



## On Evidence

Evidence is a term that requires definition. Evidence is testimony or facts in support of or for a conclusion, and in science it usually means data in support of a hypothesis. Here the hypothesis is that an unknown phenomenon referred to as Ghosts exist; this hypothesis may be called  $H[g]$ .

Hypotheses are usually proposed to explain some phenomenon, and it may be that if  $H[g]$  is true, it would explain many alleged anomalous phenomena reported in various locations. On the other hand, it may be that all the phenomena have simple explanations, and that it is only because of the existence of  $H[g]$  that the phenomena are thought to be anomalous. In that case ghosts do not exist at all and the null hypothesis  $H[0]$  is appropriate.

Many people believe that there is sufficient evidence for the existence of ghosts to satisfy a 'scrupulous historian and researcher'. There may even be sufficient evidence to satisfy an amateur physical scientist, although he might not be the best person to examine the available evidence, much of which involves complex technology and physics.

But what constitutes evidence? As Henry Bauer has noted, it is by no means obvious what is evidence and what is not; what is thought to be evidence by one person will be thought to be irrelevant by another. Further, much of the evidence for ghosts is circumstantial and it is not easy to get access to the original evidence. It seems sensible to take as the primary evidence that which is presented by the majority of the ghost-hunters (necessarily believers in the existence of ghosts).

However for completeness we must acknowledge all known reported evidence in a case, some of which is already repudiated by experience. Discarded evidence is given less space than that which the ghost-hunters themselves consider important. The onus of proof is always on those who claim to have discovered an anomaly, and in this case it rests on those who claim to have evidence for the existence of ghosts.

Despite the fact that they have not thoroughly proved their case, the evidence they present deserves to be examined.

Something needs to be said about negative evidence. Modern science regards a hypothesis as scientific (i.e. in the true spirit of science) if it produces testable predictions. If the tests produce a positive result then that does not prove the hypothesis is correct, although it might be; it only shows that it has not been found to be incorrect. If the tests produce a negative result, that does not mean the hypothesis was false, although it might be. Falsification only means that the hypothesis has been contradicted in given conditions. Nevertheless evidence inconsistent with the hypothesis is usually taken as a falsification. Here we have two and only two, rival hypotheses  $H[g]$  and  $H[0]$ . Each makes a prediction, the hypotheses are testable (and so scientific). In fact they are testable by the same experiment namely a search for ghosts.

Short of such a conclusive test, there is bound to be what is considered to be incidental positive and negative evidence, but the negative evidence tends to be overlooked.

Thousands of people each year hunt for ghosts and do not see ghosts; hundreds take photographs

which do not show ghosts. Here we can only deal with the negative evidence produced by the failure of purposeful searches, but when considering the positive evidence (much of which will turn out to be negative) researchers should remember its relationship to a mass of unrecorded negative evidence.

Strictly speaking evidence is not really evidence until it has passed a number of stringent tests. Thus in a court, while a witness may give his evidence, what he says may only be regarded as relevant evidence if it withstands cross examination.

Similarly in science, prima facie evidence must be regarded critically, and only if it withstands that examination can it be regarded as sound evidence. The evidence for ghosts stands as prima facie evidence until it has been examined, and it remains to be seen whether or not, after examination, there is any good evidence for the existence of ghosts.