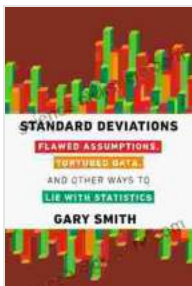


Flawed Assumptions, Tortured Data, and Other Ways to Lie with Statistics

Statistics can be a powerful tool for understanding the world around us. They can help us to make informed decisions, to identify trends, and to predict future events.



Standard Deviations: Flawed Assumptions, Tortured Data, and Other Ways to Lie with Statistics by Gary Smith

★★★★☆ 4.4 out of 5

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However, statistics can also be used to deceive and mislead. By manipulating data or making flawed assumptions, it is possible to create statistics that support almost any claim.

In this article, we will discuss some of the most common ways that statistics can be used to lie.

Flawed Assumptions

One of the most common ways to lie with statistics is to make flawed assumptions about the data.

For example, let's say you want to prove that a particular drug is effective. You conduct a study and find that the drug appears to improve symptoms in patients.

However, you fail to take into account that the patients in your study were not randomly selected. In fact, they were all volunteers who were eager to try the drug.

This means that your results are biased. The patients in your study are not representative of the general population, so you cannot generalize your findings to all patients.

Another example of a flawed assumption is assuming that a correlation between two variables means that one variable causes the other.

For example, let's say you find that people who eat a lot of ice cream are more likely to be overweight.

This does not mean that eating ice cream causes weight gain. It is possible that there is another factor that is causing both ice cream consumption and weight gain.

Tortured Data

Another way to lie with statistics is to torture the data.

Torturing data means manipulating the data in a way that makes it appear to support your claim.

For example, let's say you want to prove that a particular politician is unpopular.

You could torture the data by only reporting the results of polls that show the politician with a low approval rating.

You could also ignore polls that show the politician with a high approval rating, or you could weight the results of the polls in a way that makes the politician appear more unpopular.

Torturing data is a serious ethical violation. It is important to be honest and transparent about the data you are using and the methods you are using to analyze it.

Other Ways to Lie with Statistics

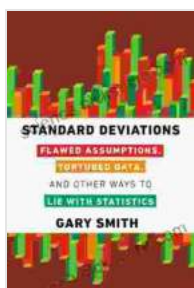
There are many other ways to lie with statistics, including:

- **Cherry-picking data:** This involves selecting only the data that supports your claim and ignoring the data that does not.
- **Misleading graphs:** This involves using graphs that are designed to make your claim appear more convincing, even if the data does not support it.
- **Using small sample sizes:** This can make it more difficult to detect patterns in the data and to generalize your findings to the general population.
- **Failing to disclose important information:** This can make it difficult for others to evaluate your claims and to determine if they are valid.

Statistics can be a powerful tool for understanding the world around us. However, they can also be used to deceive and mislead.

It is important to be aware of the different ways that statistics can be used to lie and to be critical of the statistics that you encounter.

By being skeptical and by asking questions, you can help to ensure that you are not being misled by statistics.



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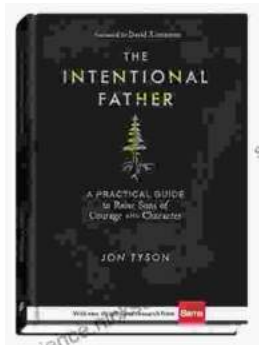
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