

Fundação Bial
Final Report on "Precognition – Possibilities, Probabilities and Events"

Project Leaders: Professor Robert Morris and Dr Fiona Steinkamp

Summary: This project had four major components – a literature review, a meta-analysis, a questionnaire survey and experimental research. All four components have now been successfully completed. A summary of their findings is given below.

1. The Literature Review

One major aim of the project was to gain an overview of the experimental, experiential and theoretical literature on precognition with a specific focus on the question of whether it is possible to take action on foreseen events. This was a large undertaking and some of the reviews were more appropriately located in other sections of the research in hand (specifically, the experimental literature was summarized as part of the meta-analysis and previous experiential findings necessarily formed the basis of the survey research). In addition to these two latter literature reviews, two other reviews were conducted. The theoretical literature on the question of whether it is possible to intervene in foreseen events was presented at the Parapsychological Association's Convention in Brighton in 1997. The review covered, amongst others, an assessment of views from such diverse thinkers as Broad, Lewis, Flew and Nerlich. The paper argued that we will be able to know if we can intervene in future events only once we have discovered what kind of reality those future events have. I have subsequently submitted a revised version of this paper for publication in a mainstream Philosophy journal – a copy was enclosed with last year's report.

Another review provided a conceptual assessment of experiments that used target sets of varying probabilities. These experiments have generally been used to test the idea of whether foreseen events are those in which one can intervene. I have argued that the questions underlying the research are not well enough defined and that once a closer definition to the problem is given, the set of experiments required to test the idea that people can intervene in the events they foresee is quite complex. The abstract of this paper is given below and a full copy is enclosed with this report. This manuscript has now been submitted for consideration for publication. The two literature reviews together enabled me to plan a series of experiments for future research.

**Testing Clairvoyance and Precognition by Manipulating Probabilities: A
 Conceptual Assessment of the Experimental Literature.**

Abstract: This paper reviews six clairvoyance experiments and two precognition ones. All eight studies effectively use an unbalanced deck of some kind in which one or more items in the deck (will) appear more frequently than others. Traditionally results from the six clairvoyance experiments have been thought to support each other; the current assessment, however, reveals that the findings are not as complementary as might first be imagined. Although all authors believe that psi operates globally in their experiments by scanning the whole target set, at least four different models are offered to explain how global psi might work. None of these models can explain all the results. A review of the two precognition experiments reveals that they fail to address the questions they sought to answer. Moreover if global psi extends over time as well as space the variety of models used to explain the clairvoyance studies may also be pertinent to the precognition experiments. A number of potential research questions are identified and a series of experiments is devised to answer the question of whether future events have any

perceptible reality prior to their fulfilment. It is hoped that this research review will promote more conceptually rigorous research.

2. Meta-Analysis

A meta-analysis of forced-choice experiments comparing clairvoyance and precognition was conducted to see whether the effect size for clairvoyance studies was larger than that for precognition studies. If precognition is due to the use of real-time ESP and calculation (for instance, clairvoyantly seeing a fault in a plane and then calculating when it would crash), precognition studies would be expected to have a lower effect size than clairvoyance ones due to the extra calculational step involved. No appreciable difference in effect size was found. The findings from this meta-analysis were presented at the 1998 Parapsychological Association Convention in Halifax, Nova Scotia. The abstract is given below. The paper has since been accepted for publication in the *Journal of Parapsychology* and will appear in print soon. A copy of the article is provided with this report.

A meta-analysis of forced-choice experiments comparing clairvoyance and precognition.

Abstract: This meta-analysis examined a database of studies published in the main parapsychology journals from 1935-1997 that compared outcomes of precognition and clairvoyance trials under relatively similar experimental conditions. Both the precognition and clairvoyance studies had a statistically significant cumulated overall effect but there was no evidence to suggest that clairvoyance worked better than precognition, with the mean effect sizes ($z/N^{1/2}$) of the two types of ESP in the 22 study pairs being very similar at 0.010 for precognition and 0.009 for clairvoyance. There were no statistically significant correlations between the presence of procedural safeguards and effect size and hence no suggestion that methodological problems had played any strong and obvious role in the overall effects, although the small database would be expected to provide relatively low statistical power for detecting any such effects. None of the planned analyses examining the effects of potential moderator variables upon effect size were statistically significant but a post-hoc ANOVA indicated a statistically significant interaction ($F(1, 16) = 15.04, p = .001$) between whether the trials were precognitive or clairvoyant and how the two types of trial were interspersed (separated into studies or mixed within a study). Being a post-hoc result and one of many analyses performed, this finding may not be meaningful. Equally, however, the general lack of significant findings does not conclusively indicate a lack of genuine relationships, given the low statistical power in the database. In case low power had in fact been a problem in identifying moderator variables, contrast between groups in effect size alone, regardless of the statistical significance of the difference was used as a criterion to identify promising variables to examine or exploit in future research. These variables, and suggestions for future research are discussed.

Whilst undertaking the meta-analysis a number of methodological problems were identified which do not seem to have received much attention in the mainstream literature. These difficulties concerned the use of independent coding in meta-analysis. Independent coding is a second coding of a meta-analytic database to ensure that the original coding of the studies is not biased in any way. Thus, in addition to the planned meta-analysis, a methodological paper was written and presented at the Parapsychological Association Conference in Halifax, Nova Scotia in 1998. This paper has now been submitted for consideration for publication to a mainstream

Psychology journal. The abstract of this paper is below and a full copy of it is enclosed with this report.

A Guide to Independent Coding in Meta-Analysis

Abstract: The task of coding studies in a meta-analytic database requires the meta-analyst to make many potentially subjective decisions. To protect against the possibility of bias or human error it is advisable for another "independent" coder to code the database again. This paper discusses the issues that have to be considered if an independent coding is to be undertaken. The decisions involved range from whether to perform a pilot independent coding beforehand to whether and how to resolve the differences between the two (or more) sets of coding decisions. Analyses on an existing database show how independent coding may potentially be used to improve the integrity of the meta-analytic database. The paper ends with a list of recommendations.

Another paper on the problems with meta-analysis in general was presented at the Congress for the Social Sciences and Humanities in Ottawa in Canada in 1998. A copy of this paper can be provided on request – it has not been formally written up as a publishable piece of work.

3. Questionnaire Research

A major aim of the survey conducted on precognitive experiences was to discover why and when people act on their precognitive experiences. The survey was conducted between January-April 1998 with advertisements in the local and National press. The survey yielded 224 usable experiences from 190 different people. It was found that there were two distinct reasons why people might act on their experience. Firstly, those who scored low on the neuroticism test and who therefore did not worry about things were more likely to take action on their precognitive experiences. Secondly, people were far more likely to act on their experiences if the event they foresaw was one on which they could act. These two groups did not overlap. An abstract of the findings is presented below and the results have now been submitted for consideration for publication. A full copy of the paper is enclosed.

Taking Action on Precognitive Experiences: Why People Act and How Acting Affects Their Worldview

ABSTRACT: 190 participants took part in a survey on precognitive experiences. Only those who suspected beforehand that their experience would come true were included. All participants completed Rotter's (1966) locus of control scale, MacDonald's (1970) shortened ambiguity tolerance scale and Eysenck, Eysenck & Barrett's (1985) shortened neuroticism scale. It was found that preventable events were acted on significantly more often than unpreventable ones and that those who scored low on the neuroticism scale would act more often regardless of the type of event foreseen. There was some indication that other ESP experiences (not precognition) inherently prompt action whereas precognitive experiences do not. Foreseeing an event seemed also to affect the way in which the future event was eventually perceived, but it did not appear to change people's view of time. Further work is recommended.

Another aim of the survey was to replicate the findings from previous surveys of precognitive experiences. A number of findings were successfully confirmed. For instance, more women reported having experiences than men did and most of the experiences were about men rather than women. This replicated Shouten's findings. As in most other studies of precognitive

experiences, most experiences came in dreams, whereas clairvoyance experiences were more often intuitive in character. Surprisingly, even Hearne's finding that women past child-bearing age who had their first precognitive experience when young were likely to have more children later on in life than those who did not have their first experience until later in life was confirmed. The abstract of the findings is given below and the full paper is enclosed with this report.

Precognitive Experiences: Replicating and Extending Previous Findings

ABSTRACT: This is the second report from a questionnaire survey of precognitive experiences. The survey successfully replicated a number of Rhine (1954, 1964) and Schouten's (1979, 1981, 1982) findings. Dreams continue to predominate in precognition databases. Sex differences still play the same role with mostly women having experiences about men. There is some support for Schouten's (1979) hypothesis that emotional dependency rather than sex differences is the crucial factor in these male and female divisions. Surprisingly, Hearne's (1984, 1989) finding that women past child-bearing age who had their first psi experience early in life went on to have more children was also confirmed. Having a precognitive experience also appears to produce a discernible effect on the way in which percipients react to the foreseen event. Most participants reported having a physiological response on hearing about the event that was at least in part attributable to believing that they had foreseen the event. The consistency of the findings from this study with those from previous research suggests that these experiences are indeed worthy of inquiry.

4. Postal Experiment

A final aim of the project was to conduct an experiment examining what it is that precognition foresees. A large number of the questionnaire participants had expressed an interest in taking part in an experiment through the post, so a postal experiment was devised for this purpose. The leading question was to see whether true precognition is possible – most other experiments have not seriously considered the possibility that their design may allow real-time psi to play a role (see Morris). The experiment had two conditions. In the “true precognition” condition the computer selected particular stock market and temperature figures on a prespecified future date. A series of calculations was performed on these figures on the prespecified date in order to obtain a target number between 1-4. Targets were postcards and were designated the numbers 1-4 for each participant. Because stock market figures vary so much from day to day and because a series of calculations was performed on the temperature and stock market figures, it was thought extremely unlikely that anyone could guess what the target would be from presently (if psychically) available information alone. All participants also took part in a “clairvoyance” condition trial. For the clairvoyance condition the target was selected by the computer at the time that the test materials were sent out to participants. The target was not seen by anybody and was stored in the computer. Here participants could either foresee their future feedback or they could clairvoyantly use the information in the computer to make a correct guess.

The overall results (i.e., both conditions together) were at chance using direct hits as a measure ($z = .09$, $p = .5$). However, preplanned sum of ranks analyses on the individual conditions revealed that the clairvoyance condition produced significant results (SOR = 130, $z = 2.25$, $p = .01$), whereas the true precognition condition produced only chance results (SOR = 152, $z = 0.17$, $p = .43$). A paired t-test of the two conditions also yielded a significant difference (t (df 53) = -2.08, $p = .02$).

These results suggest that true precognition may not be possible, although further experiments would have to be conducted to confirm these findings.

More details about the experiment and the implications of the results are given in the attached report.

Overview of Presentations and Talks arising from the Project

- February 1997: "The philosophical implications of precognition". Invited talk to Dundee University Philosophy Society.
- August 1997: "Backwards causation, precognition and the intervention paradox" at the Parapsychological Association Annual Convention in Brighton.
- April 1998: "Parapsychology and the Self". Invited talk for the Fundacao Bial's 2nd Symposium on "Beyond and Behind the Brain".
- May 1998: "Independent coding in meta-analysis as improvement in quality". Talk given at the Canadian Society for the History and Philosophy of Science section of the Congress of the Humanities and Social Sciences at the University of Ottawa.
- August 1998: "A meta-analysis of forced-choice experiments comparing clairvoyance and precognition" at the Parapsychology Association's Annual Convention in Halifax, Nova Scotia.
- August 1998: "A guide to independent coding in meta-analysis" at the Parapsychology Association's Annual Convention in Halifax, Nova Scotia.
- September 1998: "Parapsychology and the Self" at the European Society for Psychology and Philosophy in Lisbon.

Overview of Work Submitted for Publication from the Project.

- Steinkamp, F., Milton, J. & Morris, R. L. (in press). A meta-analysis of forced-choice experiments comparing clairvoyance and precognition. *Journal of Parapsychology*, 62, 3-24.
- Steinkamp, F. (submitted). A guide to independent coding in meta-analysis
- Steinkamp, F. (submitted). Taking action on precognitive experiences: Why people act and how acting affects their worldview.
- Steinkamp, F. (submitted). Precognitive experiences: Replicating and extending previous findings.
- Steinkamp, F. (submitted). Testing clairvoyance and precognition by manipulating probabilities. A conceptual assessment of the experimental literature.
- Steinkamp, F. (submitted). Backwards causation and precognition: Problems and paradoxes.