Interference Between Past and Future
Events in Computer Program

Gregory Yatskar

Abstract
The results of the experiments described in this article prove the existence of the interference of the process of computation performed by a computer program with the future dissipative process created in the computer, which in this case was opening, filling and deleting a file in the computer memory. Such a phenomenon can be accounted for by the non-locality of macroscopic systems which has attracted the attention of physicists recently, but as a property of living systems, brain in particular, has been discovered long ago. Now, that simple and easily reproducible effect will provide a powerful tool for investigations of the origin of non-locality on macroscopic scale.

Key Words: non-locality, computer, parapsychology, brain, precognition

I. Introduction
The purpose of the experiments described was to investigate the possibility of the interference between two created in a computer and separated in time events which had no causal connection defined in a classic way. Understanding the extraordinary character of such a hypothesis, the author wants to notice that the phenomena of that kind can be caused by non-locality of Quantum systems, and have been observed in the experiments with subatomic particles (Srivastava and Widom, 1993).

Traditionally, it is believed that in macroscopic physical systems under normal conditions, the effects of the interference between past and future events are vanishingly small, but in the recent time there arrived reports on discovery of the interference between the electrode detector signal and the future geomagnetic activity (Korotaev et al., 2005). Besides that, there exists, although out of scope of Orthodox science, a vast database on parapsychological phenomena, and among them on precognition, i.e., the forecasting of the future by humans and animals.

The systematic laboratory investigation of parapsychological phenomena, or psi, started in 1920s, and has been actively continued since then in hundreds of scientific institutions all over the world (Honorton and Ferrari, 1989; Bern and Honorton, 1994; Radin, 2000). Among those of a high repute are the laboratory for research of engineering anomalies of Princeton University, New Jersey, USA (Jahn and Dunne, 2001), and Cavendish laboratory in Cambridge, UK, in the latter the fundamental research in the field of the nature of...
of cognition is led by the prominent physicist and Nobel Prize laureate Brian D. Josephson (Josephson, 1991; 1992). Many decades of fruitful and impeccable work of those research centers have pointed to the possibility of the existence of biological non-locality and put forward an impressive concept of the unity of mind and matter, and theoretical “modular” model of cognition. These ideas inspired the author to work out the program described below, and to stage experiments in which the results of the computation turn out to correlate with the future random event. The further investigation of this phenomenon, as the author hope, will help to understand the nature of non-locality of macroscopic systems, including brain, and thus reveal the mystery of consciousness.

2. Idea, Design, and Procedure of Experiments
The scheme of experiments was as follows. First, computer performed the predetermined number of cycles of simple calculations producing a certain numerical result, and that computation constituted “the first event”. In the following “second event”, the computer read 1 or 0 from the table of random numbers, and according to that number performed, or did not perform, the action not connected to the results of the computation. This action consisted of creating the empty file in the memory, writing certain numbers into the file, closing the file and immediately erasing it. The idea was to find out whether it was possible, by the results of the computation, to predict the outcome of the second event.

The main cycle of the computations in the first event consisted of two consecutive invocations of the standard Timer program which defined the internal computer time. Those values were assigned to the variables t1 and t2, and the difference between t2 and t1 was calculated. In most cases, that difference was computer zero, but when it was non-zero, the program registered the number of the cycle in which that occurred. Having performed the predetermined number of cycles, the program proceeded to the second event, with completion of which the isolated trial was concluded.

3. Description of Results
The results of the experiments are presented in groups, each of them corresponding to fixed conditions of the experiment, namely, the type of the computer used, the modifications of the computer program, and the temperature range. Each group was preceded by preliminary experiments in order to work out or modify the criterion of prediction, and estimate the number of the trials in the main group, with the intent to obtain the excess of right predictions over wrong ones, by the most productive criterion of the group, not less than three statistically expected deviations from the mean value.

All groups of experiments were performed on the computers with very antiquated operational systems Windows 3.1 and Windows 98, and with very low frequency of processors. The attempts to reproduce the results on more modern computers were not successful, probably, due to the noise created by numerous background programs, but that obviously can be overcome in the future.

The first group of experiments was performed on the computer with the frequency of the processor just 33 MHz, and with the operational system Windows 3.1. Since in those experiments the random number table was produced by computer pseudo-random number generator, in order to reduce the error, each other table was converted, i.e., zeros were replaced by ones, and vice versa. With the same purpose, random delay between trials was introduced, in the range of 0–1s.

The number of the cycles in a trial was 2500, and registration of the change in timer readings occurred most often, but not always, with the period of 92 cycles. The preliminary observations also enabled the experimenter to work out the criterion of the prediction which said that if in a trial the last but one and the last registrations were separated strictly by 92 cycles, and the last registration occurred less than in 380 cycles from the end of the first event (2500 cycles), then the second event was likely to perform the random action, i.e., creation, filling, and destruction of a file.

The preliminary observations also demonstrated the reduction of the reliability of predication in the course of the incessant series of trials. That is why the number of individual trials in a series had to be limited to 120, and the interval between the series had to be not less than 22 hours. Also, the preliminary experiments showed the necessity to control the room temperature; this group of experiments was performed at 18–23°C.

The final part of this group of experiments consisted of 50 series (6000 trials), which were conducted once a day during about two months. In that part, 1302 trials satisfied the said criterion that allowed the program to
work out a prediction, and the excess of right predictions over wrong ones was 138, which constituted 3.55 statistically expected deviations. The probability that such deviation is accidental does not exceed 1 to 24000.

It is possible to extract from the said group a subgroup of experiments which had been performed at 18–21°C, and it turned out that there was another criterion applicable to that subgroup, namely, if the number of the registrations of change in timer readings during a trial was greater than 15, and the last registration occurred less than in 280 cycles from the end of the first event, then the second event was likely to perform the random action. This subgroup containing 1584 trials yielded 112 predictions, and the excess of right predictions over wrong ones was 28. And although this result is not as significant as the previous one, it allows us to trace the same tendency in next groups of experiments.

The generation of the table of random numbers in all following experiments was performed not by a computer pseudo-random generator, but by a real random number generator based on atmospheric radio-noise which is available on the Internet at random.org.

Also in these experiments, the procedures converting the table of random numbers and inserting random delay between trials were excluded from the program.

The second group of experiments was performed on the same computer at 20–21°C, with the abovementioned changes to the program. It consisted of 15 series, 120 trials each, and it yielded 299 trials which satisfied the first criterion of the first group, namely, if the last but one and the last registrations were separated strictly by 92 cycles, and the last registration occurred less than in 380 cycles from the end of the first event (2500 cycles), then the second event was likely to perform the random action. The excess of right predictions over wrong ones in that group was 15.

The noticeable reduction of the ratio of right predictions to wrong ones in this group can be explained by the reduction of the duration of a cycle caused by the modification of the program, and the following observation confirms that. In the second group of experiments, there were many series in which the last but one and the last registrations were separated by 91 cycles, and if the last registration occurred less than in 280 cycles from the end of the first event, then the second event was likely to perform the random action.

This criterion was satisfied for 66 series of the group, the excess of the number of right predictions over wrong ones being 10, and combining the criteria with 91 and 92 cycles makes the ratio of right predictions to wrong ones close to that obtained in the first group of experiments.

Although the first criterion showed some instability with respect to temperature changes and modifications of the program, the second criterion of the prediction, based on the total number of the registrations during the trial, turned out to be more stable. In the second group, there were 44 trials which satisfied the second criterion, and the excess of right predictions over wrong ones was 16. Combining this result with the data obtained in the first group, we get 156 predictions, the excess of right predictions over wrong ones being 44, in other words, 3.5 statistically expected deviations.

The third group of experiments was performed on the same computer, but the room temperature was maintained at 24°C. The results of the preliminary experiments demonstrated the shift of the first criterion from 91–92 cycles to 93 cycles and the same ‘undulation’ of the effectiveness of the predictions with period of approximately 40 trials. The modification of the first criterion worked out in the course of preliminary experiments was as follows. If the last but one and the last registrations were separated by 93 cycles, and the last registration occurred less than in 380 cycles from the end of the first event (2500 cycles), then the second event was likely to perform the random action.

In addition to that, the condition of “undulation” was imposed, namely, if the second third of a series turned out to demonstrate the negative effect with respect to the said criterion, then the last third of the series was expected to be positive. (The first third of a series was, in most cases, negative with the respect to the said criterion, probably, because it took some time for computer fan to remove stagnant hot air from the computer, as those summer experiments were carried out during the coldest time of the day.)

The modified first criterion applied to the second group which consisted of 60 series yielded 160 predictions with the excess of 40 of right over wrong ones, i.e., 3.2 statistically expected deviations.

What about the second criterion, the preliminary experiments showed that it did not exhibit any “undulation”, but it worked
properly in the first third of a series, and applied just to first 40 trials in each series of the second group, it yielded 75 predictions, the excess of right over wrong ones being 9.

Also, it had been proven that the criteria of the first and second types (the first being based on the last two registrations of a trial, the second being based on the total number of registrations in a trial) were effective on two other computers.

For the desktop computer Packard Bell with the frequency of the processor 66 MHz and operational system Windows 98, preliminary experiments at 23–26°C allowed one to work out the criterion of the first type which said that if the last but one and the last registrations were separated by 146 cycles, and the last registration occurred less than in 550 cycles from the end of the first event (6000 cycles), then the second event was likely to perform the random action. Applied to the group of 50 series, 80 trials each, this criterion yielded 161 predictions, the excess of right over wrong ones being 40 (3.15 statistically expected deviations).

For the same computer, preliminary experiments at 24°C allowed one to work out the criterion of the second type which said that if the total number of registrations in a trial was greater than 11, and the last registration occurred less than in 100 cycles from the end of the first event (2500 cycles), then the second event was likely to perform the random action. Applied to the group of 50 series, 80 trials each, this criterion yielded 18 predictions, the excess of right over wrong ones being 16 (3.77 statistically expected deviations).

For the laptop computer Hewlett Packard with the frequency of the processor 166 MHz and operational system Windows 3.1, preliminary experiments at 19–22°C allowed one to work out the criterion of the first type which said that if the last but one and the last registrations of a trial (6000 cycles) were separated by 38 cycles, then the second event was likely to perform the random action. Applied to the group of 30 series, 80 trials each, this criterion yielded 112 predictions, the excess of right over wrong ones being 42 (4.0 statistically expected deviations).

For the same computer, preliminary experiments at 20–21°C allowed one to work out the criterion of the second type which said that if the total number of registrations in a trial was greater than 4, and the last registration occurred less than in 100 cycles from the end of the first event (2500 cycles), then the second event was likely to perform the random action. Applied to the group of 15 series, 80 trials each, this criterion yielded 10 predictions, all being right (3.16 statistically expected deviations).

And since all criteria were worked out or modified, and number of series in a group and number of trials in a series predetermined as a result of preliminary experiments, all predictions of all the groups were truly independent. Thus the overall results consist of 2310 prediction on basis at least one of two criteria (including 76 trials in which both criteria were satisfied, 48 of them being right), the total excess of right over wrong ones consisting of 357 predictions (7.4 statistically expected deviations).

4. Conclusion
The experiments described above show that a computer program reacts to a future dissipative process created in the computer, such as opening, filling, and deleting a file. That can become a powerful tool for investigating non-locality in macroscopic systems, and a basis for a practical device, “electronic oracle”, which probably will consist of hundreds of synchronized preprogrammed computer chips, and will be able to predict a simple future event with good accuracy.

The next step towards the creation of such a device would be the replication of the experiments in a laboratory on a set of identical computers, the inner temperature of them being controlled. And the applications of a compact inexpensive device designed to predict the outcome of a future event will be, no doubt, innumerable.
References


