

Tutorial 7 Model Answers

1. The four stages of applying **SEARCH** are: i) **S**tate the claim, ii) assess the **E**vidence for the claim, iii) consider **A**lternative hypotheses, and iv) **R**ate, according to **C**riteria for good explanation, each **H**ypothesis.
2. Lydecker claims to communicate with animals using ESP but offers no evidence for this claim. Alternative hypotheses are that she was delusional, or that she invented the story because she was concerned that the dog would be destroyed, or that she makes a living hustling gullible pet owners. Applying the Criteria for a Good Explanation, we find no mechanism, no (novel) predictions, a lack of compatibility with what we already know, and a complete lack of explanatory power. The alternative hypotheses do much better against these criteria. The police sergeant's response is an *Argument from Ignorance*.
3. a) The *claim* is that objects such as rocks can “record” events and emotions. The *evidence* for this claim is reports of ghost sightings that involve “re-enactments of battles, deaths, or murders”. *Alternative hypotheses* include hallucinations, or the misinterpretation of natural phenomena, such as atmospheric effects. No *mechanism* for the recording of events by natural objects is provided, apart from the reference to video recording, which doesn't help. It is difficult to see how you would test this claim, which is far from *conservative*. It is also quite narrow in *scope*, given that it targets only one kind of ghost sighting. The alternatives fare better. Hallucinations or fanciful experiences can be triggered by stress or can result from neurological damage or altered brain chemistry. These mechanisms are conservative, in that they are consistent with a swath of other results in psychology and neuroscience. Moreover, they can be applied to a great many different phenomena that have traditionally been explained in supernatural terms.

b) Very similar remarks apply to this case. Compared to commonsense accounts of dreaming, positing an astral body is a radical idea. A claim like this requires extraordinary evidence: evidence that resists *all* alternative naturalistic explanations. Perhaps the book from which the quotation is drawn does attempt to meet this stringent condition but, as presented, we are offered no reason to even consider the hypothesis.
4. The SEARCH Strategy.
 - i) *State the claim*. Humans have been visited by extraterrestrials.
 - ii) *Examine the Evidence/Argument*. Structures built in ancient times, such as the Egyptian pyramids, Stonehenge, the rustproof Iron pillar of New Delhi, and so on, required technology that was not available at the time. There are also artefacts whose origins are unclear, such as the markings on the Nazca plain in Peru, and a very accurate map allegedly made in 1513 which the author claims could only have been drawn by someone situated very high above the landscape. All of these mysteries can be resolved by a single hypothesis: that alien astronauts have visited our planet from time to time and shared their (more advanced) technology with early builders, blacksmiths, mapmakers, etc.

- ii) *Consider Alternative hypotheses.* The construction of ancient monuments may have relied on huge amounts of manpower. Rulers in those times could afford the materials and had an unlimited supply of slaves at no cost. In addition, modern reconstructions show that the required techniques were available and required no equipment not available at the time. Regarding the markings on the Nazca plain, these could have almost any use, meaning, or significance. The Piri Reis map could have been made by anyone with a good visual imagination or the ability to apply the techniques of projective geometry which we know were in use much earlier than 1513 by Roman architects.
- iv) *Rate, according to Criteria of good explanation, each Hypothesis.* The author's hypothesis of extraterrestrial visitors needs to explain how they got here. We know of no *mechanism* by which a spaceship could travel the kinds of distances that would be involved. The claim is *unfalsifiable*. The hypothesis is not simple as it postulates spacecraft that contradict everything we know about space and time. The alternatives hypotheses presented here offer means or mechanisms (manpower, susceptibility of humans to superstition, visual imagination, knowledge of projective geometry). They have predictive power. For example, they suggest that wherever we find large ancient monuments, we will also find evidence of slavery. They suggest that some people can visualize aerial views of objects based only on terrestrial observation. Each of these predictions is falsifiable. In fact, there is evidence to suggest that all of them are true. The alternative hypotheses are simple and conservative as they do not postulate entities unknown to science.

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