



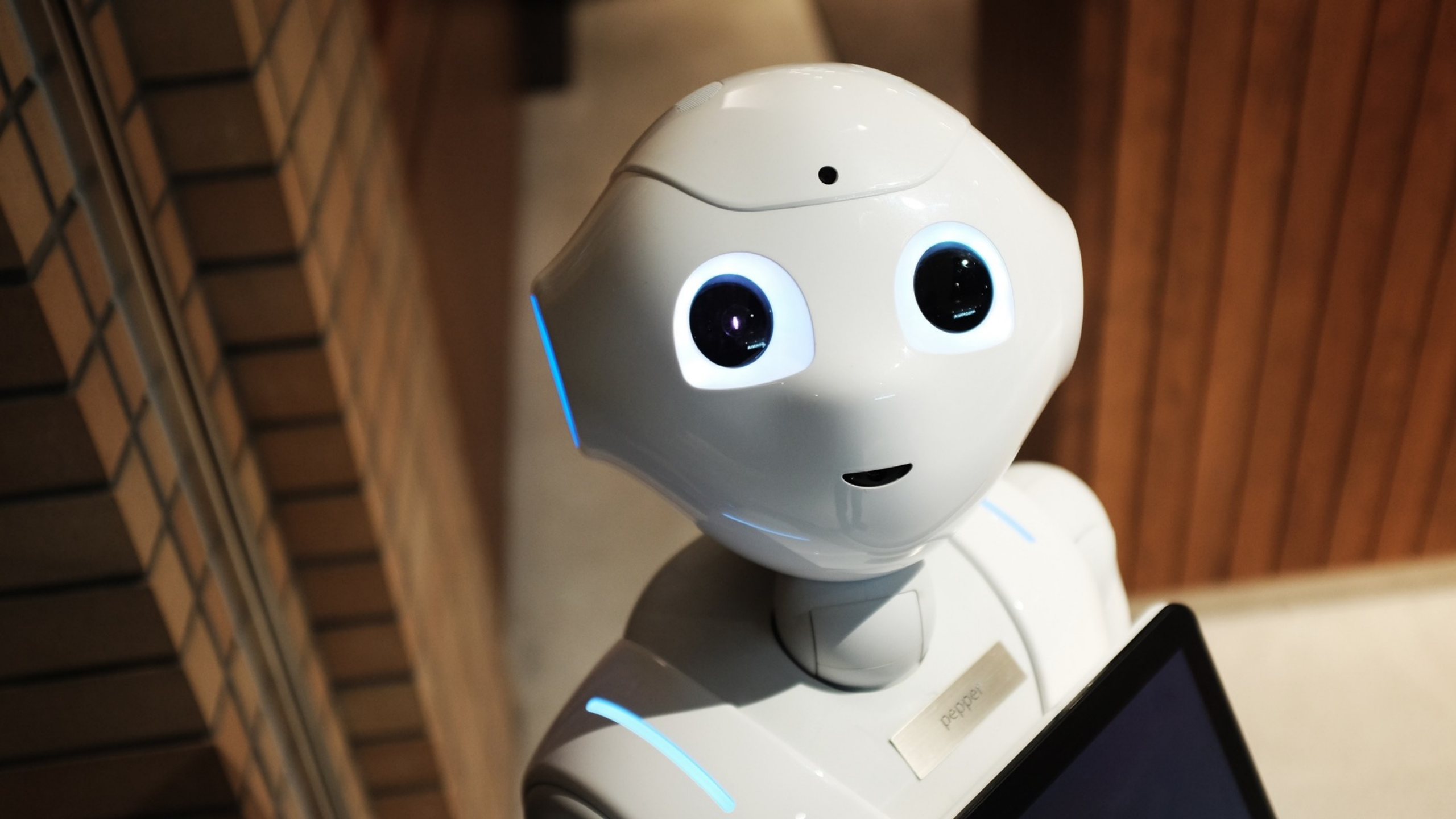
Hacking the News Story

Regina Nuzzo

Science Writer

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USCOTS 2023



pepper









UGH, PEOPLE ARE MAD AT ME AGAIN
BECAUSE THEY DON'T READ CAREFULLY.

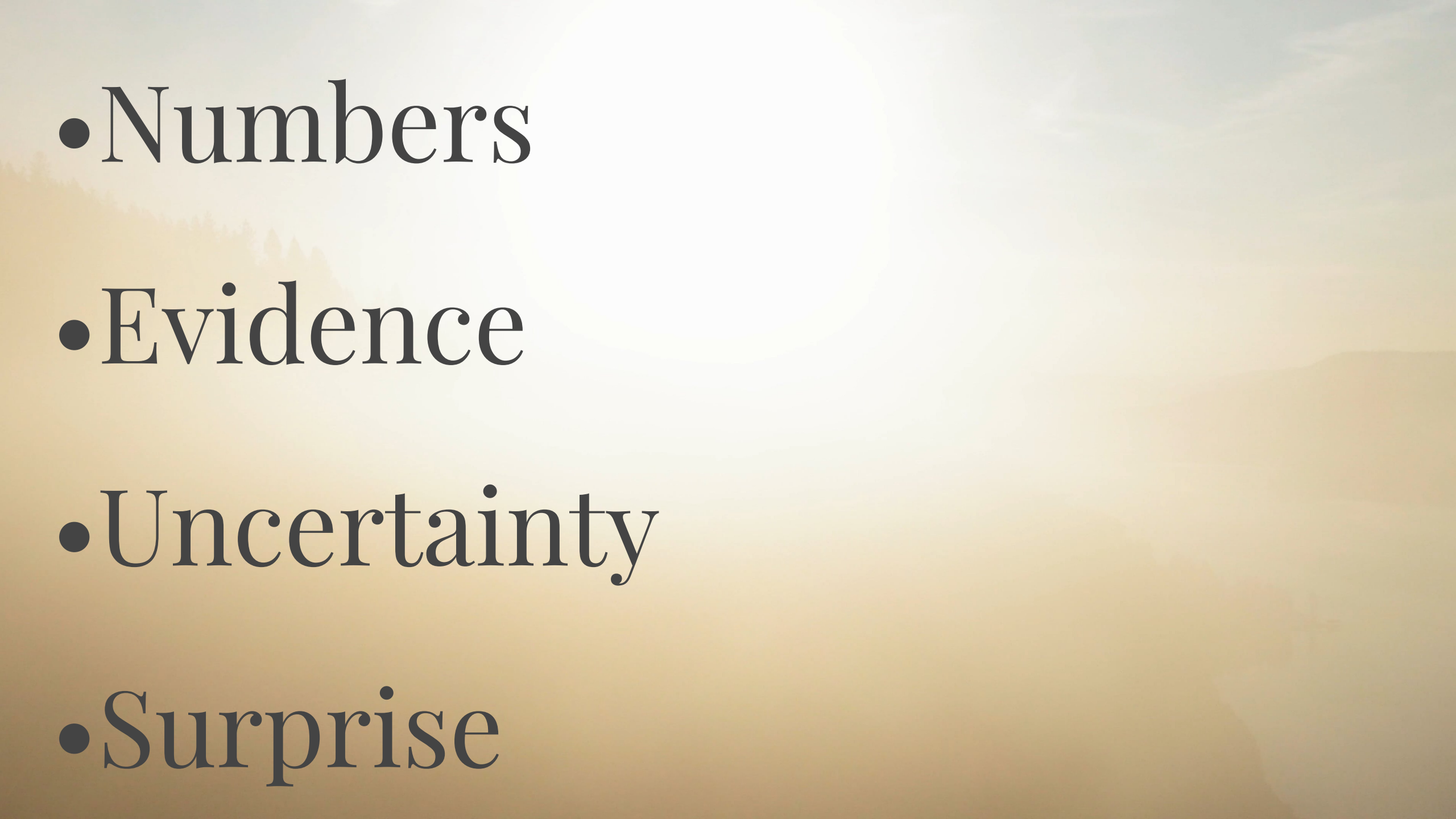
I'M BEING PERFECTLY CLEAR.
IT'S NOT *MY* FAULT IF EVERYONE
MISINTERPRETS WHAT I SAY.

WOW, SOUNDS LIKE YOU'RE
GREAT AT COMMUNICATING,
AN ACTIVITY THAT FAMOUSLY
INVOLVES JUST ONE PERSON.





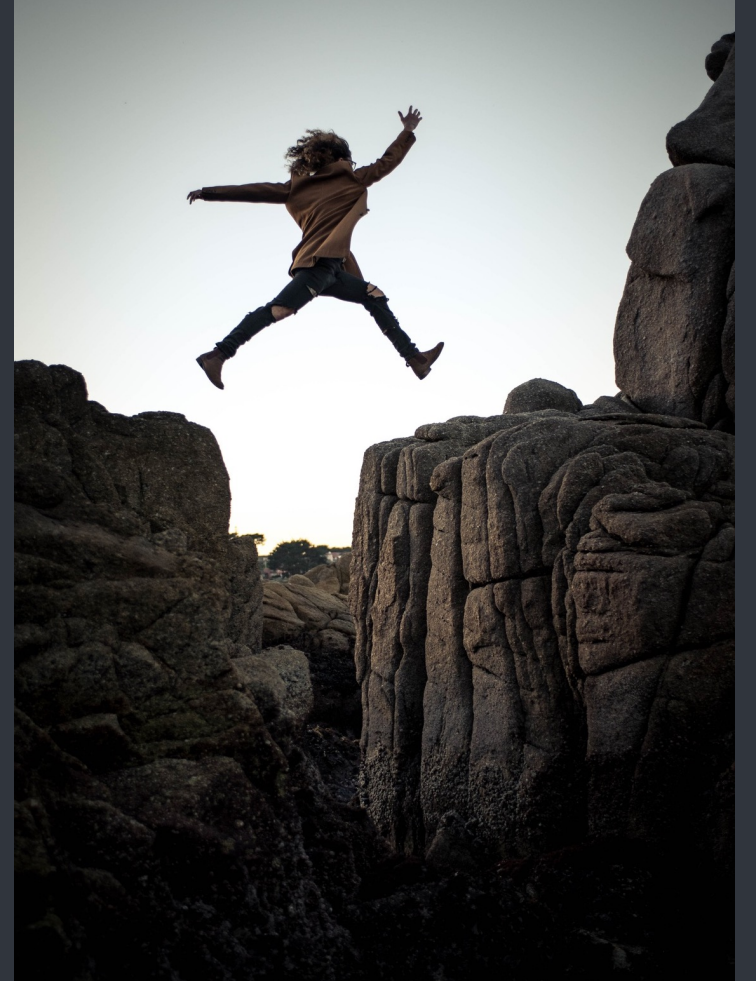
Journalists find the story amidst the facts.
Statisticians find the signal amidst the noise.

- 
- Numbers
 - Evidence
 - Uncertainty
 - Surprise

Numbers

“No one ever made a decision because of a number. They need a story”

Daniel Kahneman



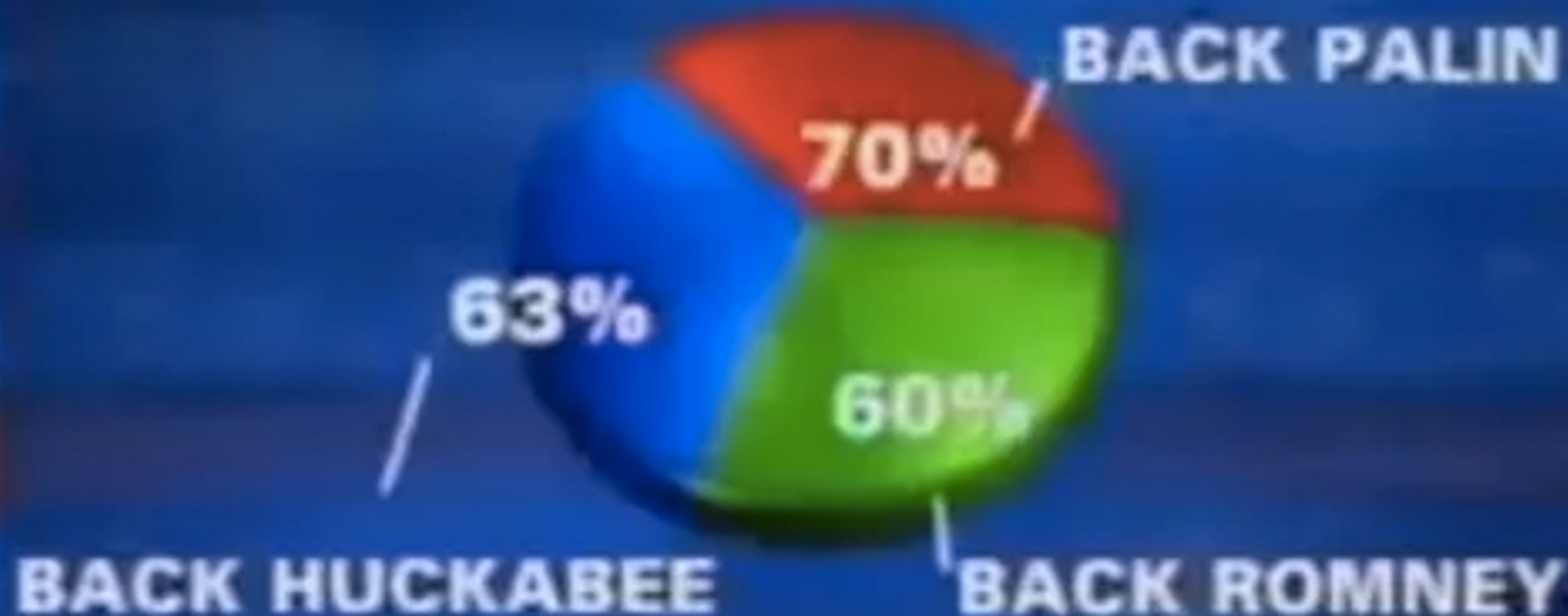


Numerosity:
One, Two, Three
from 15,000 years
ago to today

the pink bear. rebel

2012 PRESIDENTIAL RUN

GOP CANDIDATES

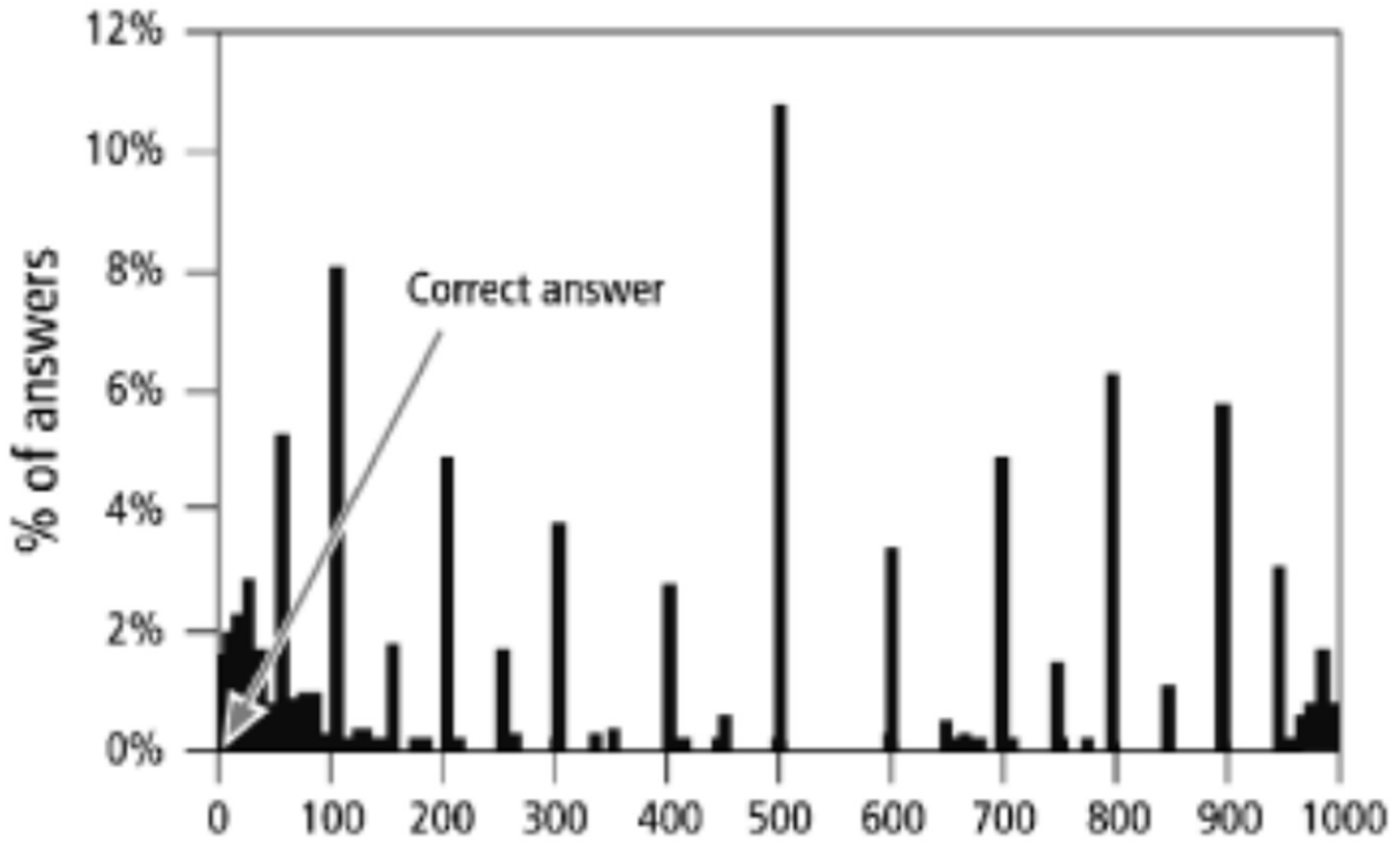


FOX

SOURCE: OPINIONS

Quick gut reaction?

“Regular mammograms reduce
breast cancer mortality by
25%.”



Estimated fewer number of women who die from breast cancer

Percentages or Natural Numbers?

Researchers estimate that over a 15-year period, the chances of a woman dying of breast cancer if she's not screened are **0.52%**. That number will drop to **0.41%** with regular screening.

Researchers estimate that for every **10,000** women who are not screened, about **52** will die of breast cancer over 15 years, compared to about **41** who will die even if they are screened.

Big Denominators or Tribe-Sized Denominators?

Researchers estimate that for every 10,000 women who are not screened, about 52 will die of breast cancer over 15 years, compared to about 41 who will die even if they are screened.

Researchers estimate that for every 1,000 women who are not screened, about 5 will die of breast cancer over 15 years, compared to about 4 who will die even if they are screened.

Science

Hormone Therapy Trial Stopped

Massive study in postmenopausal women shows that drugs hurt more than they help

9 JUL 2002 • BY MARTIN ENSERINK

But those benefits were outweighed by increased risks of breast cancer, strokes, and heart attacks, by 26%, 41%, and 29%, respectively.

The New York Times

Study Is Halted Over Rise Seen In Cancer Risk

By Gina Kolata

July 9, 2002

The data indicate that if 10,000 women take the drugs for a year, 8 more will develop invasive breast cancer, compared with 10,000 who were not taking hormone replacement therapy. An additional 7 will have a heart attack, 8 will have a stroke, and 18 will have blood clots. But there will be 6 fewer colorectal cancers and 5 fewer hip fractures.

Trimel Pharmaceuticals Corp. Reports Additional Results From Tefina Phase II Clinical Trial



COSMOPOLITAN

This New Testosterone Gel Might Help Women Orgasm

Plus, Tefina has no nasty side effects. Too good to be true?



BY ALYSSA BAILEY PUBLISHED: JUN 11, 2014

Tefina 0.6 mg showed a 35% increase in the average number of orgasms versus placebo (p=0.0013) . . .

Reaching orgasm may be as easy as applying one hormone-laced ointment beforehand — or so new clinical tests for Tefina show. Researchers found women who used a 0.6 milligram dosage of the testosterone nasal gel reported an average of 2.3 orgasms compared to the 1.7 from those who used a placebo . . .

HypeWatch: 'Significantly' More Orgasms?

ADVERTISEMENT



by **John Gever**
Deputy Managing Editor,
MedPage Today

This article is a
collaboration
between MedPage
Today® and:



- Mean orgasms in treatment group: 2.3
- Mean orgasms in placebo group: 1.7
- Mean extra orgasms: 0.6
- Study length: 3 months
- Mean number of sexual encounters: 15

1 extra orgasm
per 5 months

25 testosterone snorts
for 1 extra orgasm

Evidence:

How do you know that?



'JAW-DROPPINGLY WONDERFUL'
STEPHEN FRY

THROUGH THE LANGUAGE GLASS

WHY THE WORLD
LOOKS DIFFERENT
IN OTHER LANGUAGES

GUY DEUTSCHER

GUY DEUTSCHER



THROUGH THE LANGUAGE GLASS

WHY THE WORLD LOOKS
DIFFERENT IN OTHER
LANGUAGES

GUY DEUTSCHER

AUTHOR OF *THE UNFOLDING OF LANGUAGE*

PICADOR

Y DEUTSCHER

Spiegel Sprache

Die Welt in anderen
Sprachen anders aussieht



dtv



The Voice of America  @VOANews · 2h

.@PressSec Spicer: This was the largest audience to ever witness an inauguration, period.



WH Press Secretary Sean Spicer delivers remarks

 170  31  33

The New York Times

51% of Women Are Now Living Without Spouse

By Sam Roberts

Jan. 16, 2007

For what experts say is probably the first time, more American women are living without a husband than with one, according to a New York Times analysis of census results.

In 2005, 51 percent of women said they were living without a spouse, up from 35 percent in 1950 and 49 percent in 2000.

Opinion

THE PUBLIC EDITOR

Can a 15-Year-Old Be a ‘Woman Without a Spouse’?

By Byron Calame

Feb. 11, 2007

It was a statistic that put the story on a fast track to the front page, providing a noteworthy benchmark for a well-established trend. But the new majority materialized only because **The Times chose to use survey data that counted, as spouseless women, teenagers 15 through 17** — almost 90 percent of whom were living with their parents.

The failure to prominently and clearly explain the methodology of the survey used was one of several journalistic lapses that I found in the handling of this story. . .

The Markup

The Markup challenges technology to serve the public good.

Our journalism is actionable and drives real-world [impact](#). Explore our [investigations](#), [tools](#), and [blueprints](#) to see how.

Story Recipes

Journalists: Investigate Which Neighborhoods in Your City Are Offered the Worst Internet Deals

We analyzed more than 800,000 internet service offers in major U.S. cities. Here's how you can use our data to report local stories

By [Leon Yin](#) and [Aaron Sankin](#)

October 19, 2022 06:51 ET

Updated December 22, 2022 13:05 ET

☰ README.md

How We Uncovered Disparities in Internet Deals

This repository contains code and data supporting our investigation "[Dollars to Megabits: You May Be Paying 400 Times As Much As Your Neighbor for Internet](#)" from the series [Still Loading](#).

Our methodology is described in detail in "[How We Uncovered Disparities in Internet Deals](#)".

Please read that document to understand the context for the code and data in this repository. The data in this repository, described in more detail below, include the results of our automated collecting of ISP offers, plus records from the U.S. Census Bureau and other sources necessary for the analysis.

The code in this repository, also described in more detail below, demonstrates how we processed and analyzed that data.

Data

Uncertainty

“The whole problem with the world is fools and fanatics are always so certain of themselves and wiser people are full of doubt.”

-- Bertrand Russell



Epistemic modalities

- My blind date tonight is smart.
- My blind date tonight might be smart.
- My blind date tonight is probably smart.
- My blind date tonight seems to be smart.
- I think my blind date tonight is smart.
- My blind date tonight ought be smart.
- Clearly, my blind date tonight is smart.
- There is a strongish possibility that my blind date tonight is smart.
- 🤔 🤨

The New York Times

New Ebola Vaccine Gives 100 Percent Protection

In a scientific triumph that will change the way the world fights a terrifying killer, an experimental Ebola vaccine tested on humans in the waning days of the West African epidemic has been shown to provide 100 percent protection against the lethal disease.

Efficacy and effectiveness of an rVSV-vectored vaccine in preventing Ebola virus disease: final results from the Guinea ring vaccination, open-label, cluster-randomised trial (Ebola Ça Suffit!)

Ana Maria Henao-Restrepo, Anton Camacho, Ira M Longini, Conall H Watson, W John Edmunds, Matthias Egger, Miles W Carroll, Natalie E Dean, Ibrahima Diatta, Moussa Doumbia, Bertrand Draguez, Sophie Duraffour, Godwin Enwere, Rebecca Grais, Stephan Gunther, Pierre-Stéphane Gsell, Stefanie Hossmann, Sara Viksmoen Watle, Mandy Kader Kondé, Sakoba Kéïta, Souleymane Kone, Eewa Kuisma, Myron M Levine, Sema Mandal, Thomas Mauget, Gunnstein Norheim, Ximena Riveros, Aboubacar Soumah, Sven Trelle, Andrea S Vicari, John-Arne Røttingen*, Marie-Paule Kieny*

... 3050 were eligible, 2559 consented, and 2041 were vaccinated 21 days after randomisation. Ebola virus disease occurred 10 days or more after randomisation among randomly selected contacts vaccinated in immediate clusters versus 16 cases (7 clusters affected) among delayed clusters. Vaccine efficacy was 100% (95% CI 68.9–100.0, $p=0.0045$), and the population attributable risk coefficient was 0.035. Additionally, we defined 19 non-randomised clusters among contacts and contacts of contacts, 2006 of whom were eligible and 1677 were vaccinated. ...

New Ebola Vaccine Gave 100 Percent Protection In Study

In a scientific triumph that will change the way the world fights a terrifying killer, an experimental Ebola vaccine tested on humans in the waning days of the West African epidemic has ~~has~~ **might** ~~an~~ to provide 100 percent protection against the lethal disease.

First Ebola Vaccine Likely To Stop The Next Outbreak

December 22, 2016 · 6:31 PM ET

Heard on Morning Edition



MICHAELEEN DOUCLEFF



When Ebola struck West Africa a few years ago, the world was defenseless. There was no cure. No vaccine. And the result was catastrophic: More than 11,000 people died. Nearly 30,000 were infected.

Now it looks like such a large outbreak is unlikely to ever happen again. Ever.

The world now has a potent weapon against Ebola: a vaccine that brings outbreaks to a screeching halt, scientists [report](#) Thursday in *The Lancet*.

"We were able to estimate the efficacy of the vaccine as being 100 percent in a trial," says [Ira Longini](#), a biostatistician at the University of Florida, who helped test the vaccine. "It's [very unusual](#) to have a vaccine that protects people perfectly."

Now, no vaccine — or drug for that matter — is *perfect*. The efficacy of the vaccine is clearly high but not "100 percent." That value reflects the fact that they just haven't tested the vaccine on enough people yet. So it is likely to decrease as the vaccine is used over time. In the end, the efficacy is likely to sit somewhere between about 70 percent and 100 percent, Longini says.

By comparison, the flu vaccine last year was about 50 percent effective.

And there are still a few open questions about the vaccine, says [Dr. Anthony Fauci](#), at the National Institutes of Health.

"For example, we don't know how durable the vaccine is," he says. "If you give health care workers the vaccine, for example, how long would they be protected? That's very important to learn."

What is clear is that the vaccine offers short-term protection during outbreaks. And that's exactly what's needed to stop the virus from spreading and to keep small outbreaks from getting out of control.

No, moderate drinking isn't good for your health

Despite a long-held belief that moderate amounts of alcohol are good for you, a sweeping new analysis finds that the more you drink, the higher your risk of early death

By Marlene Cimons

Updated March 31, 2023 at 2:53 p.m. EDT | Published March 31, 2023 at 11:00 a.m. EDT

The new study, which appears Friday in [Jama Network Open](#), also found that drinking relatively low levels of alcohol — 25 grams a day for women (less than 1 ounce) and 45 grams (about 1.5 ounces) or more per day for men — actually increased the risk of death.

THE WALL STREET JOURNAL.

HEALTH

A Little Alcohol Won't Kill You or Make You Stronger

People who drink a little don't die sooner than people who never study shows

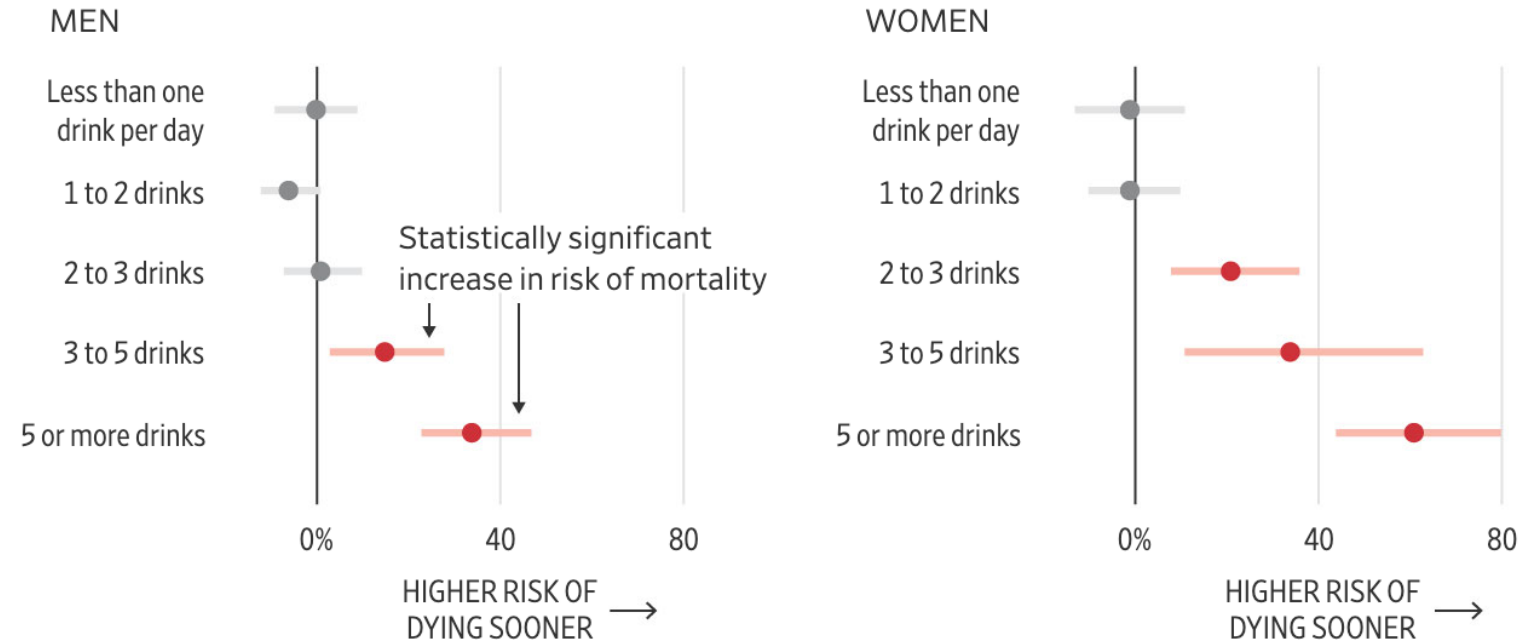
By [Julie Wernau](#) [Follow](#)

Updated March 31, 2023 1:50 pm ET

The findings suggest that the average man can drink up to about three drinks a day and expect to live as long as nondrinkers. Women might want to stop at about two drinks, the research suggested.

First, the good news: A nip of alcohol here and there probably won't kill you. But it won't help you live longer either.

Mean relative change in risk of dying sooner due to alcohol consumption compared to lifetime nondrinkers



Note: Bands show 95% confidence interval. Drink volumes are approximations based on a standard drink being 14 grams of pure alcohol, roughly the equivalent of a 12 oz. beer with 5% alcohol content. Sources: Jinhui Zhao/University of Victoria, JAMA Network Open; National Institutes of Health (alcohol content of standard drink)

A photograph of a man in a purple shirt and khaki pants standing in a park-like setting, looking up at a large, grey dinosaur statue. The dinosaur is standing on a pile of rocks and has its mouth open. The background consists of green bushes and trees. The text is overlaid on the image in white.

“Organisms only learn when events violate their expectations.”

-- psychologists Robert Rescorla and Allen Wagner (1972)



Where are the electricity hogs in your home?

Your house generates a lot of greenhouse gasses, but not all the appliances and gadgets are equal.

How many hours could you leave a light bulb
switched on and produce the same amount of greenhouse gases as a
single load in a clothes dryer?

24

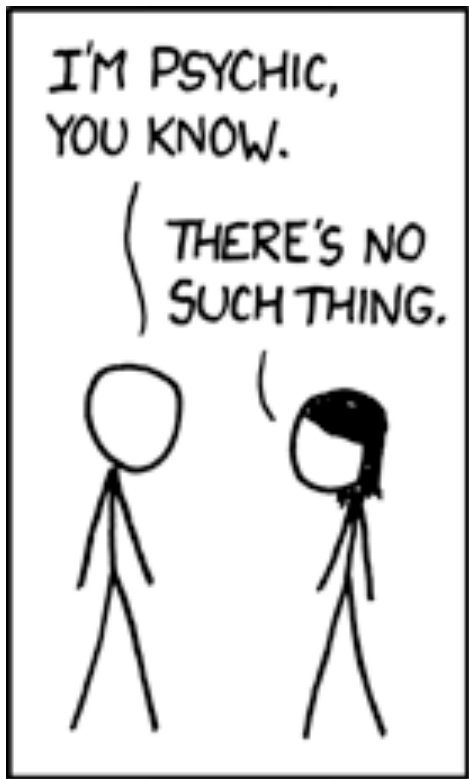
Incorrect. You could leave an LED light on for roughly 300 hours, or 13 days straight, and have the same carbon footprint as one load in the dryer. In the original survey group, the median guess was 60 hours.

Maybe switch to a clothes line?

(The correct answer range is 272 to 354 hours, depending on the brightness of the bulb.)



I'm gonna choke you,
Nate Silver.



THIS TRICK MAY ONLY WORK 1% OF THE TIME,
BUT WHEN IT DOES, IT'S TOTALLY WORTH IT.

p-value:
Index of Holy-Shitness

HUMAN-CENTERED STATISTICS COMMUNICATION



THANK YOU!

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References and other interesting things to read

Cochlear implants

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