

Answer the questions
about a

Philosophy



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Ch. 12 In this chapter, Dr. Sagan shares some thoughts on the corruption of science for marketing purposes, specifically within the pharmaceutical industry. In this discussion, Dr. Sagan tells us about an apparent relationship between acetaminophen and kidney failure. However, he pauses to note that it is not clear whether the relationship is one of correlation or causation? What is the difference between these two concepts and why is it so important that we understand it? What does Dr. Sagan's mentioning this point reflect about his character in this discussion? Does this point help or hurt his arguments? Is he more concerned with making a point or with getting the facts straight?

Dr. Sagan explores the tactical use of science by individuals to give a deceptive view of things. By highlighting the two concepts in correlation and causation, he asserts the fact that corruption of science for marketing purposes is a reality. While Causation refers to the fact that something causes an effect, or the action of causing an effect, Correlation shows a relationship in which two or more things are mutual or complementary, or one thing is caused by another. His emphasis on pseudoscience portrays his inquisitive character as far as science and humanity is concerned. This supports his various arguments on pseudoscience and helps him get facts straight on skeptical thinking as a tool to test new ideas.

2. Speaking of causation, among many other helpful points, Dr. Sagan's Baloney Detection Kit advises us to control for variables and effects in order to isolate and understand causal relationships. Why is this so important? What do we risk if we don't properly control experiments? Now, let's think of this in the leadership sense. Your employee morale is low, so you've decided to implement three new benefits to try and improve things: 1)

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free lunches, 2) 401Ks, and 3) yoga classes. Explain how you would design a controlled experiment with these three initiatives to isolate and understand their effects on morale.

Control for variables is critical in testing the feasibility of the new idea. In respect of controlling experiments, the findings leave option for comparison and informed decision on conclusion. According to the view of Dr. Sagan, it is common to realize that improper control experiments will lead to unrealistic results which have significant challenge in sustainability of the given scientific idea. Designing a control experiment constitutes;

- Taking two groups in which one group take free lunches, have 401Ks, and go for yoga classes while the other group will not be exposed to the same conditions
- Comparative analysis of their productivity will deliver the best result on which to make a decision.

3. In the following paragraph, Dr. Sagan talks about double blind experimental procedures to ensure optimal guard against the biases that weve been talking about. What does double blind mean? Why is it important to the integrity of an experiment? Hospitality researchers use double blind methods in peer review. What is a double-blind peer review? How does it benefit our research as social scientists?

In respect of Dr. Sagan's opinion, it is critical to note that double-blind is an experimental procedure in which neither the subjects of the experiment nor the persons administering the experiment know the critical aspects of the experiment. It boosts the integrity of the experiment such that the outcome is representative of the actual event. Double-blind peer review is a concept in which the identities of the author and referees are both hidden, making it

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easier for reviewers to focus on the paper itself without being swayed by any preconceived ideas about the author or his institution. This promotes unbiased critique hence boosts the reliability and validity of the research findings.

3. In Dr. Sagan's list of what not to do, he describes yet another dangerous set of traps for which we must watch vigilantly: misunderstandings of statistics, and the statistics of small numbers. In the first, Dr. Sagan gives an example of a US President's reaction to some troubling information about American intelligence levels. What is wrong with the President's interpretation of the news, and why? In the latter, let's use a business example. Assume you own a restaurant that serves approximately 500 guests per day. You want to get a gauge of customer satisfaction levels. You survey ten customers at random, and 8 out of the 10 indicate being very highly satisfied with their experience, so you conclude that 80% of your customers are highly satisfied. What is wrong with this interpretation, and why?

Dr. Sagan expresses significant concern on misinterpretation of statistics. Experiments are always known to be vulnerable to invalid results if the population sample is not representative of the entire population. It is worth noting that in-depth research study forms the basis of skeptical thinking as is in the words of Dr. Sagan. It is therefore important to take into consideration that the sample population needs to be large enough to exhaustively cover diversity within the population under question. Take a small sample size is likely to yield biased results. Statistics therefore serves better when it is used in line with the reality of diversity within the variables. The case above therefore remains one of the misconceptions that can arise from poor

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statistical application in decision making.

4. Dr. Sagan ends this chapter with a discussion of the tobacco industry, and how science and careful messaging can be used to commit unspeakable acts of immorality in the interest of financial profits, and at tremendous costs. In the 20 or so years that have passed since this book was written, the causal relationship between smoking and cancer has been all but proven, and public policy has been changed to reflect this eventual conclusion. However, what current hot topic issue does this remind you of? (Hint: it might be better described as a "warming" topic than a hot topic). Who are the major players involved here? What do these players have to lose and what would their motivation be for trying to confuse the public concerning the truth? Do you think that a manager's primary loyalty in these types of matters is to the owners of the company for which he or she works? Or to the public in general? Explain your answer.

The incidence of tobacco and its cause-effect relationship with lung cancer is extensively covered by Dr. Sagan to emphasize the corruption of science by profit-minded managers. The commercial aspect of science has overridden the truth as firms manipulate the society against tested and proven scientific ideas while the champion for the nonexistent side. However, it is worth to note that increased media freedom has left a lot of information to members of the public. It is high time the manipulation of proven scientific evidence is brought to end as the perpetrators especially business community. It is indisputable fact that managers serve the interest of the company primarily and manipulates evident scientific realities to woo the public. This explains the biased tobacco advertisements that mislead the society in order to make profits. These are some of the critical skeptical aspects of science that Dr.

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Sagan seeks to explain in his book.

Work cited

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