

## Ph 458 Evidence and Policy

### WEEK 3: Foundational Issues about Significance Tests (I)

#### READING AND STUDY QUESTIONS

##### 1. Reading:

**a My notes on 'Testing Statistical Theories'**

**b. Howson & Urbach, Chapter 5 (you can skim over the more technical bits if you need to, just try to get the main points)**

- (i) What is involved in a 'significance test'?
- (ii) What does it mean for a result to be 'statistically significant'?
- (iii) Discuss some of the difficulties in deciding what we can and cannot reasonably conclude from a statistically significant result. (Differentiate two cases: Fisher's set up where the only hypothesis 'on the table' is the "null"; and the Neyman-Pearson situation in which the experimenter tests the null against some 'alternative'.)

##### 2. Reading:

**Gerd Gigerenzer 'The Superego, Ego and Id of Statistical Reasoning'**

- (i) Cutting through the Freudian rhetorical flourishes, what claims is Gigerenzer making? (You will find it useful to differentiate the historical material about how social sciences like psychology arrived at the 'hybrid logic' of statistical testing; and the logical analysis concerning the tenability of various claims made about the outcomes and impacts of statistical tests.)
- (ii) How convincing are his claims? (Here you should concentrate on the analytical, rather than the historical claims.)

Section 2 of the seminar will start with a brief presentation, but very important of course that everyone has done the reading and comes along ready to discuss and raise questions.

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