Asides on Curious and Interesting Things
Complex Networks
CSYS/MATH 303, Spring, 2011

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Outline

Words

People

Probability

Random

Videos

Good science

References
Culturomics:

“Quantitative analysis of culture using millions of digitized books” by Michel et al., Science, 2011 [1]

http://www.culturomics.org/ ( Broken links)
Google Books ngram viewer ( Broken links)
Selflessness

Radiolab Podcast: “An Equation for Good” (▶)

- Natural selection,
- the ‘mystery of altrusim’,
- George Price,
- madness.
The Invention of Money

▶ “This American Life” Podcast on money and belief (рап)
▶ (1) Brazil and (2) the Fed...
Dynamic networks: Server security

Serving one html page with an image:

Map of system calls made by a Linux server running Apache and Windows server running IIS. Which is which?

Taken from http://www.visualcomplexity.com
Homo probabilisticus?

The set up:

- A parent has two children.

Simple probability question:

- What is the probability that both children are boys?
Homo probabilisticus?

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Simple probability question:

- What is the probability that both children are boys?
- 1/4...
Homo probabilisticus?

The next set up:
- A parent has two children.
- We know one of them is a boy.

The next probabilistic poser:
- What is the probability that both children are boys?
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The next probabilistic poser:

- What is the probability that both children are boys?  
  - $1/3...$
Homo probabilisticus?

One more set up:

- A parent has two children.
- We know one of them is a boy born on a Tuesday.

One more probabilistic poser:

- What is the probability that both children are boys?
Homo probabilisticus?

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One more probabilistic poser:

- What is the probability that both children are boys?
- ?
Homo probabilisticus?

One more set up:

▶ A parent has two children.
▶ We know one of them is a boy born on December 31.

One more probabilistic poser:

▶ What is the probability that both children are boys?
Homo probabilisticus?

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- We know one of them is a boy born on December 31.

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Prediction:

http://xkcd.com/605/
By the third trimester, there will be hundreds of babies inside you...
What’s this?
Mimicry—the lying lyrebird
Whimsical but great example of real science:

“How Cats Lap: Water Uptake by *Felis catus*” (⊞)

Amusing interview here (__)
Universal numbers

- Accidents of evolution give us $5 + 5 = 10$ fingers and hence base 10.
- We could be happy about 6, 8, or 12.
Accidents of evolution give us $5 + 5 = 10$ fingers and hence base 10.

We could be happy about 6, 8, or 12.
Beep.
Great moments in Universality

Phyllotaxis
Add pictures
Richard Wiseman’s research:

▶ http://www.quirkology.com

▶ Letter writing exercise...
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▶ http://www.quirkology.com
▶ Letter writing exercise...
People who draw letters so others can read them tend to:

- be high ‘self-monitors’
- be concerned with how others see them
- adapt better to social situations
- skilled at altering how others see them
- be more adept at lying...

People how draw letters so they can read them tend to:

- be low ‘self-monitors’
- follow their inner values
- remain the same across social settings
- be less adept at lying...
Quirkology

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And those who convince themselves they drew their letters the opposite way to what they really did...
And those who convince themselves they drew their letters the opposite way to what they really did... are good at deceiving themselves.