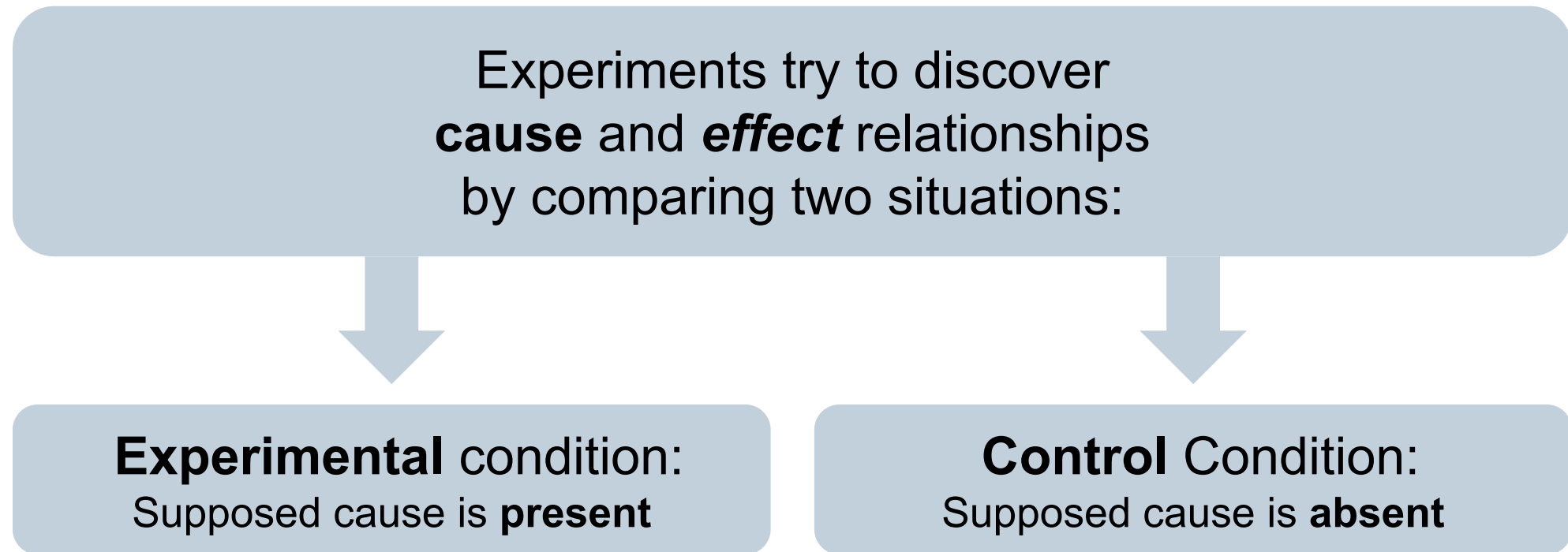# Human Computer Interaction

Chapter 6: Evaluation Part 2

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Summary Experimental Design

Summary: Experimental Design

Experiments try to discover
cause and *effect* relationships
by comparing two situations:

Experimental condition:
Supposed cause is **present**

Control Condition:
Supposed cause is **absent**

Design considerations

— Define what you want to **manipulate** (independent variable)

— What you want to **measure** (dependent variable)

— Independent (**between groups**) or repeated measures (**within groups**) design

— Use randomisation to rule out **unsystematic variance**

— Consider **ethical issues** in your design

Summary: Experimental Design

Be careful with conclusions

— The **independent variables** may not exactly isolate the suspected cause

— The **dependent variables** may be invalid representations of what you intend to measure

— Your sample may **bias the outcome**

— The results you obtained may not replicate in other settings (**external validity**)

— Experiments are not the proof in a sense of a logical 'true' (**Popper's Falsifiability**)

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Thank you
for your attention