

## **Discuss some of the major methodological issues that have arisen in relation to parapsychological research**

The history of parapsychology highlights a number of methodological issues which, while they recur throughout all areas of psychological research, assume a more exaggerated form in relation to psi. These include the replication problem, publication bias, the inadequacy of controls, experimenter/participant effects and the issue of the 'conclusive' experiment.

Psi as a laboratory effect must be reasonably capable of being observed repeatedly if it is to be studied effectively and understood. Replication of an experimental result by another experimenter reduces the probability of some causal explanations, particularly those related to the honesty or competence of individual experimenters (Rao & Palmer, 1987). Hansel (1980) suggested that the importance of a foolproof experiment recedes as the phenomenon becomes increasingly replicable. Replicability does not necessarily mean that a finding must be reproducible on demand. The important question is whether the evidence overall supports the existence of psi or not. In addition, absolute replication is only possible with a perfect understanding of and control over the critical variables. This understanding is actually the point of conducting research. Rao & Palmer (1987) argue that, once we give up the idea of absolute replication, it is evident that parapsychological phenomena are replicated in a statistically significant sense. Palmer & Utts (1988) reviewed 28 studies using the well-established free-response Ganzfeld technique and found that six out of the ten investigators reported significant results. Even if the 14 studies conducted by the two most successful experimenters are removed from the analysis, the results remain significant. The debate about the Ganzfeld as an appropriate bias-free, fraud-proof technique continues.

Publication bias refers to the claim that non-significant results may systematically go unreported. Parapsychologists are more sensitive to the possible impact of unreported negative results than most other scientists. In the USA, the Parapsychological Association (PA) has advocated publishing all methodologically sound experiments, regardless of the outcome. Since 1976, this policy has been reflected in publications of all affiliated journals and in papers accepted for presentation at annual PA conventions. According to Rao & Palmer (1987), close scrutiny of the field suggests that publication bias cannot explain away the significant number of replications in parapsychology.

Adequacy of controls is a much-debated area of parapsychological research. For example, Blackmore (1995) suggests that only if the targets in extra-sensory perception experiments are properly randomised can any kind of systematic biases be excluded. The Rhines, working throughout the 1930s, conducted a lengthy series of telepathy and clairvoyance experiments and reported results that were way beyond what could be expected by chance (Blackmore, 1995). They claimed that they had established the existence of extra-sensory perception. However, these claims produced considerable opposition from the psychological establishment. For example, were the Rhines' receivers completely physically isolated from the experimenter, so that information couldn't be passed unwittingly by non-conscious cues? Were checks on the data records precise enough to ensure minor errors were not made, either unconsciously or deliberately, to bias the results in a pro-extra-sensory perception direction? The Rhines tightened up their procedures on both counts by firstly separating receiver and experimenter in different buildings, and by secondly arranging independent verification and analysis of the results. As a consequence, the above-chance results became more rare, although they remained sufficiently common to constitute evidence for the existence of extra-sensory perception.

One of the most consistent findings in parapsychological research is that some experimenters, using well-controlled methods, repeatedly produce significant results, while others, using exactly the same methods, consistently produce non-significant results. Experimenter effects have long been recognised, discussed and addressed in parapsychology. Psi-permissive experimenters seem capable of creating a climate in which participants' psi abilities are allowed to express themselves, while psi-inhibitory experimenters have the opposite effect. These differences seem to be related to the degree of pleasantness of the experimental setting for the participant, such that a relaxed participant is more likely to display psi abilities (Crandall, 1985). The experimenter's expectations also seem to relate to these differences such that participants are more likely to display psi abilities if the experimenter expects positive results (Taddonio, 1976). According to Schmiedler (1997), some experimenters have produced particularly high levels of positive results with participants who fail to repeat their performance later. This could be explained in terms of a highly motivated experimenter, who has strong psi abilities him/herself. S/he may somehow transfer these abilities to participants during the course of the experiments. These are referred to as psi-conductive experimenters, and this transfer can distort the experimental findings.

Important individual differences between participants in psi abilities have also been identified. For example, extroverts tend to score more highly in free-response Ganzfeld studies (Honorton *et al.*, 1990), although Morris *et al.* (1995; cited in Hayes, 1998) found a slight positive correlation between introversion and psi success with an artistic population. Also correlated with positive results are whether the individual: has participated in other psi experiments (perhaps because this reduces anxiety); has practised yoga or mediation (these both produce an enhanced state of relaxation); and is highly creative, especially musical (Dalton, 1997; Schlitz & Honorton, 1992).

Parapsychology can be seen as a case-study in conducting science, which is not the unbiased, objective activity many scientists take it to be. Critics of parapsychological research have demanded a 'foolproof' experimental method that would control for all conceivable kinds of error. This means there is an assumption that, at any given time, one can identify all possible sources of error and how to control for them. However, there are no absolutes in science, only probabilities. Schmidt's (1969) random event generator (REG) is regarded by many parapsychologists as constituting a 'conclusive' experiment. It represents one of the major experimental paradigms in contemporary parapsychology and is regarded by most parapsychologists as providing good evidence for psi, but critics disagree. The safest conclusion is that there is no such thing as a fraud-proof experiment.