be considered significant.

Study Design Figure



### 1c. Comparing Accuracy of Path A and Path B

Path A aligns with a precognitive model because who the members will be connected to is randomly selected by the server AFTER they have made their choices. Path B aligns with a telepathy model because Person A knows who they are being connected to and are directing

their intention towards them. Some have argued that precognition and telepathy are different aspects of the same phenomenon. The Path A/B study design allows for exploration of this notion by comparing the results of Path A and Path B.

*Exploratory Hypothesis:* Path B will result in a greater percentage of correct responses than Path A.

### **Aim 2. Genetic Relatedness (exploratory hypothesis)**

Examine the relationship between telephone telepathy accuracy and genetic relatedness

Approach: Genetic relatedness will be recorded within each triad.

*Hypothesis:* There will be a positive correlation between accuracy and genetic relatedness. The more related two participants are, the more accurate their responses will be.

### **Aim 3. Emotional closeness, communication frequency, and physical distance (exploratory hypothesis)**

Determine if emotional closeness, communication frequency, and physical distance mediate the relationship between accuracy and genetic relatedness Approach: Self-reported measures of emotional closeness, communication frequency, and physical distance between participants in each triad will be recorded.

*Hypothesis:* Emotional closeness and communication frequency but not physical distance will significantly moderate the relationship between accuracy and genetic relatedness.

Research Plan and Methods

#### **Study Overview**

We propose a cross-sectional study with 300 participants. In groups of 3, participants will choose which family member they believe they will be connected to on a telephone call. Participants will have a one in three chance of being correct. Data will be collected on familial relationships, emotional closeness, communication frequency, and physical distance. Analyses will evaluate the relationship between accuracy and genetic relatedness including analysis of the mediating effect of emotional closeness, communication frequency, and physical distance on that relationship.

#### **Recruitment and Participants**

Participants will be recruited using the following resources: 1) Institute of Noetic Sciences (IONS) membership (~75,000) via eNewsletters, email, and the IONS website, 2) IONS associated social networks (~85,000 followers), and 3) IONS affiliate organizations' social networks. Interested subjects that contact IONS will be asked to recruit two additional family members to create triad groups. All participants will be compensated \$20 through PayPal.

This study will include 300 participants - 100 groups of 3 participants each. A minimum of 30 pairs of homozygous twins (contributing 540 trials) will be recruited. The remaining 240 participants will consist of triad groups varying in relatedness to ensure that a minimum of 500 trials are obtained for each of the following degrees of genetic relationship: DNA overlap of 0%, 12.5%, 25%, 50%, and 100%.

Inclusion criteria will be: 1) adults 18 years or older, 2) possession of a smartphone, and 3) English competency. Exclusion criteria, determined by self-report, will be: 1) acute medical illness that would decrease likelihood of study completion, and 2) mental illness such that symptoms would preclude participation. All participants will undergo an informed consent procedure consistent with the guidelines of the IONS Institutional Review Board.

### **Study Procedures**

*Screening:* Each potential volunteer will read a description of the study and answer questions about the inclusion and exclusion criteria. If eligible, they will then read the informed consent form and watch a video and/or read a description of the experiment. The informed consent form will confirm that they have a cell phone and that they will be responsible for any SMS text message or phone charges that the study may generate.

*Participant registration:* A unique registration page will be generated for each group of 3 enrolled family members (i.e., triad). On this page, each participant will list their first name, email, telephone number, gender, age, and relationship with the other participants (e.g., unrelated; first cousins, great-grandparent/great-grandchild; half-siblings, grandparent/grandchild, aunt/uncle; siblings, fraternal twins, parent/child; identical twins/triplets). Participants will be asked to separately rate how often they communicate with each person, how emotionally close they feel to that person, and the physical distance between them on a 0-to-100-point scale. Participants will need to agree on the values for these variables for each person pair, resulting in 3 sets of the 3 variables for each triad. For example, in a triad of Mary, John, and Sue, all 3 pairs - Mary and John/Mary and Sue/John and Sue - will have one value each for genetic relatedness, emotional closeness, communication frequency, and physical distance.

*Triad session:* At a pre-designated time, the web server will start the experiment. Calls will occur randomly throughout the day until 2 sessions are completed. This will be repeated for 7 days. First the server will randomly select Path A or Path B. All random data used in this study will be determined by the website [www.random.org](http://www.random.org) uses variations in atmospheric data to generate truly random numbers. A total of 6 trials for each path will be completed (12 trials total).

**Path A:** The server will call all 3 participants at the same time using random selection. It will then ask each person who they think they are about to speak to. Each participant will then press a number (1, 2, 3) based on whether they think: 1) person A, 2) person B, or 3) no one has been connected. The number corresponding to each person will be communicated by the web server and may vary with each call. The server will randomly connect 2 of the 3 people and inform the third that they will not connect in that trial. The calling period for the next trial will begin after the 2 participants of the triad hang up. If one of the participants does not answer the phone or give a response of who they will be connected to, the trial will be considered incomplete. After 6 completed trials on Path A have been completed in a one-week period, the experimental session will be over. This frequency of trials will increase novelty and was recommended as ideal by Rupert Sheldrake.

**Path B:** The server will call one randomly selected person of the triad (e.g., Person A). The server will then tell Person A that they will be connected to Person B and to please send their positive intention and focused attention to that person. The server will then connect to Person B and ask them to select who they think they will be connected to (Person A, B, C or no one). Once Person B has made their selection, the server will connect Person A and B. If Person B does not answer the phone or give a response of who they will be connected to, the trial will be considered incomplete. After 12 completed trials on Path A and B (6 trials on each) have been completed in a one week period, the experimental session will be over. If participants do not complete 12 trials after being called 50 times, data collection will stop for that triad and their data will be excluded from the main analysis (but included in the re-analysis with incomplete trials as described below).

Every effort will be made to recruit participants until 100 triads complete 12 trials (i.e., replace triads who have dropped out) until the study data collection period is complete per the funders' guidelines (data collection complete by July 31, 2022). Experimenters will not know the number of hits or hit rate for the data throughout the data collection period and thus, will also not know the hit rate when decision to stop data collection is made. Should there be less than 100 triads who complete 12 trials in the final dataset, the sample size in the final analysis will be reduced.

All responses will be stored on our secure server for subsequent data analysis. Twilio web service (an online telephone and SMS texting service) and PHP [www.twilio.com](http://www.twilio.com) language will be used to place calls from the Amazon web hosting service. Twilio scripts have already been successfully adapted and tested to place calls, connect individuals, and to send text messages within the United States.

## **Statistical Analysis**

*Power Calculation:* A power calculation for this study was conducted using the results from Dr. Sheldrake's similar study "Automated Tests for Telephone Telepathy using Mobile Phones" [10]. In 2080 trials with 3 callers, 41.8% of the trials were accurate. Using a one-sample proportion binomial test with  $\alpha = 0.05$ ,  $N = 300$ ,  $p_0 = 0.33$ , and  $p_A = 0.418$ , estimated power for this study is 0.88 with an actual alpha of 0.425. Power is even higher when using the results from another Sheldrake study where the callers were familiar with each other, and a 53% accuracy rate was observed. In this case, the same power calculation revealed the estimated power for this study is 0.98 [5].

*Specific Aim 1:*

### **Path A**

Exact Binomial Test: For each trial, there will be 3 responses, one for each of the 3 participants. The 300 participants will complete 6 trials for a total of 1,800 responses. For each datapoint, there are a total of 3 possible responses (1 in 3 chance of being correct) with  $1800 \times 3 = 5,400$  potential responses. By chance, only 600 of them should be accurate or 33%. We will test if the number of accurate responses significantly deviates from chance by using the exact binomial test. We will also calculate the 95% Agresti–Coull binomial confidence interval as has been

recommended for binomial data with an  $n$  greater than 40 [11]. We hypothesize that we will obtain greater than 33% correct trials over all responses for Path A.

#### Randomization Test:

The confirmatory hypothesis for accuracy for Path A will also be evaluated with a randomization test that treats the observed responses as fixed or given, and randomly generates callers on each trial for 10,000 simulations of the experiment. This is being done because three responses are made for each random selection of a pair of callers. This introduces the stacking effect and potential for non-independence of responses to make the variance larger than assumed by the binomial model. Underestimating the variance results in a p-value that appears more significant than is actually true. These randomization tests generate p-values that are adjusted for the multiple responses for one random selection.

**Path B:** There will be (1 response x 6 trials x 100 triads) 600 responses of 1,800 potential responses. By chance, only 200 of them should be accurate or 33% so 1/3 probability of being correct. We will test if the number of accurate responses significantly deviates from chance by using the exact binomial test. We will also calculate the 95% Agresti–Coull binomial confidence interval as has been recommended for binomial data with an  $n$  greater than 40 [11]. We hypothesize that we will obtain greater than 33% correct trials over all responses for Path A.

**Comparing Accuracy of Path A and Path B:** A repeated measures analysis of variance will be conducted to evaluate the difference in accuracy between Path A and Path B. The accuracy variable (as measured by the percentage of correct trials for a given individual) will be the dependent measure. The path (A or B) will be the factor variable. The individual will be included as a repeated measure variable (i.e., to account for repeated measures of the same person). We hypothesize that Path A will be significantly different from Path B, with Path B having greater accuracy.

#### *Specific Aims 2 and 3:*

A logistic regression model will be used to evaluate the relationship of genetics to accuracy and the influence of the covariates (emotional closeness, communication frequency, and physical distance). Accuracy will be the dependent binary variable (correct, not correct). Path will be a factor variable (A or B). Genetics will be a categorical variable with five levels (0%, 12.5%, 25%, 50% and 100%). The covariates will be coded as continuous variables from 0 to 100. Our hypothesis is that people who are genetically closer will show higher accuracy. We hypothesize that there will be a significant relationship between emotional closeness and accuracy with increased emotional closeness predicting increased accuracy. We hypothesize that physical distance and communication frequency will not be significant covariates in the model (i.e., physical proximity and communication frequency are unrelated to telepathy).

#### *Re-analysis with inclusion of groups who have not completed all trials:*

To consider optional stopping where participants stop performing the experiment because their accuracy is poor, we will reanalyze all hypotheses including trials for groups who have not completed all trials. Given people are compensated, we do not anticipate high dropout rate.

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