

## **Does Precognition Foresee the Future? A Postal Experiment to Assess the Possibility of True Precognition.**

There has been a long-standing controversy in parapsychology as to whether true precognition is possible. From a theoretical point of view a number of people have argued that what appears to be precognitively gained information could in fact be due to real-time psi alternatives. For example it is possible that a person who foresees a plane crash may have clairvoyantly seen a fault in the aeroplane and calculated when the part would malfunction, resulting in the apparent premonition of the crash (e.g., Mundle). Others argue that people may simply cause what they foresee to come true by using their PK (e.g., Tanagras, Eisenbud). Although spontaneous cases are notoriously hard to assess, one might expect experimental tests of precognition to be easier to determine as due to precognition or to real-time ESP. Nevertheless, this is rarely the case. Morris describes a number of ways in which experiments putatively testing for precognition may still allow real-time psi alternatives to play a role in producing the experimental results. The problem in determining at what point psi in any given experiment plays a role was recognized early on in psi research. A well-known example is the "psychic shuffle" experiments by Rhine. Here a person was asked to predict the order a deck of ESP cards would be in after a person had shuffled it (the person made their guesses prior to the person shuffling the deck). The results were significant, but Rhine recognized that the ESP act might enter in at the time of shuffling the cards and further experiments showed that if a person was asked to shuffle a deck of cards to match a series of pre-existing guesses, the shuffler would correctly place more cards in the right position than would be expected by chance. Subsequent to this finding mechanical card shufflers with a predetermined number of turns of the machine were used, although a PK effect by the person using the shuffler may still be possible in such cases. Morris argues that experiments using stock-market figures to determine the precognitive target in precognition experiments have never produced significant results. Because stock market figures are of huge financial interest and importance to a large number of people it is unlikely that experimenter or participant PK could be responsible for the selection of a favorable target by manipulating the stock market. Other people would have far greater incentive to use their PK for this purpose. Moreover, stock market figures are very unpredictable – at least in part because of the very large number of human decisions involved every second. Real-time ESP and inference is therefore similarly unlikely to be a plausible possibility in this situation. The implication of Morris's argument is that true precognition may not be possible after all. A meta-analysis of forced-choice precognition experiments by Honorton and Ferrari, however, claimed that there was no evidence that experiments using complex target selection procedures (cf the "Mangan" method ~~is~~) produced any weaker results than those using less complex procedures. Similarly a meta-analysis comparing clairvoyance and precognition also suggested that there was virtually no difference in effect size between the two procedures, whereas if one thought that precognition was really due to real-time psi and inference, the inferential step in the precognition experiments would allow more room for error and hence a smaller overall effect size. Nevertheless the Honorton and Ferrari analysis does not appear to separate out experiments using stock market figures and those using complex calculation methods and so the lack of difference could simply be due to a mixture of real-time psi methods

(e.g., PK on dice plus an enhanced and accurate ability to calculate when psi is operative). This would explain why there is no difference because the process is essentially the same in both (i.e., psi operates just as well whether or not it has to operate as a calculator as well). This would also explain why there is no difference between clairvoyance and precognition in Steinkamp et al's meta-analysis – the precognition experiments may in fact have been measuring real-time psi too. In sum, despite the many years of psi research there is still no clear-cut answer as to whether true precognition is possible. The experiment presented in this paper aimed to address this question.

## The Experiment

### The Target Set

The targets were postcard-sized pictures mounted on gray cardboard and had been used successfully in previous experiments (Delanoy). The postcards varied in theme and included pictures of people, cartoons, pictures of animals, landscapes, cityscapes, sculptures, and postcards of abstract or realistic art. They could either be in colour or in black and white. The target set comprised 160 such pictures divided into 40 pools of four pictures each. The pictures were rotated and reused as necessary.

Each picture had a random number between 0001 and 2999 on the back for reference (see Delanoy for further details).

### The Participants

All participants had previously taken part in a survey of precognitive experiences conducted by the author and had indicated in the survey that they would be interested in taking part in a postal experiment on precognition. Therefore all participants had had previous written contact with the experimenter and all participants believed that they had had a precognitive experience at least once in their life. It can be assumed, therefore, that the participants believed that precognition was possible. It was also hoped that because of prior communications with the experimenter, participants would feel some sort of connection to the experimenter that may normally be missing in other postal experiments. Moreover, because the experiment followed on from the questionnaire research, it was hoped that participants would feel more of an active and ongoing interest in this experiment.

### The Experimental Conditions

The experiment had two conditions. For ease of reference I shall call one the "clairvoyance" condition and the other the "precognition" condition. The difference between the two conditions lay in their method of target selection.

For the clairvoyance condition the target (a number between 1-4) was randomly selected by computer and directly stored in a file on the hard disk by the computer prior to the experimenter sending out the test materials to the participant. This number referred to the lowest numbered picture in that participant's target pool. For instance if a participant had picture numbers 0178, 2139, 0039 and 2009 and the computer had selected the number 3, the target would be the third-lowest number of that set – i.e., the target would be picture

number 2009. The experimenter did not know which number the computer had selected. For this condition the participant could theoretically use real-time ESP and calculation to guess correctly which picture was the target (e.g., by clairvoyantly seeing which number the computer had selected, knowing through telepathy the method of using that number to determine the target and then making the appropriate deduction). Alternatively, the participant could try to foresee their future feedback in order to make a correct guess.

For the precognition condition prior to sending the test materials to the participant the computer randomly selected two numbers between 1-25 and immediately stored them on the hard disk as before. The first number referred to a temperature figure (°F) in *The Times* on a prespecified future date and the second number referred to a stock market figure (closing price) in *The Financial Times* on that same prespecified future date. The date was prespecified as being a minimum of two days after the postmark on the envelope containing the participant's returned test materials and guesses. If the envelope arrived sooner than two days from the participant's posting of it, the envelope was retained, unopened, until those two days had passed. If the envelope arrived more than two days after the participant posted it, the prespecified date was the date of the envelope's arrival. Because stock market figures were not available on Mondays, any envelopes arriving at the weekend or on Mondays necessarily had to be retained until Tuesday and Tuesday was understood to be the prespecified future date. When the prespecified future date arrived the experimenter would look up the relevant temperature and stock market figures. Thus if the experimenter found that the computer had chosen the numbers 4 and 18, the experimenter would look up the fourth world city temperature listed in *The Times* that day and the closing price of the eighteenth of the top stocks listed in *The Financial Times*. It was prespecified that stock market figures would be rounded up or down as appropriate (thus a closing price of 885.5 would be taken to be 886). If a temperature figure was listed as unavailable in the newspaper, only the stock market figure would be taken. The temperature and stock market figures would then be multiplied together and divided by four until a target between 1-4 could be gained. Thus if the multiplication and division procedure resulted in a number between 1-1.99, the target would be 1; if it resulted in a number between 2-2.99, the target would be 2 and so on up to 4.99. The resulting target number determined which picture the target was.

It was thought that any positive results from this condition would have to be by precognition. The participant would not be able to use real-time psi and/or calculation because of the difficulties in influencing and/or predicting stock market figures noted above. The experimenter would have more of an opportunity to use real-time psi than the participant would, but even here it is extremely unlikely. The participant is given the freedom to do the trial when they like, so the experimenter does not know when they will send their test materials back. Postal efficiency is also variable in the UK, so even if the experimenter could know when the participant is sending the materials, it is uncertain exactly when the materials would arrive. Thus if the experimenter wanted to use PK to influence the printed results in the newspapers, the experimenter would be uncertain about which day to exercise this influence. Moreover two different newspapers were used to make the possibility of such a PK influence less likely as two sets of data would have to be influenced by PK. In addition, on days when a number of participants replied

either multiple sets of data would have to be influenced or, if two participants had the same temperature or stock market figure, they may conflict as to which figure they needed it to be. Given the number of people reading these figures in the newspapers to think that such an influence may happen over the whole period of the experiment without anyone else noticing and complaining to the newspapers is somewhat unlikely.

Moreover, all test materials were deliberately returned by second class post – unless the participant upgraded it voluntarily and without the experimenter's knowledge (as some did) – which means that such items do not get postal priority. Thus even in the unlikely event that the experimenter could influence the whole range of postal systems to ensure that the materials arrived on a beneficial date, it is doubtful how profitable such a strategy would be if recourse to precognition is not possible. By psychically delaying the arrival of the material by a day or (at most) two days, the outcome of the trial may in fact still be no better. If the experimenter used PK on the printed figures and on the postal systems throughout the UK, one would have to wonder why such a dramatic influence would be possible in an experiment testing for precognition and not in any known PK experiment to date. Moreover, the problems above regarding the use of PK on the published temperature and stock market figures would be relevant here too.

Consequently, it was thought that for this condition of the experiment any positive results would yield strong evidence in favour of the possibility of true precognition.

## Procedure

The number of participants prespecified for the experiment was the number of questionnaire participants who had previously expressed an interest in taking part in a postal experiment. All these people were asked to return a form indicating whether they had any preference as to when they would like to receive the test materials (they had eight two-week periods between July-December 1998 to choose from). All participants were sent such a form only once and only those who returned this form were allowed to take part in the experiment. If participants failed to return their test materials they were standardly sent two reminder letters. After two reminder letters participants were simply asked to return the materials and not to take part in the experiment. Participants were told the experiment would end on 6<sup>th</sup> December; formally the experimental procedure was such that if participants returned trials postmarked no later than 13<sup>th</sup> December, they could be included. It was hoped that these conditions were sufficiently well delineated to prevent any form of optional stopping.

Participants were asked to do two trials. They were sent the test materials for both trials at the same time. It was hoped that this would prevent the results being biased by participants making a decision about whether to proceed to the second trial depending on their results from the first one. The test materials included two sets of four target pictures. Each set of pictures was in a separate opaque, sealed brown envelope; one set was marked A and the other B in large, fluorescent pink lettering on the outside of the envelope. Unknown to the participants each set of pictures belonged to a different condition – one was a set for the clairvoyance condition and the other set was for the

precognition condition. The envelopes (and hence conditions) were counterbalanced across participants using an ABBA design and participants were instructed always to do envelope A first. The pictures were not placed in any particular order in the envelopes as the experimenter did not know which one would be the target and would not know which order the participant would see the pictures in anyway. The target for the clairvoyance condition had already been determined as above (see Experimental Conditions) before sending out the materials as had the temperature and stock market figures. As a further experimental precaution the room in which the computer that held these figures resided was locked whenever the experimenter was away to prevent anyone getting the information at other times. Again, the experimenter did not know what these figures were either.

Along with the two sealed envelopes A and B was a letter explaining to participants how they should do the experiment. Participants were told that their aim was to gain some impressions about a picture that I would send them through the post the following week. They were informed that the picture I would send them would be one of the four pictures in envelope A but that they should not open envelope A until they had first got some idea of what picture I would later send them ~~beforehand~~. They could gain impressions by whatever method they liked. The letter suggested they could either sit quietly in a corner and let thoughts come to them, they could draw pictures about the impressions they had or they could try to dream about what the picture would be. Once they had some ideas about what picture I would be sending them through the post the following week, they were asked to open envelope A and compare the impressions they had to each picture in that envelope. Their test materials included Experiment Information Forms on which to register their thoughts. On the first side of this form they were asked to write down how their impressions corresponded to each picture in envelope A. On the reverse side of the form they were asked to rate each picture in envelope A from 1-99 as to how much it corresponded to what they thought the picture would be like that I would send to them. They were told that a rating of 1 meant that there was no correspondence between their impressions and the picture and that a rating of 99 indicated a perfect correspondence between their impressions and the picture. They were asked to note the day and time of the trial and to indicate how they had gained their impressions (by dreams, waking impressions, drawings, etc.). They were asked to do exactly the same for envelope B, but that it was preferable that they leave at least a day between doing envelope A and envelope B.

It is possible, of course, that participants could open the envelopes before doing their mentation; however, this would not give them any clue as to which picture was the one I would send through the post the following week. As a result, although it would be undesirable for them to see the pictures beforehand, it is not a procedural flaw.

After participants had rated both sets of pictures they were asked to send all eight pictures back along with their two completed Experiment Information Forms in the prepaid addressed envelope that was enclosed with their test materials for this purpose. The participant identification number was noted on the outside of the prepaid envelope so that

the experimenter could tell on receiving the envelope whose trials were enclosed without having to look at the Experiment Information Forms inside.

On receiving the materials, the experimenter noted the participant number and asked the computer to retrieve the target numbers (i.e., the target number for the clairvoyance trial and the stock market and temperature figure numbers for the precognition trial) for that participant. The experimenter then printed out these numbers and handed over the participant's sealed envelope to a colleague. If the participant had chosen to send the materials in a different envelope or if the experimenter had forgotten to put the participant number on the outside of the envelope, the experimenter asked a colleague to open the envelope out of the experimenter's sight. The colleague would then inform the experimenter of the participant number and reseal the envelope.

These safeguards were in place to ensure that the experimenter would not know what guesses the participant had made when the experimenter recorded and/or calculated the target numbers.

When the experimenter had ascertained which participant had returned their envelope, retrieved and printed out their target numbers and deposited their sealed envelope with a colleague, the experimenter looked up the appropriate temperature and stock market figures in the specified newspapers. The experimenter made a note of these figures on the printout of the target numbers and then performed the relevant calculations. The resultant target number was then also written on the printout. All of this information was then entered onto a database.

The experimenter then returned to the colleague<sup>6</sup> asked them to check the calculations of the temperature and stock market figures independently. Once the calculations had been confirmed, the experimenter handed over the printout containing the target numbers in exchange for the sealed envelope containing the participant's guesses. The colleague was asked to confirm that the envelope was sealed and that the number on the outside of the envelope corresponded to the participant number whose target numbers had been retrieved. The colleague stored all target printouts in a place unknown to the experimenter. This prevented the experimenter from being able to change the prerecorded target numbers after the fact.

On obtaining the sealed envelope, the experimenter opened the test materials and entered the participant's ratings of the four pictures for each of the two trials onto the database. The experimenter then worked out which picture was the target and calculated the rank that the participant had given to the target picture (the highest rating being a rank of 1, the second highest rating being a rank of 2, etc.). This information was also recorded on the database, as was information about the day and time of the mentation and the form of mentation that the participant had used. For interest and for post-hoc analyses on time lapse between trial and feedback, the experimenter also noted the number of days between the date the trial took place and the day on which the experimenter found out which picture was the target. The experimenter had also recorded the day's change in the

closing price of the stock figure so that post-hoc analyses on variability could be performed.

Each of the two target pictures were then placed in a sealed opaque envelope. These two envelopes were accordingly marked A and B in fluorescent pink as before. These envelopes were the feedback envelopes. The experimenter then sent the participant a letter informing them whether they had correctly guessed either of the pictures and enclosed the feedback envelopes so that the participant could see the correct pictures for themselves. The participant was given a prepaid addressed envelope for the return of the target materials after they had seen them. It was hoped that having the feedback envelopes look very similar to the test envelopes and having the participant have an interaction with the feedback (by having to open an envelope to see it) would enhance in the participant a sense of future contact with the materials. Participants were told that they would be informed of the overall results of the experiment once it had been completed.

Once the closing date for the experiment had passed, another colleague checked that the (i) target numbers on the printouts matched those on the database; (ii) the ratings on the Experiment Information Forms matched those entered on the database and that there were no obvious signs that the Experiment Information Forms had been tampered with; and (iii) the ranks to the targets had been worked out correctly by the experimenter.

Preplanned analyses were then performed. The preplanned analyses – which were regarded as the experiment's main interest – were (i) to use direct hits as a measure for psi for the overall database (i.e., both conditions together); (ii) to use sum of ranks to assess each condition (clairvoyance and precognition) separately; and (iii) a paired t-test to compare the two conditions. All p values were to be one-tailed with an alpha of .05; it was expected that the t-test would favour the clairvoyance condition.

## Results

It was prespecified that only trials that were postmarked by December 13<sup>th</sup> 1998 would be included in the final analyses. Moreover, participants who had failed to give each picture a different rating would be excluded from the main analyses. These prespecifications meant that out of 108 people who were sent test materials, only 54 returned two usable trials. Because some people submitted only one usable trial, there were 60 trials in each condition in total. Thus the number of usable trials for the main analyses was somewhat disappointing.

There were 31 direct hits out of 120 total trials, thus yielding chance results ( $z = 0.12$ ,  $p = .45$ ). There were 16 direct hits in the clairvoyance condition and 15 in the true precognition condition.

The sum of ranks analysis for the clairvoyance condition revealed significant results in the appropriate direction, indicating that participants in this condition were more likely to rank the target picture as being relatively similar to their mentation than would be

expected by chance (SOR = 130,  $z = 2.25$ ,  $p = .01$ ). This result indicates that many participants in the clairvoyance condition rated the target as their second choice. There was no such effect evident in the precognition condition where the sum of ranks analysis yielded only chance results (SOR = 152,  $z = 0.17$ ,  $p = .43$ ). The table below serves to illustrate the excess of favorable rankings to the target pictures in the clairvoyance condition as opposed to the true precognition one.

TABLE 1

Table showing the number of times each rank was assigned to the target picture for each condition

Rank to Target	1	2	3	4
True Precognition	15	17	9	19
Clairvoyance	16	26	8	10
MCE	15	15	15	15

The paired t-test between the two conditions also revealed a significant difference, with the clairvoyance trials performing more successfully than the precognition ones ( $t = -2.08$  (df 53),  $p = .02$ ).

#### Discussion

In the past postal experiments have met with only mixed success. This mixed success has been attributed in part to the necessary delay in feedback under such conditions and to the impersonal nature of such experiments. It had been hoped that in this experiment participants would feel more directly involved than in other studies because the participants had had previous written contact with the experimenter regarding the questionnaire research. All participants had received feedback about the results from the survey of precognitive experiences before offering to take part in the experiment and it was hoped that this feedback would have made them feel more able to trust the experimenter to inform them of everything that was happening. Also, because the participants had taken part in a survey already, it was hoped that the participants would feel more involved in the research quite generally than would normally be the case in postal experiments. The positive results from this experiment may lend some support to these assumptions. Indeed, a number of people wrote to me personally to wish me luck with the results.

It is notable that the results are solely attributable to the sum of ranks and not to direct hits. It is quite possible that this is in part due to the fact that all participants were novices at this type of experiment. Therefore they may not have achieved a sense of how to judge their mentation against a picture. It is recommended that in future all postal experiments using novice participants should use sum of ranks.

The findings from this study appear to indicate that true precognition does not work; there was no evidence that people could predict the target when the target was determined



by performing calculations on randomly selected stock market and temperature figures from a prespecified future date. Those same participants, however, did seem to be able to guess more correctly than expected by chance when the information about the future target already existed. It is interesting to note that even in the clairvoyance condition no-one knew what the target was prior to the moment of feedback. The target number was immediately stored in the computer. It is unlikely that participants looked forward to their future feedback alone because otherwise the true precognition condition should also have obtained extra-chance results. Thus the findings from the clairvoyance condition also suggest that guessing a target correctly is not due to or caused by normal human knowledge – either present or future – of the target.

If the results from this experiment truly represent something about the nature of psi and are not a mere statistical aberration, they have a number of consequences for psi research. Firstly, they suggest that theoretical worries about backwards causation are unfounded because the future is not directly perceived. As a consequence the future does not really have a direct impact on our present perceptions. Secondly, the findings imply that psi does have some limits. This may be very important for the design of future experiments in which certain routes for the operation of psi (e.g., experimenter psi) need to be blocked. Lastly, as suggested above, the results suggest that feedback may not be the crucial issue that some people believe it to be.

In conclusion, if these results do hold, they have important implications. Nevertheless, this is only one experiment and a lot of work remains to be done before the conclusions from this study can be asserted with any authority. This work needs to be replicated and it needs to be considered in conjunction with other studies that may appear to have findings that conflict with it. If the results from this study can be replicated, then it will be crucial to determine at what point it is no longer possible to psychically infer future events. Thus this experiment is just the beginning of a line of research.