Experiment validity – External

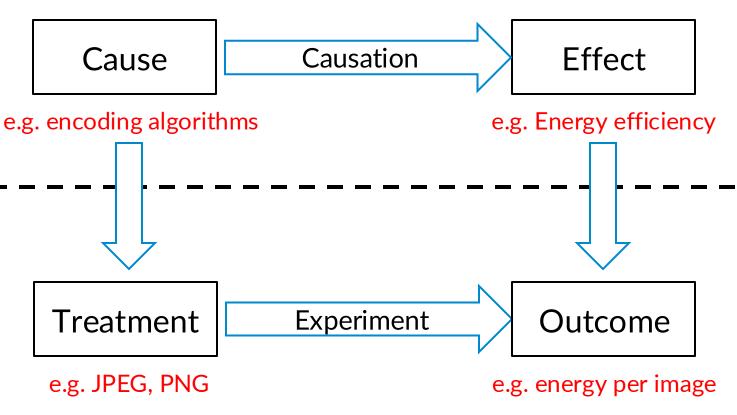
Ivano Malavolta





Types of threat to validity

Theory

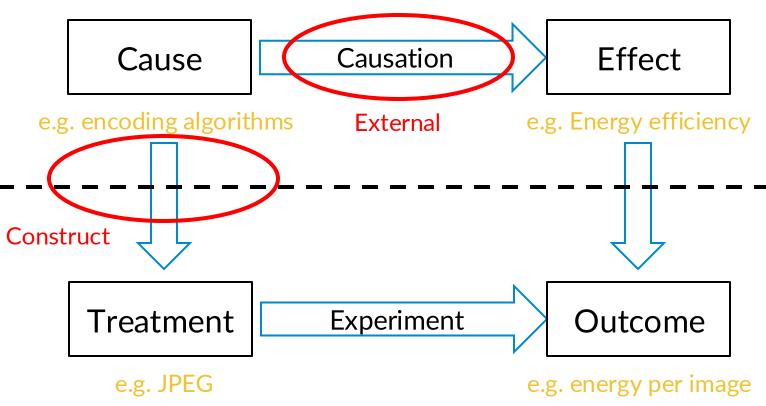


Observation



Types of threat to validity

Theory



Observation



External validity

External Validity: generalizability of the results

• Are my results valid for the whole target population?

• Have I selected a representative sample?



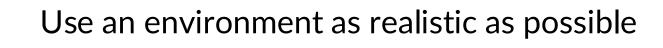
External validity: types of threat

• Interaction of <u>selection</u> and treatment

- the population of subjects is not representative of the one for which I would like to generalize my results
- eg, performing experiments with toy/synthetic apps
- Interaction of <u>setting</u> and treatment
 - the experimental setting or the material are not representative
 - e.g. I let the subjects using tools that they don't use in the reality
 - e.g. I run the experiment on a perfect Wifi connection
- Interaction of <u>history</u> and treatment
 - the experiment is conducted on a special time or day which affects the results
 - eg, our experiment on green software is performed after a big congress at which some subjects participated



External validity: mitigation





Explicitly define and model your context



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Some contents of lecture extracted from:

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