Grounded Theory

Fundamentals of Human-Centered Computing

Grounded Theory

Today I will answer the following questions:

- What is Grounded Theory?

- What is **not** Grounded Theory?

- How do I do Grounded Theory research?

What is it?

What is Grounded Theory?

What is it?

Grounded theory is a collection of systematic strategies for qualitative research practice

What is it?

"systematic strategies"

Grounded Theory provides methods for:

- how to collect qualitative data (interviews, observations)

- how to analyze that data (coding, memo writing, sorting)

- how to sample participants (theoretical sampling)

- how to create theories (comparative analysis, theory reconstruction)

What is it?

"**collection of**"

There are several types of Grounded Theory. The three main types are:

- Positivist (more structured, only report the facts, more pure theory development)

- Interpretive (more open for interpretation, can be confirmatory)

- Constructivist (structured like positivist, but aware that qualitative research is inherently subjective)

What is it?

"for qualitative research practice"

Grounded Theory is does not tell you what to look for

It tells you **how to look for it**

A benefit of this is that it applies to all kinds of topics

A potential drawback is that it is not replicable

e.g., two people doing the exact same interview can have completely different interpretations of the data

Constructivist grounded theorists embrace this ambiguity!

Ambiguity

Evaluation is inherently subjective

It's an interpretive portrayal of the studied world, not an exact picture of it

"All models are wrong, but some are useful"

George Box

What do we study?

We try to learn what our research participants' lives are like

How they achieve a goal

Study events and experiences

Focus on the process, not on the structure

Build abstract theoretical explanations of social processes

Go beyond "what", to "how" and "why"

Bring an open mind to what is happening

You will build theories, not confirm them

Applied to HCI

Grounded Theory is not an HCI research method by default

"Traditional" constructivist Grounded Theory studies Symbolic Interactionism

> How society, reality, and the self are constructed through interaction

The HCI variant studies "computer-mediated symbolic interactionism

> How computers influence this process and vice versa

Applied to HCI

However, even HCI Grounded Theory is **not** about a system or a feature!

It is about a process or phenomenon that is (or could be) supported by a system

We study how users use (or fail to use) a system as a **means** towards achieving a **goal**

The focus is on the goal, not on the system!

Applied to HCI

Practical implications of this difference:

Traditional Grounded Theory has a heavy emphasis on interviewing

HCI Grounded Theory puts more emphasis on observation

This is why I assigned Holtzblatt's chapter as additional reading for next Tuesday

Contextual Inquiry is "observation-based interviewing", or "interview-supported observation"

Example

Proposed topic: Is there a difference between a regular menu and personalized e-menu, for example in terms of whether the customer tries new dishes instead of ordering the same thing every time?

Suggestion: How do people order food online?

Example

**Suggestion:** How do people order food online?

Why?

- A process that is (or can be) supported by an application

- Focus on the goal (ordering food), not the application (personalized menu)

- Keeps an open mind on what is happening (build theories, not confirm them)

Personalized menus may come up, but you may also find that something totally different stands out!

Grand scheme

| phenomenon | Grounded Theory ➤ | theory | Experiment ➤ | confirmed theory |
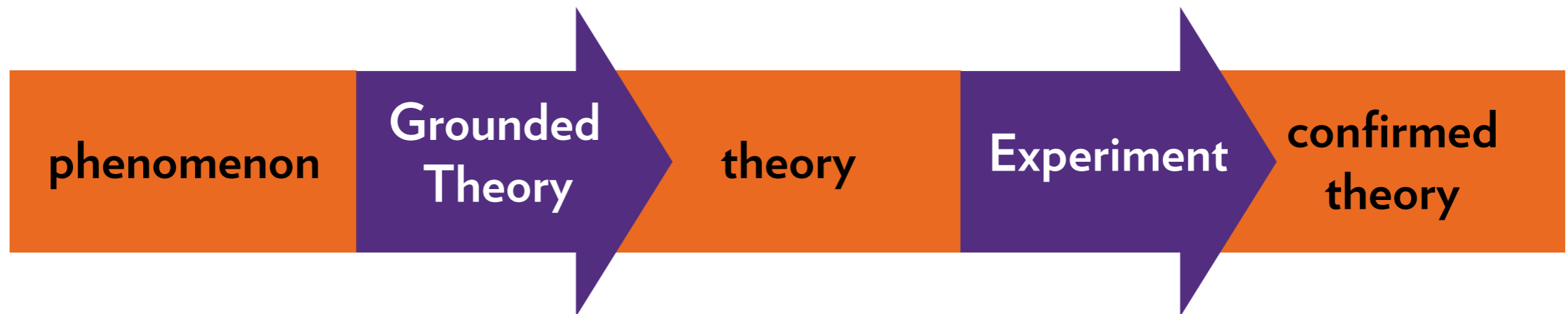
You can always do an experiment to confirm your hypotheses about the personalized menus (or the other thing that you find) later

What is it not?

Due this Thursday!

What is it not?

Grounded Theory is not an experiment

Grounded Theory is not a survey

Grounded Theory does not employ quantitative metrics

Grounded Theory is not an interview study

Not an experiment

Experimental researchers start with theory

They deduct testable hypotheses from existing theories, and then conduct a study to test those hypotheses

Experiments usually involve an intervention (which creates a comparison)

As grounded theorists, we start with data

We develop theories from research, grounded in qualitative data

Comparisons arise from the data

Not a survey

Survey researchers ask standardized questions to a random sample

> They try to learn something about a population, either to get accurate metrics, or to find correlations

As grounded theorists, we let the data guide us

> Every interview will take a different path

> Sampling is guided by intermediate results

No metrics

Most scientific researchers try to quantify phenomena

> Numbers are a convenient means to communicate results, easy to analyze, and can be replicated

As grounded theorists, we qualify phenomena

> We describe situations, their consequences, and the conditions under which they occur

> There is no replication of results

> Analyzing the data and communicating the results is much harder than usual

No interview study

Grounded Theory requires the following:

- Theory construction, not application/confirmation

- Iterative collection and analysis

- Theoretical sampling

- Grounded in actions and processes (not just structure and themes)

- Systematic data analysis, resulting in categories

- Comparison: search for variation

- Theorize, not just describe

How is it done?

How do I do Grounded Theory research?

How is it done?

Steps:

- collect qualitative data

- analyze data

- iterate

- create a theory (or theories, plural)

Collecting data

Learn to see the world as participants do

> Useful to have a mentor-apprentice (interested learner) relationship

Gather rich data

> More data from fewer participants is better than less data from more participants!

Create a "thick" description

> Record and take notes, transcribe, write memos (see later)

Collecting data

Main collection method: intensive, contextual interview

    Combination between a deep interview and an ethnography

Several types:

    Watch the person while they do activity and ask questions

    Ask the person to recall past activities; walk through them

    Use an artifact to guide the discussion

Goal: Focus on specific events (not "in general")

Collecting data

Ask people to do the process while teaching you how they do it

  Let them lead

  Observe what they do and say

  Ask **open** questions when they stop talking

  Direct back to the task if they go on a "usability rant"

Create (and confirm) a **shared understanding** of the process

  Get not just the what, but also the how and why*

Collecting data

Conflict is interesting
(especially in HCI Grounded Theory)

Analyzing data

Analyzing the data consists of two parallel processes:

Microanalysis and coding

Engaging with the data

Memo-writing and sorting

Reflecting upon the data

Analyzing data

The coding track:

Step 1: A microanalysis of your transcript

    Go through the transcript line by line (even word by word)

    Assess, compare, question, and hypothesize about each sentence!

Step 2: Open coding

    Highlight important concepts, develop categories, describe their properties and dimensions

Analyzing data

Step 3: Axial coding

How do the dimensions of two categories relate?

Find correspondences between properties

Step 4: Selective coding

Pick storylines that create interesting theories

Analyzing data

The memo track:

Step 1: Writing memos, which may contain:

– your higher levels thoughts and ideas

– ideas for theoretical sampling (who to interview next)

– diagrams

– results from the different coding steps

Step 2: Sorting your memos

Put everything together into theoretical "tracks"

Iterate

Do small batches (3-4 interviews) of data collection, analysis and even theory construction (to a certain extent)

An early theory may cause you to go back to your data

Try to confirm, qualify, or disprove the theory

You can even sample participants for this purpose!

This is called **theoretical sampling**

data collection	data analysis	theory construction

Creating a theory

Theories are practically the end product of selective coding and memo sorting

Criteria for theories: No theory exists without variations, and a description of the conditions under which they occur

    not: "some people felt they had too much choice"

    not: "choice overload reduces satisfaction"

    but: "when choice is abundant, satisfaction is low, but when choice is limited, people seem to be more satisfied"

    (followed by a detailed description of why!)

Result: a theory

Final goal: a "grounded theory"

An abstract analytical understanding of the studied experience

An explanation, not just a description!

Directly supported by (contrasting) quotes from participants

Such a theory is a middle-range theory

A theory to describe a single phenomenon

Result: a theory

Notes:

- There can be more than one theory per study (you can write more than one paper per study!)

- It is not uncommon for your research question to change based on the data

- A grounded theory can potentially be abstracted to a Grand Theory (especially when you find the same theory in multiple fields)

Example

Page et al. "Don't Disturb My Circles!
Boundary Preservation Is at the Center of
Location-Sharing Concerns"

http://bit.ly/icwsm2012

Example

"What consistently predicted the absence or presence of privacy concerns turned out not to be the relationship type itself. Rather, it was whether or not the situation would change existing offline relationship boundaries. However, boundaries (and thus the ensuing activities) change when the associated relationships change, even when the 'who' stays the same: when acquaintances become good friends sharing may increase, while sharing may slowly decrease when relationships dry up. In turn, what was once a privacy concern may no longer be, and new concerns may appear where they were absent."

Example

"For instance [...] one interviewee explained how he turned off his Facebook wall to keep his coworkers from seeing unprofessional communications. This preserved his professional relationship boundaries. At a later point in time though, he "got over it" and turned the wall back on: "It's fine now. I don't really care [if they see it]...I'm not there anymore, I quit the job." In this example, his ex-coworkers are still on Facebook with him, but his relationship with them has changed. In other words, the who is constant, but the relationship has changed from coworker to ex-coworker. This transition dispelled privacy concerns since he no longer had a professional relationship boundary to maintain."