

CS449/649: Human-Computer Interaction

Winter 2018

Lecture II

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Understand Your Users

Think about **purpose**, not technology

- allows you to **solve a problem**, not create a new one
- people need to know **why** they **need** your product
- features are useless without purpose

Watch: [The art of innovation | Guy Kawasaki](#)



Value Proposition

A promise of the value you can deliver; a sharp product definition that highlights the key aspects of it.

Assignment 1:
Description of the project

What do you do?

How will it help?

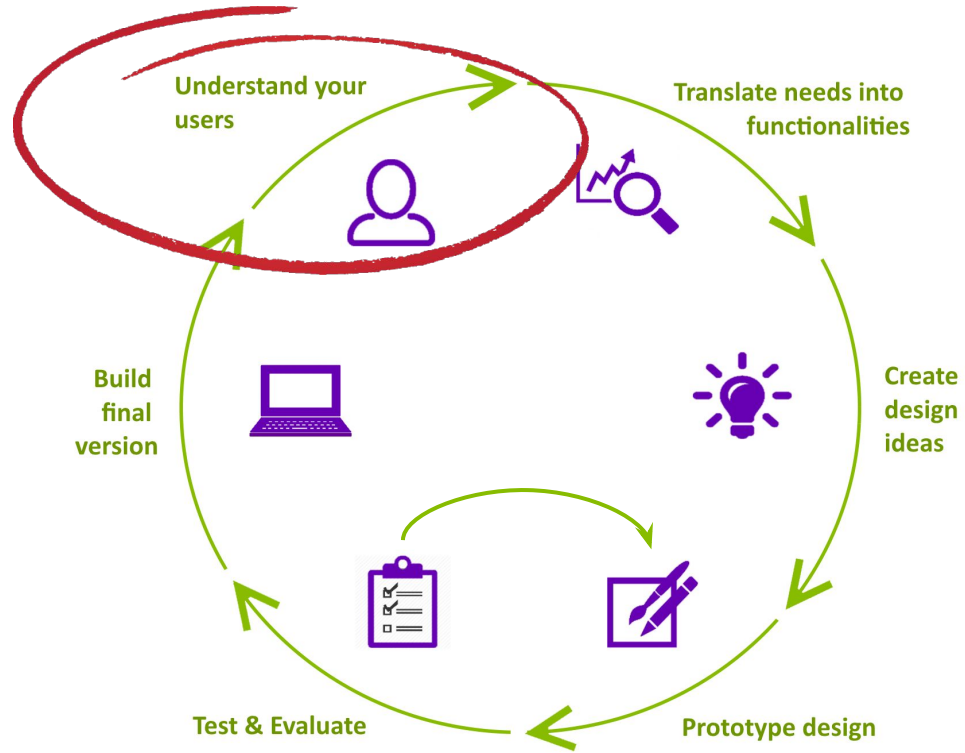
Assignment 1:
Goals and Hypotheses

Assignment 1:
Target user groups & personas

Who is it for?

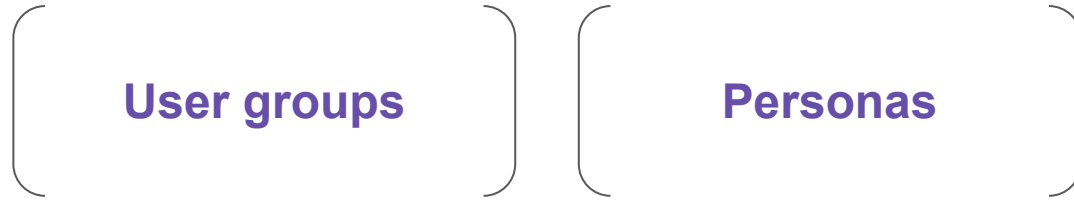
Why you?

Assignment 1:
Description of the project





Your Users



Set of characteristics
Based on statistics
General

Fictional character
Based on statistics
Specific

User groups



Your Users

Set of characteristics
Based on statistics
General

Demographics:

- Age & Gender
- Country & Language
- Education
- Occupation
- Residence
- Income
- Family status
- Size of a family
- ...

Other Characteristics:

- Means of transportation
- Music preferences
- Hobbies
- Food preferences
- Device preferences
- Fashion & clothing style
- Haircuts
- Sport preferences
- ...



Your Users

Personas

Best practice: 3-5 different personas

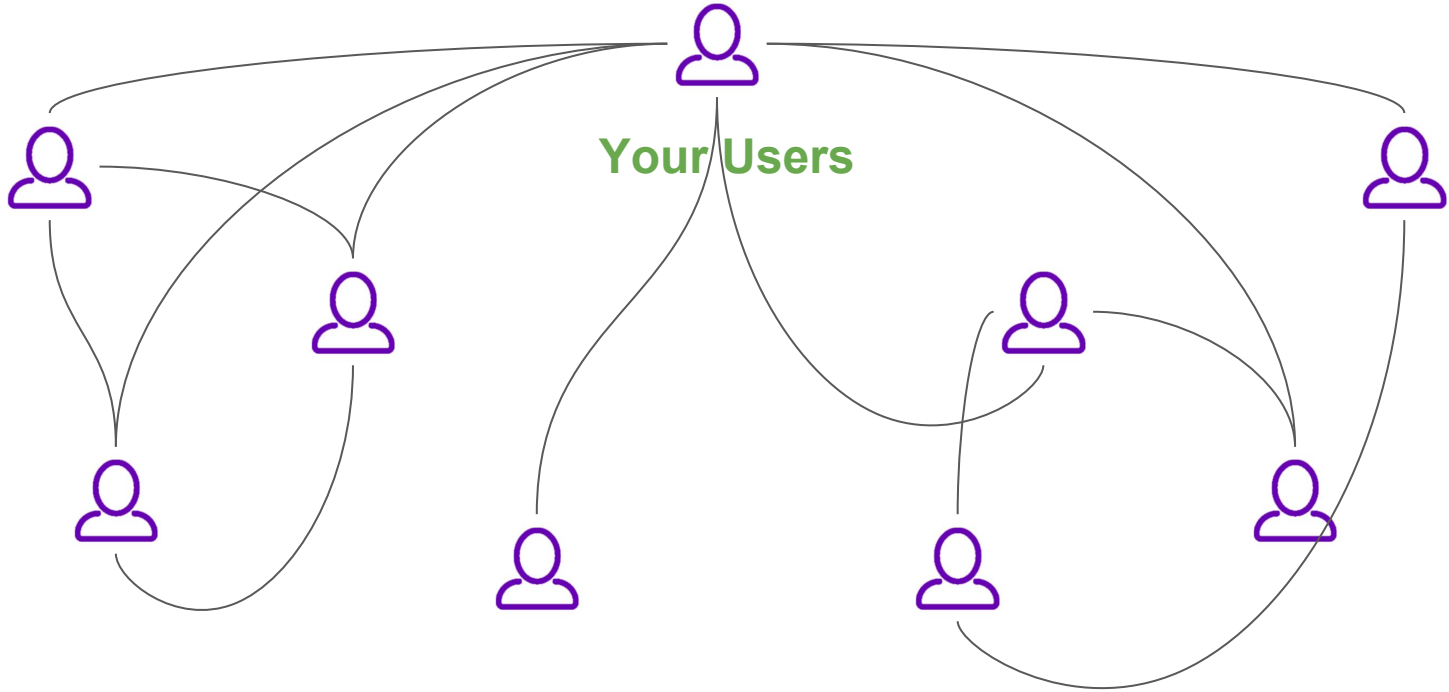
- Persona Group
- Fictional name
- Job titles and major responsibilities
- Demographics (age, education, family status, etc.)
- The goals and tasks when using the product
- Physical, social, and technological environment

Fictional character
Based on statistics
Specific

Important for:

- Building empathy and relating to users
- Communicating design goals
- Staying focused of design goals
- Supporting decision-making

Reading: [The origin of personas](#) by Alan Cooper





Your Users

Participants



Your Users

Representation of
user groups

Diverse but
generalisable

Participants

Balanced around
key differences

How many?



Your Users

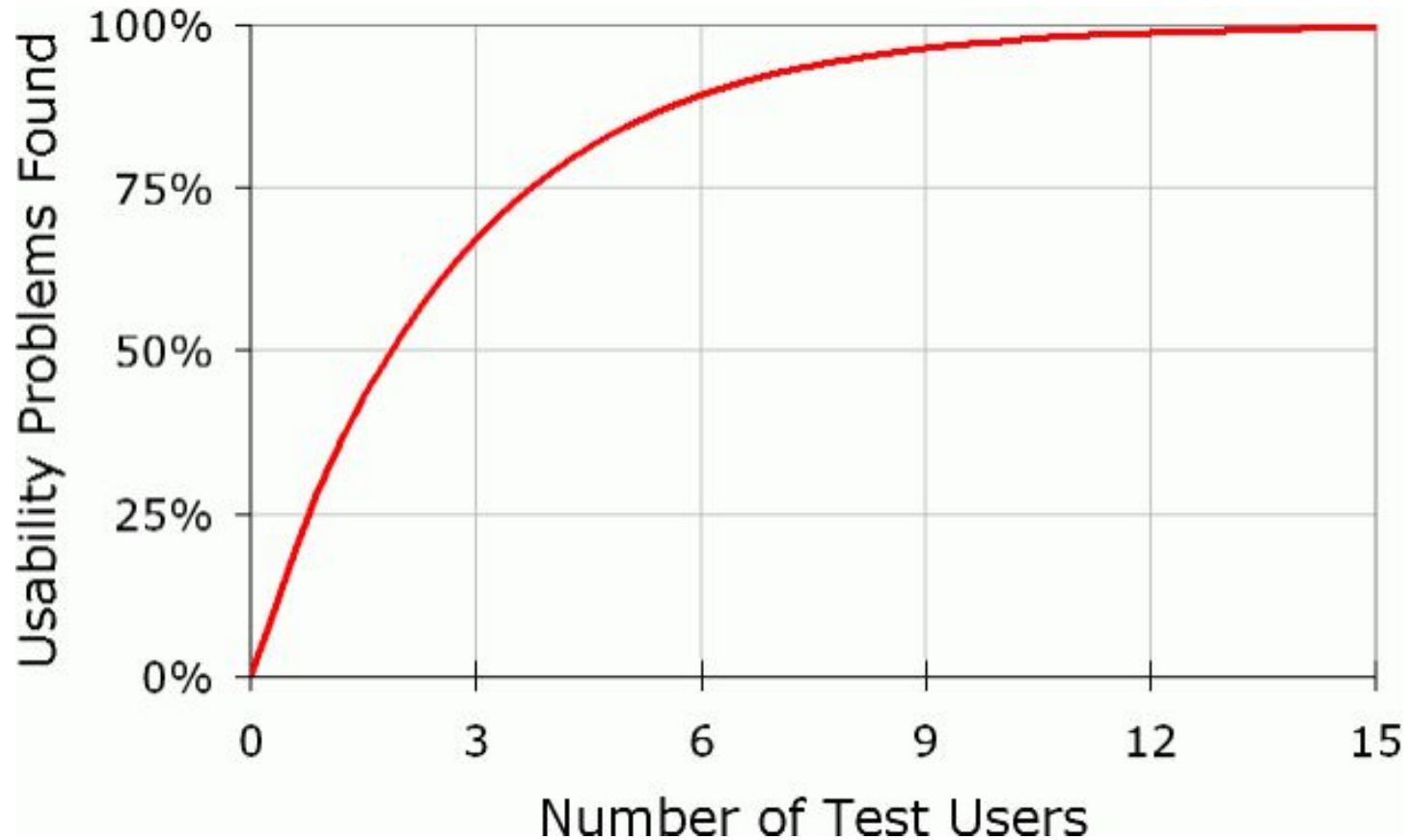
Participants

Why You Only Need to Test with 5 Users

by Jakob Nielsen

$$N (1-(1- L) ^ n)$$

Where **n** is a number of users, **N** is the total number of usability problems, **L** is the proportion of usability problems discovered while testing a single user. The typical value of **L** is 31%



[Why You Only Need to Test with 5 Users](#) by [Jakob Nielsen](#)



Your Users

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How many?

For this course 3-5 participants



Your Users

Ethics



Your Users

Ethics

Why would the university have ethics requirements for a course?

Always respect participants!

Including their:

- Time
- Attitude and environment
- Desire for privacy

University has a formal process for Ethics.

They consider:

- **Recruitment**
- **Voluntary participation**
- **Confidentiality and anonymity**
- **Risks/benefits**
- **Fully informed consent**

Process and protections ensure study is done correctly with proper forethought



Your Users

Ethics

Principles:

- Respect for human dignity
- Respect for free and informed consent
- Respect for vulnerable persons
- Respect for privacy and confidentiality
- Respect for justice and inclusiveness
- Balancing harms and benefits
- Minimizing harm
- Maximizing benefits

Research Ethics Board (REB) at Waterloo can:

- Approve, reject, propose changes, or terminate any work with human subjects by members of the university. **This includes you.**
- REB consists of five members (both men and women)
 - One member knowledgeable in ethics
 - Two members have expertise in fields covered by REB
 - One member knowledgeable in biomedical law
 - One member from outside university

Goal is breadth – want a balanced perspective on projects being examined



Your Users

Ethics

Informed Consent:

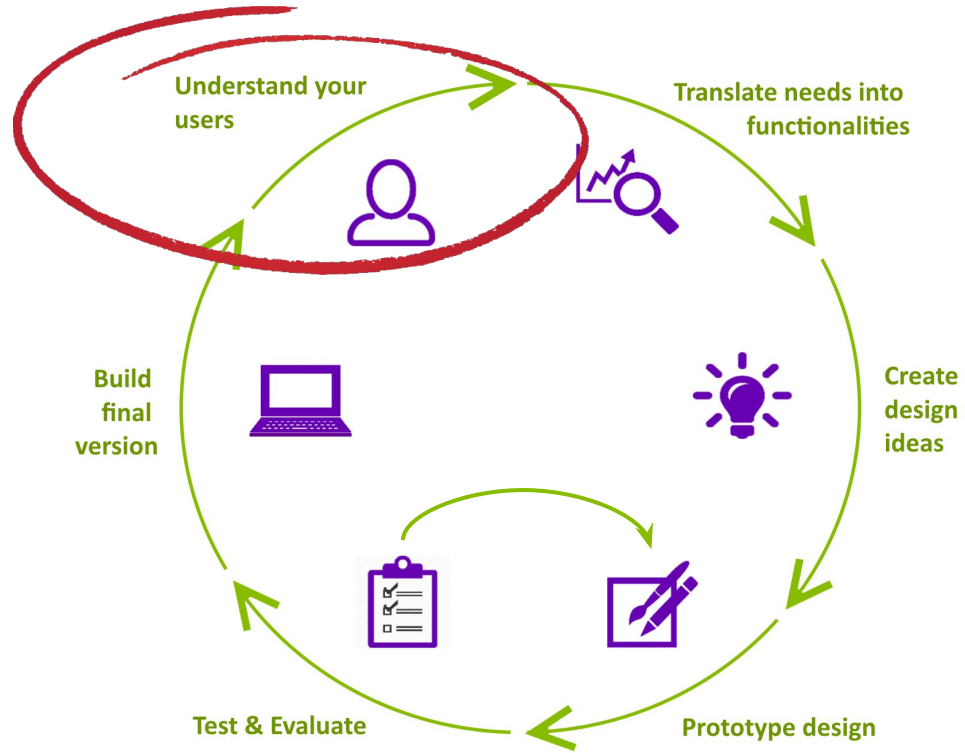
- Full Disclosure
- Comprehension
- Voluntariness
- Competence
- Agreement

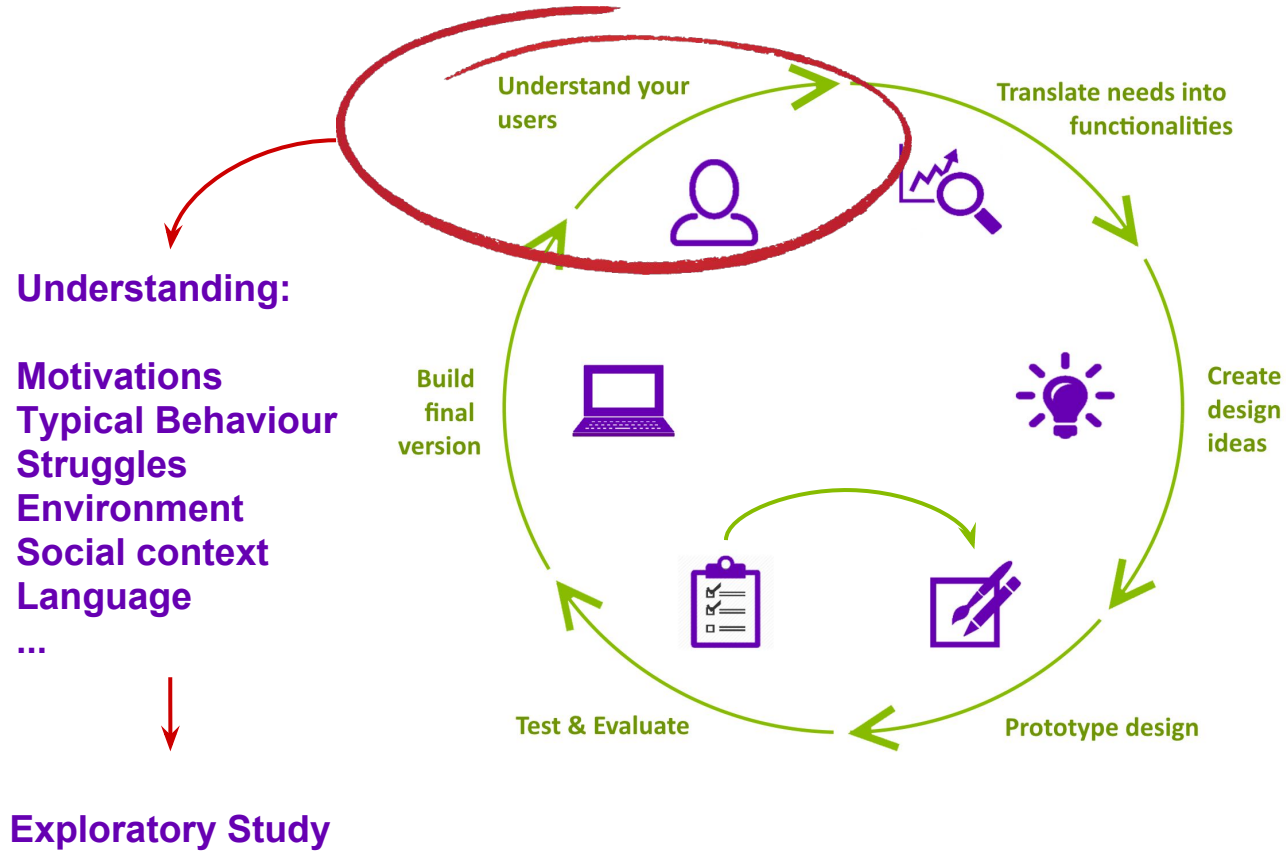
Voluntariness:

- Subjects can refuse to answer and can stop participating at any time
- If they say they don't want to participate, their involvement is done
- Never, ever push subjects for information they cannot or do not want to disclose

Partial consent:

- They can consent to all or part of process
- Consider consent forms
- Make them aware of selective exclusion

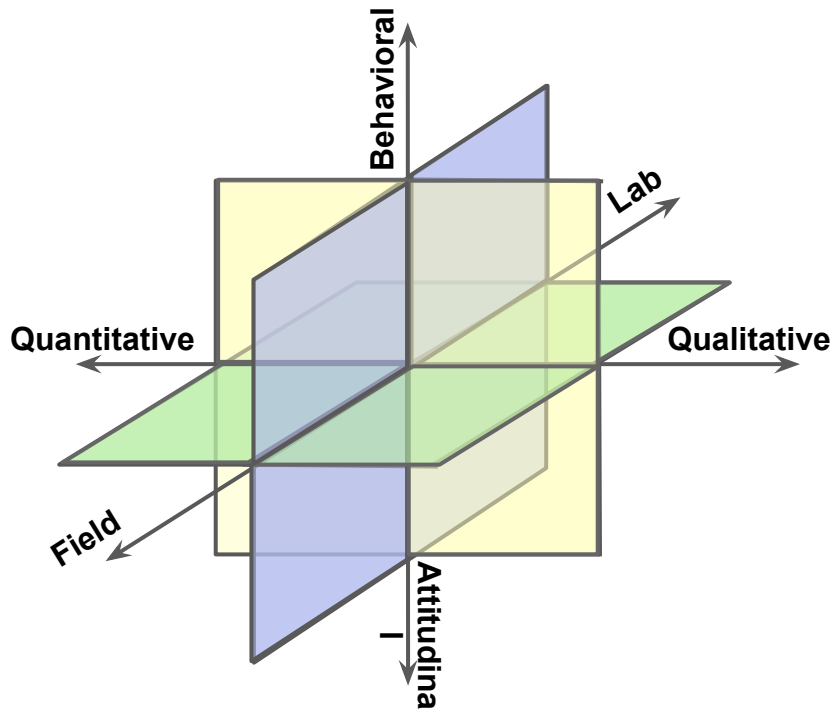






Understand Your Users





[**Quantitative**]

- Fixed & measurable reality
- Analyzed numerically and statistically

[**Qualitative**]

- Dynamic & descriptive reality
- Analyzed by themes

[**Field**]

- Natural Environment
- Uncontrolled

[**Lab**]

- Artificial Environment
- Well Controlled

[**Behavioural**]

- What people do

[**Attitudinal**]

- What people think / feel

Data Triangulation

- One question - several methods
- Cross verification

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Understand Your Users: Exploratory Studies

Generalizability
of outcomes

Validity of Research Design

Trustworthiness
of measurement

External Validity

Internal Validity



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Selection of the sample

Size of the sample

Consistency of instruments

Experimental Situation

Time of the study

Reactivity



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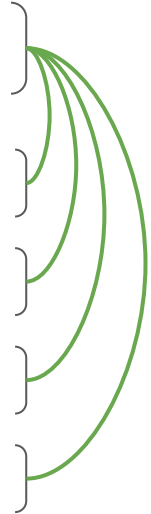
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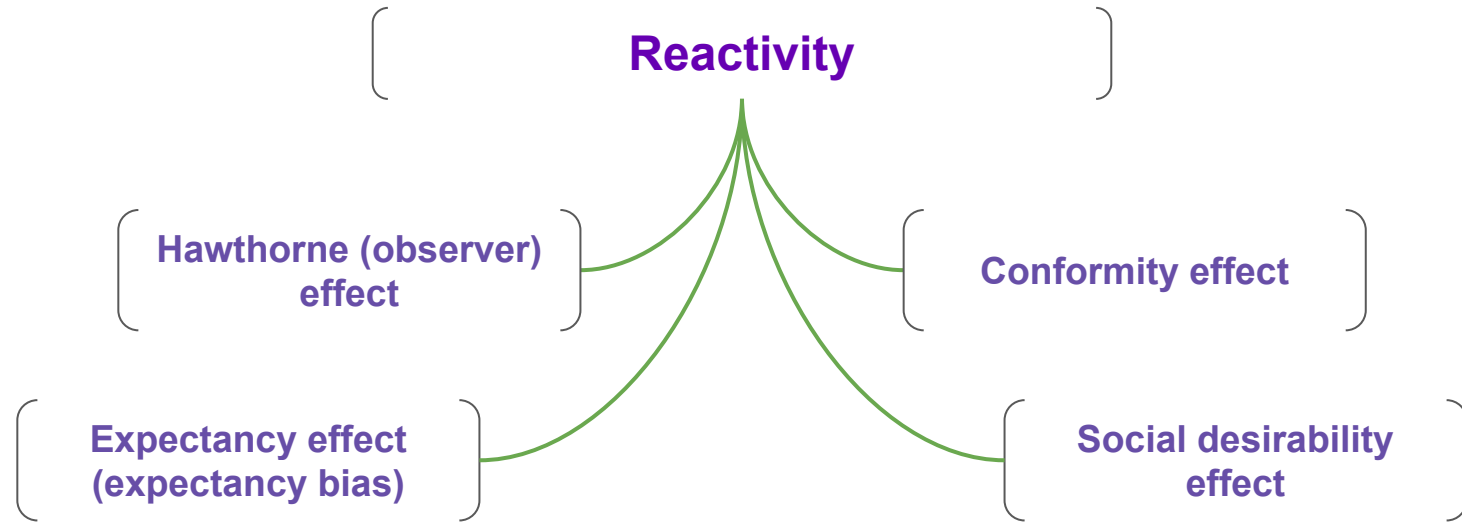
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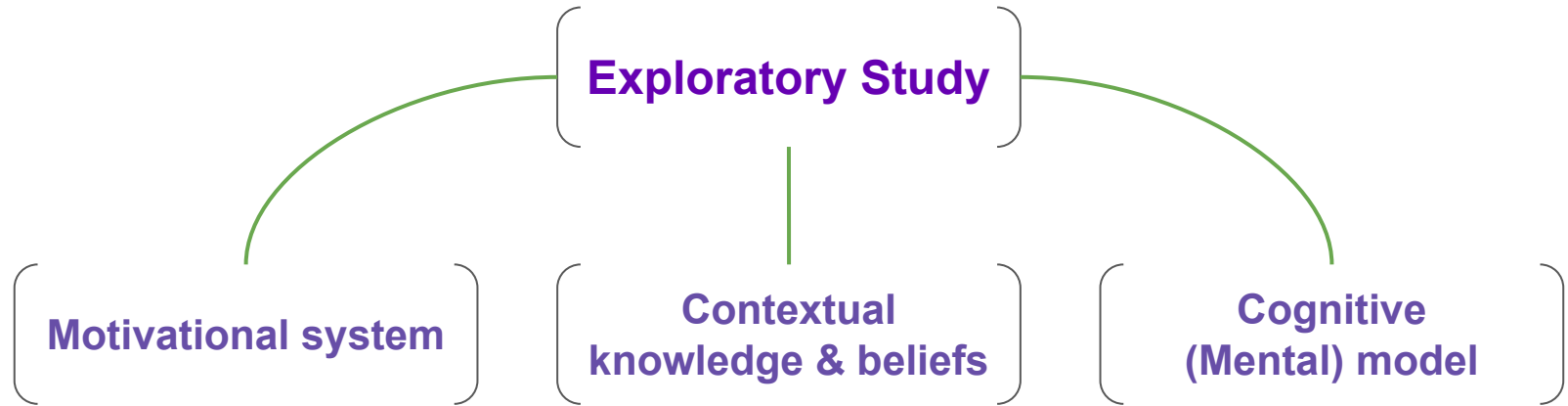


Understand Your Users: Exploratory Studies



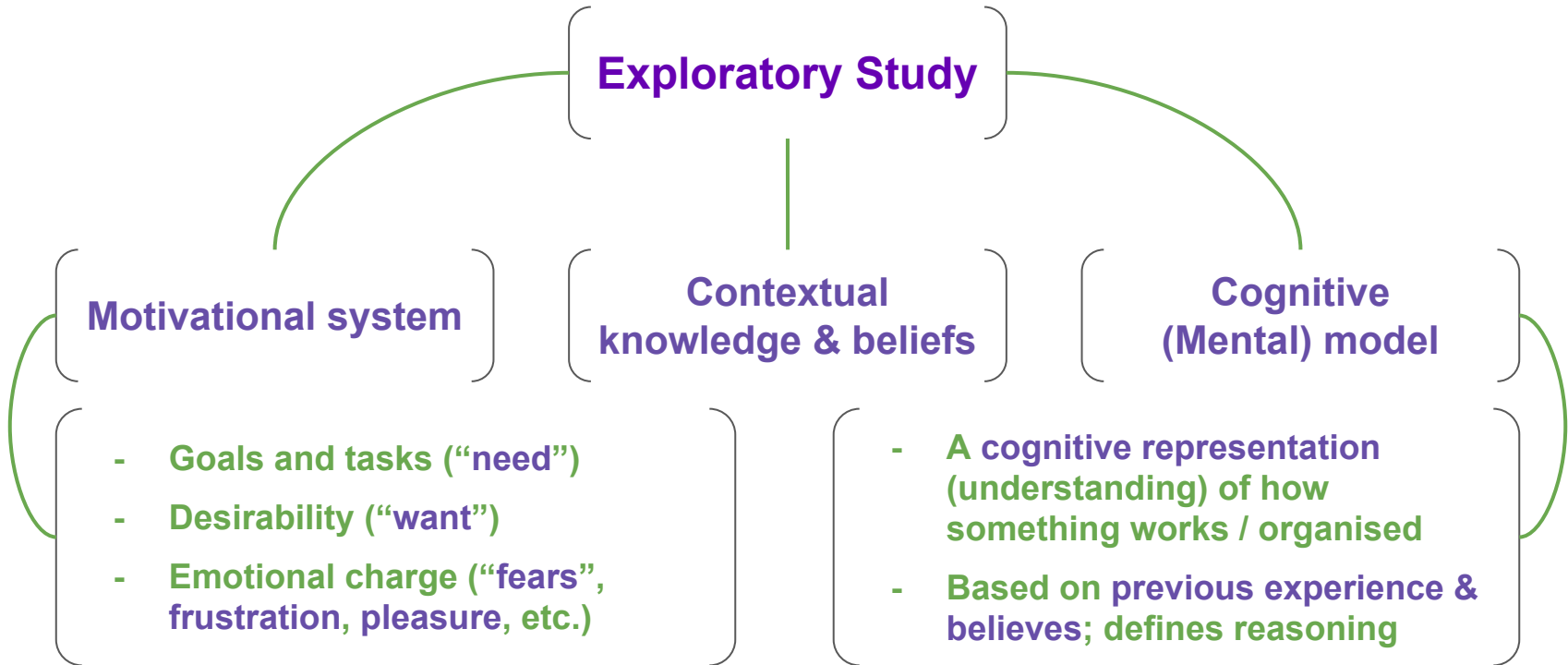


Understand Your Users: Exploratory Studies





Understand Your Users: Exploratory Studies





Understand Your Users

