

# CS449/649: Human-Computer Interaction

Winter 2018

Lecture III

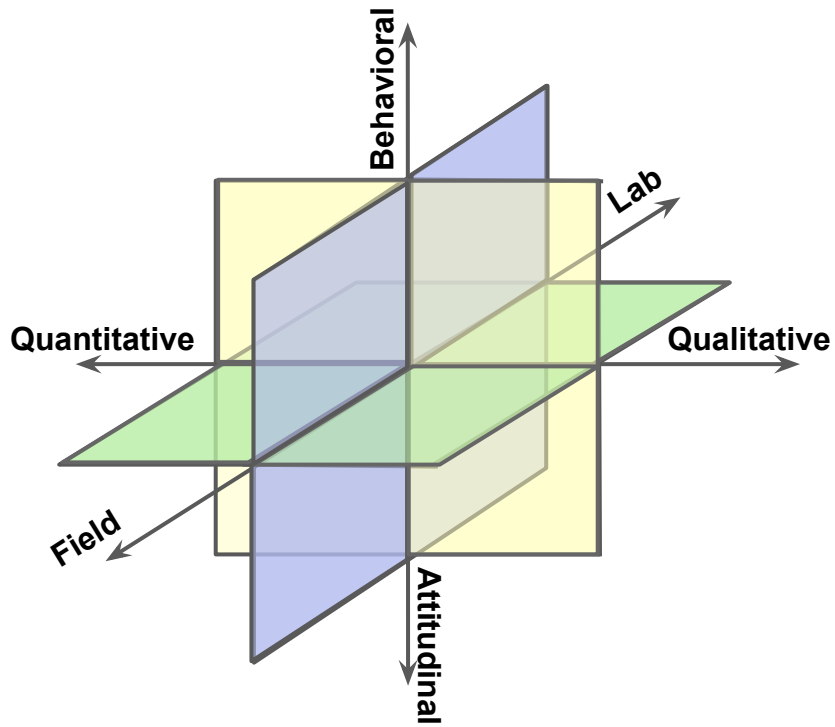
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Anastasia Kuzminykh



## 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

### Quantitative

- Fixed & measurable reality
- Analyzed numerically and statistically

### Qualitative

- Dynamic & descriptive reality
- Analyzed by themes

### Field

- Natural Environment
- Uncontrolled

### Lab

- Artificial Environment
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### Behavioural

- What people do

### Attitudinal

- What people think / feel



## Understand Your Users: Exploratory Studies

Generalizability  
of outcomes

**Validity of Research Design**

Trustworthiness  
of measurement

**External Validity**

**Internal Validity**



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Generalizability  
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**Validity of Research Design**

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**External Validity**

**Internal Validity**

Selection of the sample

Size of the sample

Consistency of instruments

Experimental Situation

Time of the study

Reactivity



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**External Validity**

**Internal Validity**

Selection of the sample

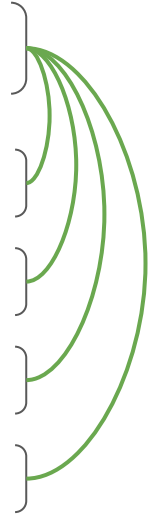
Size of the sample

Consistency of instruments

Experimental Situation

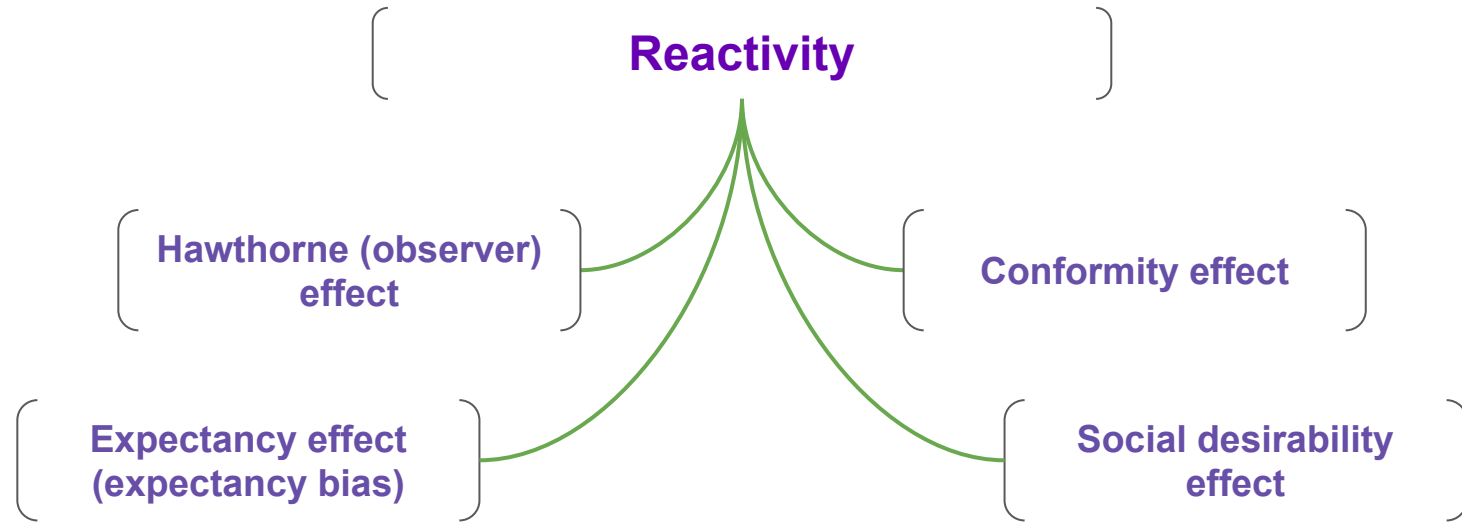
Time of the study

**Reactivity**

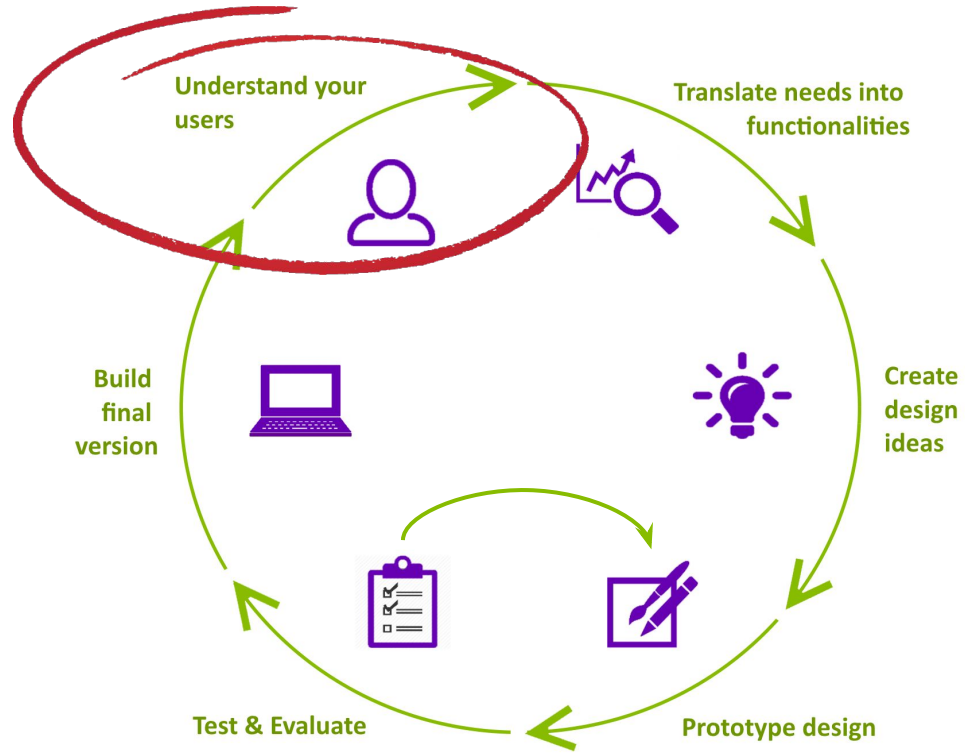




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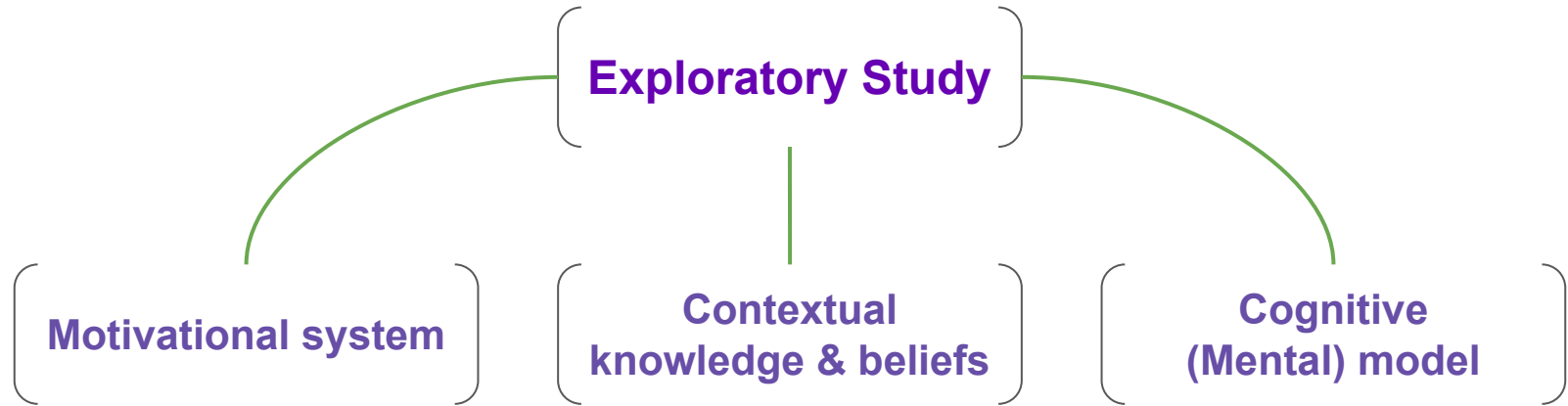








## Understand Your Users: Exploratory Studies





## Understand Your Users: Exploratory Studies

### Exploratory Study

#### Motivational system

- Goals and tasks (“need”)
- Desirability (“want”)
- Emotional charge (“fears”, frustration, pleasure, etc.)

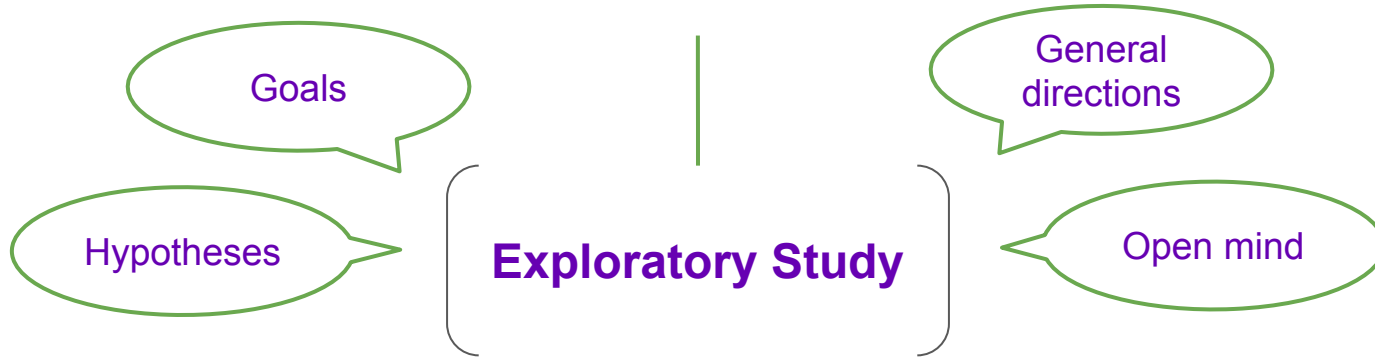
#### Contextual knowledge & beliefs

#### Cognitive (Mental) model

- A cognitive representation (understanding) of how something works / organised
- Based on previous experience & beliefs; defines reasoning

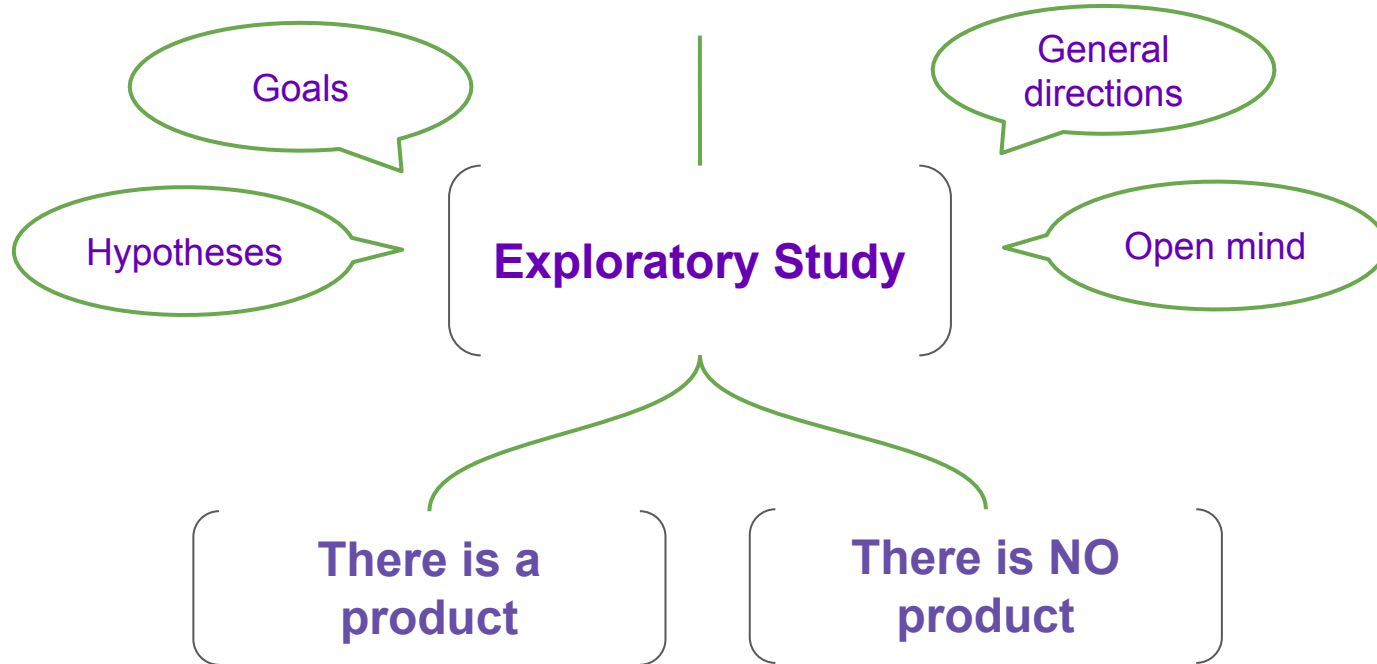


## Understand Your Users: Exploratory Studies





## Understand Your Users: Exploratory Studies





## Understand Your Users: Exploratory Studies

**There is a product**

- True-Intent Studies
- Remote Unmoderated Usability Studies
- Intercept Surveys
- Clickstream Analysis

**There is NO product**

- Questionnaires
- Observations
- Interviews
- Diary/Camera Studies
- Participatory Design
- Ethnographic Field Studies
- Contextual inquiry



## Understand Your Users: Exploratory Studies

There is a product

- **True-Intent Studies**

- Remote Unmoderated Usability Studies
- Intercept Surveys
- Clickstream Analysis

- Ask about user's goals and/or intentions when they entering the service
- Track their subsequent behavior
- Ask if they were successful in achieving their goal

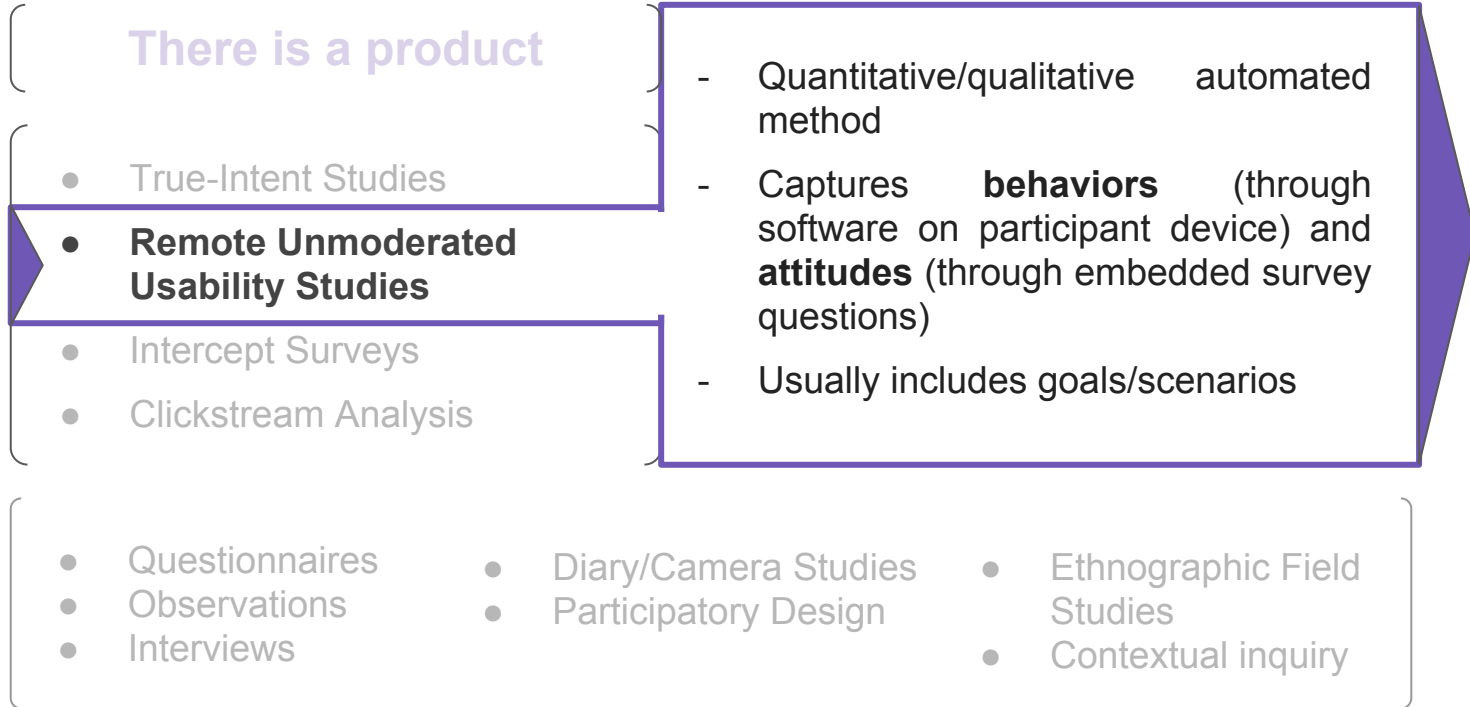
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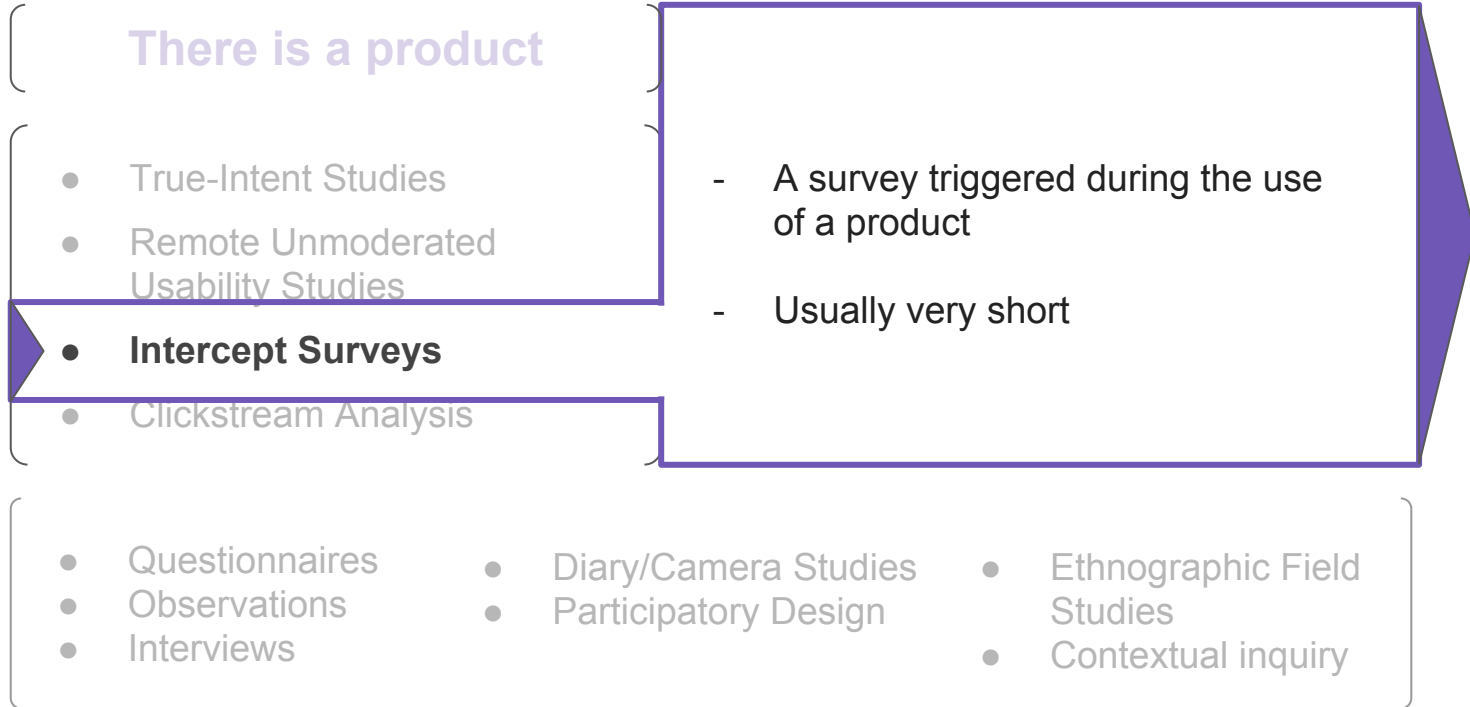
## Understand Your Users: Exploratory Studies







## Understand Your Users: Exploratory Studies





## Understand Your Users: Exploratory Studies

### There is a product

- True-Intent Studies
- Remote Unmoderated Usability Studies
- Intercept Surveys

- **Clickstream Analysis**

- Analyzing the record of elements that users clicks on/views, as they use a software product
- Requires proper software instruments / tools for telemetry data collection enabled

- Questionnaires
- Observations
- Interviews

- Diary/Camera Studies
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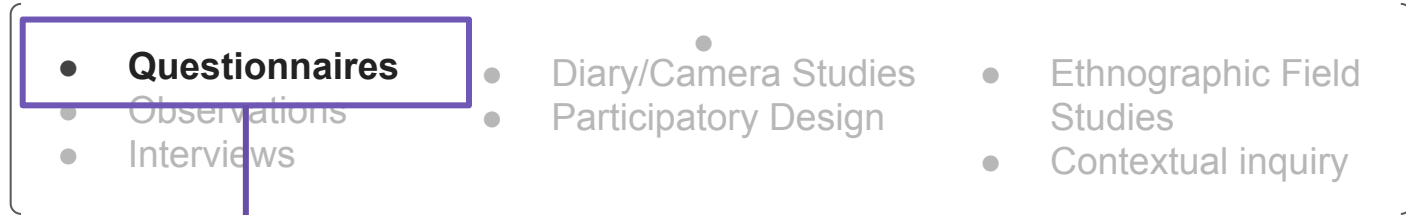


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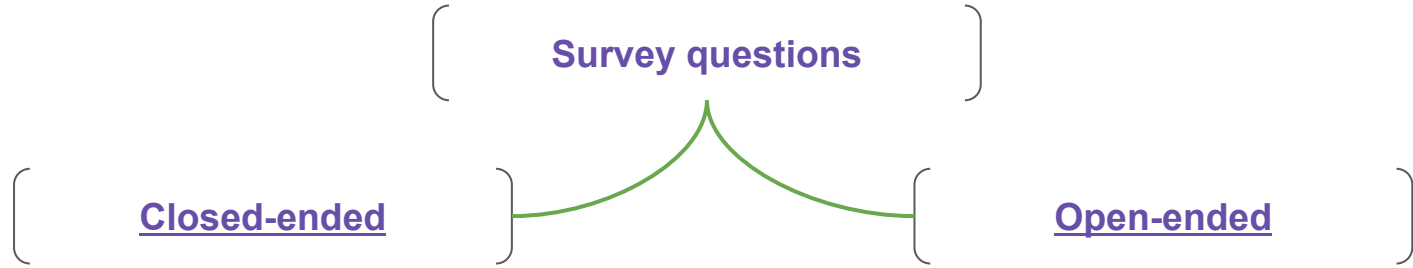
## Understand Your Users: Exploratory Studies



- Predefined series of written questions
- Usually relatively large samples - fast and cheap method
- Often used remotely
- Better to keep within 20-25 questions

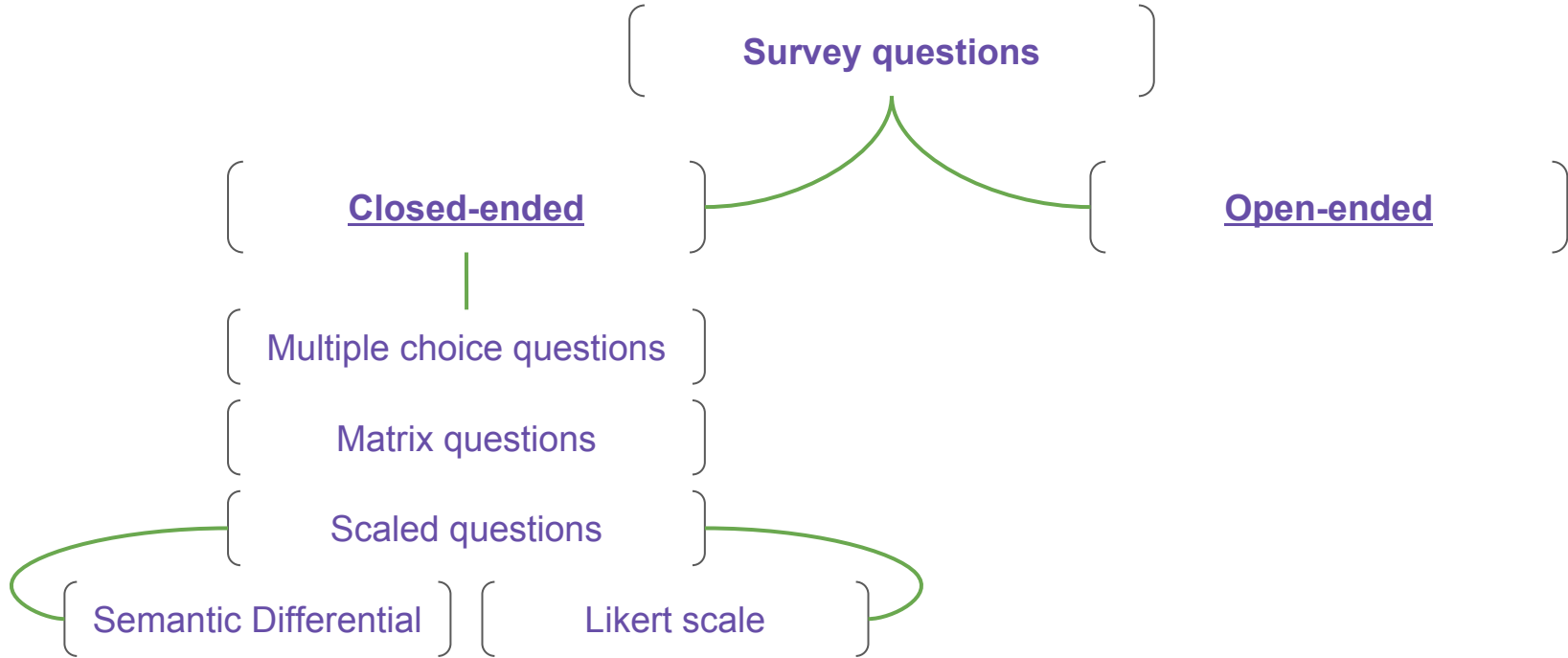


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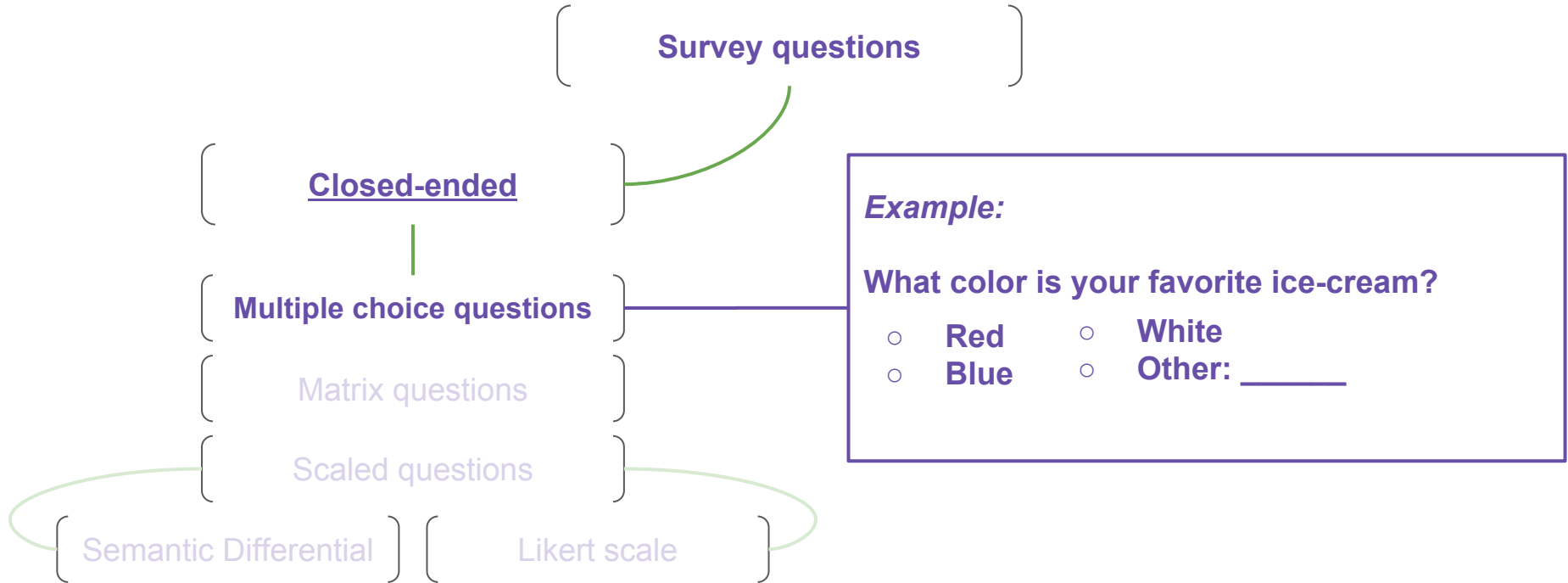


## Understand Your Users: Exploratory Studies





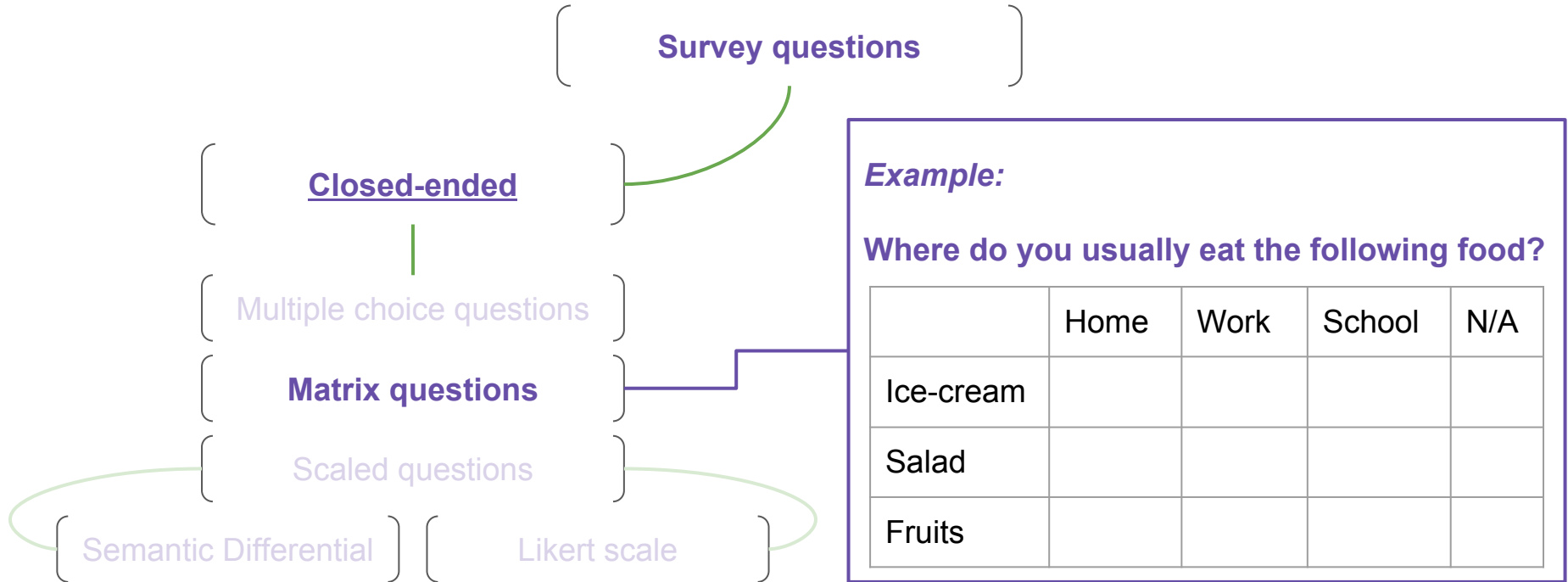
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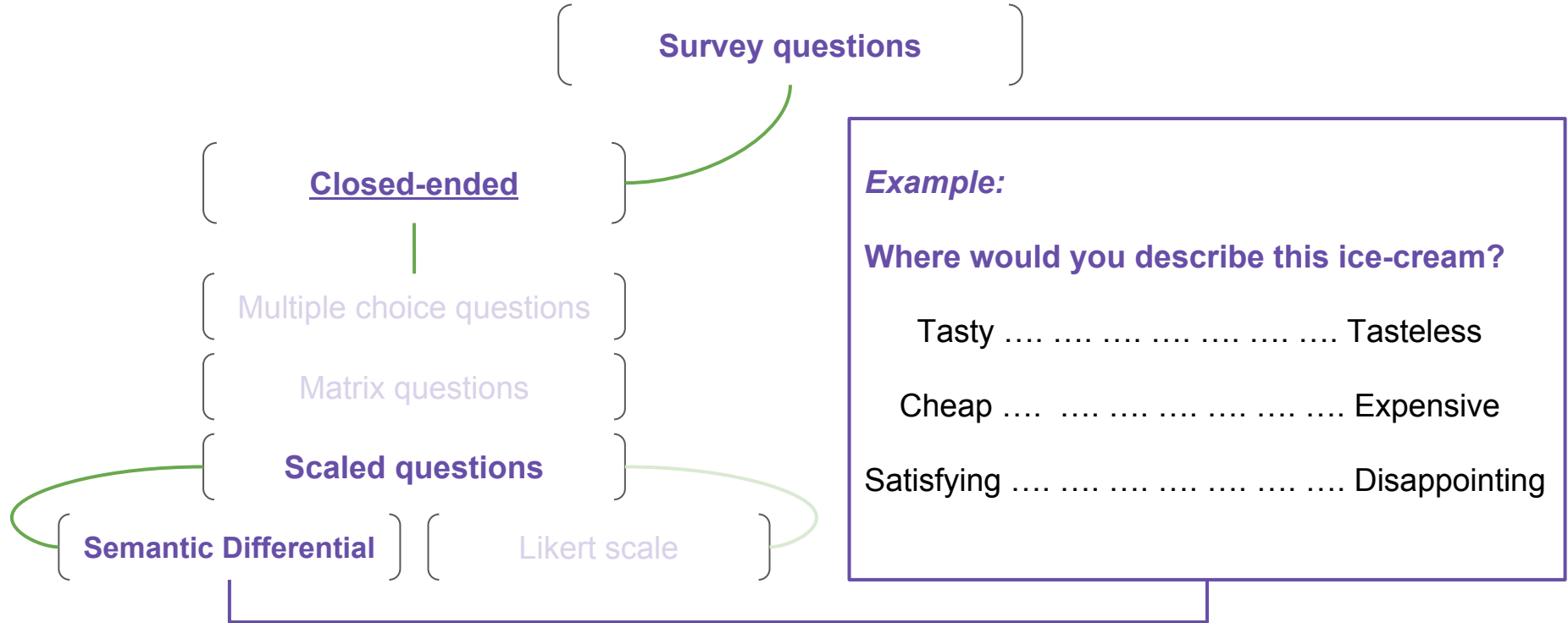


## Understand Your Users: Exploratory Studies





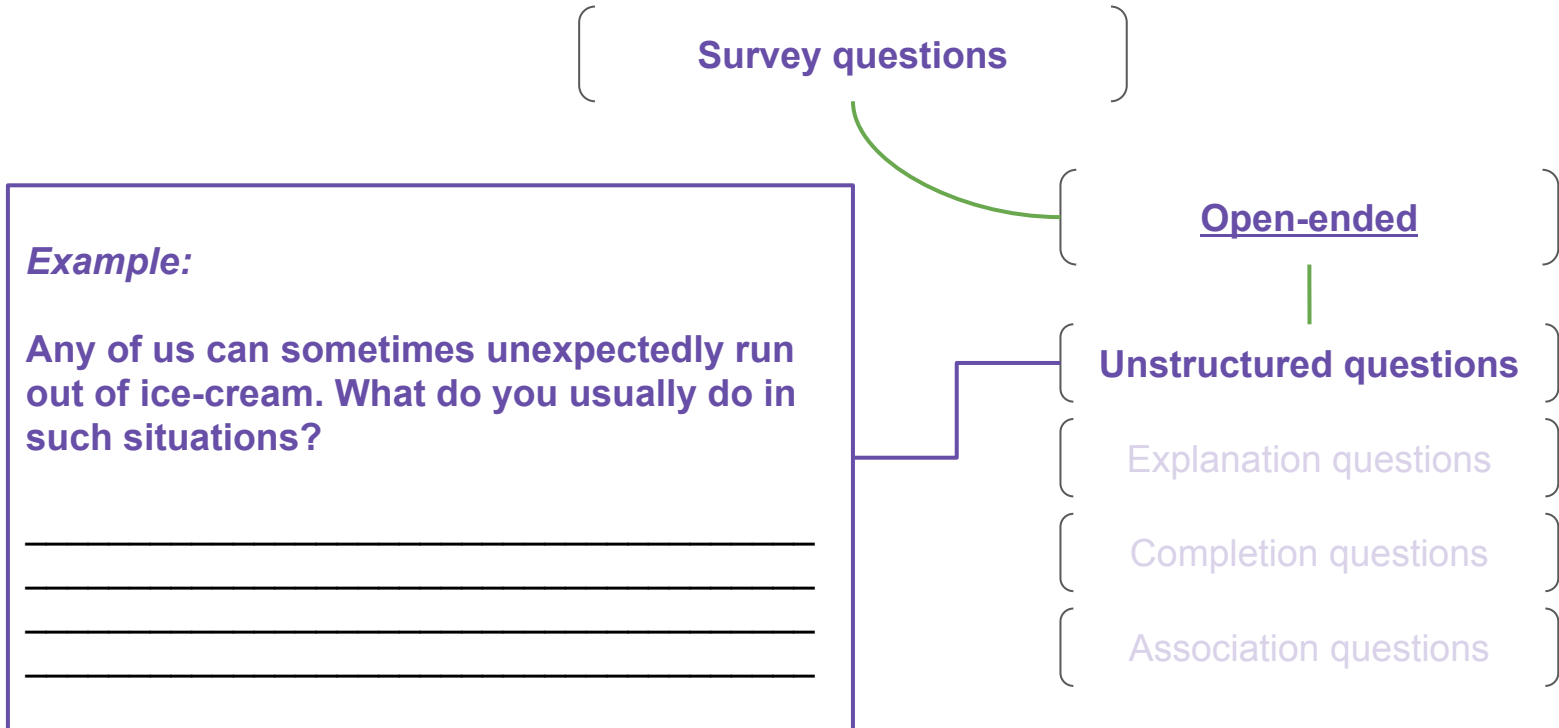
## Understand Your Users: Exploratory Studies







## Understand Your Users: Exploratory Studies





## Understand Your Users: Exploratory Studies

[ Survey questions ]

**Example:**

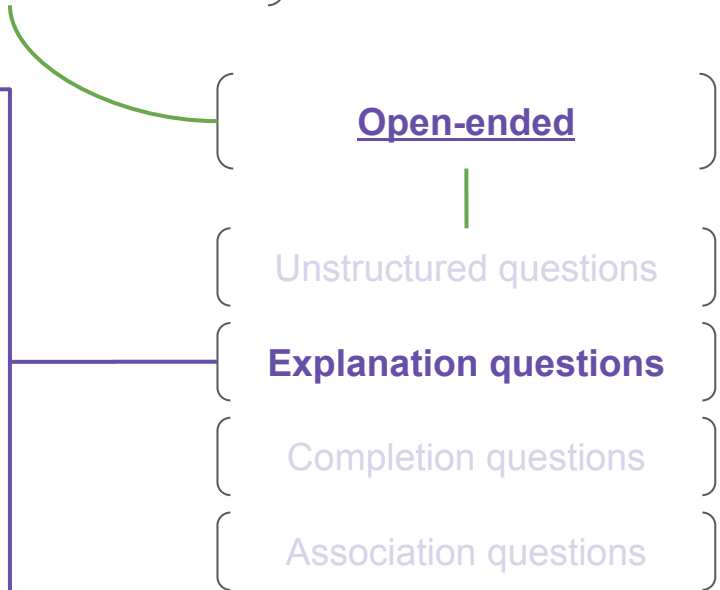
In previous question you said you prefer salads. Please, explain why:

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## Understand Your Users: Exploratory Studies

[ Survey questions ]

[ Open-ended ]

[ Unstructured questions ]

[ Explanation questions ]

[ **Completion questions** ]

[ Association questions ]

**Example:**

My favorite taste of ice-cream is \_\_\_\_\_.  
I like it the most because it is \_\_\_\_\_.  
I usually eat it at (in) \_\_\_\_\_  
when I am \_\_\_\_\_.



## Understand Your Users: Exploratory Studies

[ Survey questions ]

**Example:**

What is the first word that comes to mind when you see the following:

Summer, Tasty, Cold, Flavour

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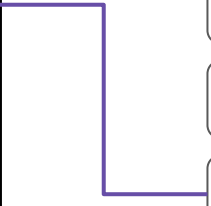
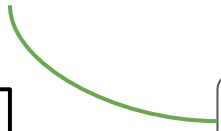
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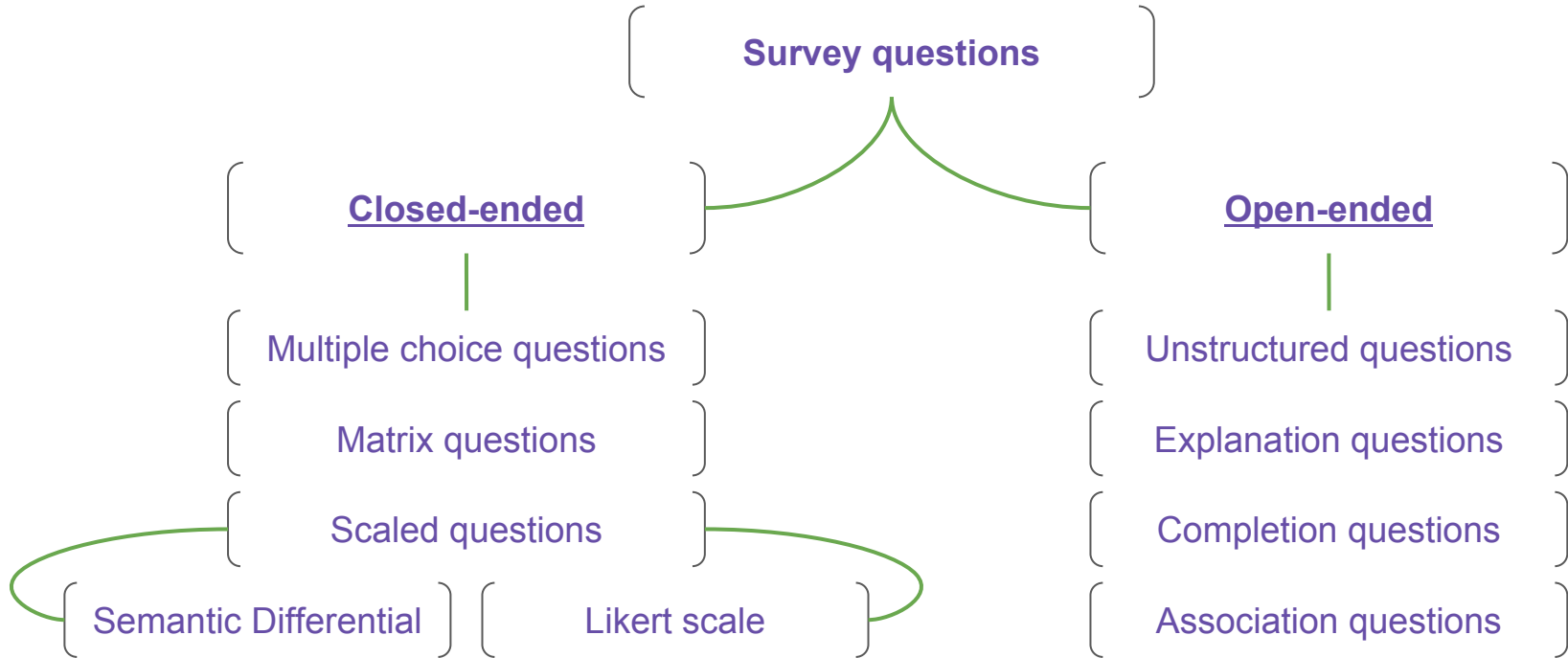
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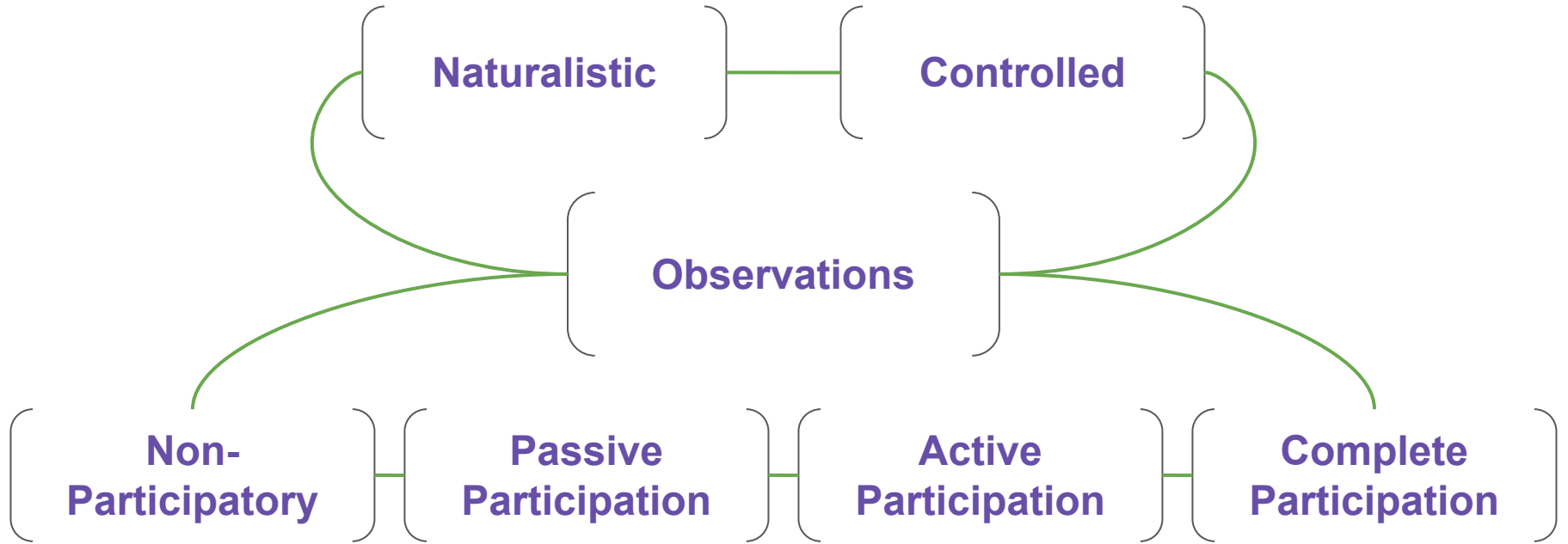
## Understand Your Users: Exploratory Studies

- Questionnaires
- **Observations**
- Interviews
- Diary/Camera Studies
- Participatory Design
- Ethnographic Field Studies
- Contextual inquiry

- Observing participants performing some type of activity (ongoing behaviour)
- Can be controlled (lab) or naturalistic (field)
- Different possible levels of participation
- Written or video recording (requires consent!)



## Understand Your Users: Exploratory Studies





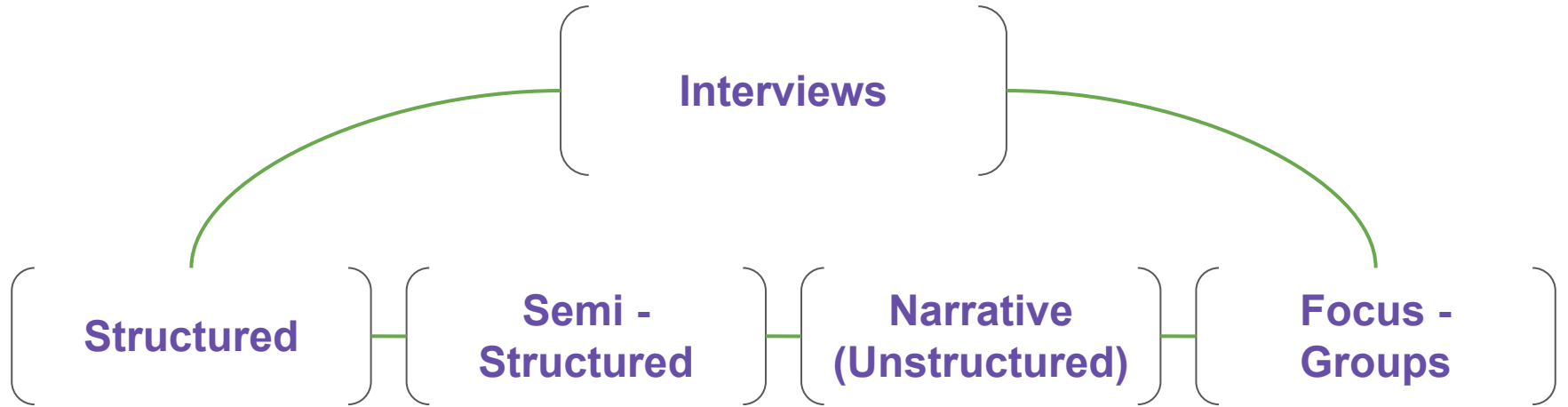
## Understand Your Users: Exploratory Studies

- Questionnaires
- Observations
- **Interviews**
- Diary/Camera Studies
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- Contextual inquiry

- In depth discussion of the topic with a participant
- Usually one-on-one
- Written, audio, video recording options (requires consent!)



## Understand Your Users: Interview





## Understand Your Users: Interview

### Structured

- Same set of questions
- Standardized process
- Little freedom of expression
- Often self-reported

### Semi - Structured

- List of guiding questions / topics
- Trajectories in a conversation
- Often preceded by observation
- One of the most popular

### Narrative (Unstructured)

- Focus and goal guide the discussion
- Open-ended questions
- Freedom of expression & little control
- Popular in ethnography

### Focus - Groups

- Semi-structured in a group
- Moderated
- 6-10 homogeneous strangers
- May permit discussion
- Emerged in the 1940s