Mind-Body Problem: Telepathy, An approch to Detect Connection Between Minds☆

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Abstract

One of the main qustions that remains unanswered is the existance of mind as the part of human's body. The Hardness of this problem is that we believe Mind(soul) is non-physical matter so that the existance of soul can't be shown by physical measurements of body. Instead of proving existance of Mind directly, we try to show that if the soul exits it can communicate with other souls as the concept of telepathy. Telepathy is the purported vicarious transmission of information from one person to another without using any known human sensory channels(1). We suggest if telepathy as the ability of mind exist we have some evidances to prove existing of soul.

Keywords: Mind, Mind-Body, Telepathy

1. Introduction

In this article we will focus on telepathy as the ability of brain to communicate with other brains. In the concept of telepathy we cosider two people that participate in the process: one that is named "sender" who send information or data through some unkonwn human sensory channels and two that is named "receiver" who receive this information through his mind. This connection between sender and receiver is independet from distance and only concerns to abilities of their minds. We say that telepathy is confirmed whenever the data that the receiver gets is the same from what information that sender sends.

There isn't any known particular tools to show that telepathy is confirmed because of the subject that we talk about is non-phyiscal interaction between sender and receiver so that researchers investigates wide different practical methods to detect this connection. One of the most considerable works on this subject is Ganzfeld's Experiments(2),(3). There are several things in Ganzfeld's experiments does not consider to be important or should be better to spot:

- does telepathy is unconsciousness interaction between sender and receiver or it is totally done consciously?
- does distance between sender and recevier is important for transmitting information between them?
- does relation between sender and receiver affect to get better results in telepathy? to other mean, does strong relationship between people like twins or mother and child is a factor to get better evidances of telepathy?

we tried to preparing a platform to consider this issues.

In our experiments to detect telepathy we looked for strong bounderis between subjects(sender and receiver) and preparing any factor that may increase chance of telepathy. we perform half of our experiment in the condition that the sender and the recevier doesn't know what experiment was about (unconsciously) and the other half of experiments they knew what should they do(consciously). Also we consider short distance between sender and receiver as a factor to get better results. Like Ganzfeld's experiments we perform our experiment on subjects trial by trail, and in each trail we examin stimulis on sender. our stimulis has two state: pain and rest(coresponding to feelings that sender have during experiment), and after a while we ask receiver what was stimulis about and if the receiver report correct state we consider telepathy occurs otherwise there was't any connection.

2. Results

2.1. *Hypothesis and Size of Sampling*

We get our null hypothesis that the correctness of report that receiver represents is totally by the chance so we have: $\mu = 0.5$ and there isn't any connection between them. And then we set our alternative hypothesis that telepathy occurs between sender and receiver so that we have greater chance that the receiver guesses correct state: $\mu > 0.5$.

By considering that we don't know what exact probability of telepathy is with taking alternative hypothesis, we caculate power size of each probability to find out what size of sample is propper to be significance with respect to that probability of telepathy:

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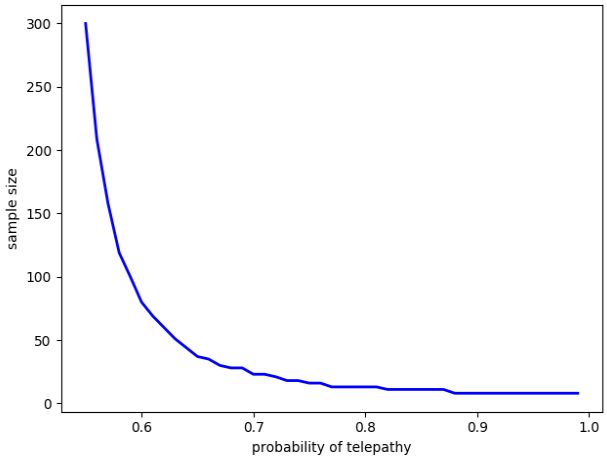

Figure 1: power size of probability between 0.5 to 1

as you can see in Figure 1, if we take probability of telepathy somewhere between 0.55 to 0.6, we will need 150 to 250 sample to detect telepathy between sender and receiver significantly. By this observation we take 19 pair(by switching of them) of objects(sender, receiver) and perform 12 trails of experiment on them.

2.2. *Hypothesis Testing*

- t-test:

  By calculating t-score for correctness of receiver's answers to the stimulis that perform on sender, we get $p-value = 0.8559$ with 95 percent confidence interval in $0.4067243, 1.0$ (Null hypothesis : $\mu = 0.5$, Alternative hypothesis: $\mu > 0.5$). This means that the results are not significant and we can't reject null hypothesis that stated there is no telepathy between objects and answers was by the randomness.

- fisher-test:

  In the last section we derive that the answers of receiver to the stimulis was by the chance. By Considering that stimulis has two state, we can perform fisher-test between the actual state of stimulis and the answer that gived by recevier to examin that how much results only was by the randomness.

	actual state: (1)	actual state: (2)
answer: (1)	52	62
answer: (2)	60	53

  by calculating p-value of fisher-test from above table, we get that:

$$p - value = 0.8963$$

  .

  This result means that there is a great chance that receiver's response to the stimulis that performed on sender was by the randomness and a little probability of occurance of telepathy between them.

2.3. *Correlation Analysis*

In the previous section 2.2 we showed that with the great chance there is no evidance that tells us telepathy occurs between subjects or some connections happends between their minds.

In this section and next section we will focus on dependency of different features of samples that gathers from objects. this featues including: correctness of responce to stimulis, closeness of sender and receiver, how long they know each other, feeling that sender have during experiment(pain rate), experience of loss of friend or family member, their belief of telepathy and are they have any backgrounds in meditation or mental illness.

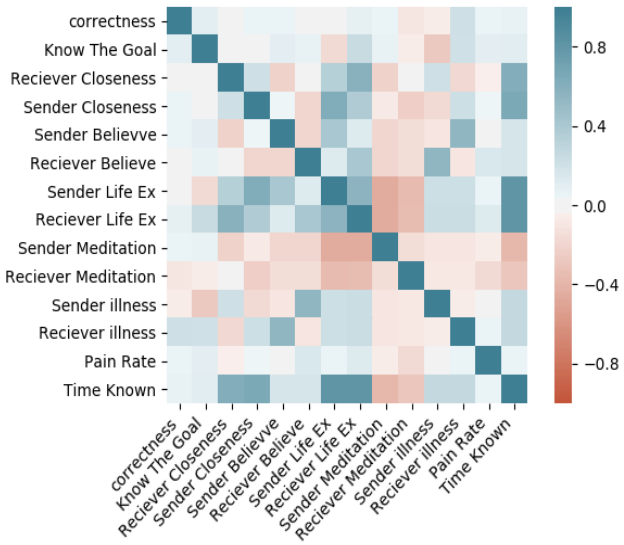

Figure 2: correlation heatMap between features

first we calculate the correlation between these features that shown in the above heatmap. As shown in Figure 2, we have no strong correlation between the feature that we most intrested on: correctness and other features. Also Figure 2 show some obvious correlations like time that objects knew each other with closeness or life experience.

It seems like there is no dependecy between correctness of responce and other features in each trail but if we get average of trails that each pair participate in, we get some informations about correlation between pain rate(feelings during experiment) and correctness.

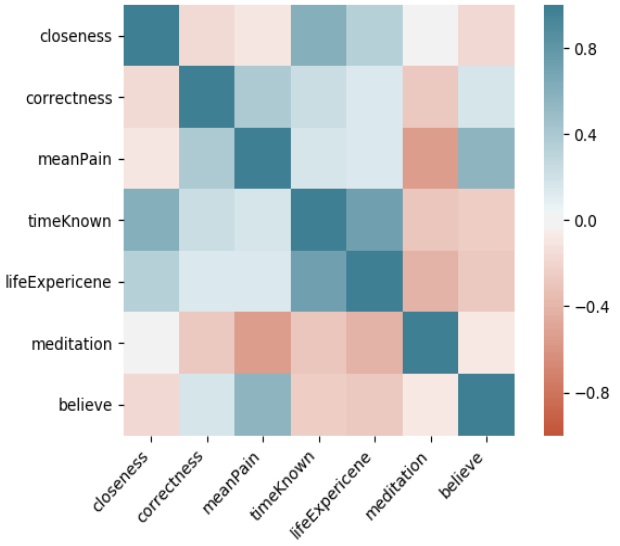

Figure 3: Average correlation heatMap by pairs

The correlation between total correctness of recevier's response during experiment (including 12 trails) and the average pain rate of sender during these 12 trails is 0.393443. It seems like if the sender suffers more pain in experiment there is more likely to have telepathy between them.

2.4. *Regression Analysis*

As we mentioned in the last section, we saw rather some strong correlation between average pain rate in 12 trails of experiment and total correctness of recevier's responce. As we go deeper, we will find regression line that explain this correlation between these features:

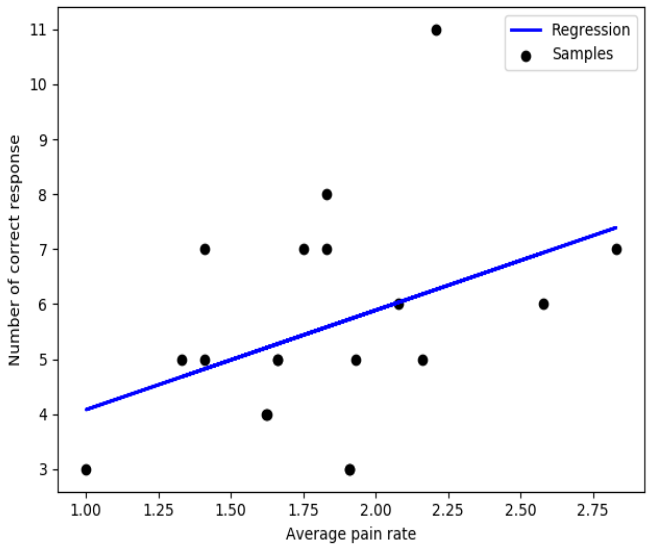

Figure 4: Average correlation heatMap by pairs

As you can see in Figure 4 that regression line has positive gradient meaning that in average, as we increase mean of pain rate(feelings during experiment) in trails we are more likely to get better results and may be show existence of telepathy between sender and receiver.

2.5. *Principal Component Analysis(PCA)*

As we mentioned in previous sections, our samples has 14 features including correctness, colseness, ... so that our samples only can be represents in the space with 14 dimensions. Because of this large dimension we can't get any information about distribution of data over that space. With principal component analysis we can reduce our dimension of data and map it to a space with 2 dimention without huge loss of variance over our data.

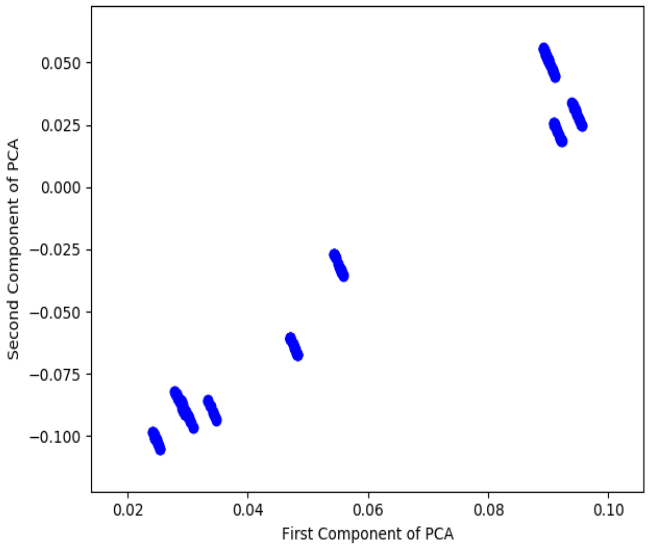

Figure 5: PCA of the sample set

As you can see in Figure. 5 our data represent in a space with two dimention on 2 vecetors. Above figure also show that we have some good separation over distribution of our data. if we perform Kmeans clustering alogorithm on this data we get:

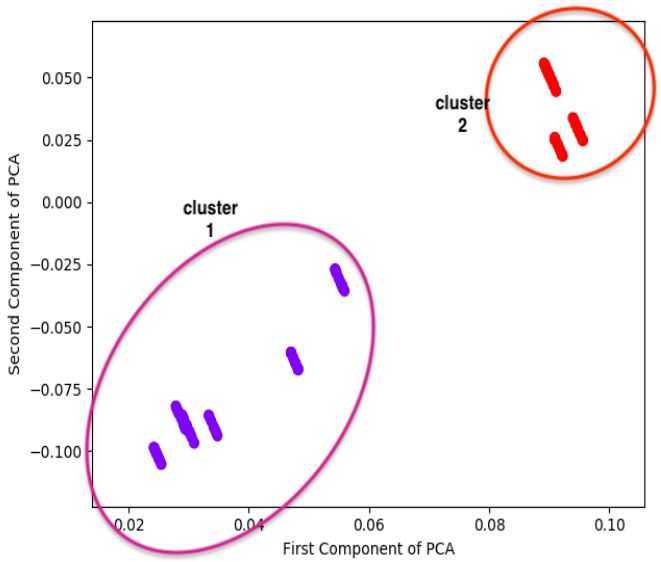

Figure 6: Clustering on data in two dimentions

As Figure. 6 shows we can seprate our data into two clusters that each cluster has samples that have strong similarity between their features.

3. Discussion

As previous sections suggets, we couldn't show existance of telepathy between our subjects but the main result that we achived was some evidance that shows there is rather strong correlation between feelings and emotions of sender that excited during experiment and accuracy of recevier's response. Another thing that the article showed was great seperation between samples in smaller dimension. This suggests that backgrounds of our objects that may be related to the concept of telepathy and correctness of their responce can be divided into two different categories with similar features.

Shortcomings of our approach was that our sources was limited and we had only 10 pairs(sender and receiver) that participate in our experiment.

If the numbers of samples increase or ask pairs that have more strongly emotional relation between them to take part in experiment or ask peoples that claim they have a lot of experience in telepathy may be it tend to getter better results. Another thing that could help to get better connection betweeen objects is the thing that we achieved in our experiment: exciting emotions and feelings of sender more strongly. Use of stimulis that could arise feelings more efficiently may can help in process of experiment and tend to get more connection between pairs.

The most important thing that the future works should consider is that design experiments in perpose of detect telepathy such that the output results of that could be replicable by other researchers.

Appendix A. Materials and Methods

Appendix A.1. subjects

We get 10 pairs of subject that it seems to have strong emotional relation between themself like twins or brother and sister or long lasting friends. Age range of our subjects was around between 18 to 23 and including 14 mens and 4 womans. We asked our objects to complete two pre-forms: bill of rights and a form that ask them personal information and the features that we talked about through the article and a post-form that asked about their feelings during experiment and their opinion about the whole process.

Participants have no idea about the topic and the purpose of the experiment in the first attempt. At the second one, since their place have been changed, they know the procedure of experiment and they may guess the purpose. But after completing both sessions, everything about the experiment is told to them. We thought knowing the purpose would make a bias in their mind and affect the results.

Appendix A.2. stimuli

The sequence of stimuli containing cold and warm states is generated randomly with the computer. Each sequence contains 6 states of cold and 6 states of warm water.

Appendix A.3. Experiment

we have a cold and warm sequence as stimuli. At each state, a hand of the sender is put in a cold (0 C water) or warm (37 C water) for about 20 seconds. After the 15th second, we asked the sender rate of pain and the receiver the state of the sender (he is in pain or no). After each interval, there is a 15 second resting period that the sender should put his hand in warm water so that its temperature becomes natural. After 12 intervals participants switch places and we perform the other session.

Appendix A.4. Statistical tests and significance

As we mentioned in the content of Article we use t-test and fisher-test to examine how much our results are significant. We assume that each trail follows bernoulli distribution with parameter of p. By central limit theorm we can derived that mean of these trails has normal distribution and also we have enough number of samples. Because of these reasons we use parametric test against non-parametric one.

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