



Praktika z experimentální psychologie

OPBP1Q134B, Faculty of Education, Charles University

Katerina Lukavska, Ph.D.

Tradiční premisa vědy

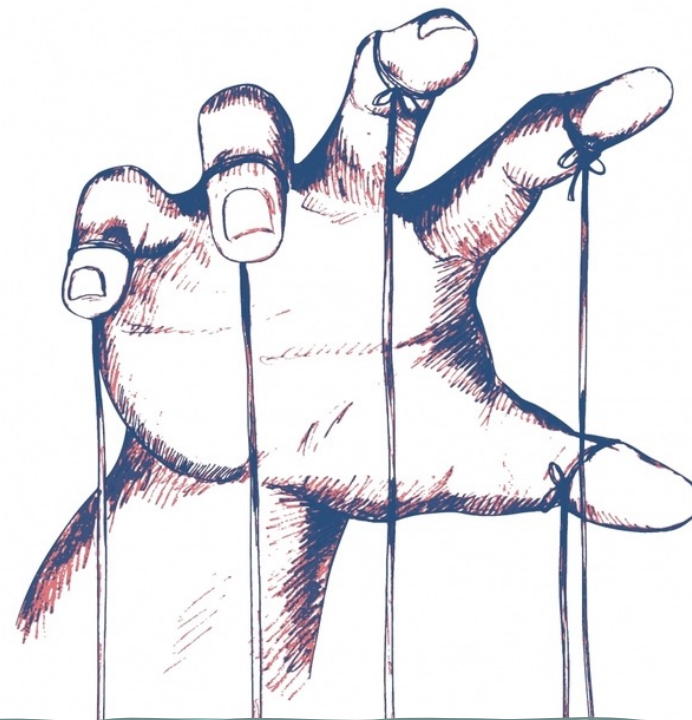
A black and white illustration of a person looking up at a starry sky. The person is shown from the waist up, with their head tilted back and eyes looking towards the stars. The sky is filled with numerous small stars and several planets of varying sizes and textures. One prominent planet on the right has a ring system, resembling Saturn. The person is standing on a surface that reflects light, creating concentric ripples around their feet. The overall scene is a contemplative and philosophical representation of the search for truth in the universe.

**There are absolute truths
to be discovered**

Dvě výzkumné cesty jejich objevování



POZOROVÁNÍ (OBSERVATION)



MANIPULACE (MANIPULATION)

Dvě výzkumné cesty jejich objevování

survey?

interview?

product analysis?

ethnography?

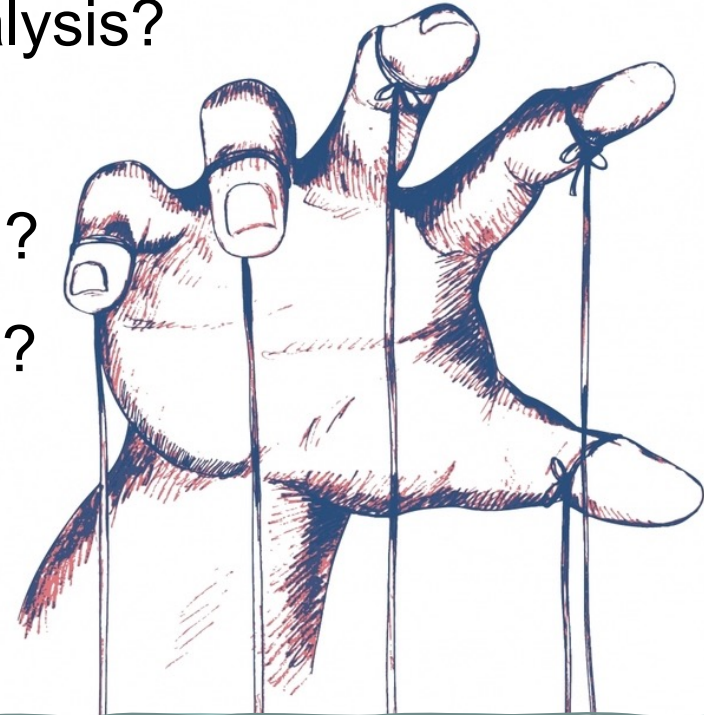
lab observation?

focus group?

experiment?



POZOROVÁNÍ (OBSERVATION)



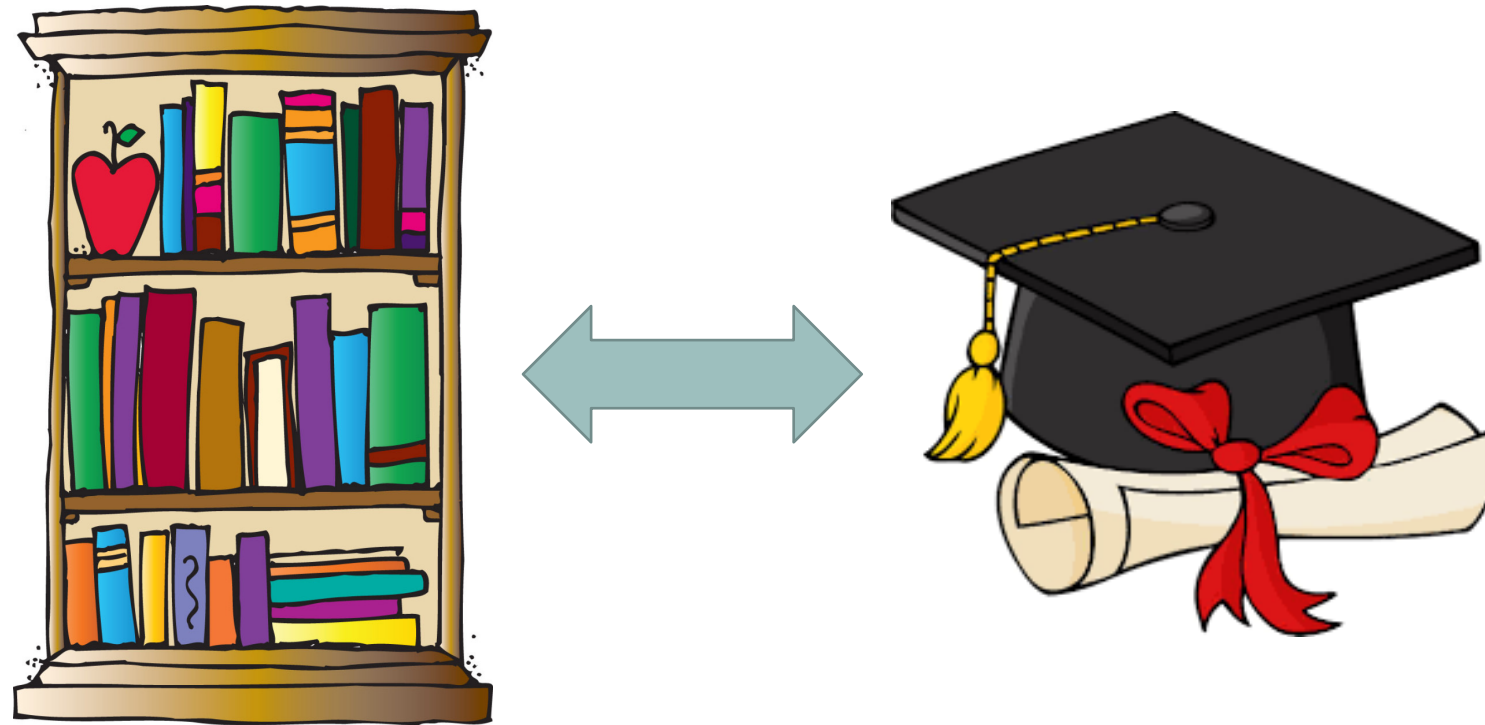
MANIPULACE (MANIPULATION)

Potřebujeme manipulaci?

A black and white illustration of a person standing in water, looking up at a starry sky with various planets and a ringed planet. The person is shown from the waist up, with their head tilted back. The water around them has concentric ripples. The sky is filled with stars of varying sizes and several planets of different sizes and textures. One prominent planet on the right has a ring system, similar to Saturn. The overall style is minimalist and artistic.

**Jakou formu mají “pravdy”
(vědecké poznatky)?**

Koincidence nebo kauzalita?



Co je kauzalita?

■ idea...



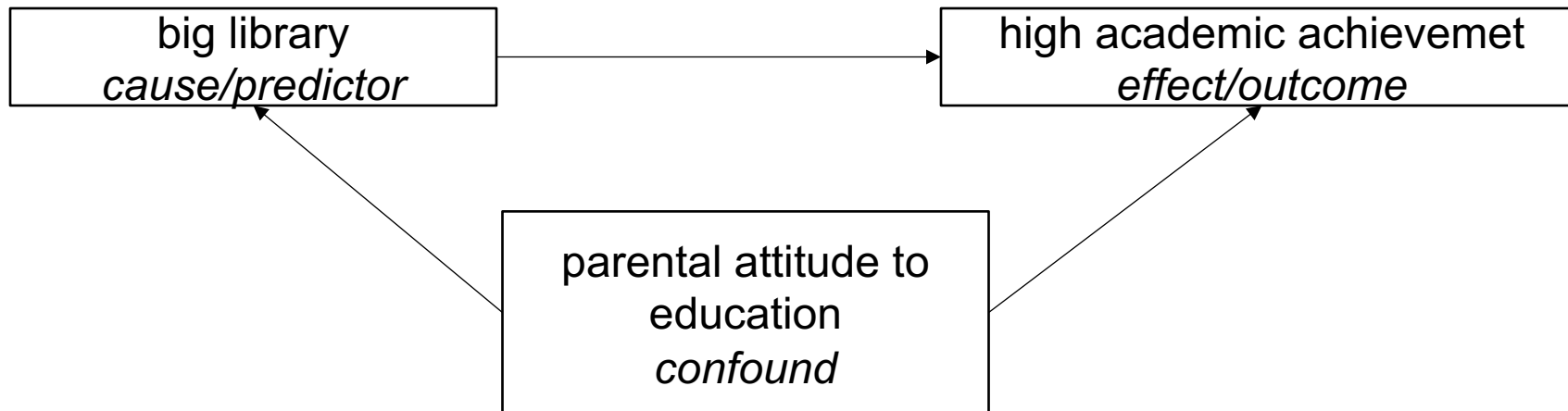
Hume

- (1) cause and effect occur close together in time;
- (2) the cause always precedes the effect – occur before the effect;
- (3) the effect never occur without the cause.

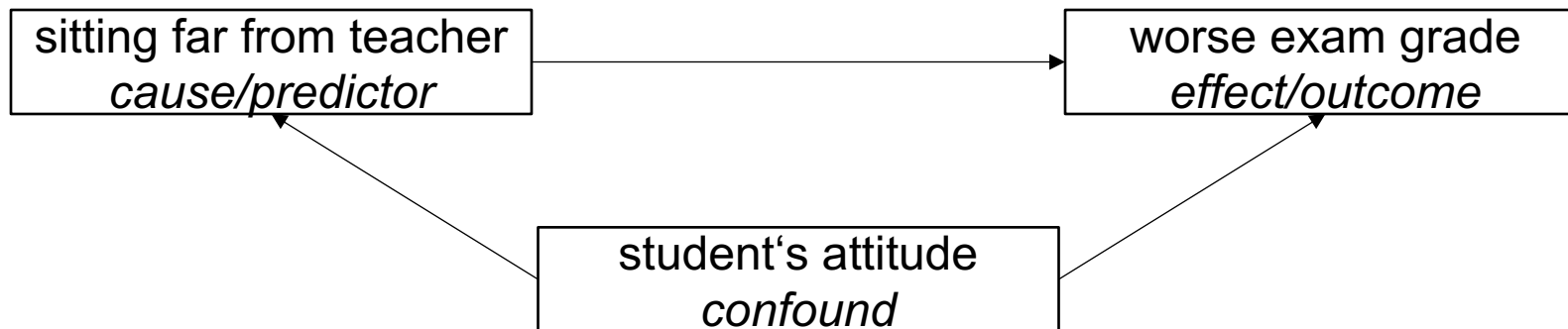
Mill

- (1) cause always precedes the effect
- (2) cause and effect are correlated (i.e., when there is a cause, there is the effect)
- (3) all other explanations of the cause-effect relationship must be ruled out.**

Matoucí proměnné (Confounding variables)



Matoucí proměnné (Confounding variables)



Co dělá (hodnotný) experimentální design?

**Internal validity
(ruling out confounds)**

A well-designed experiment **isolates causal factors** well; a poorly designed experiment leaves so much scope for alternative explanations of the results that were obtained, that the results are virtually useless.

Co dělá (hodnotný) experimentální design?

**Internal validity
(ruling out confounds)**

Manipulation

Randomization

Co dělá (hodnotný) experimentální design?

**External
validity**

**Internal validity
(ruling out confounds)**

**Theory
development**

Measurement

Manipulation

Randomization

**Replication
Falsification**

↓
Psychometrics

Replication and falsification

- Karl Popper (1957) *The logic of scientific historicism* -> each theory only waits to be falsified (replaced by more advanced theory)... it is how the science develops (one disproving result is more valuable than many supporting results)
- Optimally, the experimental manipulation should be designed in such way that it enables **to decide between two competing (alternative) theories/models/hypothesis.**
- Replication = the repetition of a research study, generally with different situations and different subjects, to determine if the basic findings of the original study can be applied to other participants and circumstances.