The Misuse of Statistics -- The Forms it Takes and the Conequences it Produces

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1. *What Qualifies as Statistical Misuse?*

Most people may view statistics as a complex and uninteresting subject, whole others feel strongly that statistics are necessary to understand the world around us. While statistics can be used to support either positive or negative claims, the misuse of statistics is a major problem that often goes unnoticed.

The misuse of statistics has become a prevalent issue that impacts society on a larger scale than most people know. The reason for this is that statistics is the decision-making method of choice for businesses, governments, and researchers to gain information about an unknown process in an attempt to gain previously unknown information for some sort of benefit, from a competitive advantage in business to proving a previously unknown property in the context of a scientific experiment.

Given this fact, it makes sense that, in at least some cases, attempts are made by statistical practitioners (mostly at the direction of their superiors) to produce false statistics in an attempt to manipulate their desired audience. This tactic, while deceitful, is surprisingly effective in helping certain people and organizations obtain their goals. Often, statistics meant to be viewed by the public are taken as a reflection of what society thinks is the ‘normal’ way to think in the context of collective belief. While there is no definite way to predict unknown information exactly, the random, uncertain nature of statistics is often exploited for selfish reasons to attempt to manipulate a group of people into changing their belief system in such a way that benefits the practitioner of achieving the goals of their reality. Specifically, it harms the recipient of the information by misaligning their belief system so as to not match reality. This is cruel because revoking such information is like big tobacco selling the customer cigarettes: you could be killing them, and you probably are. But then, since they *might* not be killing themselves (Or at least can’t prove it), pretend cigarettes are a healthy tool to relax to make a quick but unethical buck. Since the recipient *might* be fine, anything is ethically permissible based solely on plausible deniability. I claim this Is unacceptable and may be able to be improved by viewing statistics from the perspective of virtue ethics.

2. Examples:

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The first example is the case of Dr. Andrew Wakefield, a British
doctor who published a now-discredited study linking the MMR (mumps,
measles, rubella) vaccine to autism. Wakefield's study was based on
only 12 cases, and it was later revealed that he had falsified data
and had financial conflicts of interest. However, his study caused a
great deal of public fear and skepticism about the MMR vaccine,
leading to a decline in vaccination rates and an increase in measles
outbreaks. The ethical consequences of Wakefield's misuse of
statistics were potentially severe, as his study caused many people
to forego a life-saving vaccine out of fear.


The second example is the rising use of false or misleading
statistics in political campaigns. For instance, during the 2016 U.S.
presidential election, then-candidate Donald Trump repeatedly claimed
that the murder rate was the highest it had been in 47 years when it
was near an all-time low. Trump's false claim was based on a cherry-
picked statistic, creating fear and division among the electorate.
The ethical consequences of this misuse of statistics were that it
misled people about an important issue and contributed to a toxic
political environment.
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Both of these examples illustrate how the misuse of statistics can have serious ethical consequences. In the first case, innocent people were put at risk by a doctor who falsified data; in the second case, people were misled about an important issue by a political candidate. In both cases, the misuse of statistics could certainly cause harm.

3. *The Role of Philosophical Frameworks*

To analyze the ethics associated with the following situations, we must first look at the problems from a philosophical point of view. To do this, we must consider the main philosophical frameworks at play:

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1. Utilitarianism is the belief that the morally correct thing to do
is the one that will produce the most good for the most people. This
could mean choosing the option that will cause the least suffering or
that will ideally provide the most happiness.


2. Emmanuel Kant is the father of Deontology, which is the belief
that certain things are just right or wrong — and that we have a
moral obligation to do what is right and distinctly avoid what is
wrong. This principle could be exemplified by always telling the
truth or never stealing.


3. Virtue Ethics, pioneered by the philosopher Aristotle, is the
belief that the morally correct thing to do is the one that will help
us become better people. This could mean choosing the option that
will make us more courageous or honest.
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When considering the first case of statistical misuse, Utilitarianism⊠⊠ seems rampant in both. The overarching theme of the ethical dilemmas is using misleading facts to benefit the careers of both Dr. Andrew Wakefield and Donald Trump. Andrew Gelman decided to apply a cost/benefit analysis to his report, causing him to ignore the reality of a correct and truthful experiment in the pursuit of profit. The consequences were massive because they conjured the belief that vaccines are generally bad in millions worldwide. Dr. Andrew Gelman helped contribute to the dangerous and illogical behavior we see today with anti-vaxxers during the COVID-19 pandemic. Trump, on the other hand, used misinformation to exploit the low-hanging political tactic of scapegoating minorities to make the average white voter believe the world outside is full of criminals and murderers when it, in fact, is not. The former president only had to make people remember those statistics for a limited time: they just needed to believe it during the election. Again, the “shortcutting or lying for profit” principle was heavily at play in the minds of Trump and his campaign managers. But, to win, he realized if most white voters held the belief that crime in the US was on a dangerous upward trajectory, a gigantic lie was justified to benefit one man at the expense of a population.

3.1. *The Importance of Intentionality*

Abuse of statistics can result in unintentional misrepresentation and incorrect conclusions. When data is analyzed and presented without considering the factors that can affect its accuracy, there is a greater chance that the results will be skewed. Intentionality matters because it helps ensure that the data is properly interpreted and that its conclusions are accurate.

In some cases, misinterpretation can lead to decision-makers basing their decisions on incomplete information, leading to incorrect, suboptimal decisions. However, this is understandable to some degree. Since statistics as a theory has been an ongoing work in progress for centuries, when the thought of as the best tool we have as humans to predict the unknown but certainly must be interpreted with a tolerance for ambiguity, getting an inaccurate answer is entirely possible. However, a statistical practitioner knows the inter-workings of a model and can certainly adjust the results the way they want — at least more so than the average eventual viewer of the statistical report.

With that being said intention does matter. Anyone could come across a dilemma where they could either be honest or decide to lie. Maybe they found a hundred dollar bill on the ground and can either keep it or hand it back to its owner. Perhaps the owner was far gone, or maybe they had just left. The utilitarian would most likely keep the bill, justifying the person shouldn't have dropped it — even in an understandable circumstance. The deontologist would unrealistically run and give the bill back seeing it as their duty. But despite the effort, their attempt to convince others will probably fall short due to the self-righteous nature of deontology which is ultimately hypocritical. However, the virtue ethicist would simply just try to give the bill back. Maybe they wouldn't end up achieving the goal of getting the bill back to the owner or feel good from a hundred dollar bonus, but they would figure in the long run, their behavior would likely return the most bills to their owner while respecting themselves as to not run ridiculous distances. This is someone who Aristotle thought was an example and that if everyone simply cared about improving the ways in which they acted or thought, society would certainly benefit a great deal.

4. *Conclusion*

Virtue ethics is one approach that can be used to grapple with the ethical implications of data and statistics. This approach emphasizes the character of the individual statistician and the need to cultivate virtue. The aim is to produce statisticians who are honest and trustworthy and who use statistics in an ethical way. This is important because statisticians have the power to shape public opinion and policy. If we want to ensure that statistics are used for good, then we need to ensure that the people producing and using them are virtuous. Perhaps statistical fiduciary responsibilities are in order.

5. *Sources*

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