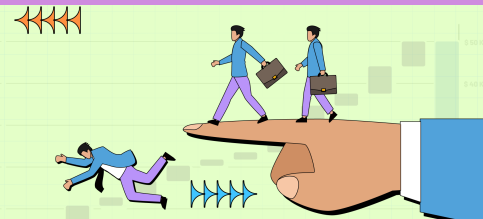**Misleading Statistics in the Media: Examples and How to Spot Them**

PART 2: How statistics can be misleading

1. Consider the following problem and make a decision according to the data provided. Justify.
Imagine you need to choose between two hospitals for an elderly relative's surgery. Out of each hospital's last 1000 patients, 900 survived at Hospital A, while only 800 survived at Hospital B. Which is the better choice?

2. What could be wrong about one's spontaneous decision in that particular case?

3. Actually, not all patients arrive at the hospital with the same level of health.
Let's divide each hospital's last 1000 patients into those who arrived in good health and those who arrived in poor health. Hospital A had only 100 patients who arrived in poor health, of which 30 survived. But Hospital B had 400, and they were able to save 210. Which hospital should one choose? Describe your calculations.

4. What contradiction do the results raise? Do you know what to call such a phenomenon?
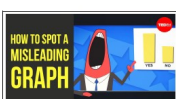
5. What factor should you take into account in the following cases before drawing definitive conclusions? Which is the lurking variable?

a. One study in the UK appeared to show that smokers had a higher survival rate than non-smokers over a twenty-year time period.	b. An analysis of Florida's death penalty cases seemed to reveal no racial disparity in sentencing between black and white defendants convicted of murder.

PART 3: How to spot a misleading graph

1. In each case, how would you manipulate people into believing what you want? What kind of misleading graph should you resort to? What strategy can you rely upon to distort the information?
Clearly identify the effect expected in order to design the misleading graph.

a. The brand Chevy wants to claim in an ad they make the most reliable trucks in America: 98% of all Chevy trucks sold in the last 10 years are still on the road. The data for the other brands are: 97.5% for Ford, 96.5% for Toyota and 95.5% for Nissan/Datsun. How can they impress customers?	b. Fox News aims at highlighting a dramatic increase in American unemployment from 2008 to 2010.
c. To sell more expensive ads, you are required to make it look like the Super Bowl's popularity is exploding by presenting data related to its viewership.	d. A global warming sceptic organization wants you to present the evolution of annual global ocean average temperatures from 1880 to 2016.