Short Practice 1

European Field Experiments Summer School 2018

Question 1

Gerber and Green, Chapter 1, question 4:

A parody appearing in the British Medical Journal questioned whether parachutes are in fact effective in preventing death when skydivers are presented with severe "gravitational challenge." The authors point out that no randomized trials have assigned parachutes to skydivers. Why is it reasonable to believe that parachutes are effective even in the absence of randomized experiments that establish their efficacy?

Question 2

Gerber and Green, Chapter 2, Question 12:

A researcher studying 1,000 prison inmates noticed that prisoners who spend at least 3 hours per day reading are less likely to have violent encounters with prison staff. The researcher therefore recommends that all prisoners be required to spend at least 3 hours reading each day. Let D_i be 0 when prisoners read less than 3 hours each day and 1 when prisoners read more than 3 hours each day. Let $Y_i(0)$ be each prisoner's potential number of violent encounters with prison staff when reading less than 3 hours per day, and let $Y_i(1)$ be each prisoner's potential number of violent encounters when reading more than 3 hours per day.

1. In this study, nature has assigned a particular realization of d_i to each subject. When assessing this study, why might one be hesitant to assume that $E[Y_i(0)|D_i = 0] = E[Y_i(0)|D_i = 1]$ and $E[Y_i(1)|D_i = 0] = E[Y_i(1)|D_i = 1]$?
2. Suppose that researchers were to test this researcher's hypothesis by randomly assigning 10 prisoners to a treatment group. Prisoners in this group are required to go to the prison library and read in specially designated carrels for 3 hours each day for one week; the other prisoners, who make up the control group, go about their usual routines. Suppose, for the sake of argument, that all prisoners in the treatment group in fact read for 3 hours each day and that none of the prisoners in the control group read at all during the week of the study. Critically evaluate the excludability assumption as it applies to this experiment.
3. State the assumption of non-interference as it applies to this experiment.
4. Suppose that the results of this experiment were to indicate that the reading treatment sharply reduces violent confrontations with prison staff. How does the non-interference assumption come into play if the aim is to evaluate the effects of a policy whereby all prisoners are required to read for 3 hours?