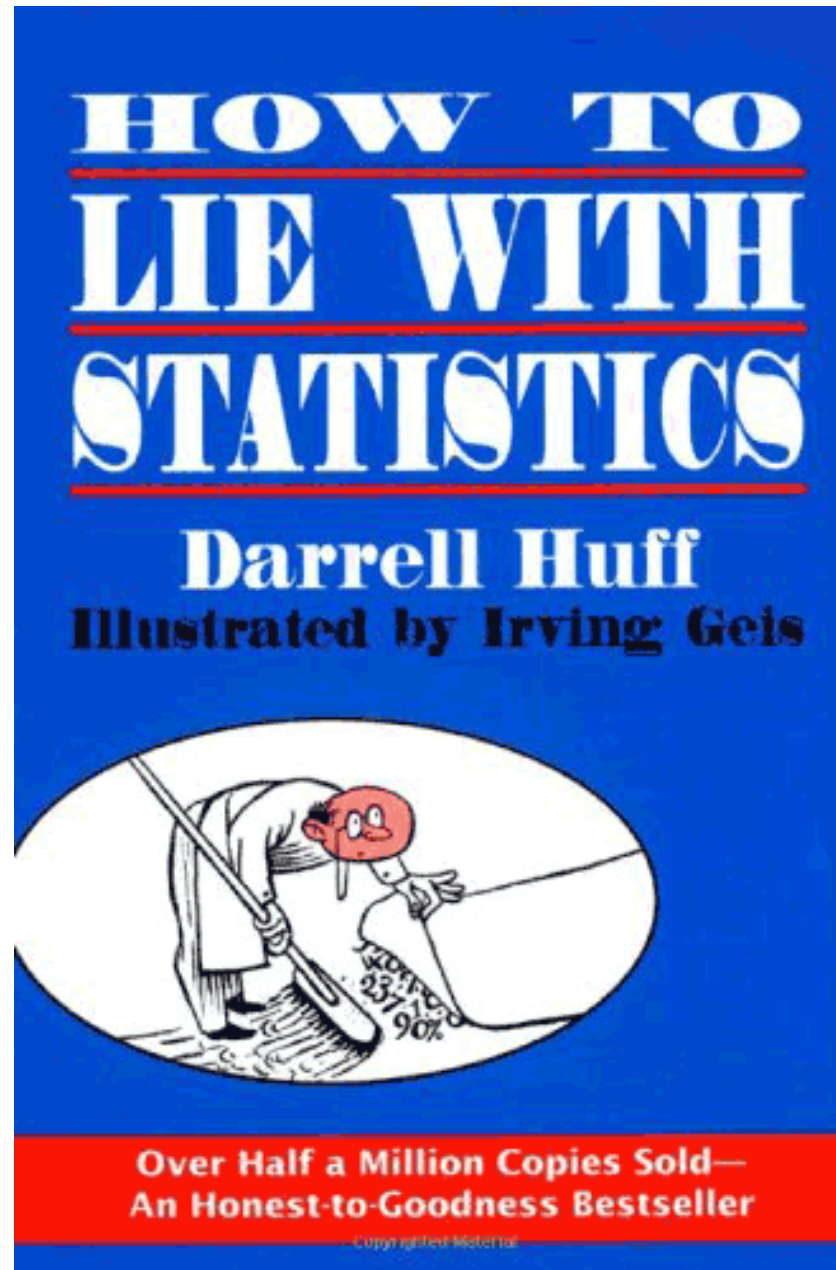


Beslissen volgens goed statistisch ge(mis)bruik

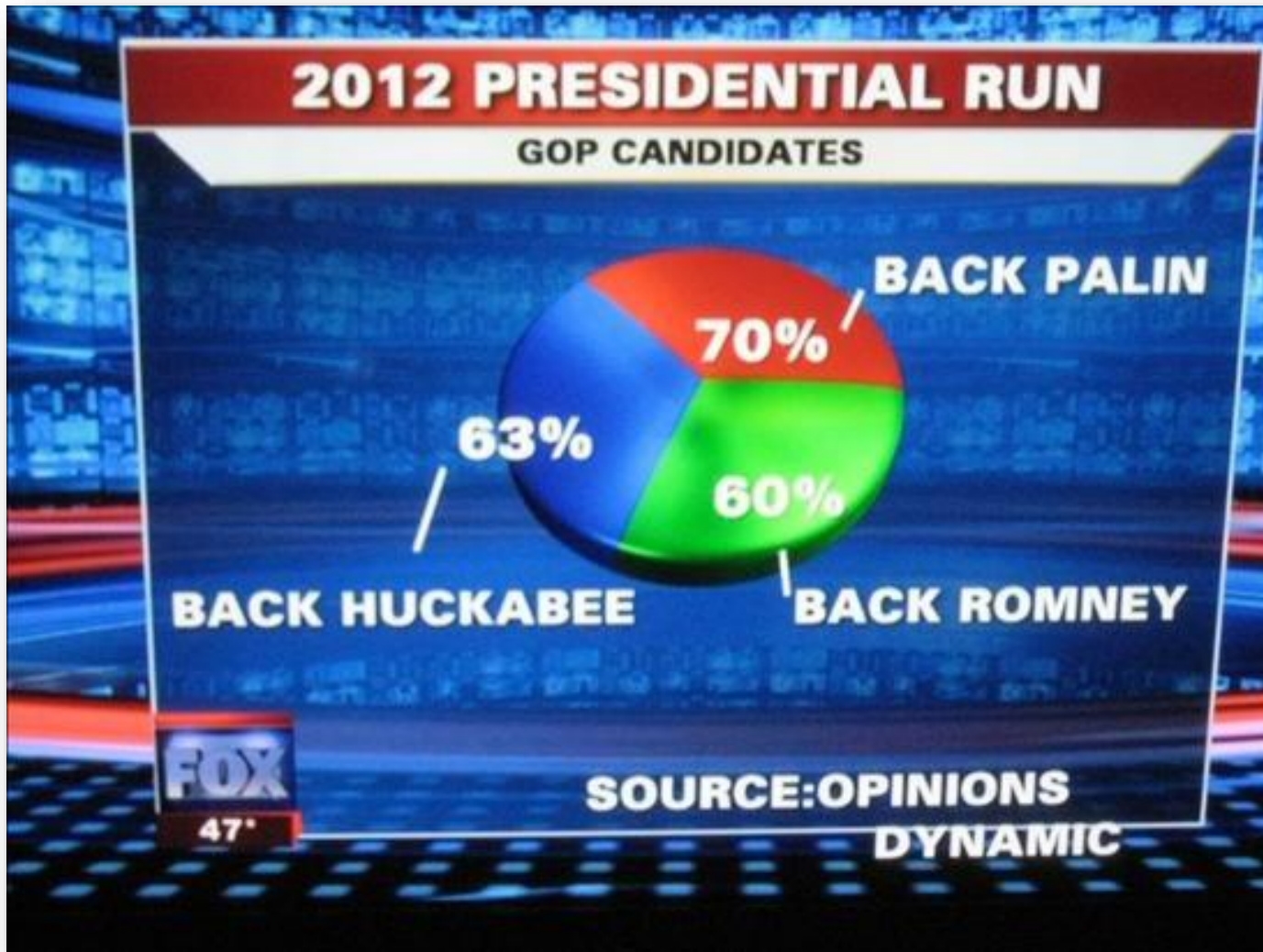
John Poppelaars, ORTEC

Dit wordt geen



verhaal

Dit heeft u vast al eens
gezien



Voor meer plezier kijk op
<http://hanswisbrun.nl/tag/lieggrafiek/>

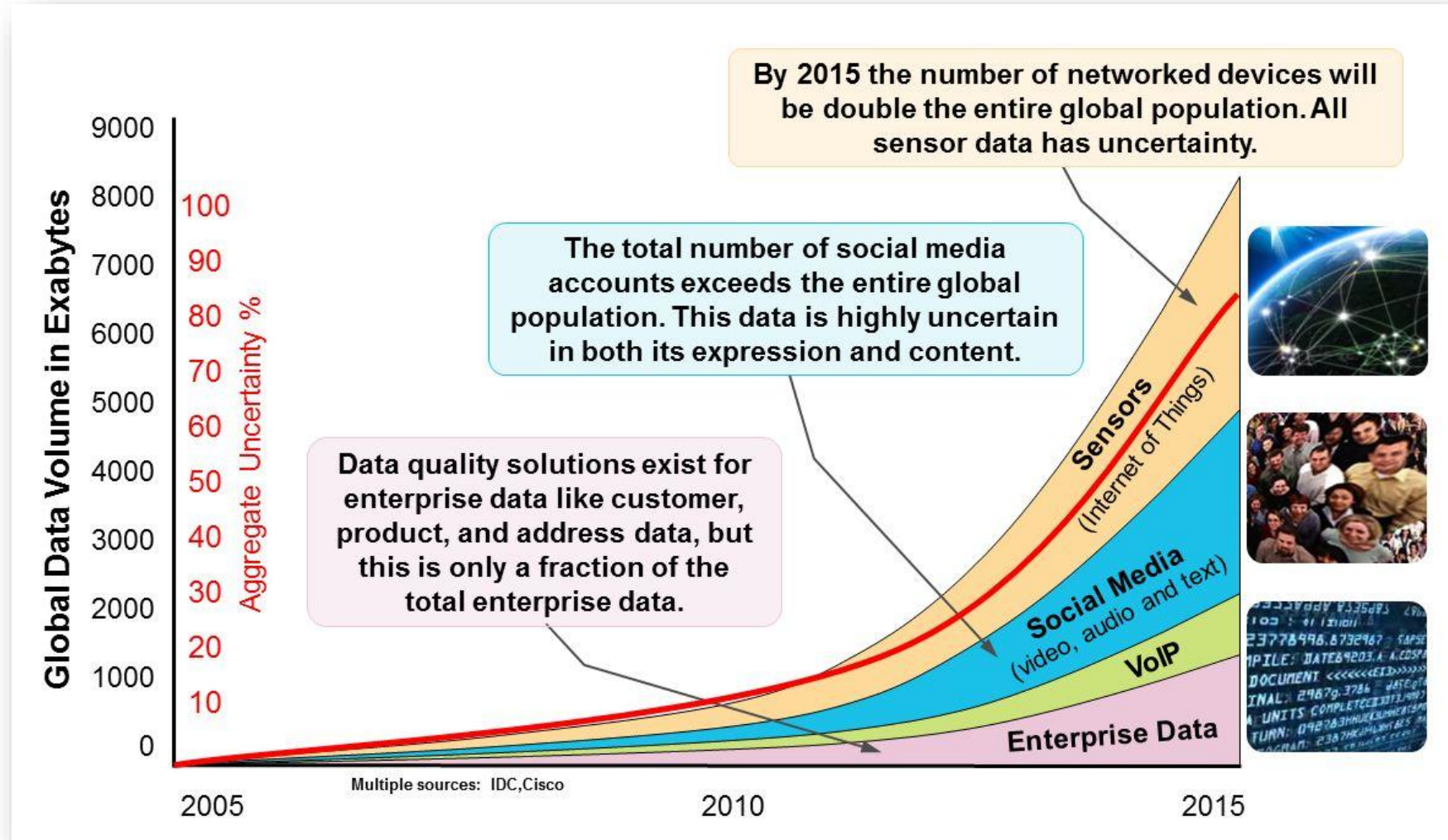
Lilian legt het nog eens
Helder uit



Grondleggers van de
kenniseconomie?



Aan data hebben we geen gebrek



Griezelig nauwkeurig



TECH 2/16/2012 @ 11:02AM | 2,410,938 views

How Target Figured Out A Teen Girl Was Pregnant Before Her Father Did

334 comments, 173 called-out + Comment Now + Follow Comments

Kashmir Hill
Forbes Staff

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Welcome to *The Not-So Private Parts where technology & privacy collide*
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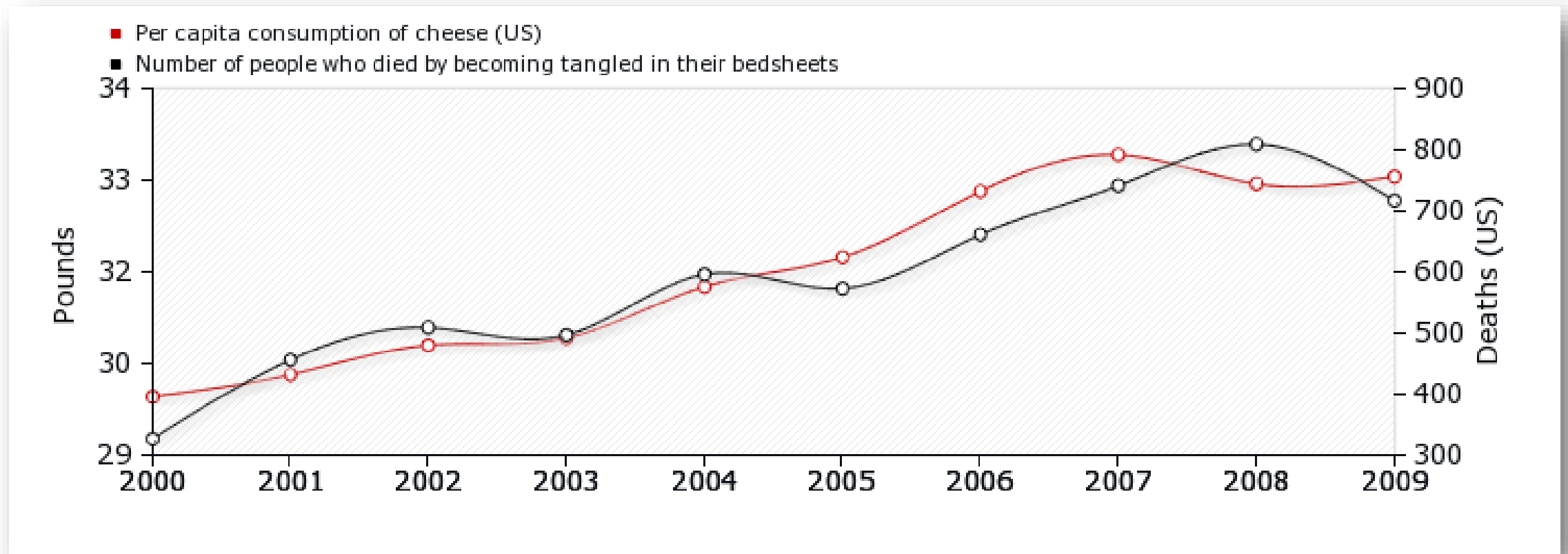
Every time you go shopping, you share intimate details about your consumption patterns with retailers. And many of those retailers are studying those details to figure out what you like, what you need, and which coupons are most likely to make you happy. [Target](#), for example, has figured out how to data-mine its way into your womb, to figure out whether you have a baby on the way long before you need to start buying diapers.

Charles Duhigg outlines in the [New York Times](#) how Target tries to hook parents-to-be at that crucial moment before they turn into rampant — and loyal — buyers of all things pastel, plastic, and miniature. He talked to Target statistician Andrew Pole — before Target freaked out and cut off all communications — about the clues to a customer’s impending bundle of joy.



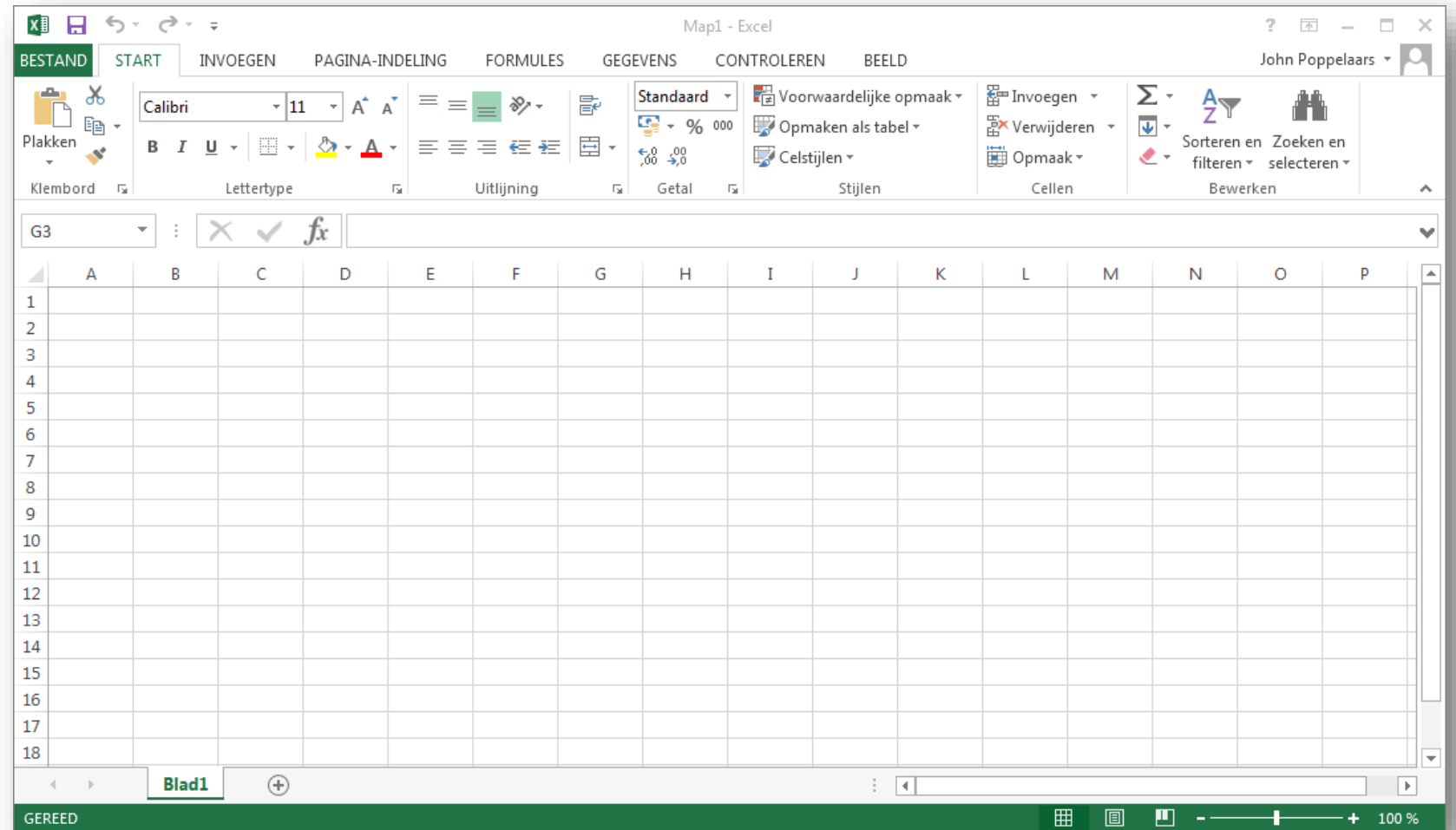
<http://www.forbes.com/sites/kashmirhill/2012/02/16/how-target-figured-out-a-teen-girl-was-pregnant-before-her-father-did/>

Kaas eten is levensgevaarlijk!



Zie <http://www.tylervigen.com> voor meer onechte correlaties

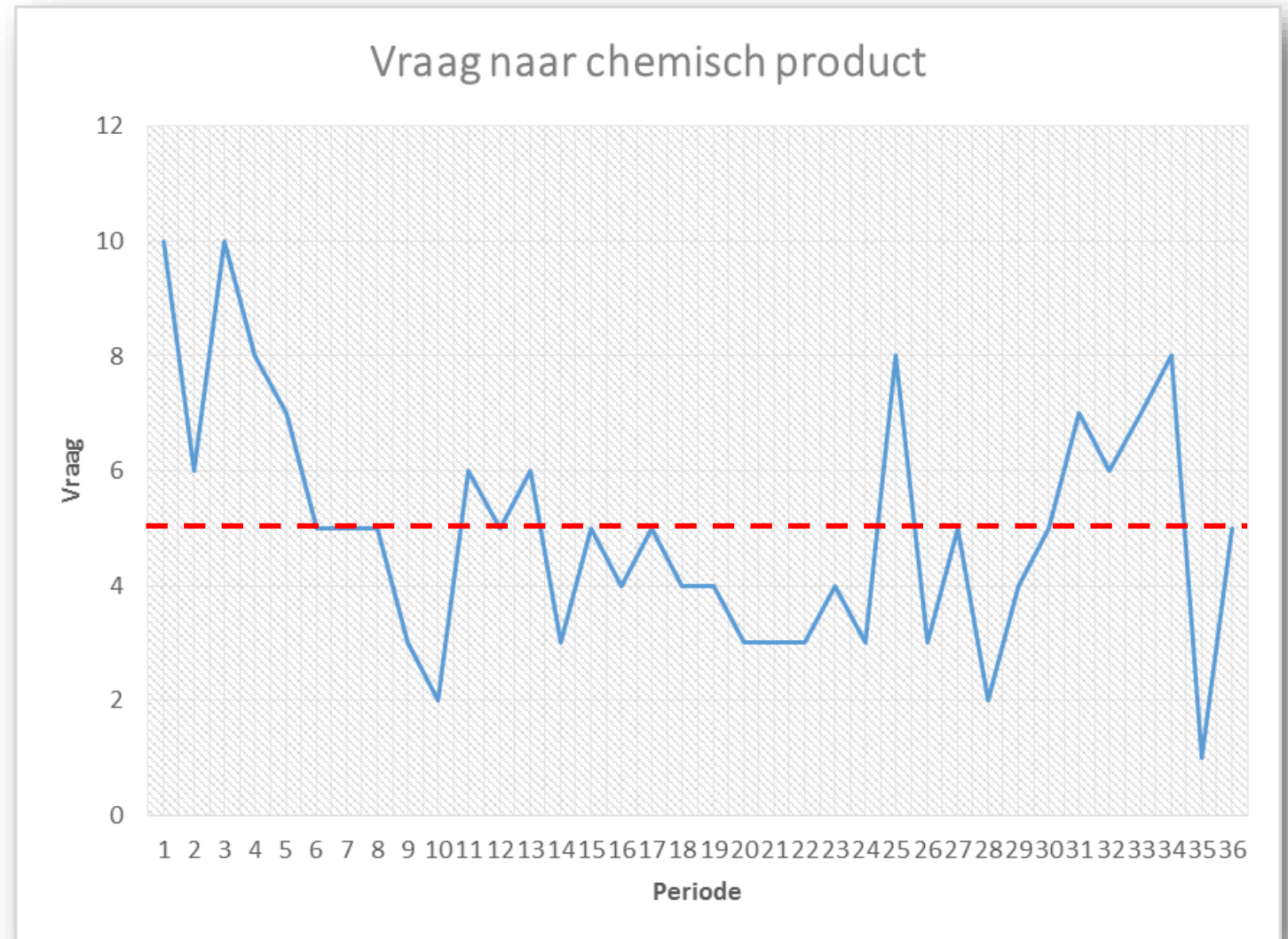
De toolkit van de manager....

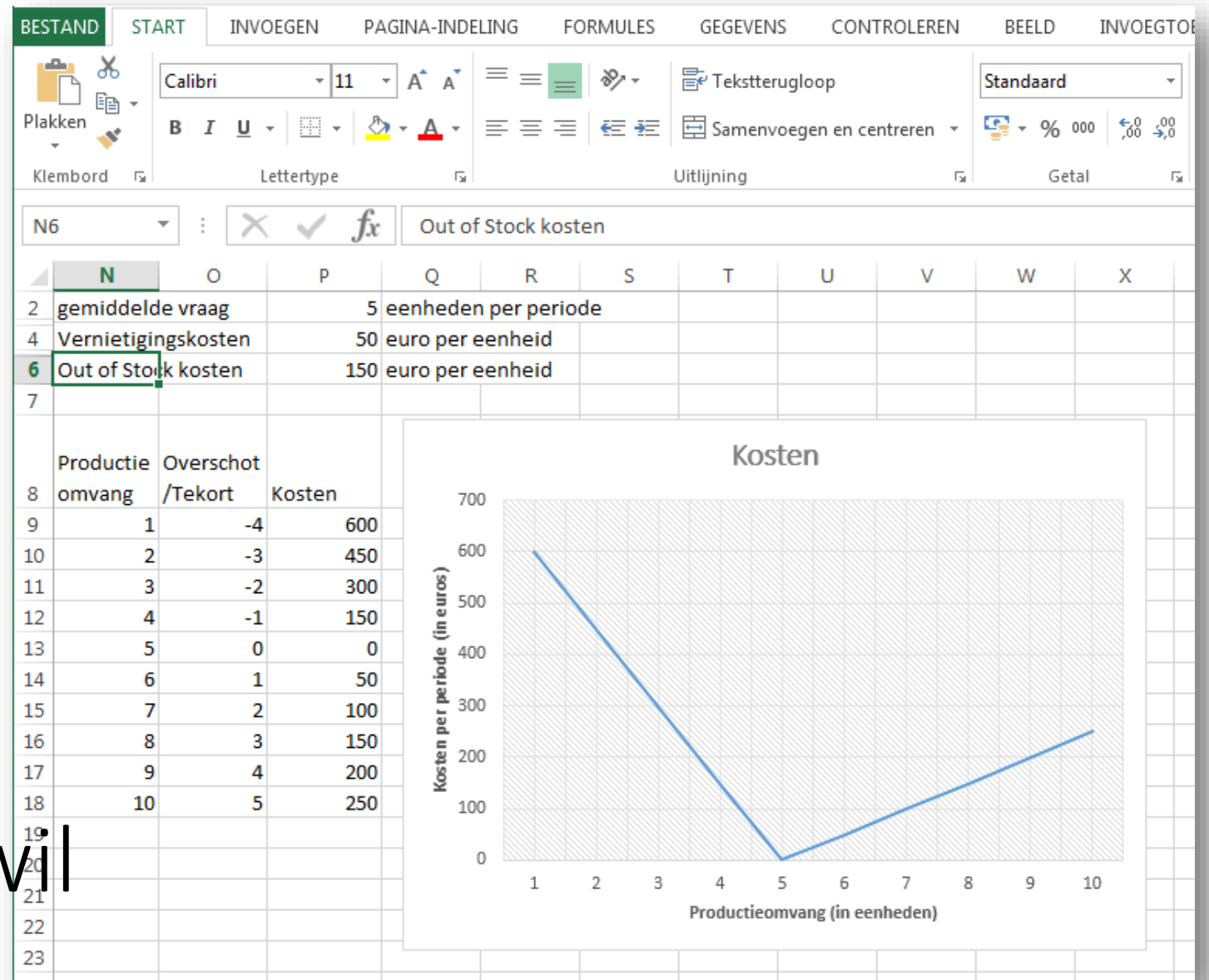
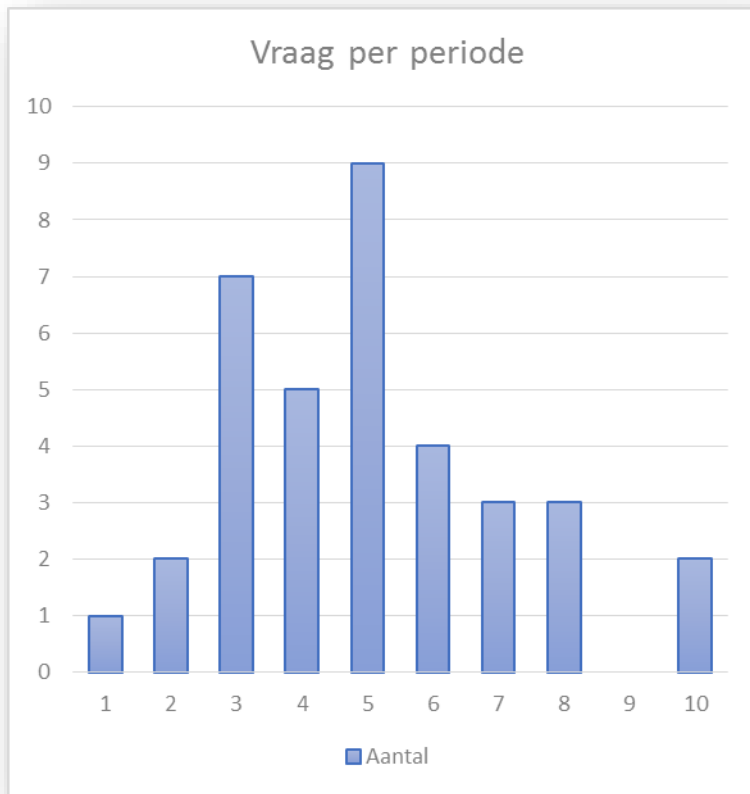


...en de oorzaak van veel problemen

Hoe groot moet onze productie zijn?

| | |
|---------------------|--------------------|
| | |
| Gemiddelde vraag | 5 eenheden/periode |
| Vernietigingskosten | €50/eenheid |
| Out of Stock kosten | €150/eenheid |



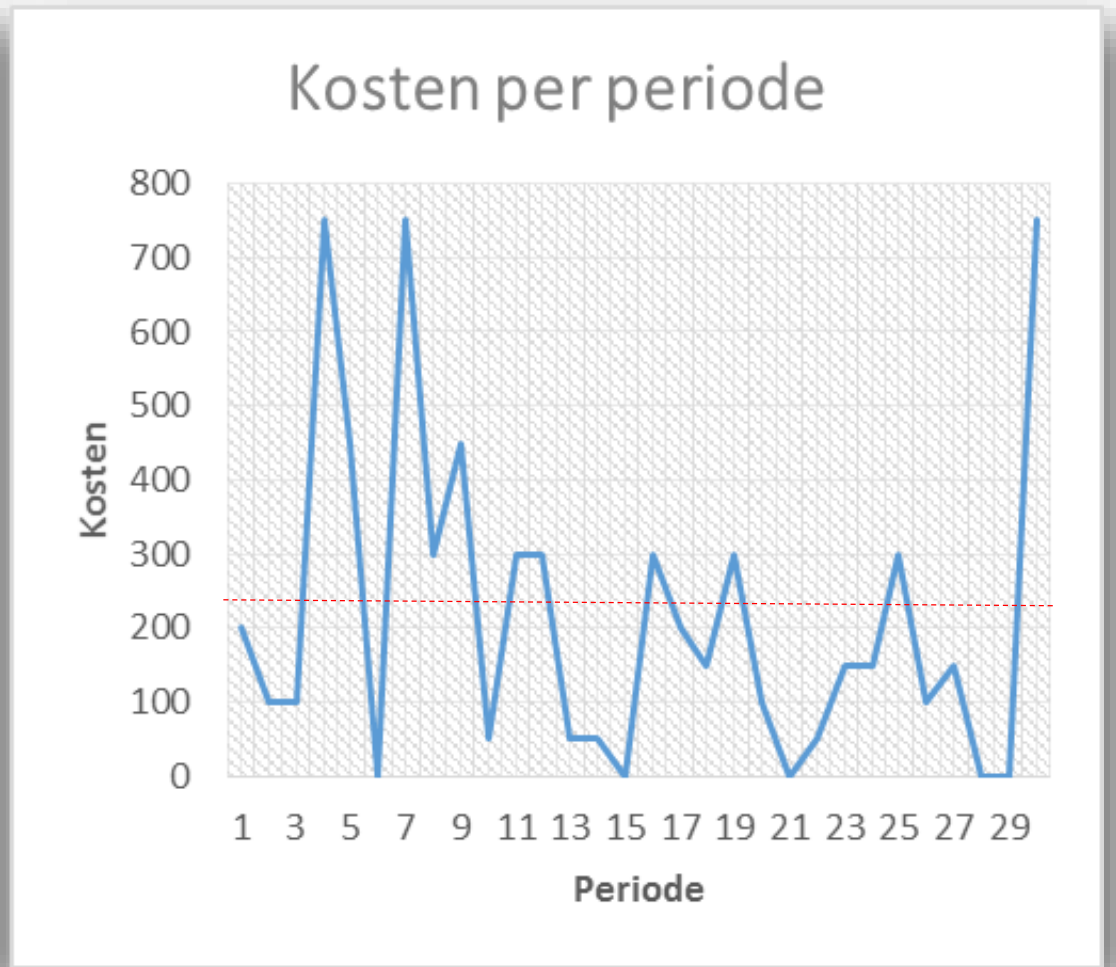
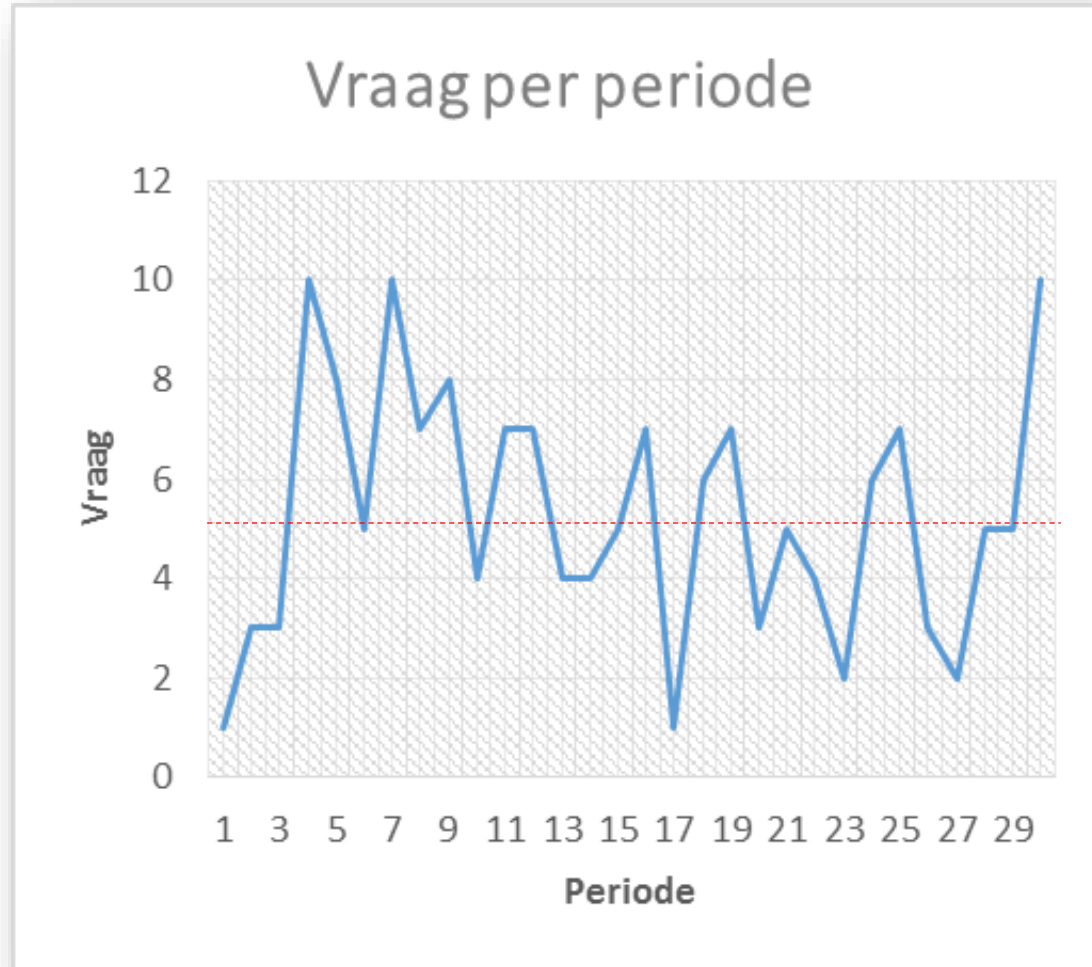


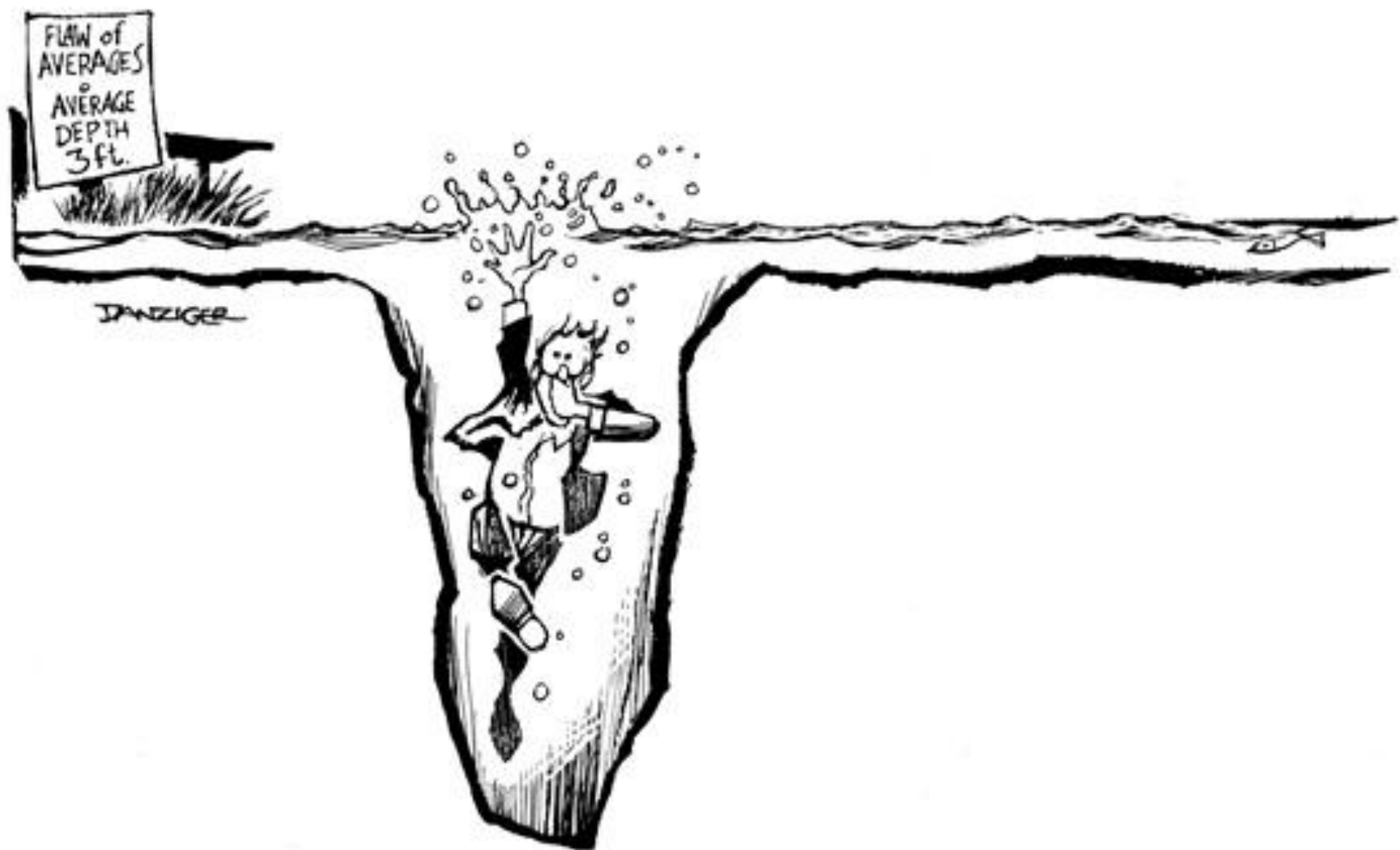
“Een verdeling? Ik wil een getal”

De realiteit

1. Omvang vraag 1 -> Een overschot van 4, kosten $4 * €50 = €200$
2. Omvang vraag 3 -> Een overschot van 2, kosten $2 * €50 = €100$
3. Omvang vraag 3 -> Een overschot van 2, kosten $2 * €50 = €100$
4. Omvang vraag 10 -> Een tekort van 5, kosten $5 * €150 = €750$
5.

De realiteit, gemiddelde kosten \neq 0





FLAW of
AVERAGES
AVERAGE
DEPTH
3 ft.

DANZIGER

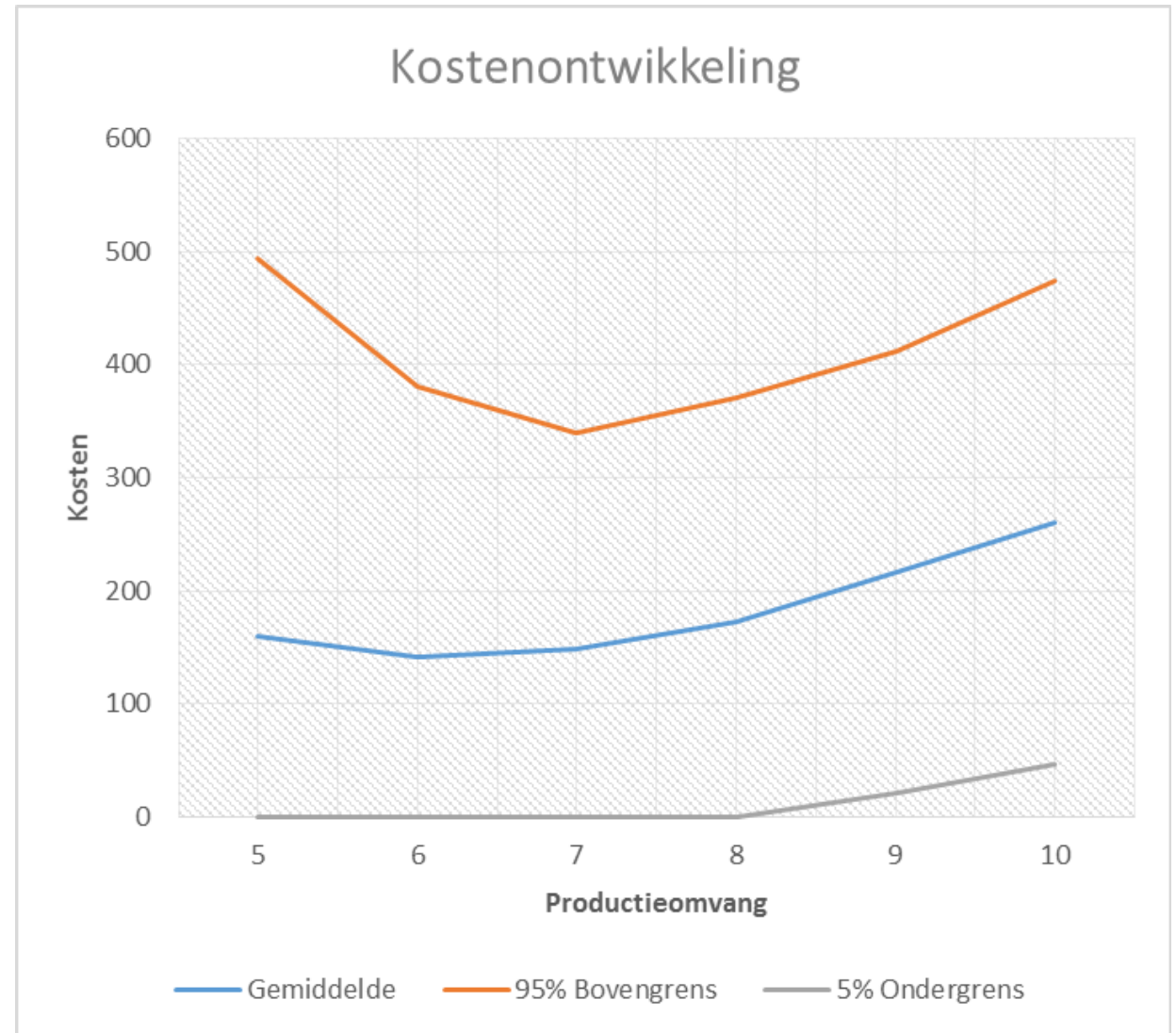
Jensen's gelijk

$$E(F(x)) \neq F(E(x))$$

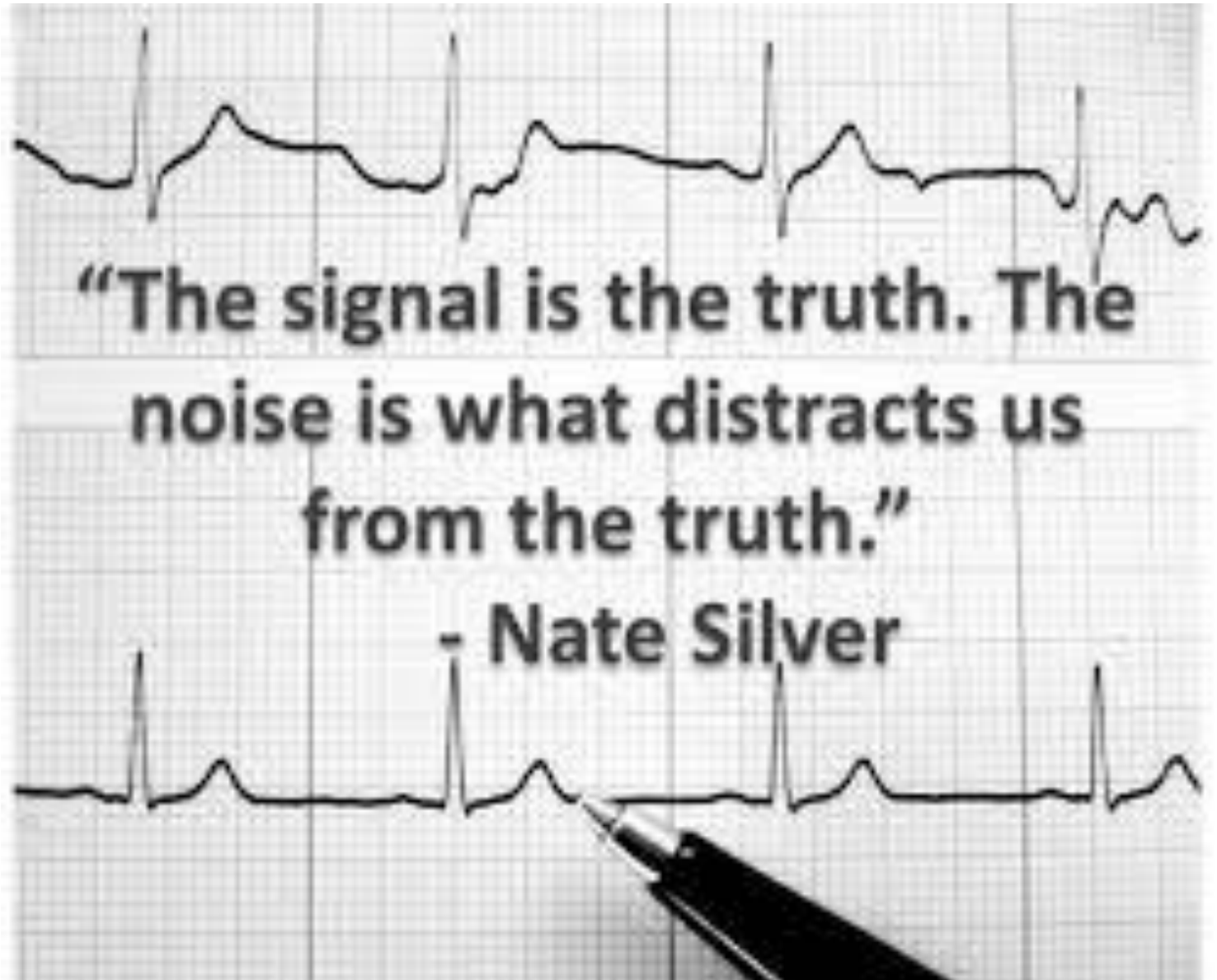
De oplossing is simpel...

..en kan in Excel

Zie ook <http://probabilitymanagement.org/>



Niets anders dan
de waarheid...



Terroristen jagen

- Van iedere groep van 1000 mensen verwachten we dat er 10 terroristen zijn
- De screening methode detecteert met 90% zekerheid een terrorist. Met dezelfde betrouwbaarheid detecteert de screening methode vredelievende burgers
- Uit de screening blijkt een persoon aangemerkt te worden als terrorist, wat is de kans dat deze persoon ook echt een terrorist is?



Is de screening wel betrouwbaar?

| | Terrorist (1%) | Vredelievende burger (99%) |
|---------------|----------------|----------------------------|
| Test Positief | 90% | 10% |
| Test Negatief | 10% | 90% |

$$P(\text{Positieve test \& Terrorist}) = 1\% * 90\% = 0,9\%$$

$$P(\text{Positieve test \& Burger}) = 10\% * 99\% = 9,9\%$$

$$P(\text{test wijst terrorist aan}) = 0,9\% / (0,9\% + 9,9\%) = \mathbf{8,3\%}$$

$$P(\text{test wijst verkeerde aan}) = 9,9\% / (0,9\% + 9,9\%) = \mathbf{91,7\%}$$

Het is niet alleen theorie

ON THE ROAD

Not Too Small to Appear on a Big No-Fly Watch List

By JOE SHARKEY

Published: September 29, 2008

A RESPONSE to last week's column about the chronic troubles of air travelers came from Christine Anderson, who says she was with her son Jack both times he was told that he was on the terrorist watch list.




The first time was in 2004, when Jack; his mother; his brothers Joey, then 8, and Joshua, then 5; and their grandmother, Susan, arrived at the airport in Minneapolis for a trip to [Disney World](#).

"The woman at the ticket counter demanded, 'Who is John Anderson?'" Ms. Anderson recalled. She pointed at the baby stroller and said, "He's right here." The suspect, then 2 years old, blinked his big blue eyes and happily gummed

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(THE UNEXPECTED VIRTUE OF IGNORANCE)
NOW PLAYING TICKETS

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theguardian.com has a new look coming soon

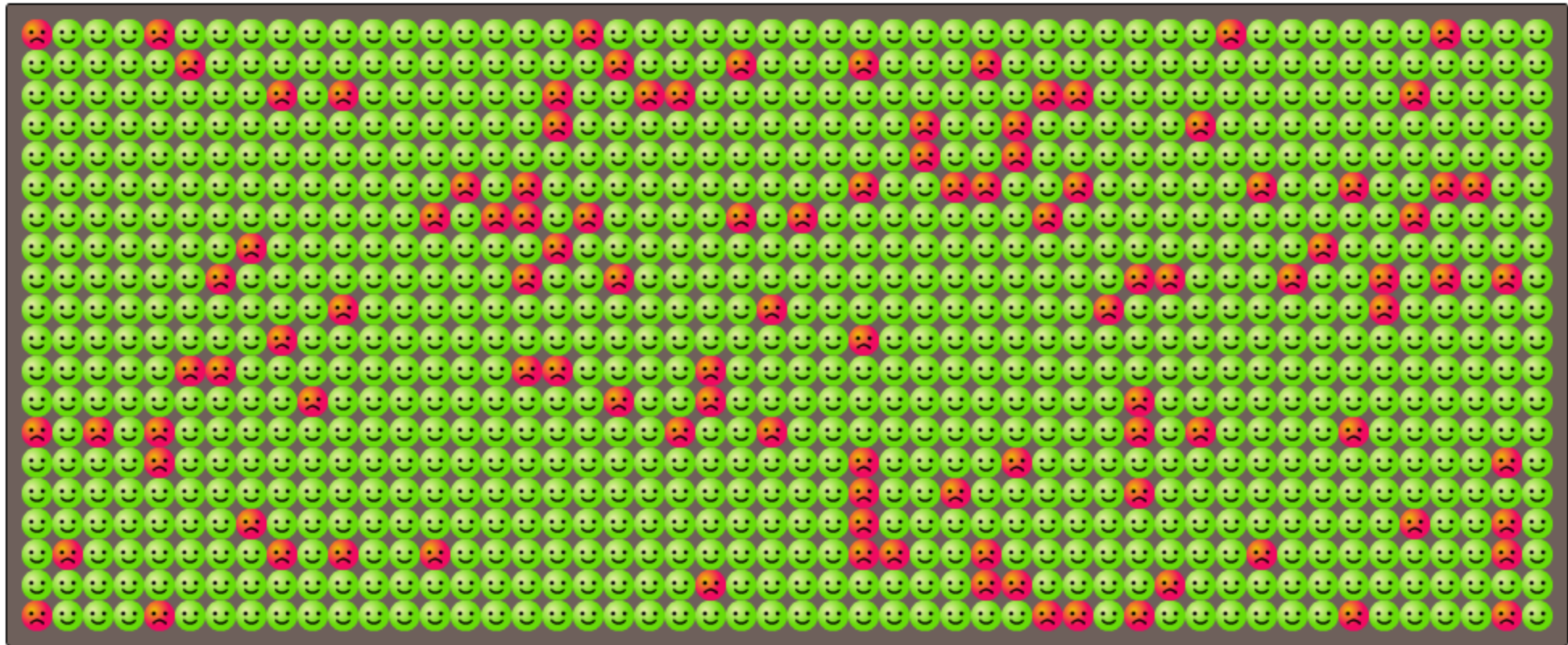
[preview it now](#) →

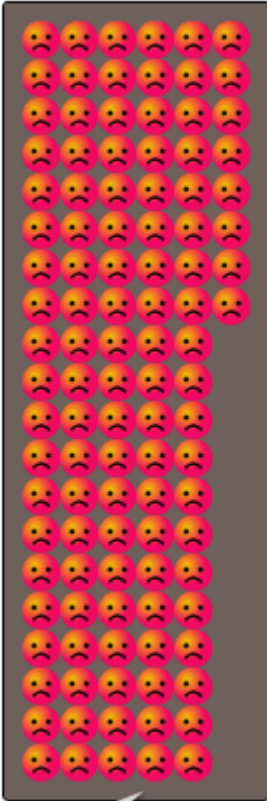
New York woman visited by police after researching pressure cookers online

Long Island resident said her web search history and 'trying to learn how to cook lentils' prompted a visit from authorities but police say search was prompted by tipoff

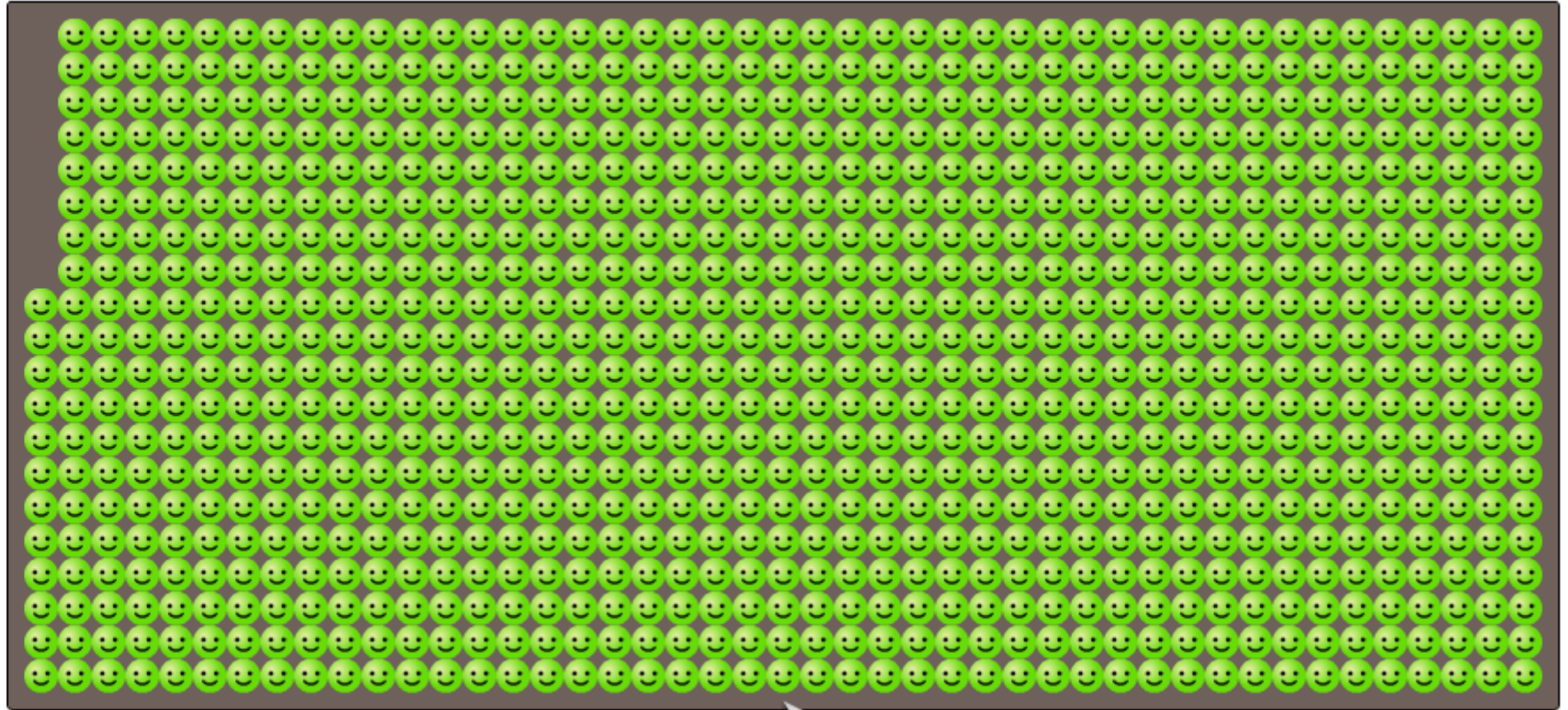
Bayes rule legt een relatie tussen
 $P(\text{Terrorist} | \text{Positief})$ en
 $P(\text{Positief} | \text{Terrorist})$

$$\begin{aligned} P(T|+) &= \frac{P(+|T) * P(T)}{P(+)} \\ &= \frac{P(+|T) * P(T)}{P(+|T) * P(T) + P(+|\sim T) * P(\sim T)} \\ &= \frac{90\% * 1\%}{90\% * 1\% + 10\% * 99\%} = 8,3\% \end{aligned}$$



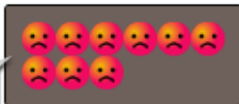


☹️ 108 test positive



😊 892 test negative

9 test positive
and are terrorists



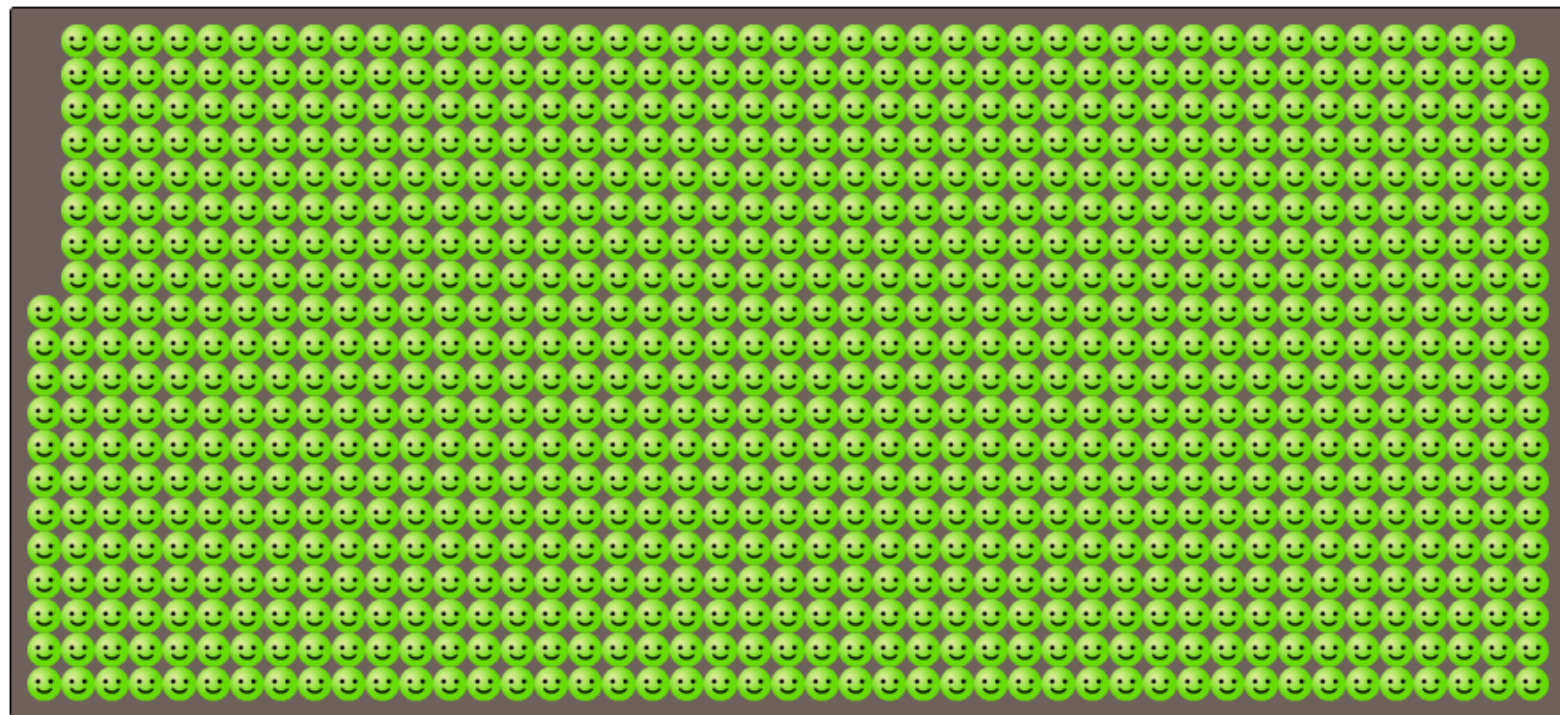
99 test positive
and are not
terrorists



1 tests negative
and is a terrorist

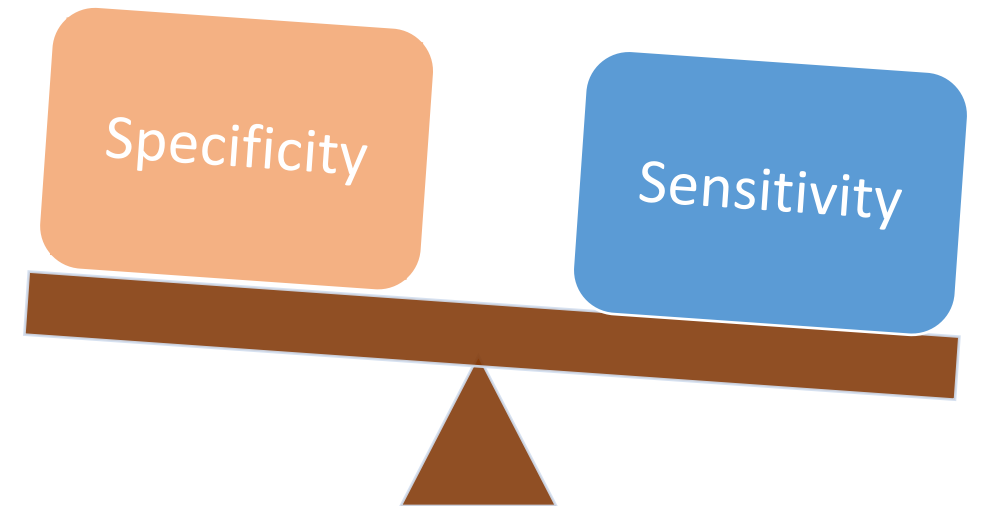


891 test negative
and are not
terrorists





Teeven's dilemma..

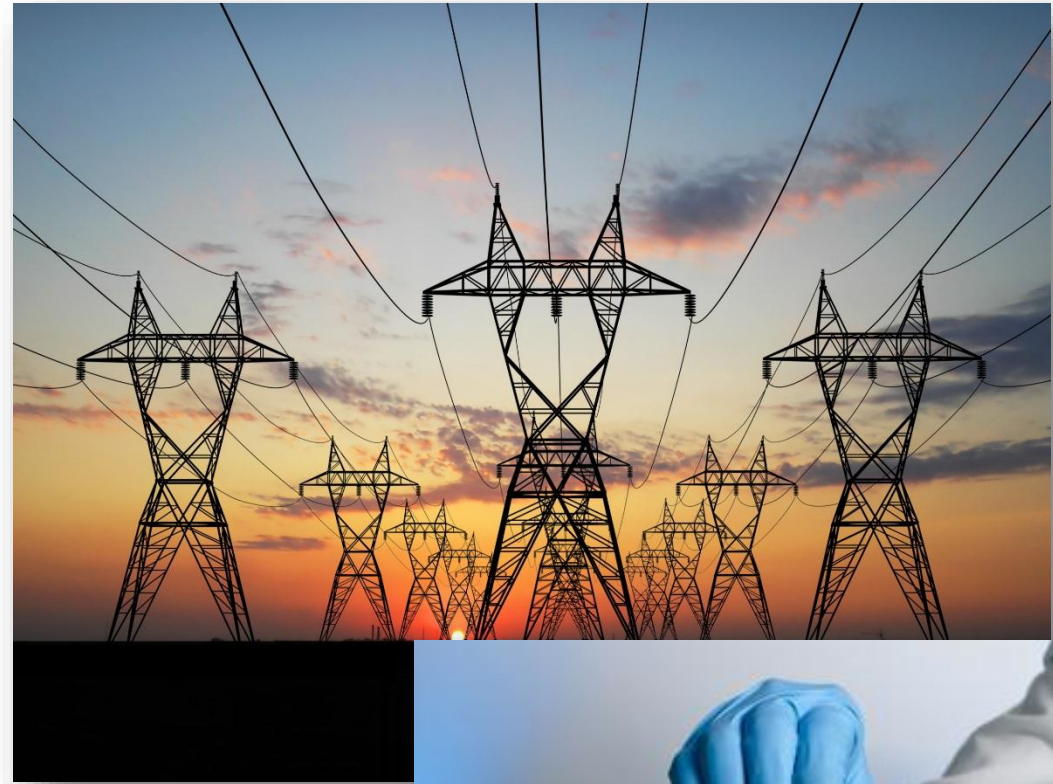


...is een duivels dilemma

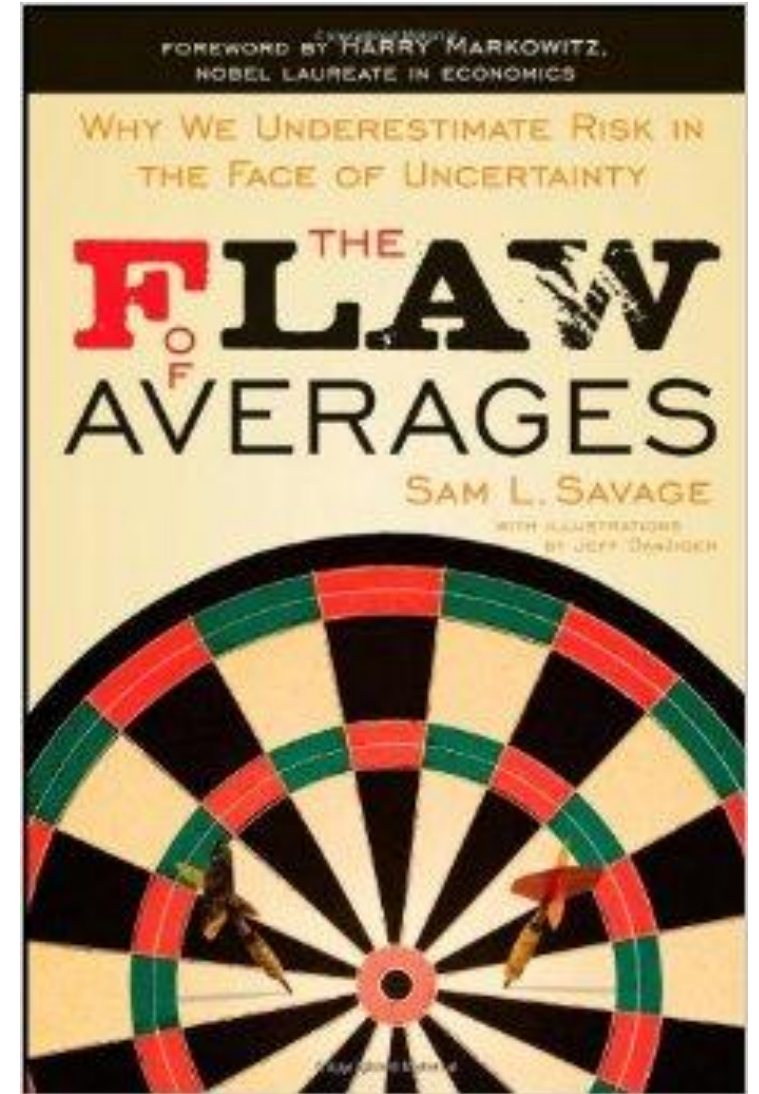
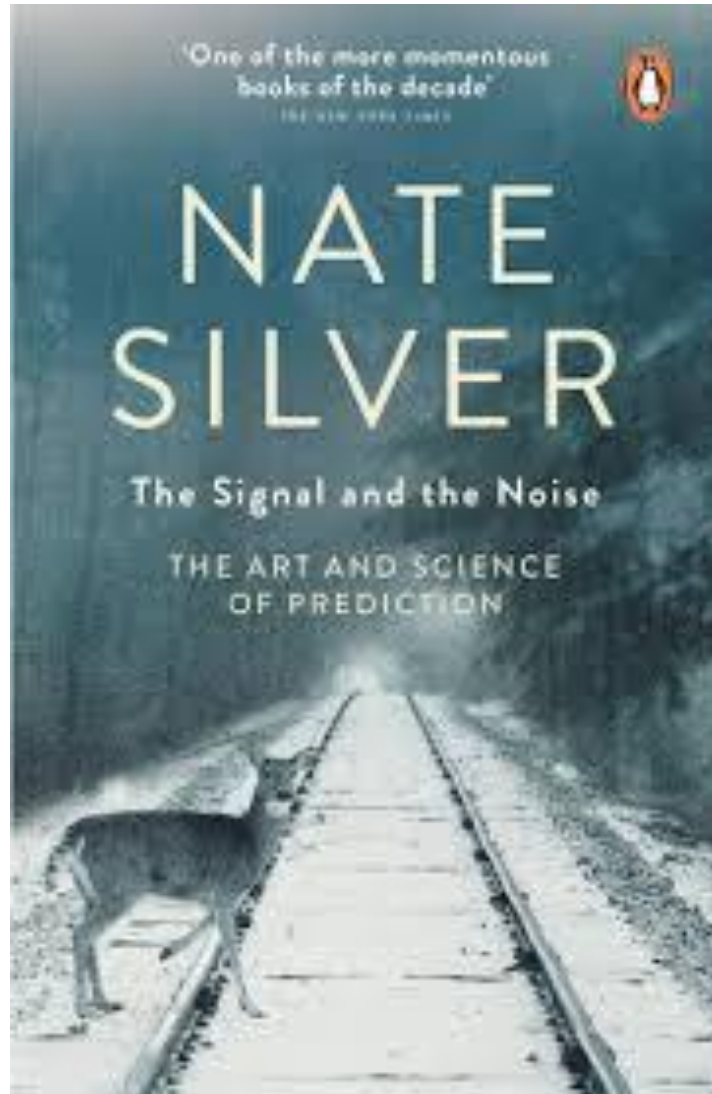
| | Nauwkeurigheid test | | | | |
|-------------|---------------------|-------|-------|-------|-------|
| Prevalentie | 50% | 60% | 70% | 80% | 90% |
| 1:100.000 | 100% | 100% | 100% | 100% | 100% |
| 1:10.000 | 100% | 100% | 100% | 100% | 99,9% |
| 1:1.000 | 99,9% | 99,9% | 99,8% | 99,6% | 99,1% |
| 1:100 | 99,0% | 98,5% | 97,7% | 96,1% | 91,7% |
| 1:10 | 90,0% | 85,7% | 79,4% | 69,2% | 50,0% |

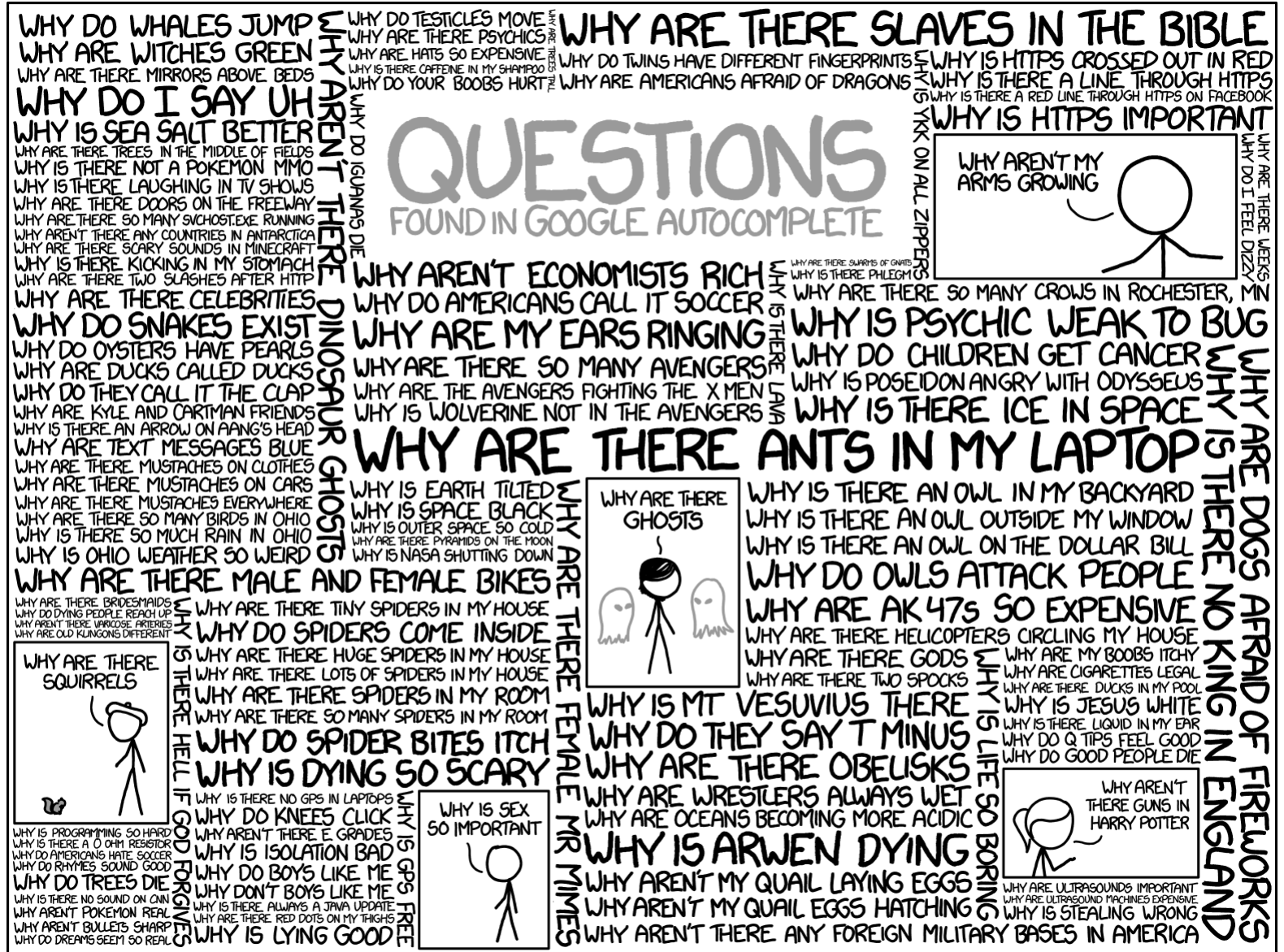
het zijn niet alleen
terroristen

Contrôle
Anti-Dopage



Aanraders





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www.john-poppelaars.blogspot.nl