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How News Media Shaped History

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 A Mathematician Reads The Newspaper

“It is by turns amusing and depressing to track the way descriptions of numerical relations depend on the author’s intentions” (p. 79). This is what John Allen Paulos, in his book *A Mathematician Reads The Newspaper,* emphasizes throughout a compilation of 53 brief essays on how mathematics is used in the media, especially newspapers, and how these numbers are misleading or imprecise, either voluntarily or purposely, and its impact on the news itself. For example, an outlet that wants to show seriousness in the topic will provide exact numbers, while one who wants to downplay the situation will provide percentages. Paulos essays are written in newspaper format and cover a wide array of topics such as politics, economics, business, social issues, lifestyle, science, medicine, the environment, food, and sports. In all of these topics, Paulos discusses how mathematics is not only vital in reporting these topics, but if used wrongly, can be misleading and have negative effects on those who read it. Paulos also repetitively emphasizes how numbers are used to enhance the reports and change public opinion and outcomes over important issues. Moreover, the author offers suggestions to newspaper readers on how to read the news with another perspective in order to gain new insights and provide an alternative viewpoint.

One of the essays, *Cellular Phones Tied to Brain Cancer*, Paulos starts with offering the reader a perspective on how the same number could be physically represented in different ways and one way may look like its more even if it’s the same. This analogy allows to reader to start thinking about how news outlets show figures when reporting, and how the way the present these numbers affects the way the reader reacts to the news. In this essay the author states: “A related equivocation arises when one is discussing diseases, accidents, or other misfortunes and their consequences. If one whishes to emphasize the severity of a problem, one will talk about the number of people afflicted nationally. If one wants to downplay the problem, one will probably speak about the incidence rate. Hence, if 1 out of 100,000 people suffer from malady, there will be 2,500 cases nationwide. The latter figure seems more alarming and will be stressed by maximizers. Minimizers, on the other hand, might invoke the image of a crowded baseball stadium during a World Series game and then point out that only one person in two such stadiums suffers from the misfortune in question” (p. 79-80) This is one of the examples the author gives in terms of perspective, and how numbers can help achieve the news outlets goal. Same numbers, represented in different ways can undermine or maximize the effects. If people hear that there are 2,500 cases nationwide, because of the big number, most of them would probably start panicking. However, if the government wants to downplay it in order to decrease public hysteria, it will most likely use the baseball stadium example, which makes it look like not a lot of people have the malady. It is a psychological approach when using numbers. Big numbers make us think it is more while a smaller number, even if it represents the same value, may not alarm us as much.

Another example from the book comes from the essay *Ranking Health Risks: Experts and Laymen Differ*, in which the author talks about the effects of health statistics on misinformation, which ultimately causes misconceptions. “If a study indicates that 36% of ethnic group A and 45% of ethnic group B improve from some treatment, and a second study indicates that 60% of group A and 65% of group B improve, it is tempting but incorrect to conclude that a higher percentage of group B improves. The first study might, for example, have included 100 members of group A and 1,000 members of group B, while in the second study, these numbers might have been reversed. If so, how many of the 1,100 members of each ethnic group improved?” (p.135) In this one, the author points out that sometimes the information published, even though it has numbers and is correct, missing important details may undermine its validity. Perhaps it was done like this in order to back up validity of a drug that a company wants on the market or to change public opinion about a treatment. Yet, this shows that numbers may be manipulated in such ways in order to get a desired result, whether it is a change in public opinion, change in outcomes, or to create a bigger effect in the news. Another example the author mentions in another section is when governments report war death tolls. Most of the time, the government will report exact numbers of its own civilians but will look to minimize the number of deaths from the enemy in order to gain sympathy. However, if the government wants to look like it’s “winning” the war, it will do the opposite. It’s interesting to see how numbers can undermine, maximize, and psychologically affect the readers and even a whole nation.

Paulos concludes that journalists should be trained to report more than the traditional questions of who, what, where, when, why, and how and should also address how many, how likely, what fraction, as well as showing how quantities relate to other similar quantities and how quickly numbers are changing. He also says that we, as readers, should be more careful and be able to discern incomplete pieces of numeric information and to pay close attention to the report in order to get a full, correct story.

On the other hand, the book *Mightier Than The Sword: How the News Media Have Shaped American History* by Rodgers Streitmatter also shows how news outlets, especially newspapers can change and shape public opinion. For example, on Chapter 5: Pushing America Toward An International War, Streitmatter shows how Hearst’s exaggerations of the accounts in Cuba and criticism towards the American governments fail to act on it lead to the Spanish-American War in 1898. Much like in the essay *Cellular Phones Tied to Brain Cancer*, the exaggeration in the report not only changed public opinion, but led to a change in events and eventually, in history. Another example is found in Chapter 1 of *Mightier Than The Sword* and talks about how Adams used his newspaper titled “Journal of Occurrences” to fume anti-British sentiment throughout the American colonies. Its tactic was to report incidences and misdeeds done by the British soldiers to the American people, yet more often than not, these stories were exaggerated, altered, or had no proof. Much like the essay *Ranking Health Risks: Experts and Laymen Differ*, even though the events happened, the full details were probably left out purposely in order to benefit the editor’s viewpoint and enhance their agendas.

Even though *A Mathematician Reads the Newspaper* focuses on how numbers in a news can be manipulated and misrepresented, it also shows how those numbers in the report can change and shape an individual and later, a nation’s opinions and actions. Just like *Mightier Than The Sword: How the News Media Have Shaped American History*, both books talk about the influence the media, especially newspapers, have on people and events. The difference between the two books is the focus on how media can shape it. Paulos focuses on the numbers in the report while Streitmatter focuses on different aspects like the way the news was written, the persistence, the innovations in the way newspapers were written and published, the topics, and overall the history of it. Yet, without a doubt, both books show evidence that the news outlets have a huge effect and can exert great influence over just anyone and anything, including its own government.

 References:

 *A Mathematician Reads the Newspaper.* Paulos, J. Anchor Books, Doubleday (1995).

 *Mightier Than The Sword: How the News Media Have Shaped American History*. Streitmatter, R. Westview Press. (2016).