

## Study Registration For the KPU Study Registry

The registration information for the study is given below. Each section can be expanded as needed.

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

Mind-matter interaction at distance on a random events generator (REG): a confirmatory study

### 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.

This is a confirmatory experiment aimed at demonstrating the possibility to influence the activity of a random event generator (REG) at distance. Participants selected for their strong motivation and capacity to control their mind activity, were requested to alter the functioning of a REG, located in a lab approximately 10 to 50 Km far from their location, to achieve a cumulative deviation above or below 1.65 with respect to the expected mean, during sessions lasting approximately 60 seconds, for a total of 102 experimental sessions.

In a pilot study, the percentage of experimental sessions which achieved the predefined cutoff was 78% out of fifty, compared to 48% for the control ones.

### 4. A statement or list of the specific hypothesis or hypotheses being tested, and whether each hypothesis is confirmatory or exploratory. ([confirm/explore guidance](#))

“In the study there is only one **confirmatory hypothesis**: the proportion of experimental sessions which will achieve the predefined cutoff of a cumulative deviation above or

below 1.65 at any time during the session length will exceed the proportion observed in the control sessions.

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

We plan to recruit 34 participants who will contribute for three sessions each, for a total of 102 experimental sessions. The number of bits for second will be set to 200.

**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.**

At the 10<sup>th</sup> of May 2014, we have recorded 30 experimental sessions contributed by 10 participants and 30 control sessions.

**7. The specific statistical test method that is planned for each hypothesis, including dependent and independent variables, any data transformations or adjustments, any criteria for excluding or deleting data, which statistical test will be used, whether the statistical test (or confidence interval) is one or two-tailed, whether the unit of analysis is the participant or the individual random event, what  $p$  value (or confidence interval level) is considered significant, and any adjustment for multiple analyses. For example, “to analyze overall  $\psi$ , a z-score binomial test with continuity correction will evaluate whether the overall rate of direct hits for all trials in the experiment is greater than 25%, with significance set at  $p \leq .05$  one-tailed,” or “the difference between the two conditions will be analyzed with a two-sample  $t$ -test with the number of hits for each participant as the unit of analysis and significance set at  $p \leq .05$  two-tailed.” (This information can be included in section 4 above.)**

We will compare the proportions of experimental sessions which will achieve the predefined cutoff, with the analogue proportions observed in the control sessions by using a one-tailed frequentist (Fisher exact test) and Bayesian statistical approach evaluating the Bayes factor for comparing two proportions using the software available at <http://glimmer.rstudio.com/rdmoney/bfProportions> , with a one-tailed test and prior parameters set as:  $\mu\mu=0$ ,  $\sigma\mu=0.75$ ,  $\mu d=0$ , and  $\sigma d=0.5$ .

The criteria for significance should be  $p \leq .05$  one-tailed and Bayes Factor  $\geq 10$  in favor of the alternative hypothesis for the Bayesian analysis.

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

From the pilot study the achieved an effect size of 0.82 [0.50, 1.14], consequently, we estimated to achieve a similar effect size doubling the number of sessions.

## **9. The methods for randomization in the experiment.**

The The Psyleron™ REG-1, we are using, is a well-known REG which guarantee a real randomization of its digital outputs.

## **10. A detailed description of the experimental procedure.**

The Psyleron™ REG-1, connected to a dedicated PC with Windows7 64 bit, is located in a faraday shielded lab in the Department of General Psychology of Padova University, Italy.

The participant's task is to influence the REG output to achieve the cutoff level, fixated to  $\pm 1.65$  z scores from the expected mean, corresponding to 0.95 cumulative function, within the time window of the session lasting approximately 70 seconds. Particular care is devoted to the mental strategy to influence the REG output. Following the Jahn et al. (1997) and Radin et al. (2012;2013) findings, we suggested the strategy to think to "become one with the apparatus and imagine to stay mentally inside it with positive emotions". At the end of their sessions each participant will be interviewed to describe the strategy he/she adopted.

Participants are located in their homes, approximately 10 to 50 km far from the REG. Each of them will contribute to three experimental sessions completed in different days at their choice. Each participant agreed with the research assistant the day and the precise time when he/she want to carry out an experimental session. When he/she decided to be mentally ready to influence the REG, he/she informed the research assistant by using a SMS. At this point the research assistant activated the REG at distance by using an internet connection, to avoid any possible interference on the apparatus. Before each experimental sessions, the research assistant recorded a control session of the same length and with the same bit stream frequency (200 x sec) of the experimental sessions.