## Introduction

- 1 The topic
- 2 The course
- 3 A note on computers
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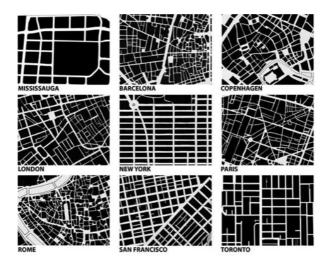
## Reality is predictable

## Los Angeles Times | ARTICLE COLLECTIONS

## Stopping crime before it starts

Sophisticated analysis of data can sometimes tell police where criminals are headed. It's academic now, but the LAPD plans to get involved.

## Reality is visualizable



## Reality is multidimensional





Bad Religion (317 plays) David Bowie (220 plays) Isis (202 plays)





Horace Andy (178 plays) Army of the Pharaohs Biosphere (168 plays)





Bibio (162 plays)



Antonio Vivaldi (143 plays)



Neil Young (125 plays)



King Crimson (116 plays)



H.P. Lovecraft (116 plays)

(177 plays)



Virgin Prunes (115 plays)





Wax Tailor (104 plays)





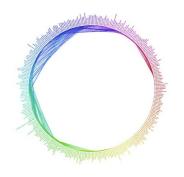


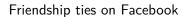
7L & Esoteric (102 plays)



Gonzales (100 plays)

## Reality is relational





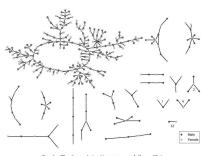


Fig. 2.—The direct relationship structure at Jefferson High

Sexual ties in high school

## Data stand as professional assets

### **OECD Health Data 2010: Statistics and Indicators**

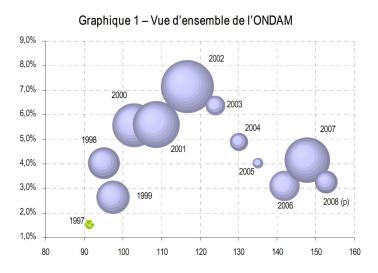
AVAILABLE NOW - October 21st - Internet update for OECD Health Data 2010

**OECD Health Data 2010**, released on 29 June 2010, offers the most comprehensive source of comparable statistics on health and health systems across OECD countries. It is an essential tool for health researchers and policy advisors in governments, the private sector and the academic community, to carry out comparative analyses and draw lessons from international comparisons of diverse health care systems.

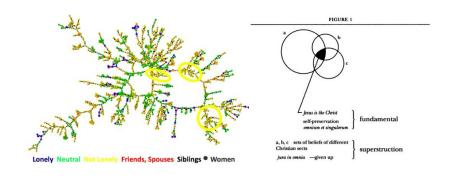
• What is OECD Health Data 2010



## Data stand as policy expertise



## Interpretation is key to all analysis



Loneliness in social networks

Sets of Christian beliefs

## Interpretation is difficult

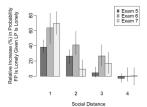


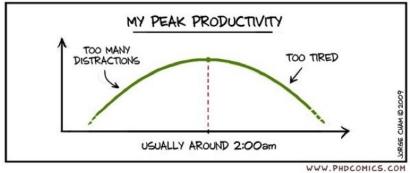
Figure 2. Social distance and locolitors in the Framingham Social Network. This figure shows for each exam the proresung increme the likelihood a given ficeal participant (FP) is lonely if a friend or family member at a certain social distance is lonely (where lonely is defined as feeling lonely more than once a week). The relationship is stronger between individuals who are directly connected, but it remains distinct the strength of the stre

With explanation



Without explanation

## Interpretation is what this course is eventually about



- www.rnpcomes.com
- What are the **measurements** of the axes?
- What is the **probability** of 2am being the cutoff point?
- What is the **shape** of the time/productivity relationship?

### Internal biases

### In observational data from surveys:

■ Survey design and **sampling strategy**:

```
"Please fill in this 367-page long questionnaire"
"Answer our questions and win an iPad! (perhaps)"
"We surveyed knowledge of SDMX among toddlers."
```

■ Question design and **measurement error**:

```
"Are you a racial supremacist pig?"
"What do you like most, inflation or Star Wars?"
"Do you support Aliina Koospürati's new coalition?"
```

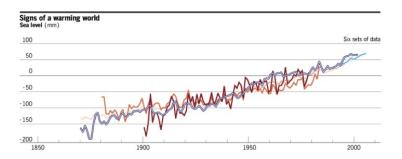
### In official statistics:

```
"[GDP figures] are for reference only"

— Chinese official, 2010
```

### External biases

- Media coverage
- Political spin
- 'Merchants of doubt'



### WEIRD biases

BEHAVIORAL AND BRAIN SCIENCES (2010), Page 1 of 75 doi:10.1017/S0140525X0999152X

## The weirdest people in the world?

"The findings suggest that members of Western, Educated, Industrialized, Rich, and Democratic (WEIRD) societies, including young children, are among the least representative populations one could find for generalizing about humans."

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### Course essentials

### Core learning objectives

- Data management
- Statistical hypotheses
- Model-driven research

### Core teaching blocks

- Statistical theory (readings)
- Statistical computing (programming)
- Tons of social science (research)

### Course essentials

### Requirements

- Attendance
- Homework
- No plagiarism

### Grading

- Code and paper
- Draft, revised, final
- Project management



This won't work.

### Homework

### Course website

http://f.briatte.org/teaching/quanti/

### Readings

- Feinstein and Thomas: default
- Urdan: shorter, less explained
- Stata Guide: practical walkthrough

### Coursework

- Replicate session do-files
- Code your own data analysis
- Write up a empirical research paper

## Logistics

# Elect a student representative.

No estimation without representation; one (wo)man, one vote.

### Any questions so far?

Do not worry about deadlines: these will be discussed in class.

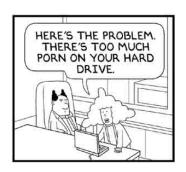


## A note on computers

Despite appearances, computers are more than

- Music players
- Facebook terminals
- Porn stashes

They can also be used to do, like, serious stuff.



### **Important**

This course requires that you learn how to work with a computer. Program or be programmed.

### A note on slides

The course slides cover logistics and offer basic guidance. They are absolutely insufficient to complete the course requirements.



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## Welcome, and thank you.

