Investigating the possibility of telepathy between closely related subjects[1]

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Abstract

Humans have always wondered if there is another way of perception and communication other than the five physical senses. Although this so called "sixth sense" has had many believers throughout history and many have claimed that they possess this extraordinary power, it's structure and whats and hows are still an enigma to us. In this paper we investigate the possibility of telepathy, a type of extra sensory perception, between pairs that are closely related to each other. And we try to add some features to researches that have been done to this day.

Key words: telepathy, ESP, parapsychology

1.introduction

Telepathy is transmission of information from one person to another by means other than the known physical senses. The term was first introduced by Fredric W. H. Myers and has been used since then.

Organized investigation of the concept was first started with the establishment of the British Society for Psychical Research in the 19th century [1]. The First attempt at a scientific experiment was made by J. B. Rhine and his associates in Duke university with the Zener card experiment [1] in which a sender looks at a series of cards with different symbols on them and a receiver tries to guess the symbols. Other experiments have used this system of choosing and guessing like the Ganzfeld experiment.

Since 1965 series of studies have reported correlation between EEGs of spatially separated subjects [2].Also [3] has reported correlation between EEGs of closely related subjects. However, all these experiments lack consistent and significant effect size independent repetition and they are mostly overpowered studies with high false positive results and impressive p values.

In our experiment we have used the fact that nearly all cases of telepathy reported by people are in states in which:

1) Two sides of the communication are closely related e.g. are twins, brothers and sisters, couples, friends and have known each other for a long time
2) at least one side is experiencing strong emotions, pain and/or is in danger at the time that telepathy has occurred.

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So we have gathered a group of 10 closely related pairs as subjects and have chosen pain as the type of stimulus that we are going to use in the experiment. In order to create pain, we have asked the subjects to put their hands in cold 0ºC mixture of ice and water. And for the non-pain causing stimulus we have used 37ºC water.

2.Methods and materials

2.1.Subjects

10 pair of adults were chosen for the experiments consisting of 16 men and 4 women with ages between 19 to 22 years.

8 of the subjects were aware of the goal of the experiment when they were asked to be the receiver side of the communication.

The criteria for choosing the pairs were their mutual friendship (>1 year) and their level of closeness which they themselves stated and ranked with a number between 1 to 10.

Each individual was once used as sender and once as receiver.

The sender was told to put his hands in a bowl containing cold water or the bowl containing warm water when asked by the experimenters and after each time he was exposed to the stimulus he was asked to rate his pain with a number between 0 and 5.

The receiver was told to guess his partners state (in pain or not in pain) and write it when asked by the experimenters.

2.2. Stimuli

A bowl containing mixture of ice and water with temperature kept at 0ºC was used as the painful stimulus and a bowl containing warm water kept at 37ºC was used as the painless stimulus.

Each exposure interval was 20 seconds and there was a 15 second gap between each interval in which the subject had time to put his hands in warm water and ease his pain. Each person was exposed to the stimuli for 12 times. 6 times in warm water and 6 times in hot water and the sequence of the stimuli was randomly generated before the start of the experiment.

2.3.Experiment

Before the experiment began, the subjects filled out a form in which they were asked to state their name, age, level of education, level of closeness with their partner and how long they have known their partner and whether or not they have had strong emotional experience with their partner, they have a particular physical or mental illness or they have meditation or yoga experience.

The members of each pair were separated in two different places unable to see or hear each other.

The member designated as 'Sender' was given the following instruction: "when the experiment starts, we will ask you to put your hands in one of the bowls in front of you. After 20 seconds we will ask you to rate the pain you just experienced from 0 to 5. After that you can rest your hand by putting them in the hot water bowl until you are asked again to put your hands in one of the bowls."

The member designated as Receiver was given the following instruction: "when the experiment starts, we want you to relax and

focus on your partner. When asked to try to guess the state which your partner is in. if you think that he/she is in pain write "+" on the

piece of paper in front of you and if not write "-".".

The receiver was asked to guess his/her partner's feeling 5 seconds before the 20 seconds exposure interval was over so that when he started guessing his partner was still exposed to the stimulus.

After 12 times of exposing one member two the stimuli, the pair changed places and the sender became receiver and vice versa and

the whole experiment was repeated from the beginning.

After the experiment the subjects filled out a form stating their belief on telepathy, and their experience in this experiment.

3.Results

The data analysis consists of two parts. First we analyzed the data to see if we can prove the existence of telepathy. Second we used some statistical tests to find features that are in correlation with telepathy.

For the first purpose we used two statistical tests.

1. One sided Student t test
2. One sided Fisher exact test

First we should note that the data comes from a Bernoulli distribution with parameter p.

Our test parameters are:

$$H_0: p = 0.5$$

$$H_1: p > 0.5$$

And p value of 0.05 is considered significant.

Because the proportion of true answers seen in our data is equal to 0.462, there is no use in conducting these tests as $0.462 < 0.5$. however, if we conduct these tests, we will see that p value for the t test is equal to 0.856.

For fisher test we have used the following contingency table:

	Guessed cold	Guessed hot
cold	53	62
hot	60	52

If we conduct fisher test we will see that the p value is equal to 0.89 which is even worse.

For the second part of our analysis we calculate the correlation between pain rate and the correctness of the receivers guess and we can see it is equal to 0.048 that is very close to zero and shows that there is absolutely no correlation between these two features. However, if we calculate the mean pain rate for each sender-receiver pair and draw the correlation heat map between different features, it will be as follows:

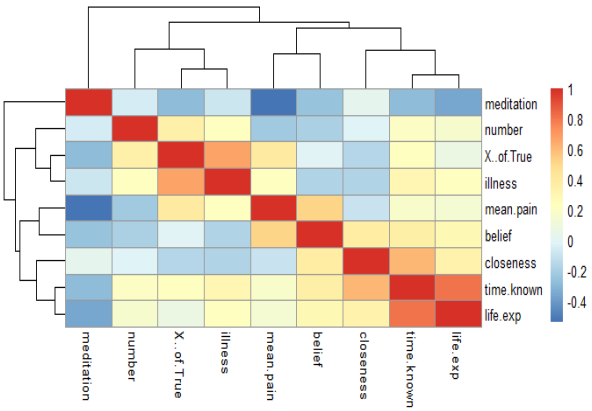

Figure 1:correlation heat map between features

As you can see there is a correlation of 0.4 between average pain rate during an experiment and the number of correct guesses in that experiment.

At first we can conclude that these two features are related. but if we run a permutation test in which the parameters are:

$$H_0: \overline{pain\ rate}_{true} - \overline{pain\ rate}_{false} = 0$$

$$H_1: \overline{pain\ rate}_{true} - \overline{pain\ rate}_{false} > 0$$

We will get a p value of 0.22 which is again not good and hence these two features are not related at all.

At last we conduct another fisher test and we use the following contingency table:

	Guessed cold	Guessed hot
Pain rate >= 2.5	41	45
Pain rate < 2.5	77	64

And we get p value of 0.87 which again is a proof that the features of pain rate and number of true guesses are not related.

4.Discussion

From our analysis we conclude that with this experiment we can't infer existence of telepathy nor we can derive any correlation between level of pain and the power of telepathy between a pair of close friends.

Like other experiments conducted in this context our experiment has failed dismally to find a significant and consistent effect size to prove telepathy and further research should

be done in order to find whether or not this phenomenon exist. Although our experiment and other experiments have not been able to prove telepathy as a power all humans possess, it doesn't contradict the fact that some individuals may be gifted with the power.

Even though our experiment failed to prove existence of telepathy, the idea of using close Pairs and provoking strong emotions in them might still be useful in further researches.

Using subjects who have stronger and deeper emotional bounds and provoking stronger emotions in the subjects in the course of the experiment, might lead to better results in the future.

References

[1] S. H. M. Michael McVaugh, "J. B. Rhine's Extra-Sensory Perception and Its Background in Psychical Research," *The University of Chicago Press journals,* 1976.

[2] W. Ambach, "Correlations between the EEGs of two spatially," *European Journal of Parapsychology ,* 2003.

[3] W. G. e. al, "EEG correlates of social interaction at distance," 2016.