

Helping students glimpse the true promise of statistics

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USCOTS, May 16, 2013

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Change...



in data from early years, majored in Psychology

Fast forward to 2007

- lapsed psychologist (but took all required stats courses for PhD in Psychology)
- graduate degree in Biostatistics
- interweaving interests in stat ed and stat computing
- shipped off to Auckland for the year



Change...(*Statistics and the Modern Student*)

USCOTS 2011:
**The Next
Big
Thing**



eCOTS
2012



Change... (baby steps towards *Big Data*)



What is *Big Data*, exactly?

The
Economist

FEBRUARY 27TH-MARCH 5TH 2010

Economist.com

Obama the warrior
Misgoverning Argentina
The economic shift from West to East
Genetically modified crops blossom
The right to eat cats and dogs

The data deluge

AND HOW TO HANDLE IT: A 14-PAGE SPECIAL REPORT



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Glimpsing the true promise



What is *Big Data*, exactly?

Big data is high-volume, high-velocity and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making (Gartner, 2013).

How do we get there? (What are the precursors...)

Big data starts with datasets with k variables, where $k > 2$ (Kaplan, personal communication).

What we teach...

Name Alana Horton

Date 10/3/00 very Nice!

Draw pictures which illustrate the meanings of your words. Write your word clearly in each box and underline it. Also, try to fit in a thought bubble that uses your word in the illustration. Work carefully.



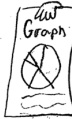
Here's my data

Data



I estimate their are 42 balls

Estimate



Here's my graph

Graph



Here our plot

Plot

Statistics

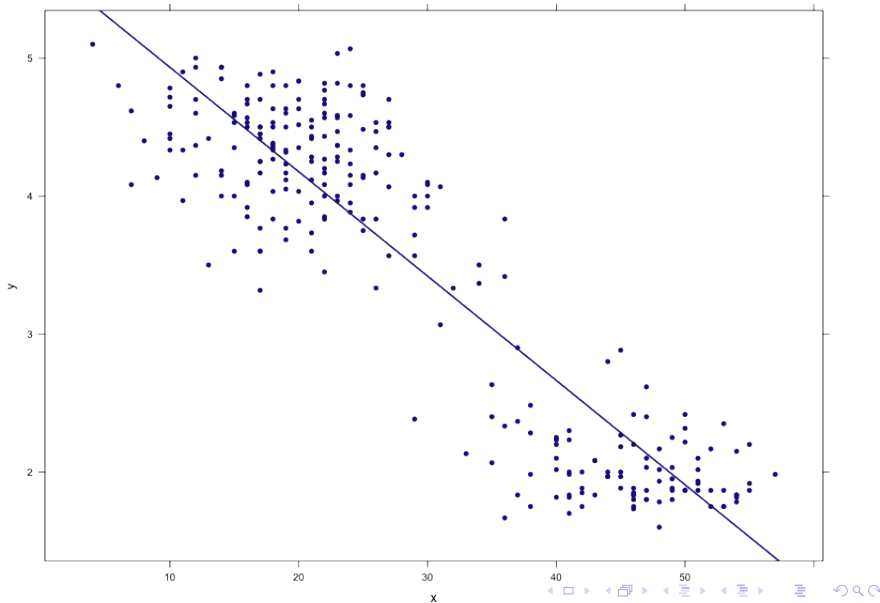


Here's so statistics

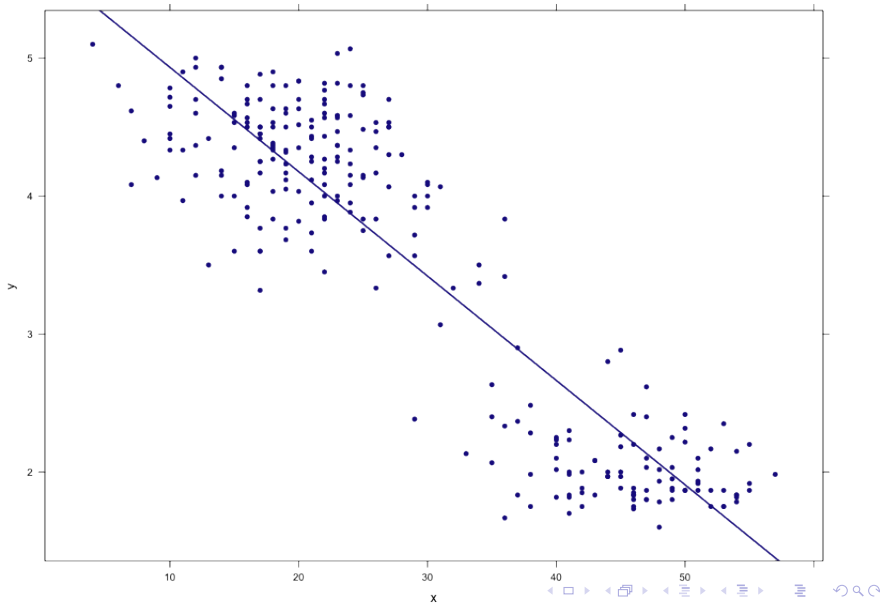
What we teach...



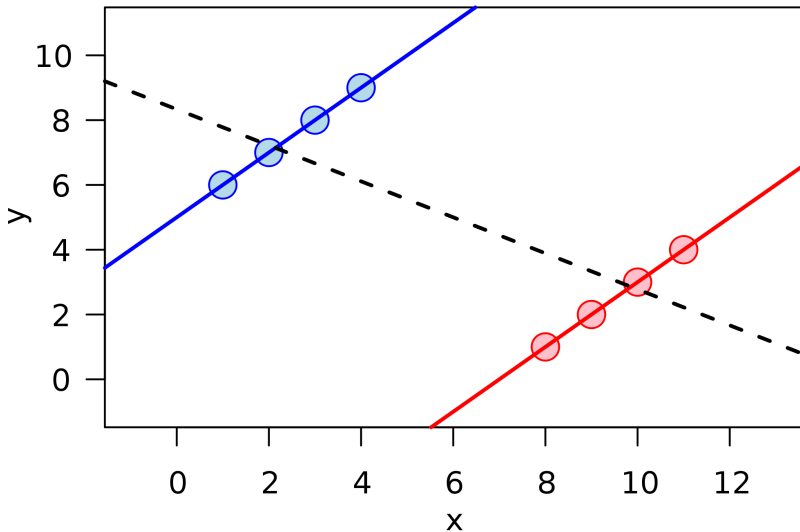
What we teach...



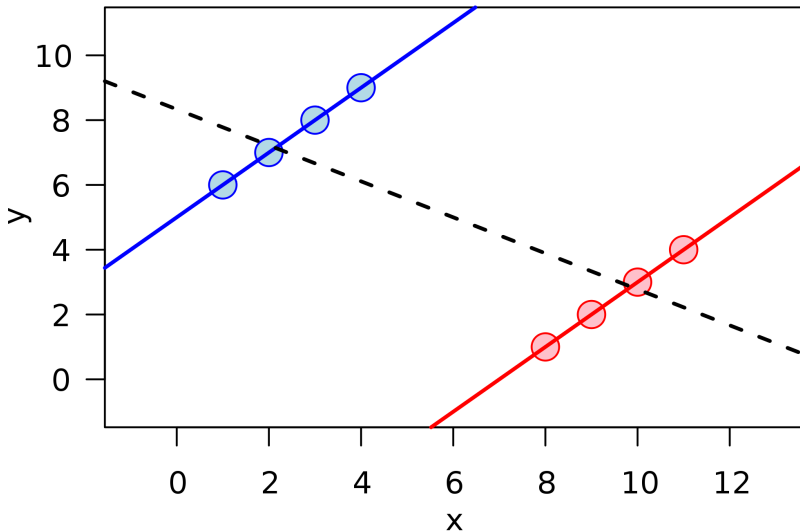
What we teach...



What is really happening...



What is really happening...



AP Statistics Vocabulary

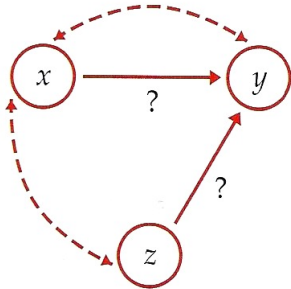


Both Sides

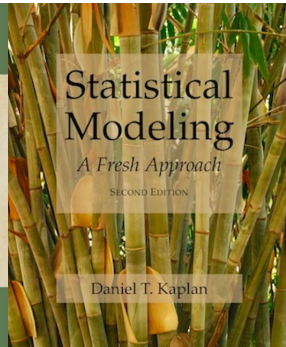
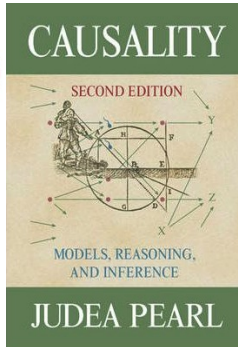
confounding

when the levels of one factor are associated with the levels of another factor so their effects cannot be separated

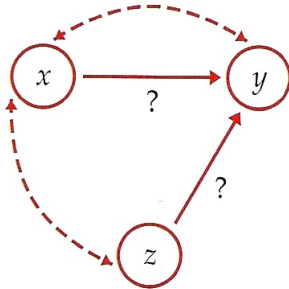
What students need to know...



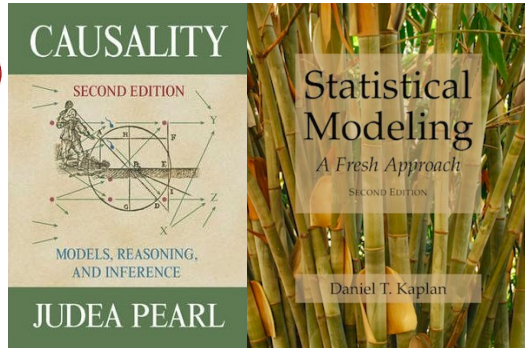
Confounding



What students need to know...



Confounding



- rethink datasets that motivate our courses
- move from $k = 2$ to at least $k = 3$
- communicate the excitement of statistics (or at least give a glimpse...)

Helping students glimpse the true promise of statistics

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(note professional change as of July 1st)

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