CS449/649:
Human-Computer Interaction

Spring 2017

Lecture IV

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Project area

Market research

Life experience

Academic research

Your product ideas

Creativity

Value Proposition

Business

Customer

UX
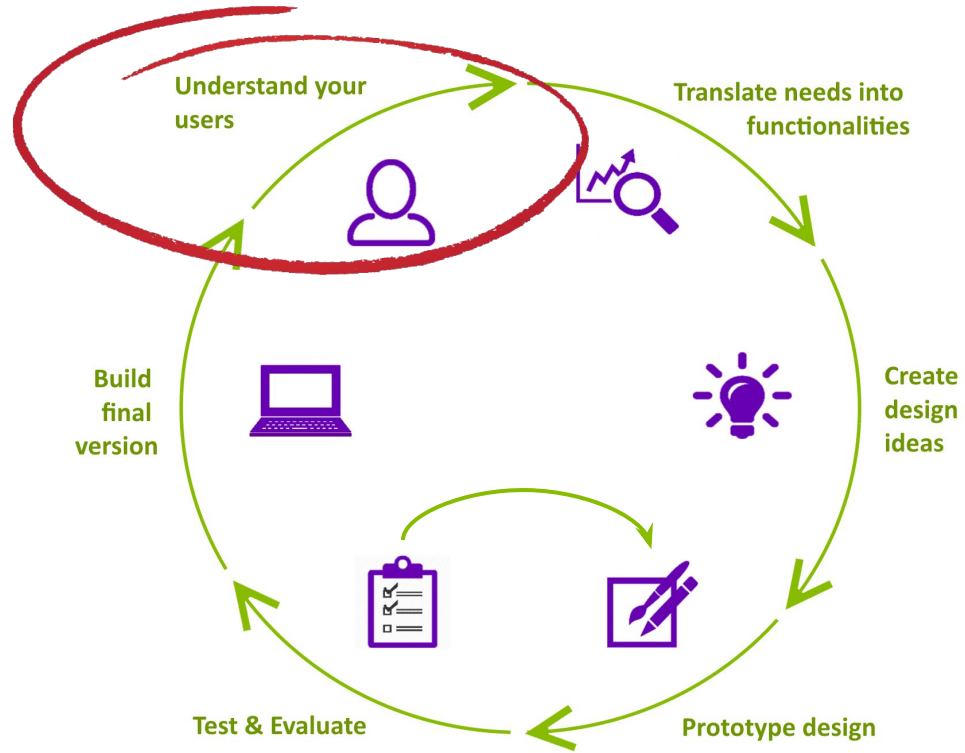
Slide from Lecture 2
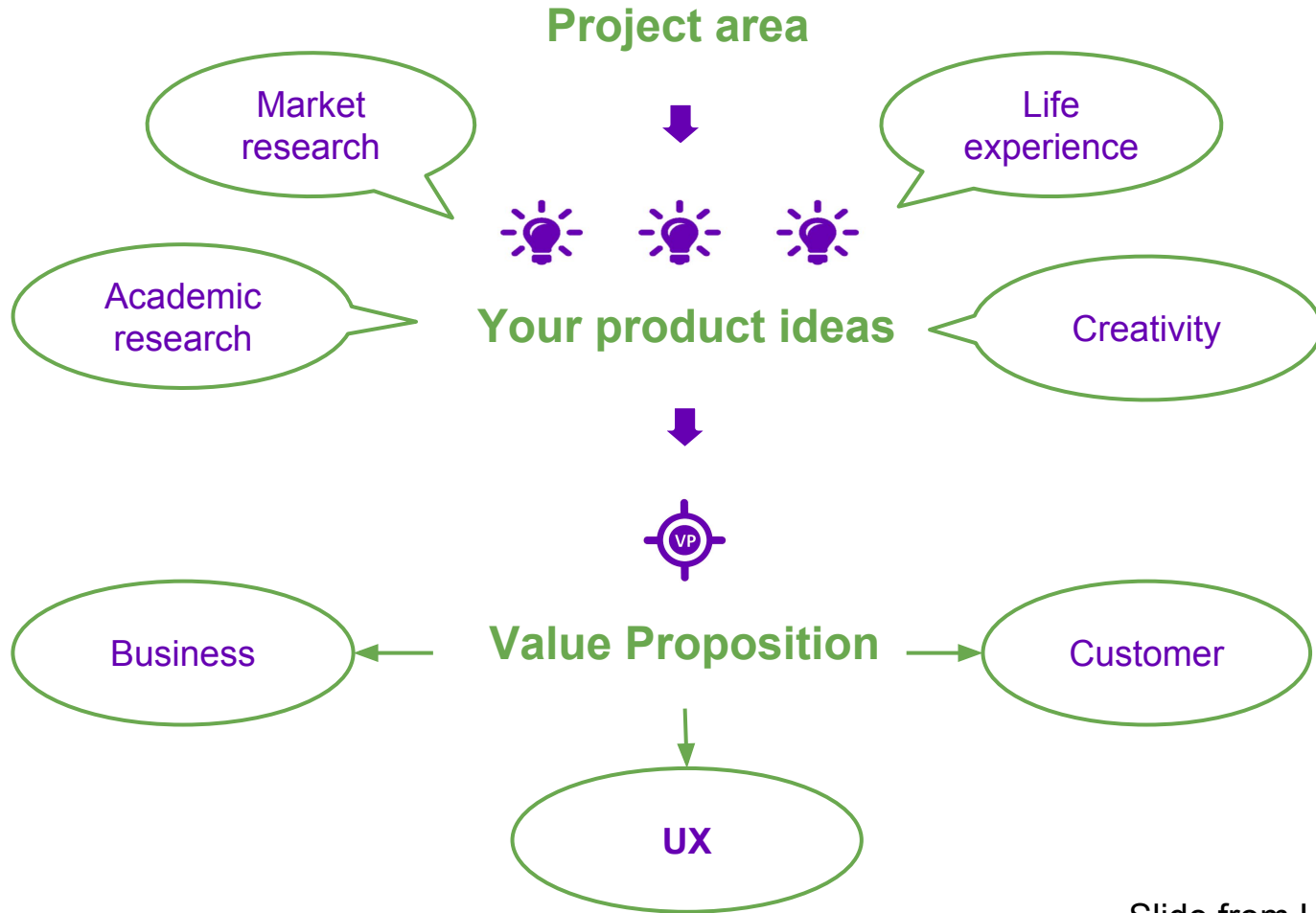
Understand Your Users

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

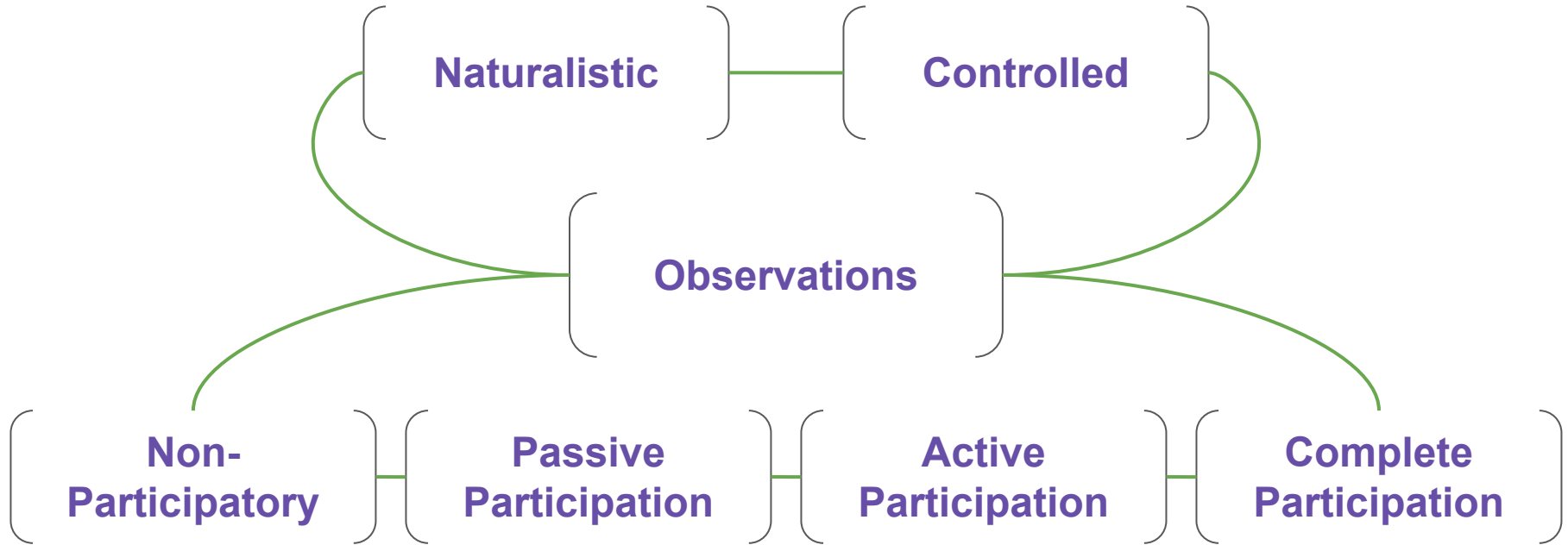**Richard A. Bolt (1979), MIT Media Lab. "Put that there" project**

Understand your users

Translate needs into functionalities

Create design ideas

Prototype design

Test & Evaluate

Build final version

Understand Your Users: Exploratory Studies

Observations

Understand Your Users: Exploratory Studies

Naturalistic — **Controlled**

Observations

Non-Participatory — **Passive Participation** — **Active Participation** — **Complete Participation**

Understand Your Users: Exploratory Studies

Observations

- Record artifacts users manipulate
- Use codes and symbols
- Separate "says" and "does"
- Separate tasks, goals, motivations
- Keep your side notes separately
- Separate actions and body language
- Separate **observations** and **interpretations**
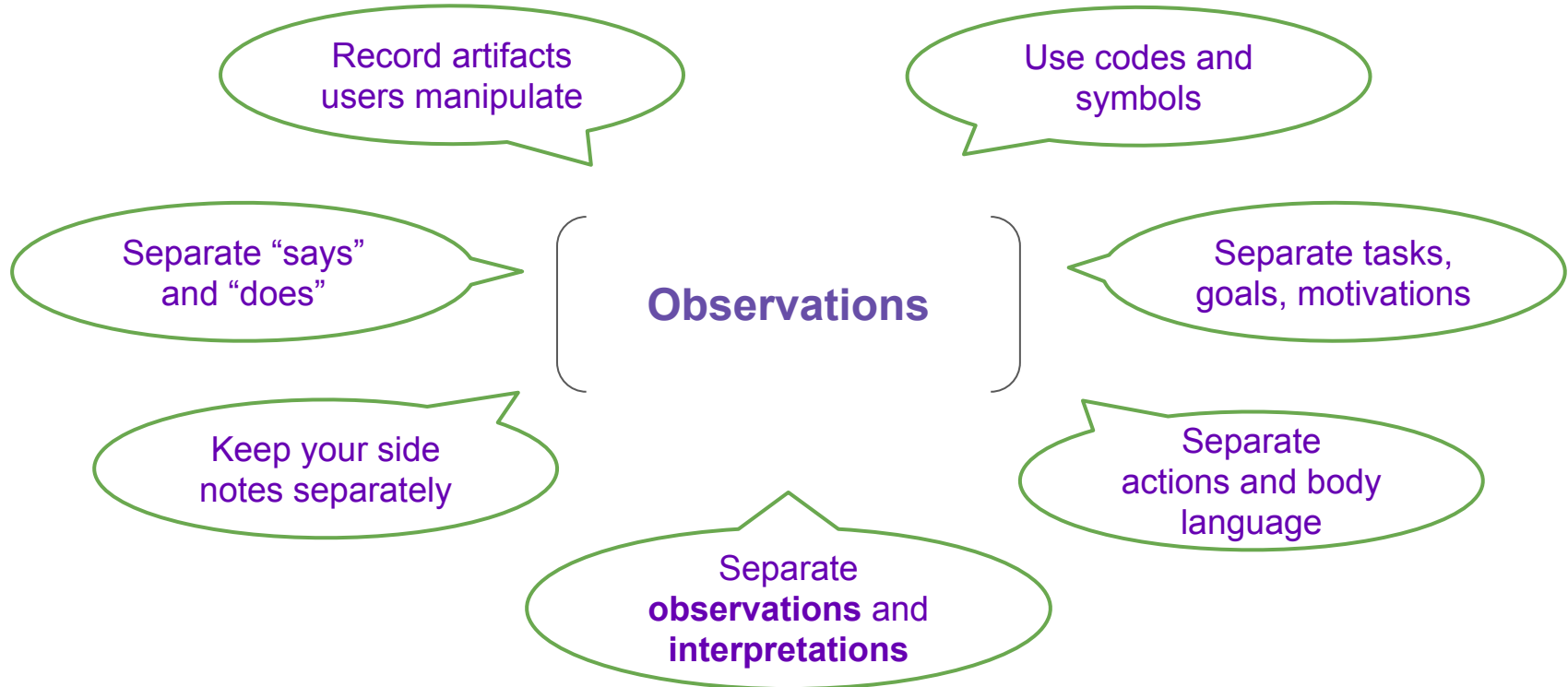
Observation 1 practice

Observation 2 practice

Observation 3 practice
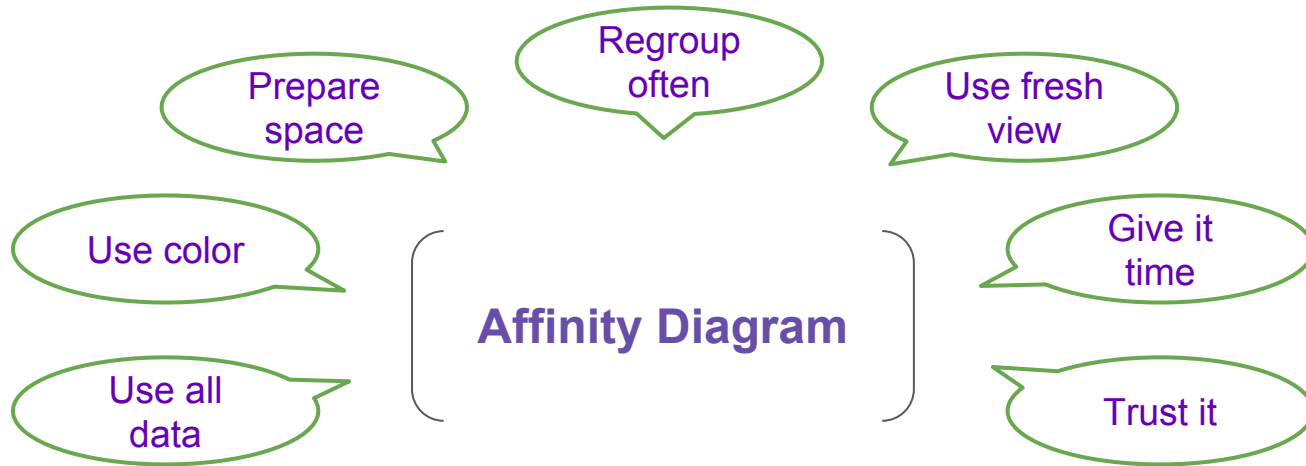
Understand Your Users: Analyzing Qualitative data

Row Qualitative Data **=** **"Fuzzy Data"** **=** **Not yet Actionable**

Affinity Diagram

Notes on cards → **Review the cards** → **Sorting and grouping** → **Smaller Subgroups** → **Themes in Data**

Understand Your Users: Analyzing Qualitative data

Regroup often

Prepare space

Use fresh view

Use color

Affinity Diagram

Give it time

Use all data

Trust it

Notes on cards → Review the cards → Sorting and grouping → Smaller Subgroups → Themes in Data

Understand Your Users: Exploratory Studies

Interviews

Understand Your Users: Interview

Interviews

Structured

Semi - Structured

Narrative (Unstructured)

Focus - Groups
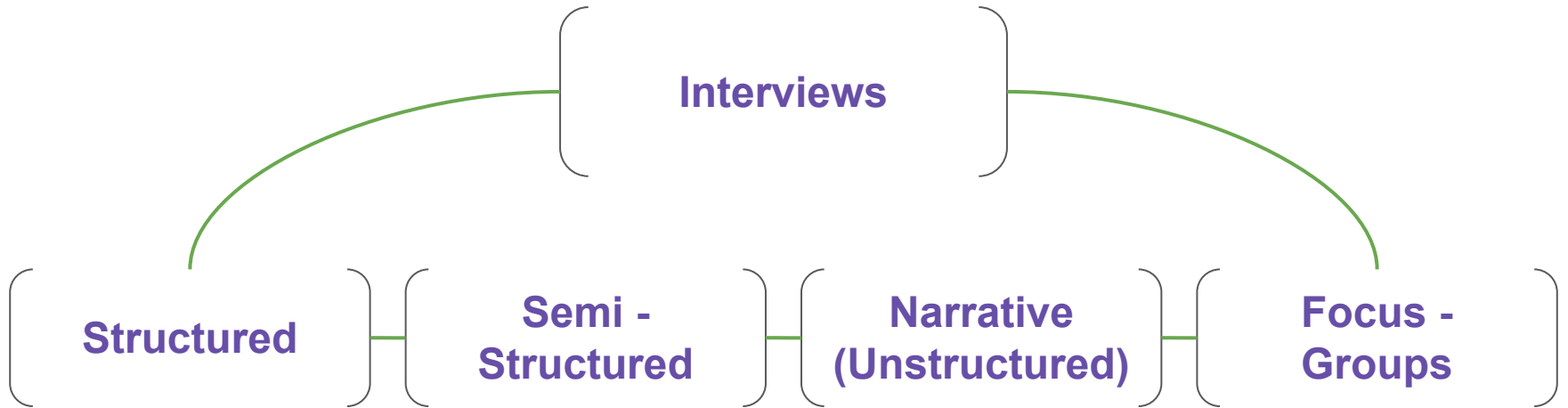
Understand Your Users: Interview

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**

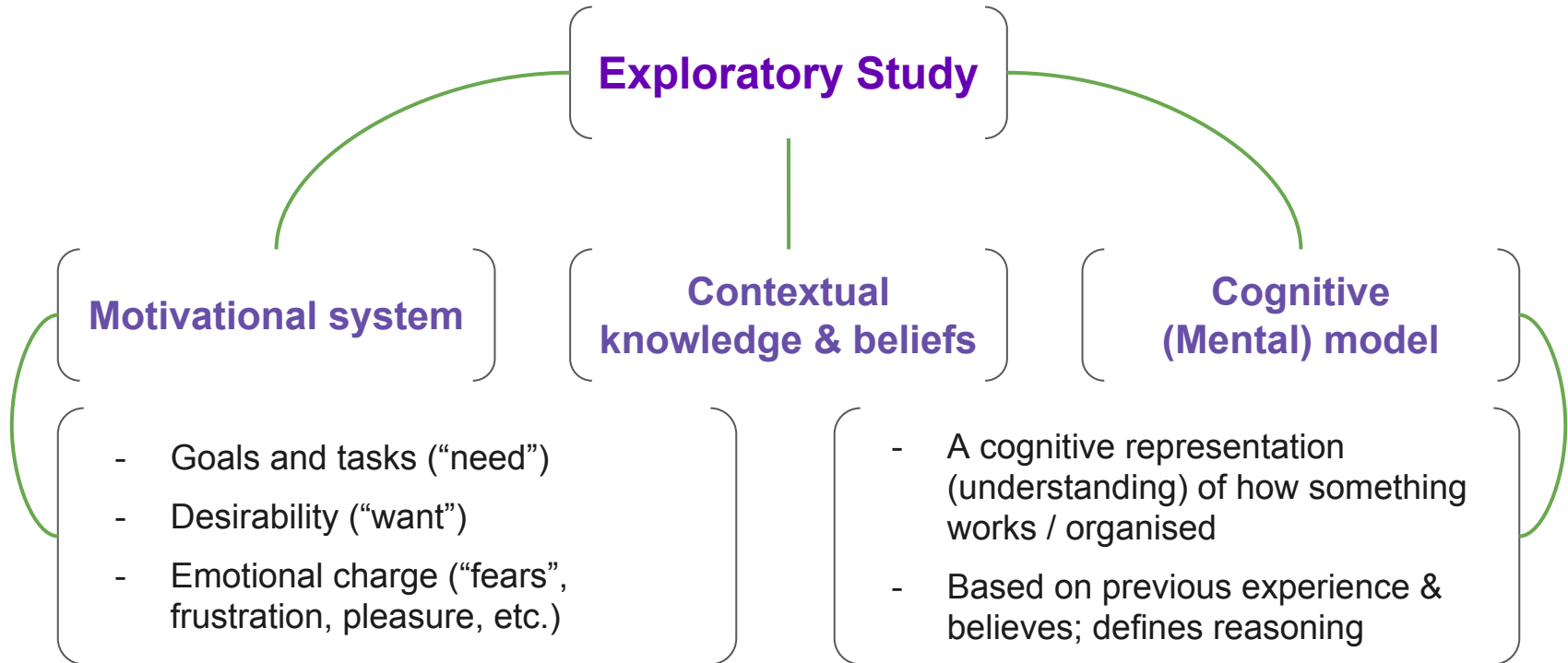**Understand Your Users: Exploratory Studies**

Ethnographic Field Studies

Understand Your Users: Exploratory Studies

Ethnographic Field Studies

Observations ✚ Interviews ✚ Natural context

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 & believes; defines reasoning

Week 2 take-away

Questions:

- Exploratory study - when, why, what we are looking for
- Cognitive (Mental) model
- 3 dichotomies of research methods and data triangulation
- Methods for exploratory study
- Surveys and questionnaires - types of questions, advantages, disadvantages
- Observations - types and how to conduct, advantages, disadvantages
- Interviews - types and how to conduct, advantages, disadvantages
- Ethnographic field study & Contextual inquiry - what is it, differences, similarities, how to conduct
- Working with qualitative data - affinity diagrams (why we use ir and how to make)