

# wrapping up

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## outline

conclusion (p.240-254 Wheelan, 2013)

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## data, data everywhere

- ◇ eg goog timeline <https://support.google.com/maps/answer/6258979>
- ◇ Wheelan (2013) discusses uses of data
  - football concussions, autism
- ◇ again see: [www.economist.com/node/15557443](http://www.economist.com/node/15557443)
  - and full report: <https://www.emc.com/collateral/analyst-reports/ar-the-economist-data-data-everywhere.pdf>
- ◇ Target can even predict better pregnancy of your daughter
  - she buys unscented lotions, vitamins, etc (Wheelan, 2013, p252-3)

## so what?

- ◇ use data! (do stats)
- ◇ or read about using it (lit rev)
  - AND ALWAYS think about it! (critique research)
  - this is *\*important\** for final project in this class
  - and use stat software (Python, Stata, etc): a job skill!

## remember stats is positive, not normative

- ◇ it says what it is
- ◇ not what it should be
- ◇ for the latter we need something like philosophy or religion
- ◇ [https://en.wikipedia.org/wiki/Positive\\_statement](https://en.wikipedia.org/wiki/Positive_statement)
- ◇ dog fighting used to be socially acceptable, but not anymore
  - same thing may happen to football (p242-244)
- ◇ similarly, research can help evaluate damage from say cigars v cigarettes
  - but cannot tell us what to do about it

## be skeptical

- ◇ eg correlation  $\neq$  causation
  - MMR vaccine, autism (p245,246)
- ◇ also: measurement
  - many ways to measure the same thing
  - no measure is perfect
  - all measures oversimplify
- ◇ eg: teacher ratings, school ratings (p246-249)

## do experiments!

- ◇ again, experiment is the gold standard
  - (superb internal validity, but usually poor external)
- ◇ eg: force Indian teachers to show up by recording them
  - randomly assign cameras (p250)
- ◇ test if males or females care about kids more
  - natural experiment: weather affects crops differentially by gender:
    - eg guys grow coffee, girls grow coconuts (p251)



# the end!

- ◇ let's keep in touch
- ◇ keep me posted about your research endeavours!
- ◇ email me, stop by
- ◇ let's have a coffee

- MOHR, L. B. (1995): Impact Analysis for Program Evaluation, Sage, Beverly Hills CA, second edition ed.
- SHADISH, W. R., T. D. COOK, AND D. T. CAMPBELL (2002): Experimental and quasi-experimental designs for generalized causal inference, Wadsworth Cengage learning.
- WHEELAN, C. (2013): Naked statistics: stripping the dread from the data, WW Norton & Company.