Behind the Headlines: The Truth About Media and Misused Statistics

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ABSTRACT

We encounter statistics on a daily basis, whether in news reports, political speeches, or advertisements, and they often appear credible simply because they are numerical data. However, it is important to recognize that statistics can be manipulated, distorted, or misrepresented to serve a specific purpose. This report examines how statistics can be manipulated to deceive people, even when the numbers themselves are accurate. It dissects common tactics such as employing biased survey questions, confusing correlation with causation, selectively choosing data, and manipulating graphs to present misleading information. Real-life instances, like immigration survey data and a toothpaste commercial, demonstrate how numbers can be manipulated to create a misleading perception. Ultimately, it's not about blindly accepting all statistics. It's about being able to identify when they are being used unfairly and asking the right questions to gain a comprehensive understanding of the situation.

INTRODUCTION

Statistics is around us in various forms. It is a part of news reports, advertisements, and political debates. Its presence is also integral on social media platforms. Numbers tend to be broadly trusted due to their perceived objectivity and factual nature. However, it is imperative to note that statistics could sometimes be misleading, and

in some cases, that is precisely the intention. Here are some typical methods by which statistics could be misleading and strategies for their identification and prevention:

1: Unfair or deceptive data

(Source:https://tse2.mm.bing.net/th?id=OIP.cnwovFFzPxJlnff7l1Ga2AHaD4&pid=Api Retrieved on 25.04.2025 at 8:33pm)

One of the simplest methods to generate a misleading statistic is by gathering data from an incorrect group or posing questions that steer individuals towards a predetermined response.

Consider the case of a Colgate toothpaste advertisement that boasted, '80% of dentists recommend Colgate.' Initially, this statistic appears impressive, but upon further investigation, it becomes evident that dentists in the survey were allowed to recommend multiple brands. The advertisement was not deceptive, but it failed to mention that other brands were also suggested with equal frequency (BBC, 2007). This made it sound like Colgate was the best choice, even though it wasn't necessarily preferred over other brands.

The accuracy of surveys can be compromised by the way questions are phrased. For example, asking, 'Do you support raising taxes so people who don't work can get free money?' versus 'Do you support government assistance for unemployed citizens looking for work?' The wording leads the respondent in different directions — and survey creators know it.

2: Distinguishing between association and causation

In a circumstance where two events occur simultaneously, it does not necessarily mean that one event could cause the other. This is a logical error frequently encountered while analyzing statistical data. Consider the case of ice cream sales and shark attacks, we can see that both of these increase during summer. However, one does not cause the other. The primary factor is warm weather — more individuals visit the beach (where shark attacks are more probable) and also purchase ice cream (Vigen, 2015). The connection is genuine, but it doesn't imply that one event is causing the other. This type of error can be observed in politics, health claims, and business decisions, where unrelated trends are mistakenly presented as cause-and-effect relationships.

3: Selective Presentation of Information.

Cherry-picking can be explained as a circumstance where a person is selectively presenting data that aligns with their point of view, without considering the information that contradicts it. For instance, a politician could demonstrate that crime rates decreased during their tenure — but fail to mention that they had been declining for several years prior. Or a business might emphasize one month of exceptional customer satisfaction while disregarding months of negative feedback.

This approach presents a one-sided account that appears factual but fails to provide essential context (Huff, 1954).

4: Distorted charts and images.

Data can be simplified using graphs. However, it can also be manipulated. By adjusting the y-axis scale, omitting labels, or skipping

numbers, a graph can exaggerate the significance of minor changes or downplay the importance of significant changes.

A popular technique is to begin the y-axis at a value greater than zero, which magnifies the disparities. These strategies are commonly employed in political campaigns and business promotions, where the visual appeal takes precedence over factual accuracy (Tufte, 1983).

A real example: immigration statistics in the media.

One common way the media can mislead the public — without actually lying — is by framing statistics in a selective or emotionally charged way. A striking example comes from a 2019 article by Breitbart News titled ***'Pew: Majority of Americans Do Not Want Increased Immigration***' (Huseman, 2019). The headline seems straightforward, even factual.

If a closer look has to be taken at the data, it can be observed that the article referenced a Pew Research Center survey, which asked Americans about their views on immigration. The findings were:

- **24%** said they wanted **immigration to increase.**
- **31%** said they wanted it to **decrease.**
- **39%** said they wanted **no changes (Pew Research Center, 2018)**

Breitbart added the 31% who wanted less immigration to the 39% who wanted no change to claim that 70% of Americans opposed increasing immigration. Technically, that's not incorrect — but it's a misleading picture. The 39% who wanted no change aren't necessarily 'opposed' to increased immigration; they're simply content with the current level. Their views are more neutral than negative. Furthermore, one could just as easily argue that 63% of Americans (24% increase + 39% no change) do not want immigration to decrease. While both the interpretations are 'true,' they lead to different emotional reactions.

Tips to Prevent Being Deceived

One does not have to be a mathematician to have to question numerical data. When encountering a statistic, it is advisable to ask a few fundamental questions to gain a better understanding of its context and implications.

- Who collected the data?
- Is the graph scaled properly and labelled?

Taking a moment to delve deeper than just the headline can provide valuable insights.

CONCLUSION

Statistics are formidable instruments. They assist us in comprehending trends, resolving issues, and making informed choices. However, when used recklessly or intentionally, they can result in confusion, poor choices, and inaccurate beliefs. Whether it's an advertisement, a news report, or a political statement, always take the time to examine the numbers more closely. The truth may be hidden beneath the surface — but it's not always immediately apparent.

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