

“Struck by Lightning” Supplementary Materials

Group Exercise about Medical Studies

Working cooperatively with your group, consider the following questions.

1. Suppose a medical study comes to certain conclusions, but there is probability p that the conclusions are invalid. How small do you think p should have to be, before the study’s findings could be published in a medical journal? Do you know what the currently accepted value of p is?

2. Suppose you had a bad cold, and a doctor wanted you to take a certain pill. The doctor said that a medical study had determined that the pill would cure your cold immediately, and was perfectly safe. However, there was probability p that the study’s conclusions were invalid. How small would p have to be, before you would agree to take the pill?

3. Suppose someone claims they have the power to make a coin come up heads every time, and then proceeds to get two heads in a row. Would you believe that they had the power? Explain.

Part II (after instructor’s demonstration):

4. Which of the following explanations do you believe best explains the instructor’s coin flip results:

- (a) He just got lucky.
- (b) He is using a two-headed coin.
- (c) He is flipping the coin just so, to make it come up heads.
- (d) He is *catching* the coin just so, to make it come up heads.
- (e) He is using some other physical trick, to make the coin come up heads.
- (f) He has supernatural powers, by which he is *forcing* the coin to come up heads.