## Case Study 1: 1936 Literary Digest Poll

In 1936, Alfred Landon (R) ran against Franklin Roosevelt (D) for president. Literary Digest magazine sent sample ballots to 10 million Americans to try to predict the results in advance.

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Why were they so far off?

# Large samples don't fix bias!

Here's how they found people to contact:

1. Phone book listings
2. Magazine subscriptions
3. Club rosters

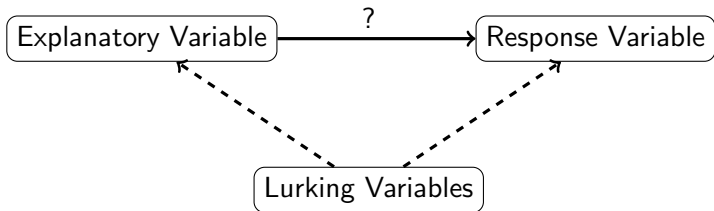Also, only 2.4 million sample ballots were returned.

# Case Study 2: Kristin Gilbert Murder Trial

Kristin Gilbert was a nurse in Massachusetts who was accused of murdering patients at the Hospital where she worked. The following was part of the evidence against here:

Over the 18-month period that she worked at the Hospital, she was on duty of 257 eight hour shifts. During these shifts, 40 patients died. On the 1384 shifts she wasn't working, only 34 patients died.

# Association is not causation!

# Case Study 3: Zinc for Colds

A 1999 study found that Zinc nasal sprays are effective in reducing the duration of colds. The study recruited 104 volunteers who agreed to visit the researchers' lab within 24-hours of developing cold symptoms. They were then randomly assigned to 3 treatment groups:

1. Full dose zinc nasal spray
2. Low dose zinc nasal spray
3. Placebo

Symptoms lasted 1.5 days on average for the full dosage group, 3.5 days for the low dose group, and 10 days for the placebo group.