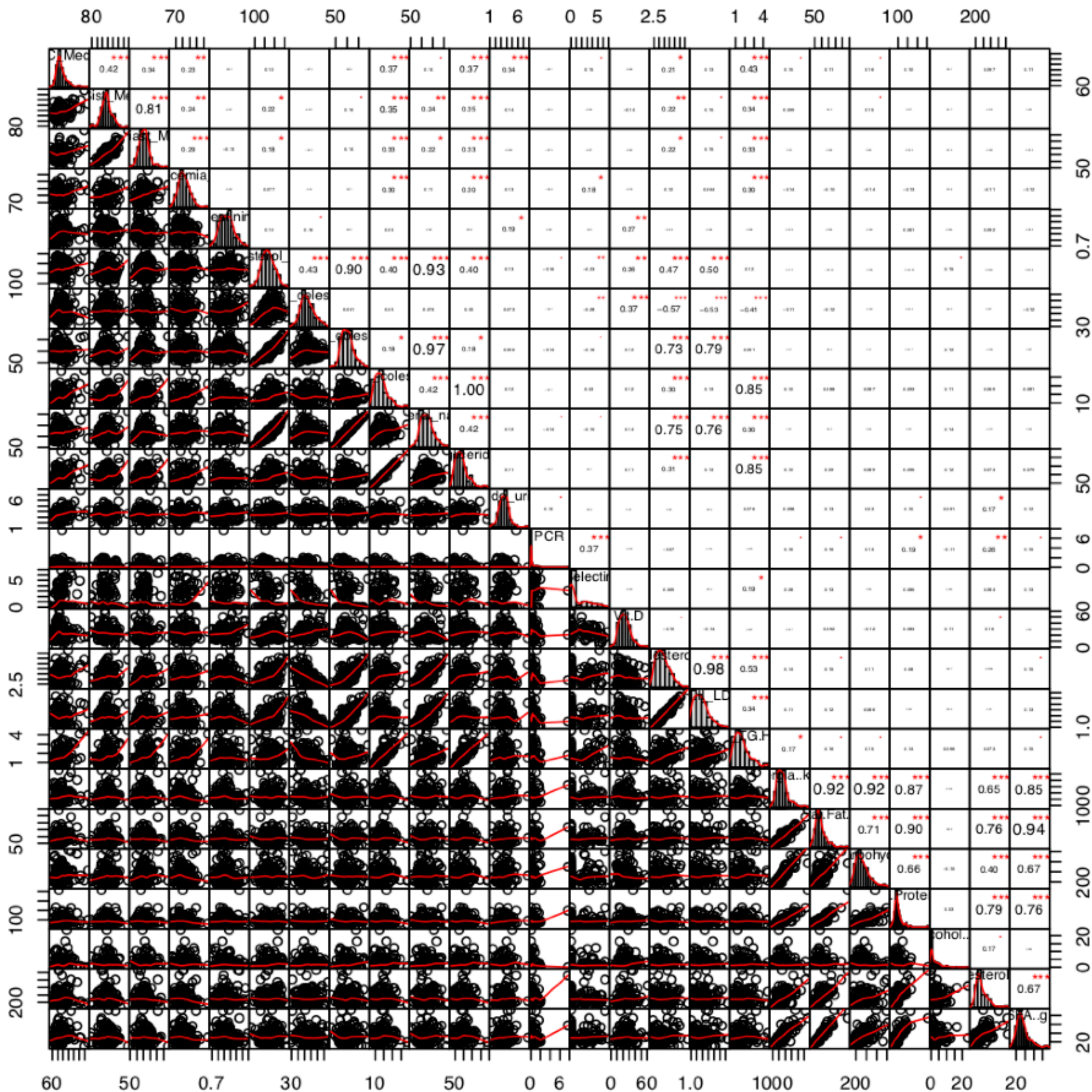




Instituto  
René Rachou  
**FIOCRUZ MINAS**





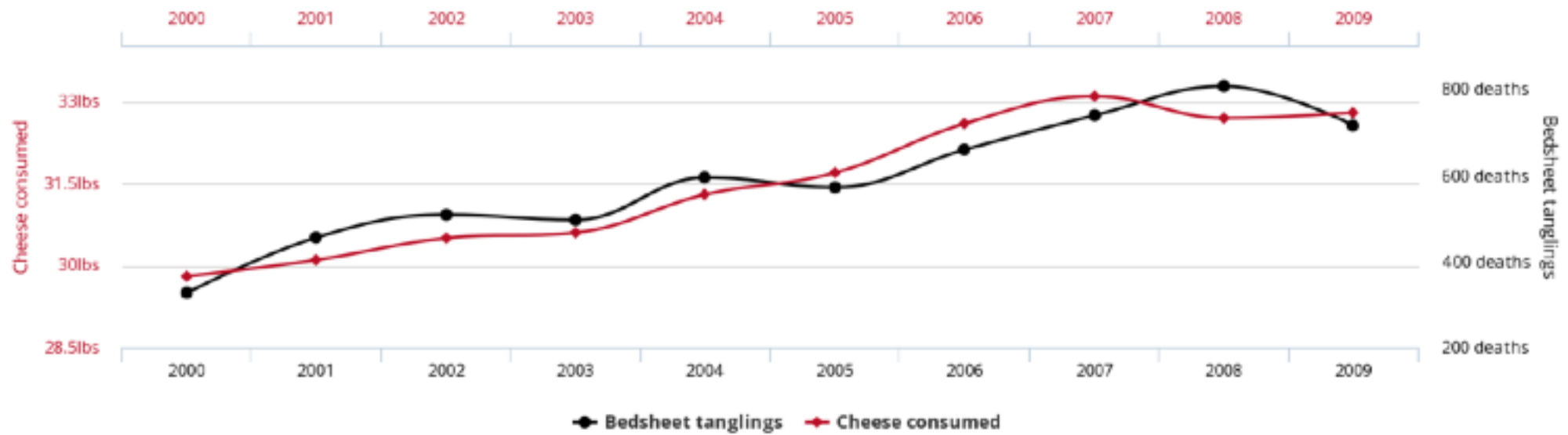
- Amplamente usadas para inferir associação.
- Geralmente vendidas como causa ou consequência.
- A armadilha do “Big Data”.
  - Correlações espúrias

Associações

## Per capita cheese consumption

correlates with

## Number of people who died by becoming tangled in their bedsheets

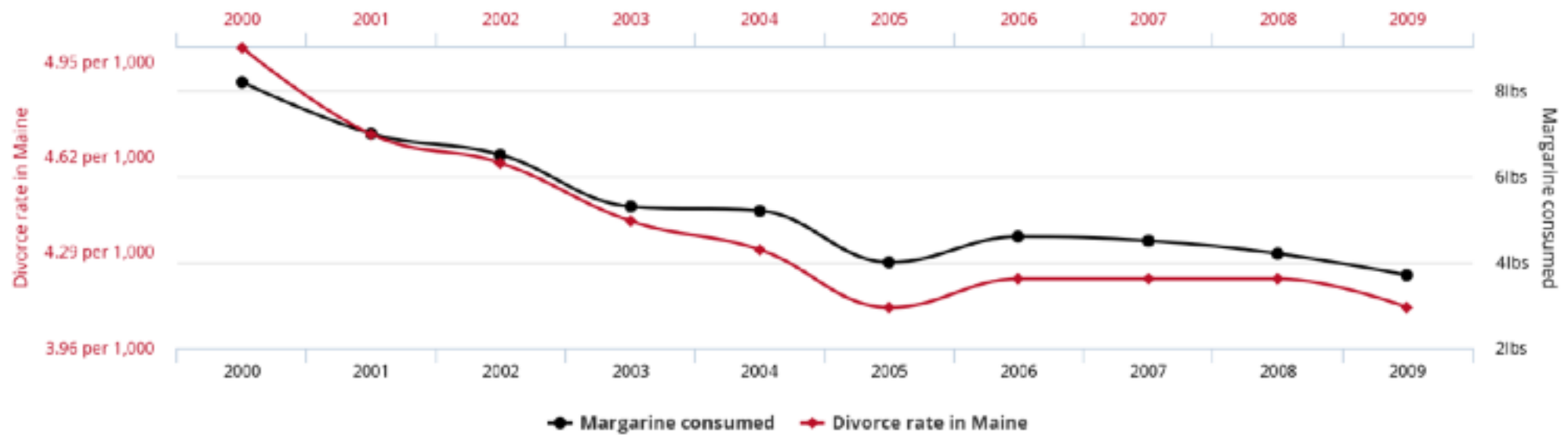


tylervigen.com

## Divorce rate in Maine

correlates with

## Per capita consumption of margarine

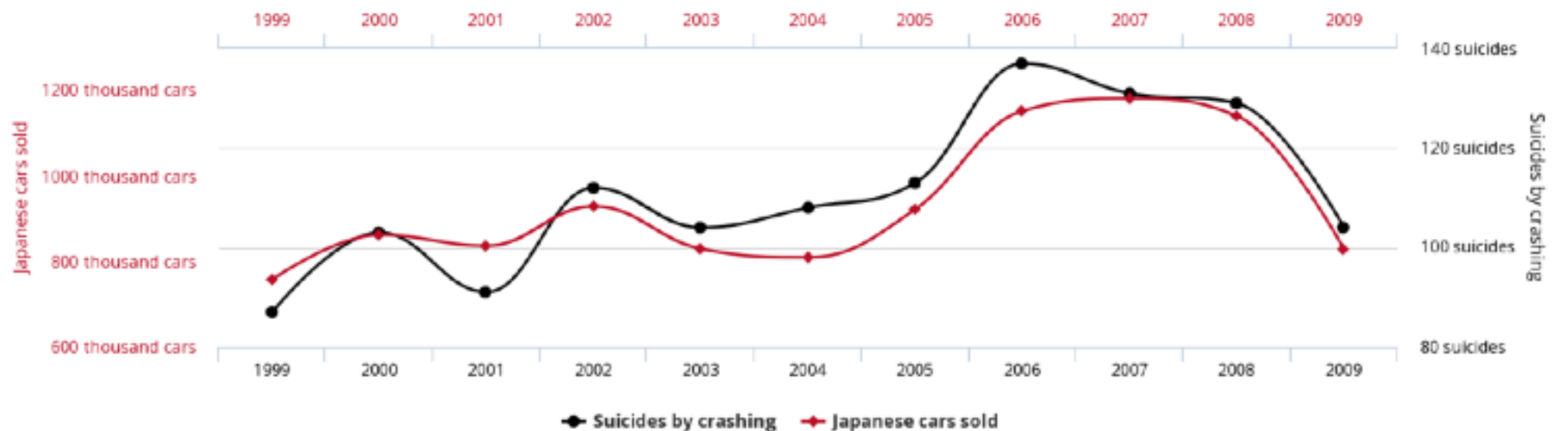


tylervigen.com

## Japanese passenger cars sold in the US

correlates with

## Suicides by crashing of motor vehicle



tylervigen.com



LIVE

breakyourownnews.com

**BREAKING NEWS**

## BEDSHEET LAWS REVISED

12:02

TANGLING IS A RELEVANT CAUSE OF DEATH IN FRANCE AND IN MINAS GERAIS STATE

LIVE

breakyourownnews.com

**BREAKING NEWS**

## MARAGRINE ADS AREN'T TRUE

14:14

KEEP YOUR FAMILY TOGETHER, AVOID MARGARINE IN YOUR BREAKFAST.

LIVE

breakyourownnews.com

**BREAKING NEWS**

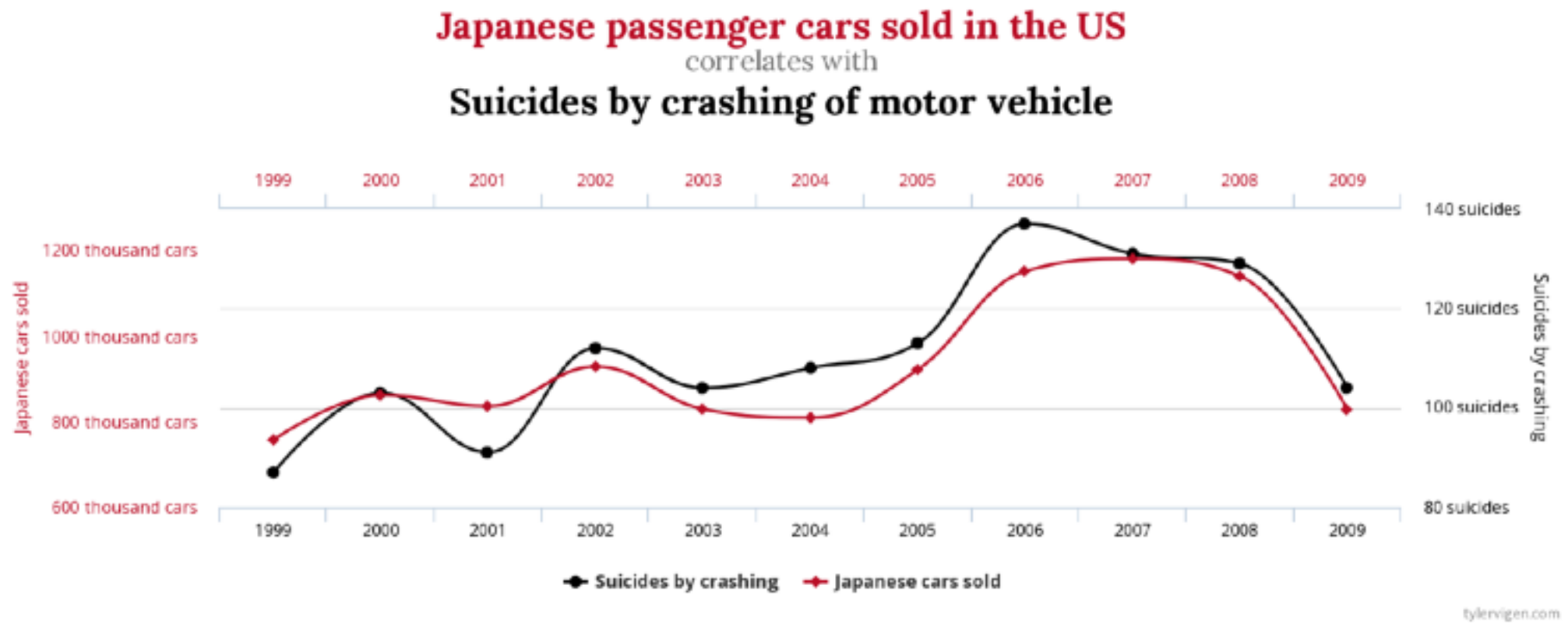
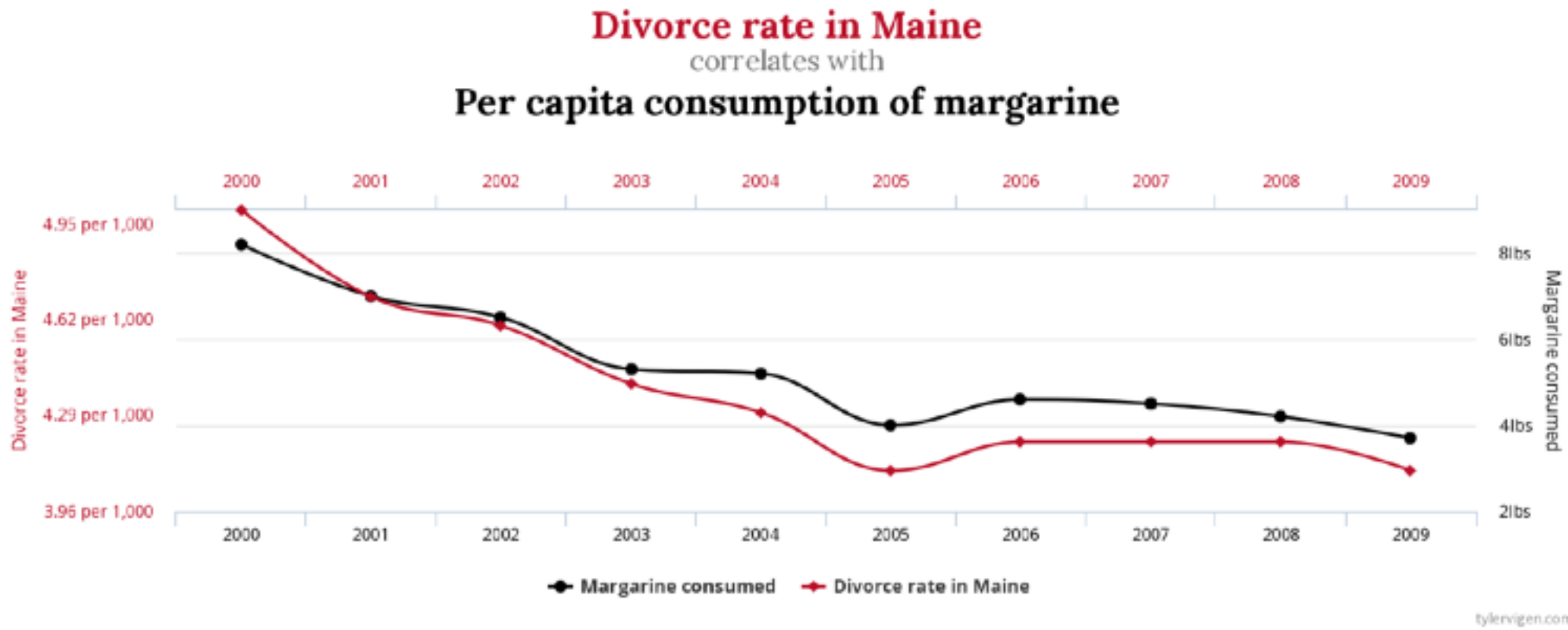
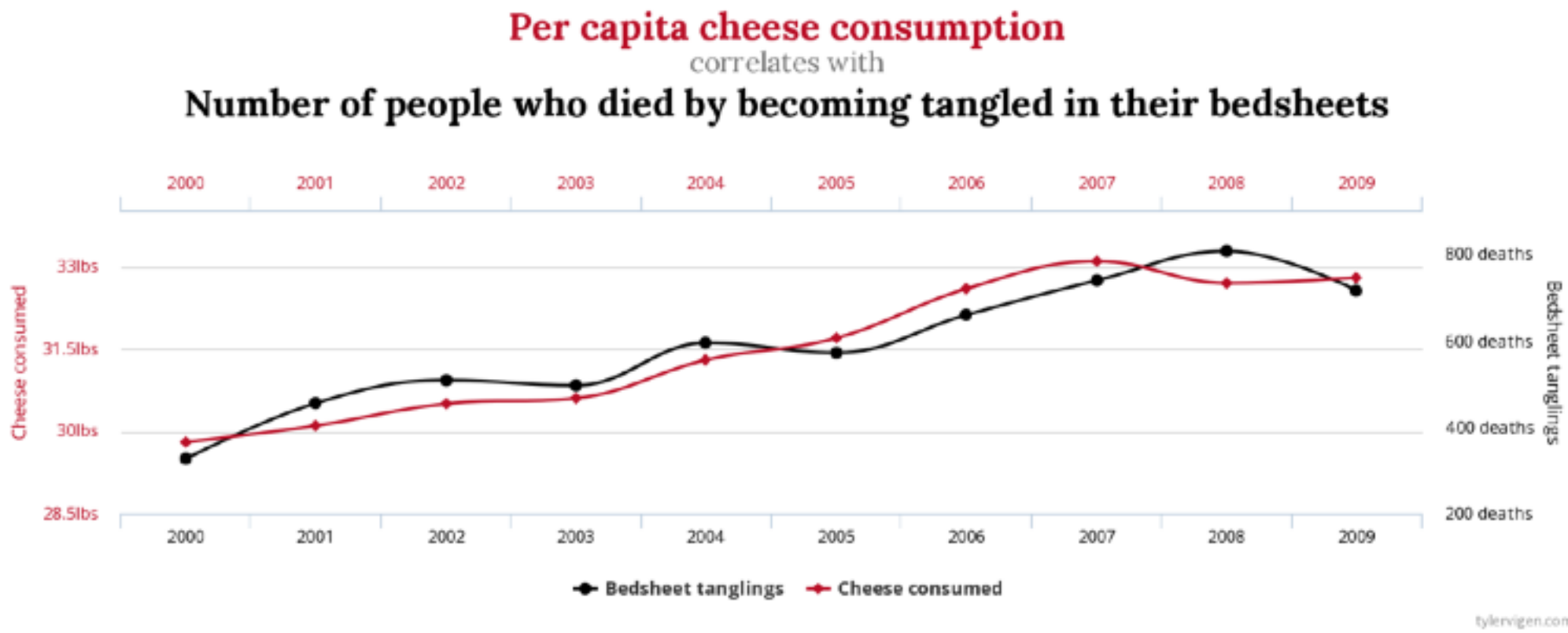
## JAPANESE CARS: HELL ON WHEELS

12:10

JAPANESE CARS ARE SO BAD THAT MAKE THE OWNERS WANT TO DIE



# As correlações





- Efeito JARK
  - Justify After Results are Known
- Qualquer trabalho pode ser publicado
  - Você pode encontrar referências que suportem seu experimento errado.

Too many journals? Towards a theory of repeated rejections and ultimate acceptance

Jan Oosterhaven

- Muitos trabalhos de microbiomas não são reprodutíveis
  - Método de clusterização
  - Método de classificação
  - Método de montagem

Prediabetes

Association	Organism	Result	Out of Range
Associated	<i>Prevotella</i> [57]	<div><div></div></div> Normal	
	<i>Veillonella</i> [57]	<div><div></div></div> Normal	
Inversely associated	<i>Akkermansia muciniphila</i> [58]	<div><div></div></div> Normal	
	<i>Bifidobacterium</i> [57]	<div><div></div></div> Low	<div><div></div></div> Condition more likely
	<i>Butyricimonas</i> [57]	<div><div></div></div> Normal	
	Microbial Diversity [51]	<div><div></div></div> Normal	



2018-v2.0.0

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Lab Director Susan Zneimer, PhD, FACMG  
CLIA 05D2089115  
CAP 9263832

9/17

SmartGut™ Report

Patient Sam Sample  
DOB N/A

Metabolic disorders (continued)

Type 2 Diabetes

Association	Organism	Result	Out of Range
Associated	<i>Akkermansia muciniphila</i> [59]	<div><div></div></div> Normal	
	<i>Barnesiella</i> [60]	<div><div></div></div> Normal	
	<i>Collinsella</i> [61]	<div><div></div></div> Normal	
	<i>Prevotella</i> [62,63]	<div><div></div></div> Normal	
Inversely associated	<i>Lactobacillus</i> [64,65]	<div><div></div></div> Low	<div><div></div></div> Condition more likely
	<i>Roseburia</i> [59,66]	<div><div></div></div> Normal	