this time:	experimental design;
next time:	probability

read: JDB1 ch. 7-8, LN pp. L95-118

Apr 5 / 21 Apr 17

today: LN p. 77→

homework 1 deadline at canvas.uchicago.edu: 11.59pm tonight

controlled experiment:

* treatment (T) & control (C) groups are compared, & experimenters have control over which subjects get into which groups

(R-36) flowchart for classifying experimental designs

founder of contemporary experimental design

R. A. Fisher (1890-1962) statistician & geneticist

randomization destroys bias (good)

ex. RCT of drug to lower hypertension (high blood pressure)

① drug: blue pill w/ drug
control: identical blue pill without drug (placebo)

goal: try to keep subjects from knowing their T/C status

their blinding subjects to T/C status

why is this good?

to eliminate the placebo effect: people may respond to the idea of treatment rather than to the treatment itself.

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also a good idea to blind experimenters to T/C status:

both: double-blind experiment.

an unbiased experimental design (ex. RCT) is called valid

matched pair design

pair #	T	C	D = T − C
1	683	670	+13
2	642	603	+39
⋮	⋮	⋮	
n = 60	592	599	−7
mean	683	647	+36

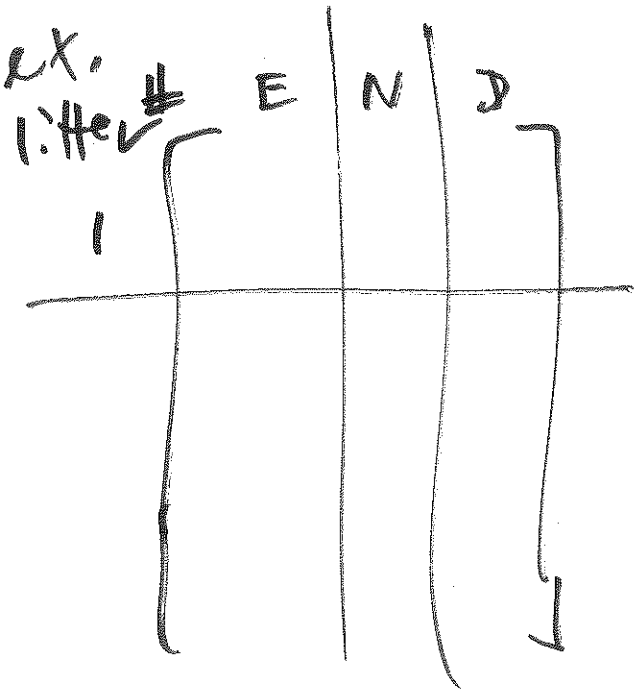
2 brothers from same litter

60 chosen randomly

analysis

this design is also valid but is likely to be more accurate (because ↑ PE has been held constant)

matching but with more than 2 subjects matched: ~~randomized~~ blocks design



blocks

blocksize = 3

matched pairs is special case of randomized blocks with blocksize 2

one other way to get matched pairs

ex. ① = new drug to combat insomnia
② = placebo