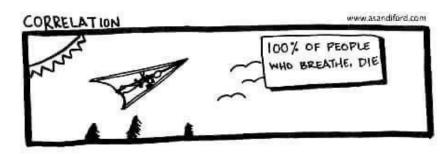
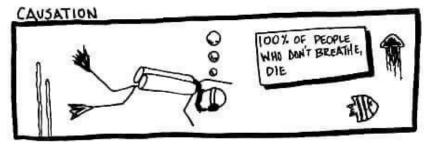


# BY THE WAY, WHAT WERE FOUR CONDITIONS OF CAUSALITY?





- 1. Association
- 2. Time ordering
- 3. Causal mechanism
- 4. No alternative explanations
- ... and how do we conduct research in Political Science (wheel of science)?

Research question – Theory – Hypotheses – Operationalisation – Data Collection – Analysis

### WHAT TYPES OF EXPERIMENTS DO YOU KNOW?







**LABORATORY** 

**FIELD** 

**NATURAL** 

## HOW DO I DISTINGUISH BETWEEN DIFFERENT TYPES OF EXPERIMENTS?

#### **Solution:**

Look at the variables involved in your experiment.

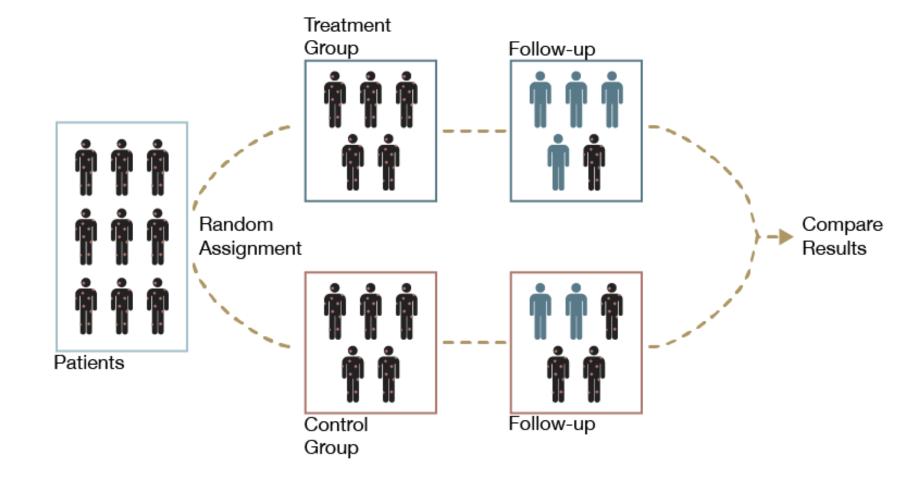
- Are both variables manipulated? (lab)
- Is only IV (=stimulus) manipulated? (field)
- Is there no manipulation at all? (natural)

So, thinking about ethical aspects of manipulation is pivotal!

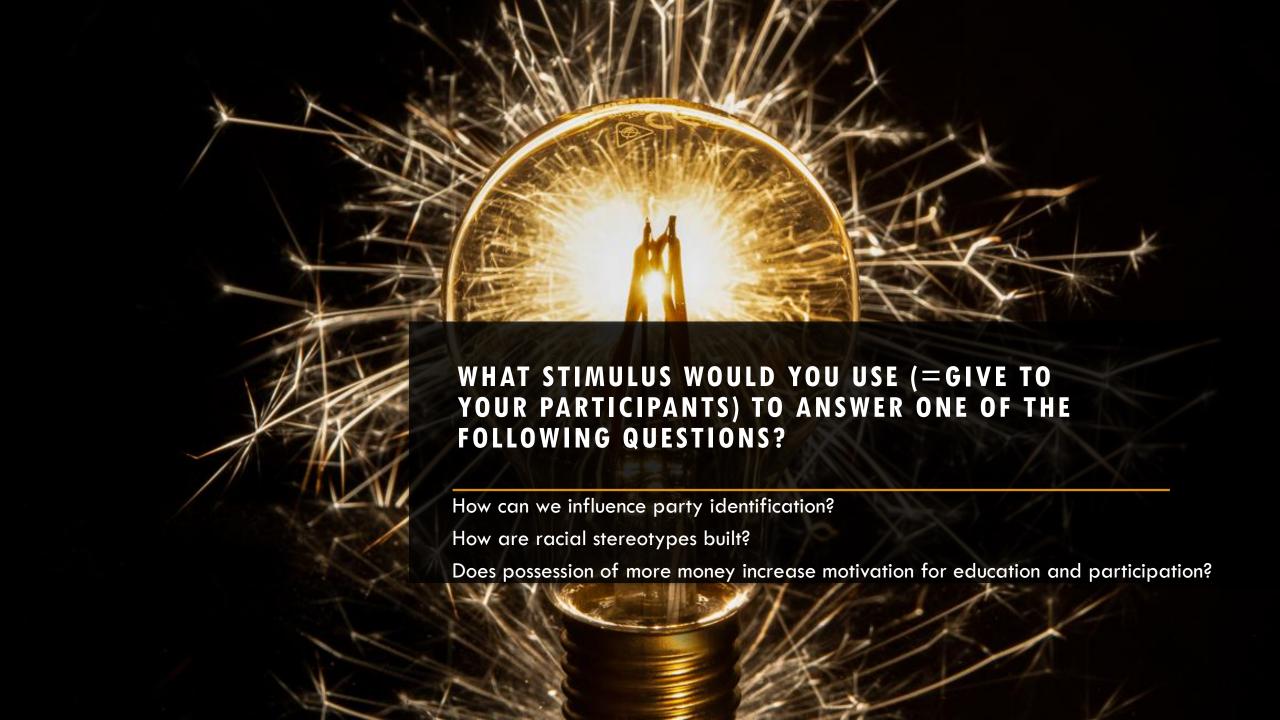


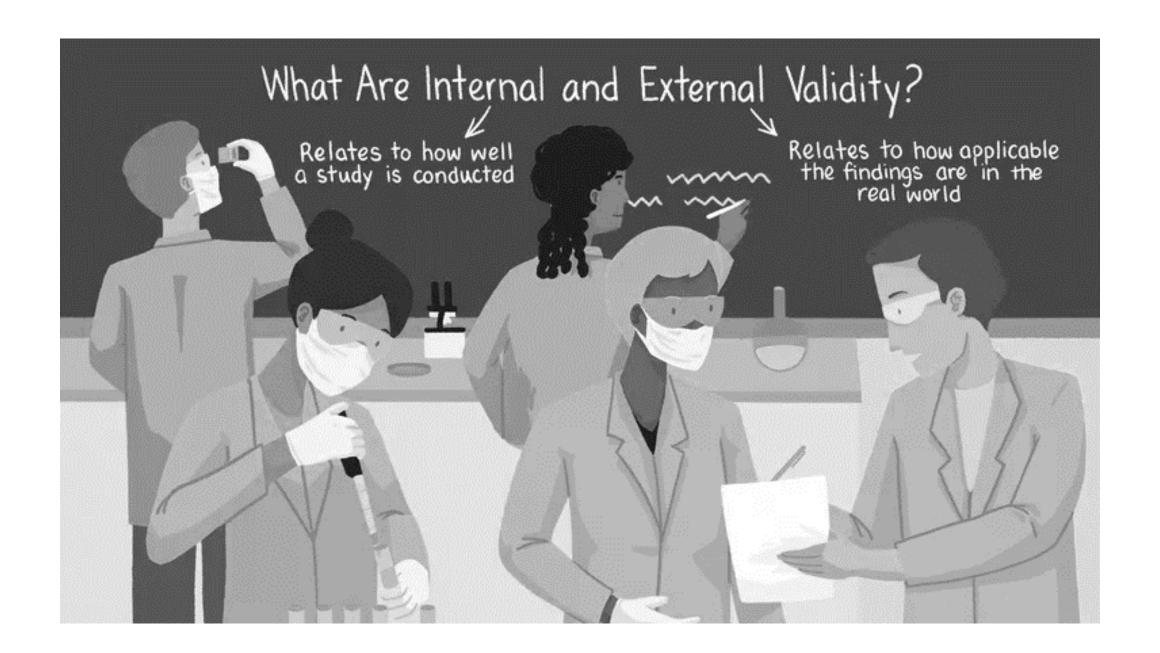


#### HOW DO WE DESIGN EXPERIMENTS?



if you want to read more about experiments: https://sites.duke.edu/niou/files/2012/04/McDermott\_Experiments\_2002.pdf





### EXPERIMENTS ARE IMPERFECT AND THREATENED BY MANY FACTORS

#### Threats to Internal Validity

History=external events, personal history

Intersession history=things happen outside of experiments and influence participants

Maturation=people change/grow up over time

Performance effects=participants learn from experiments and change their behaviour

Regression to the mean=effect of stimuli converges to the average

Subject self-selection=people can decide whether they want to participate or not

Mortality=respondents can die

#### CONTROL



### EXPERIMENTS ARE IMPERFECT AND THREATENED BY MANY FACTORS

#### Threats to External Validity

Testing effects=no pre-testing makes generalisation problematic, because you do not know the status quo (true for field and natural experiments)

Unrepresentative sample=selection bias, often self-selection

Artificiality=experimental environments and setting do not exist in the real world

'Professional' subjects= e.g., genies who are not representative for everybody else

Reactivity or Hawthorne effect=people tend to intentionally change their behaviour when they know that they are being watched

#### CONTROL

