

this time: design, probability

read: DD(B) AMS7
ch. 7-8, 24 Apr 17
LN pp. 95-119

next time: more probability

today: LN pp. ①

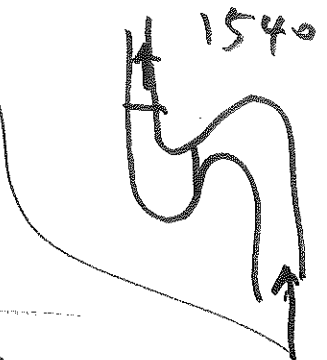
observational studies

L-83 → R-35 → L-86 →

cont receptive drug trial

I: (systolic) blood pressure (mmHg) (b.p.)

X: pill use : T: pill users
C: nonusers



4: age : ✓ as age ↑, b.p. ↑ on ave
PUF ✓ as age ↑, pill use ↓ on ave

therefore age is a PUF & bias from PUFs is the enemy in obs. studies

Q! How defeat (control for) a PUF?

A: Hold the PCF constant at (2)

analysis time: divide all subjects (T + C) into groups ~~and~~ inside which the PCF is

roughly held constant: ex. age

age 17-24 $\left\{ \begin{array}{l} T \\ C \end{array} \right.$

25-34 $\left\{ \begin{array}{l} T \\ C \end{array} \right.$

35-44 $\left\{ \begin{array}{l} T \\ C \end{array} \right.$

45-58 $\left\{ \begin{array}{l} T \\ C \end{array} \right.$

if we don't control for age, the comparison will be biased in favor of the pill being ok, because pill users are young \leftarrow low blood pressure

conclusion: after controlling for ^③
(holding constant) age, pill use
was associated with an increase
of about 5 mmHg of systolic
blood pressure

← dig when allowed
to cumulate over time

Probability \downarrow α - 95

frequentist: repeated experimentation
ex. (roulette)

Bayesian: weight of evidence
in favor of truth of
true/false statement

↑
Rev.
Thomas
Bayes