There are three kinds of lies:
lies, damned lies and statistics

– Benjamin Disraeli
Prime Minister of Great Britain (1868, 1874-1880)
When Statistics Seem to Lie
– They’re Answering a Different Question

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Ottawa keeps drug reviews under wraps

Doctors alarmed that reassessment of 151 medications, many widely used, will stay secret
Science shows HPV vaccine has no dark side

To attribute rare devastating occurrences to a vaccine requires evidence of causation, which the Star didn't have in its article on Gardasil.
Given the power of HPV vaccine to prevent disease and death, a long Toronto Star article that appears to suggest that the HPV vaccine causes harm is troubling and disappointing, write Juliet Guichon and Dr. Rupert Kaul.

By: Juliet Guichon Dr. Rupert Kaul Published on Wed Feb 11 2015

The HPV vaccine was created to prevent an infection that causes cancer. That is pretty exciting. After all, Terry Fox’s arduous marathon a day was to raise money for a cancer cure. Did he even imagine that we would have a vaccine to prevent cancer?

Given the power of HPV vaccine to prevent disease and death, a long Toronto Star article that appears to suggest that the HPV vaccine causes harm is troubling and disappointing. Although the article states in the fifth paragraph that “there is no conclusive evidence showing the vaccine caused a death or illness,” its litany of horror stories and its innuendo give the incorrect impression that the vaccine caused the harm.
The Star story states that some people became sick and even died after being vaccinated against HPV infection. Yet, after HPV vaccination, some people might have won a major scholarship or the lottery. Does this mean the vaccine caused the award or the win? Hardly.

The fact that one event follows another does not mean that the first event caused the second — in scientific terms, correlation is not causation.

For example, the number of shark attacks and ice cream sales rise when the weather is hot. The confusion of correlation and causation here is funny because, of course, the shark attacks don’t cause the ice cream sales increase. But in the case of the HPV vaccine, such confusion is not funny because HPV infection can have very serious consequences that the vaccine helps prevent.
The Star presented the stories of women who have suffered greatly. The article was engaging, dramatic and might have created fear. But study after study has shown that there is no causal link between the events the Star reported and the vaccine. About 169 million doses of the HPV vaccine have been administered worldwide. In any given large population, there will be illness and death. This is a statistical fact. To attribute rare devastating occurrences to a vaccine requires evidence of causation, of which the international scientific community and the Star article have none.
“Solid, well-reported science... Like a bloodhound, Teicholz tracks the process by which a hypothesis morphs into truth without the benefit of supporting data.”

—Kirkus Reviews (starred review)
Butter Is NOT Back (And Other Truths About Saturated Fat)
In March, *New York Times* writer and famous foodie Mark Bittman declared that “butter is back.” His piece reported on the findings of a recent meta-analysis published in the *Annals of Internal Medicine* that questioned the long-standing link between saturated fat and coronary disease.

While Bittman celebrated the findings and told readers they could “go back to eating butter,” nutrition and public health professionals have been quick to caution, “Not so fast!”

Dr. David Katz, Director of the Yale Prevention and Research Center, responded to the piece, pointing out Bittman’s lack of qualifications for interpreting scientific studies and ultimately calling the writer “a potential danger to the public health.”

The Harvard School of Public Health put out a statement in the wake of the meta-analysis’ publication calling its conclusions “seriously misleading,” highlighting “many errors and omissions.”
Best selling stats book of all times

How to Lie with Statistics

By DARRELL HUFF

Pictures by IRVING GEIS

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How Numbers Confuse Public Issues
Joel Best
The Author of Damned Lies and Statistics
Bad Pharma
Ben Goldacre

How drug companies mislead doctors and harm patients
364 pages

Bad Science
Ben Goldacre

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A fine lesson in how to skewer the enemies of reason and the peddlers of cant and half-truths.
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You'll laugh your head off, then throw all those expensive health foods in the bin.
Observer Book of the Year

INCLUDES A BRILLIANT, SHOCKING AND PREVIOUSLY UNPUBLISHABLE NEW CHAPTER
Going further: David Healy (of CAMH fame):
David Healy takes Goldacre’s argument one step further and questions whether relying Clinical Trials can give us the answers we need.
Statistical thinking will one day be as necessary for efficient citizenship as the ability to read and write.

– H. G. Wells
Misunderstand statistics?
Splitting hairs?
Does it really matter?
Misunderstand statistics?
Splitting hairs?
Does it really matter?

A few consequences?
- The global economic meltdown
- Wrongful murder convictions
- Delayed response to health effects of tobacco
- Poor health policies and treatment decisions
Meet the man whose big idea felled Wall Street

Math whiz proposed applying this statistical formula to credit risk, and financial meltdown ensued

Mar 18, 2009 04:30 AM

CATHAL KELLY
STAFF REPORTER

Note: This article has been edited to correct a previously published version.

Former University of Waterloo statistician David X. Li didn’t burn down the American economy. He just supplied the matches.

University of Waterloo statistician David Li is shown in this handout photo, along with his statistical formula for modeling the behaviour of several correlated risks at once.
As economists and market watchers cast about for people to blame for the U.S. market meltdown, Li has surfaced as a scapegoat. Recently, *Wired* magazine ran an article on Li's work subtitled, "The Formula That Killed Wall Street."

The formula in question is the so-called Gaussian copula function. On the most basic level, the formula allows statisticians to model the behaviour of several correlated risks at once.

In a scholarly paper published in 2000, Li proposed the theorem be applied to credit risks, encompassing everything from bonds to mortgages. This particular copula was not new, but the financial application Li proposed for it was.

Disastrously, it was just simple enough for untrained financial analysts to use, but too complex for them to properly understand. It appeared to allow them to definitively determine risk, effectively eliminating it. The result was an orgy of misspending that sent the U.S. banking system over a cliff.

"To say David brought down the market is like blaming Einstein for Hiroshima," says Prof. Harry Panjer, Li's mentor at the University of Waterloo. "He wasn't in charge of the financial world. He just wrote an article."
It is easy to lie with statistics.
It is hard to tell the truth without it.

– Andrejs Dunkels
Pot use before 18 lowers IQ by 8 points

Theresa Boyle  
Health Reporter

Persistent, dependent use of marijuana before age 18 has been shown to cause lasting harm to a person’s intelligence, attention and memory, according to a study in The Proceedings of the National Academy of Sciences of the U.S. Among a long-range study cohort of more than 1,000 New Zealanders, individuals who started using cannabis in adolescence and used it for years afterward showed an average decline in IQ of eight points when their IQs were compared at ages 13 and 38. Quitting pot did not appear to reverse the loss either, said lead re-
Pot use before 18 lowers IQ by 8 points

THERESA BOYLE
HEALTH REPORTER

Persistent, dependent use of marijuana before age 18 has been shown to cause lasting harm to a person’s intelligence, attention and memory, according to a study in The Proceedings of the National Academy of Sciences of the U.S. Among a long-range study cohort of more than 1,000 New Zealanders, individuals who started using cannabis in adolescence and used it for years afterward showed an average decline in IQ of eight points when their IQs were compared at ages 13 and 38. Quitting pot did not appear to reverse the loss either, said lead re-

Don’t forget to brush your teeth

Good oral health could lower risk of dementia

NATASJA SHERIFF
REUTERS

People who keep their teeth and gums healthy with regular brushing may have a lower risk of developing dementia later in life, according to a new study.

Researchers, who followed close to 5,500 elderly people over an 18-year period, found those who reported brushing their teeth less than once a day were up to 65 per cent more likely to develop dementia than those who brushed daily.
64,000 US Public Health Survey 1964

Never, Healthy, Quit, Worst of all, Smokers Less Healthy

Control, Age, Gender

Mediator: Stress → Bad Health

Prior Poor Health

Confounder variable

Q

Bad Health