

Fundamentals of Human-Centered Design



Introduce: The Lab + Each Other



Welcome +
Introductions

The Lab at The Office of Personnel Management

The Lab at OPM (The Lab) fosters innovation through design. We teach human-centered design across the Federal Government and help deliver innovative solutions to address complex public and cross-sector challenges.

TEACHING | DOING | LEADING

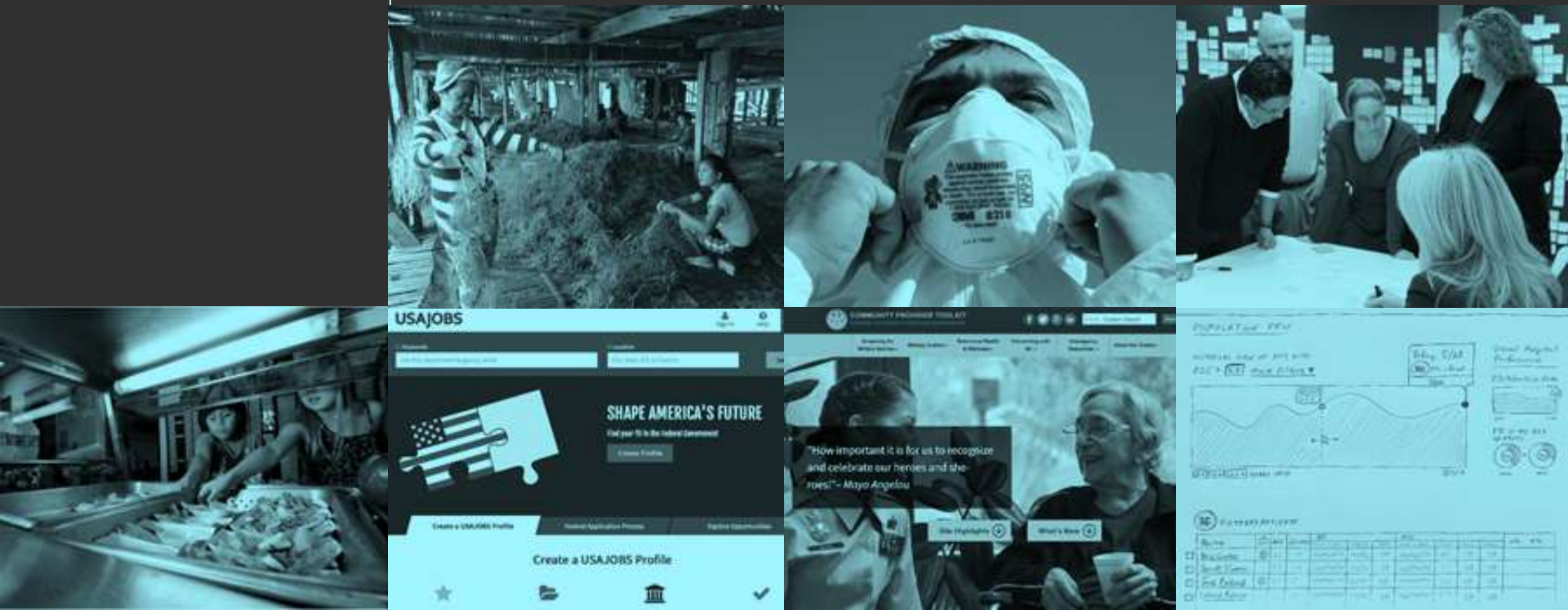
LAB OPM

➤ <https://lab.opm.gov>

Welcome + Introductions

The Lab's Portfolio

- Our work ranges from pure stakeholder-insight and discovery efforts to full design and piloting projects.
- We've done experience mapping with VA, form design with USDA, full-stack development for USA Jobs, etc...



Let's introduce ourselves...

- Use marker to draw one fun fact about yourself on an index card
- Write your name on it

Let's introduce ourselves...

Please tell us:

- Your name
- Organization & title
- Fun fact
- Interest in and/or experience with human-centered design

Align: Objectives + Expectations



Over the next 3 days we will...

- Develop an understanding of the mindsets, methods, and tools in the discipline of human-centered design (HCD).
- Explore how to apply HCD to the challenges you may find at work.
- Improve collaboration and co-creation skills.
- Learn to design within constraints and to accept constraints as a key part of the design process.

The Guiding Principles and Spirit of Our Course

- This workshop is just an introduction to HCD; being proficient will take longer than three days.
- You need to fully participate and minimize work or personal distractions.
- We believe that collaboration is a survival strategy, not just a choice; this workshop hinges on your ability to collaborate with others.
- Suspend what you know and what you are comfortable with. Take some risks. Nobody will judge you for it.

The Guiding Principles and Spirit of Our Course

- Stand and stretch when needed
- Accessibility and accommodations
- Bio breaks
- Use of cell-phone/laptop
- Create groups of 4-5 members
- Group with people different background & office

Objectives + Expectations

Our Design Challenge*

**a task or situation that tests someone's abilities*

Your challenge for these three days will be:

How DOL might further promote the success and wellbeing
of DC **food-service workers**



Objectives + Expectations

Day 1 Agenda

- Introduce: The Lab + Each Other
- Align: Objectives + Expectations
- Explain: Human-Centered Design

Break

- FRAME: Problem Framing

Break

- EXPLORE: Design Ethnography
- EXPLORE: Fieldwork Preparation

Lunch + Fieldwork 12:30–3:30pm

- Reflect: Fieldwork Debrief

Wrap Up 4:00pm

Explain: Human-Centered Design



Innovation and Design

Take a moment to reflect on what these terms meant to you. Write down some keywords, thoughts, etc.. Share them with the group.



Collecting the thoughts





“

**Everyone designs who devises
courses of action aimed at
changing existing situations
into preferred ones.**

**Human-Centered
Design**

– Herbert Simon
Economist, psychologist, and design theorist

Human-Centered Design

Breakthrough Products



Human-Centered
Design

Breakthrough Processes



So then, what about *human-centered* design?

Take a moment to reflect on an example of a product, service, or process that exemplifies good (or bad) human-centered design for you. Share it with the group.



Human-Centered Design: A Definition

The discipline of navigating complex problems and creatively designing effective solutions to meet people's real needs.

Inhumane (Norman) Doors



<https://www.youtube.com/watch?v=yY96hTb8WgI>

Human-Centered (Swedish) Services

Blood Donors In Sweden Get A Text Whenever They Save A Life

143.1K
SHARES



Share on Facebook



Share on Twitter



Origins and Evolution of Human-Centered Design

In the '30s, '40s, and '50s...

Modernist architects and industrial designers employed “top-down” approaches to *designing*, following what they saw as universal rules of form and function.

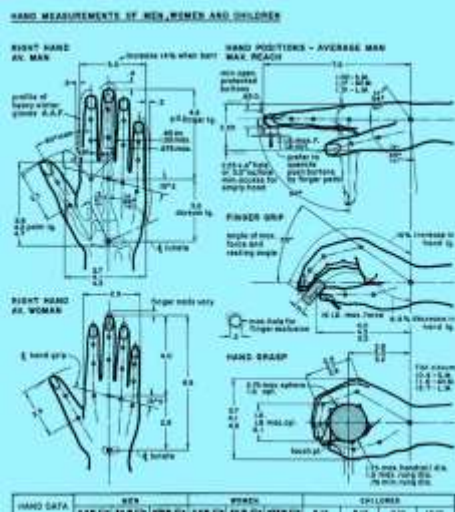


Human-Centered Design

Origins and Evolution of Human-Centered Design

In the '60s, '70s, and '80s...

Computer scientists and management experts formalized *processes of designing for* particular situations and needs through “diagnosis followed by prescription.”



Origins and Evolution of Human-Centered Design

In the '90s, '00s, and '10s...

Restless designers and social innovators have adapted **immersive and participatory methods** for *designing with* people, integrating qualitative social-research practices.



Design in government

Although it arose largely from private industry, HCD is uniquely suited to the work of government, where serving people's needs is both good policy and sound strategy.



DESIGN AS

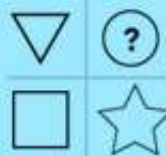
FRAMING



Design redefines the challenges facing the organization.

Framing sets the agenda, outlines the boundaries and axes of interest, and moves design from executing strategy to shaping strategy. Disruptive innovation lives here.

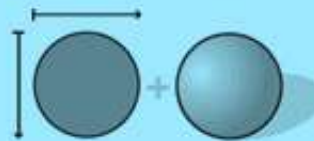
PROBLEM SOLVING



Design finds new opportunities by solving existing problems.

Design process generates alternatives within a problem space. Design also narrows down those options to a specific solution.

FUNCTION AND FORM



Design makes things work better.

This is the classic practice of design - but it's still commonly limited to incremental improvements through iteration over existing solutions.

STYLE



Design is the gateway to be hip and cool.

Design is stylish, but too often is perceived and practiced as a cosmetic afterthought.

NO CONSCIOUS DESIGN



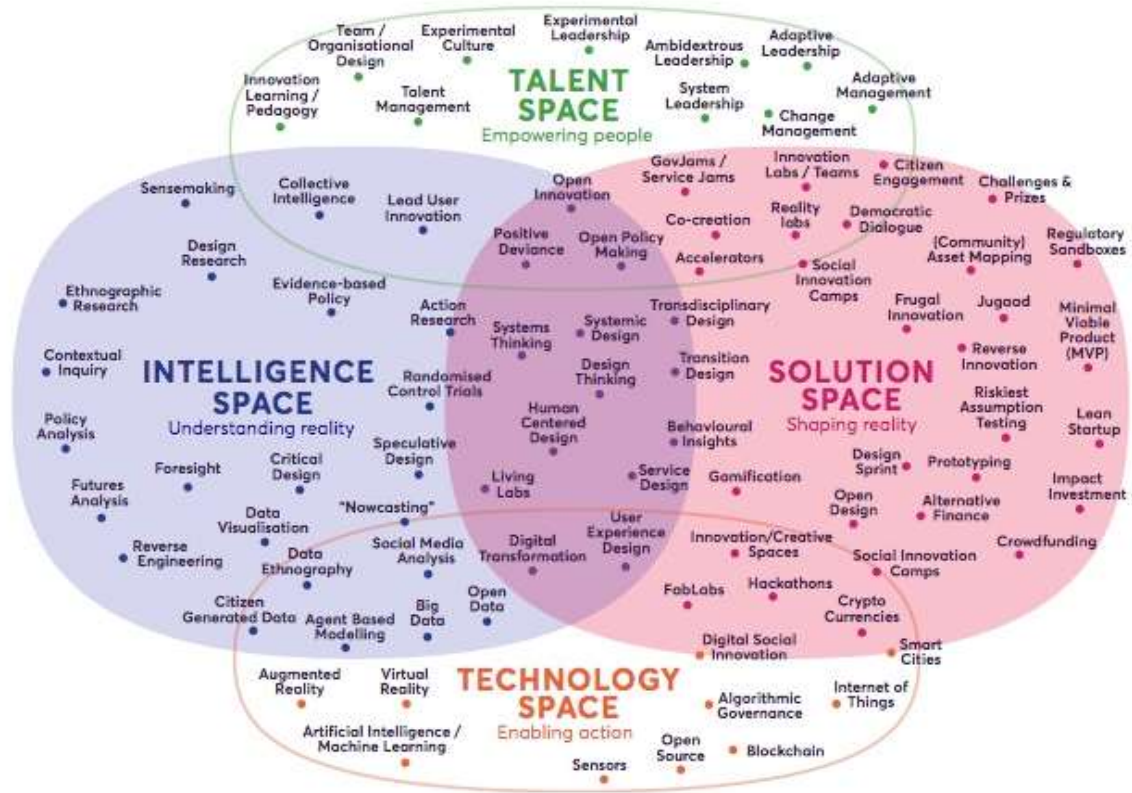
Design value isn't recognized.

This attitude fosters design by default - however things come out is fine, because there are more important issues to deal with.

Innovation Landscape

Landscape of innovation approaches

An overview for exploring different innovation methods when developing an innovation strategy.





Mapping the Innovation Ecosystem

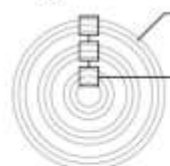
VERSION 1, JUNE 2017

Where and what do public sector innovators see themselves innovating?

Organizations

- The Lab at OPM
- Dept. of Education
- Dept. of Labor
- Dept. of Labor: Bureau of Labor Statistics
- Small Business Administration
- Census Bureau, Center for Applied Technology
- Open Opportunities, GSA
- Internal Revenue Service

Rings: "Where"



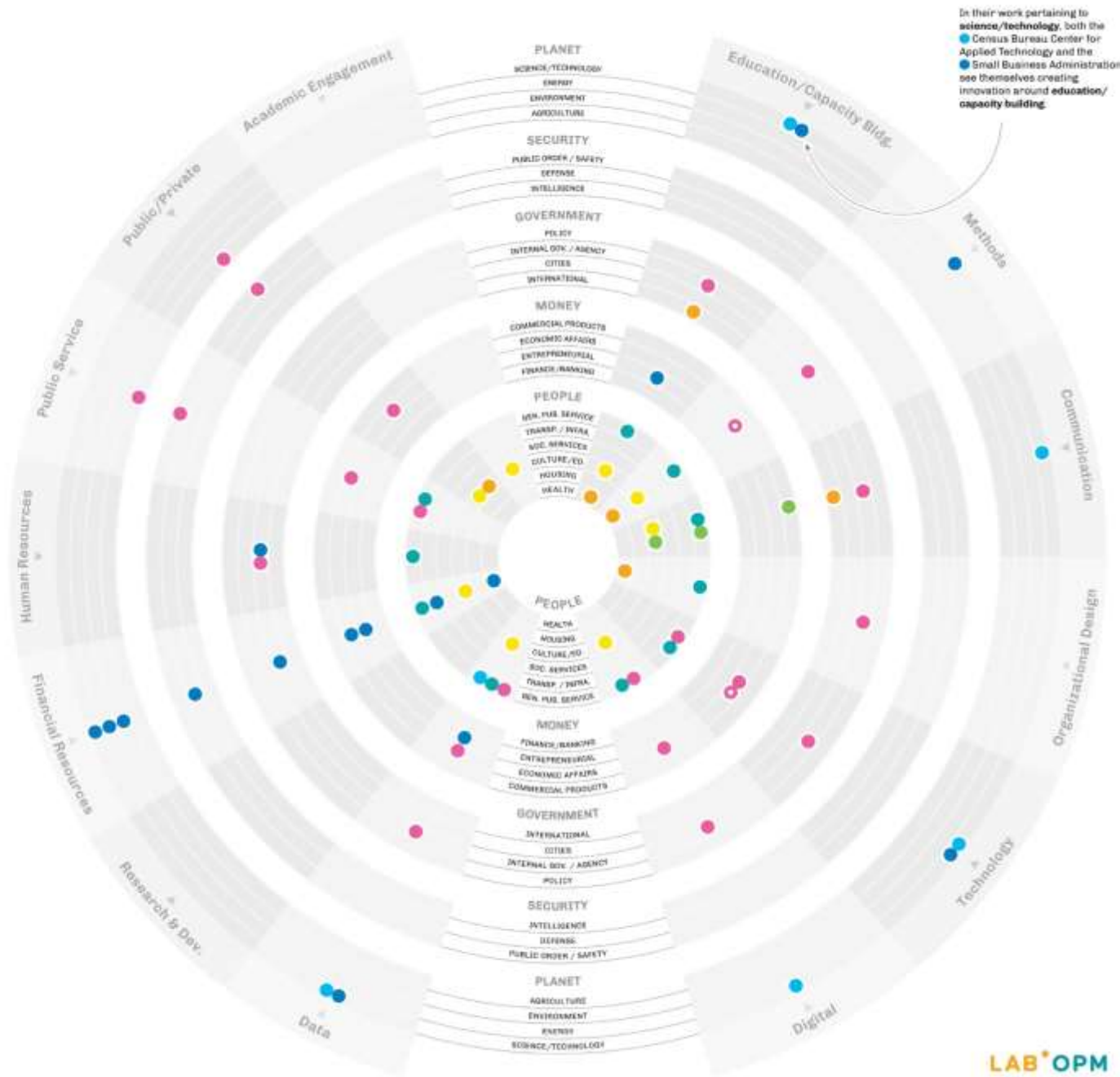
Each narrow ring is a **field of work**

Fields are grouped by broad, **overall focus** of work and arranged into concentric rings

Slices: "What"



Each slice is an **area to innovate** within a field of work



In their work pertaining to **science/technology**, both the Census Bureau Center for Applied Technology and the Small Business Administration see themselves creating innovation around **education/capacity building**.

Mapping the Innovation Ecosystem

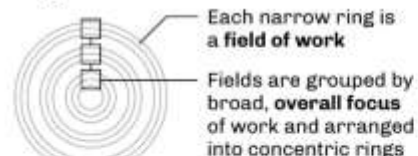
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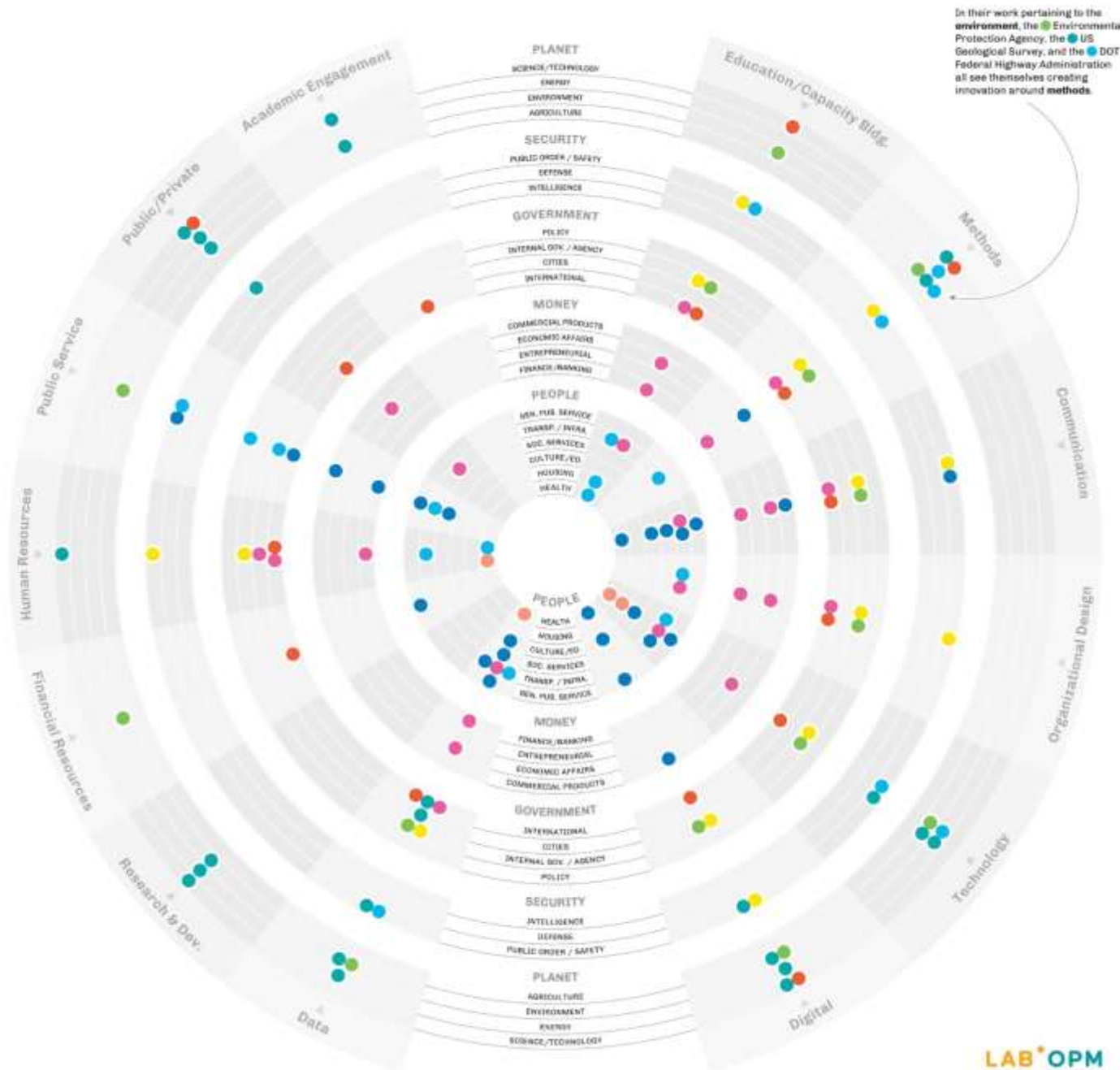
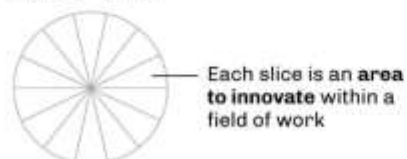
Organizations

- Dept. of Justice
- Dept. of Health & Human Services
- USAID Global Development Lab
- Export-Import Bank
- US Postal Service
- DoT Federal Highway Association
- US Geological Survey
- Environmental Protection Agency

Rings: "Where"



Slices: "What"



Mapping the Innovation Ecosystem

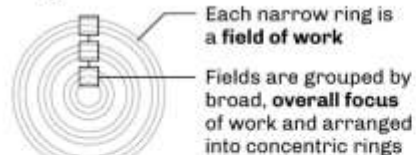
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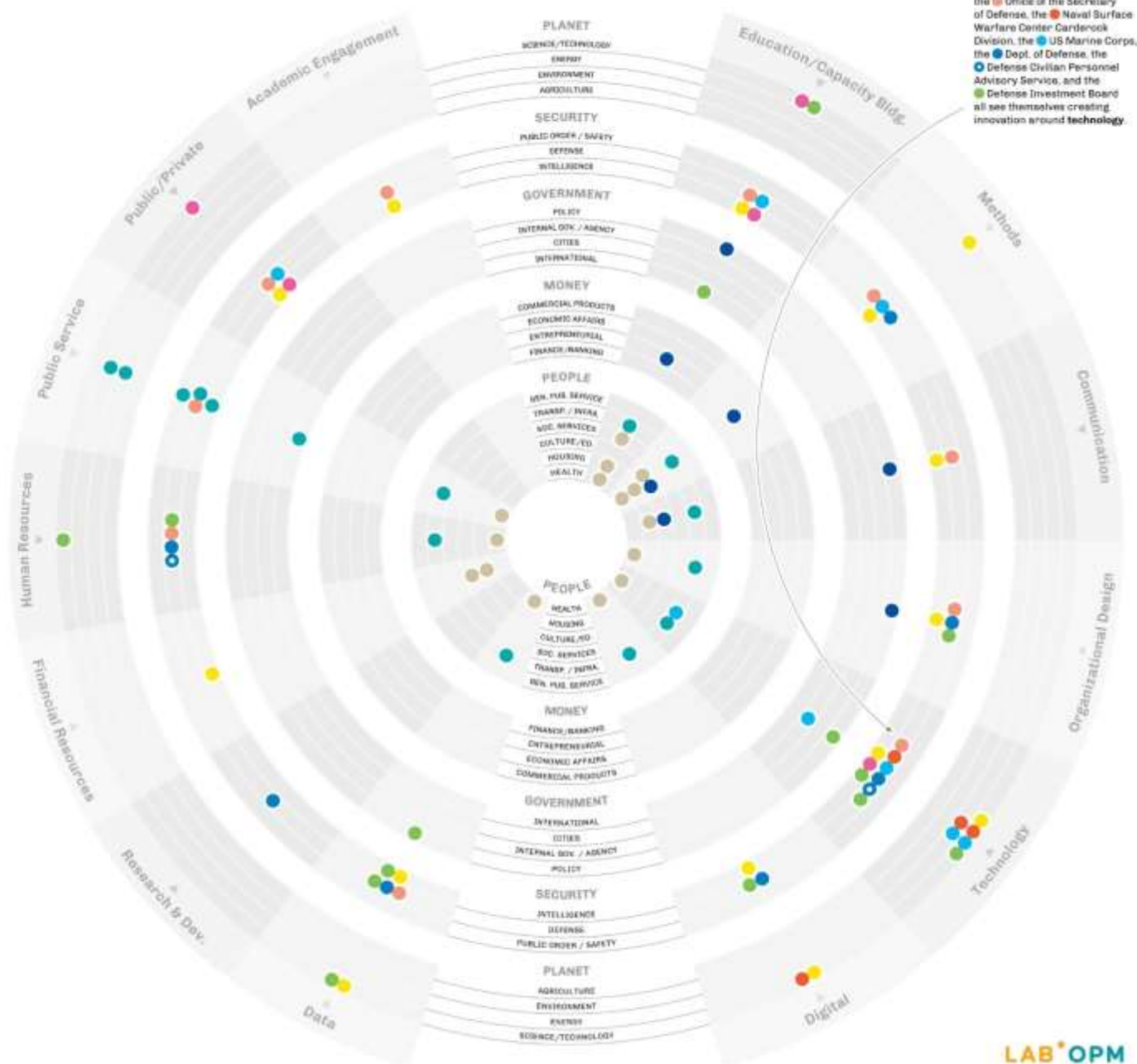
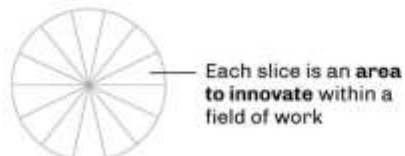
Organizations

- Central Intelligence Agency
- Office of the Secretary of Defense
- Naval Surface Warfare Center Carderock Division
- MD5 National Security Technology Accelerator
- Dept. of Defense
- DoD: Defense Civilian Personnel
- Dept. of the Navy
- US Marine Corps
- US Coast Guard
- Defense Investment Board
- Dept. of Veterans' Affairs

Rings: "Where"



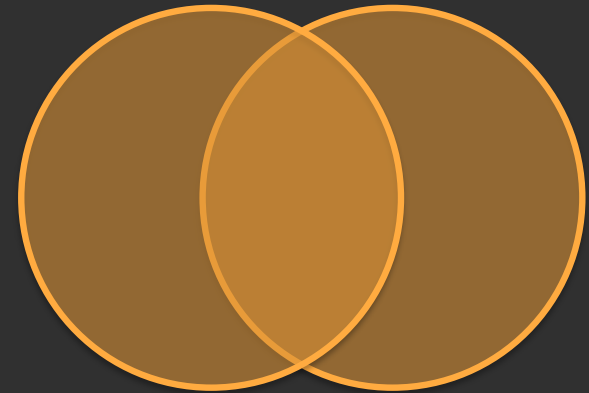
Slices: "What"



Complementary Practices

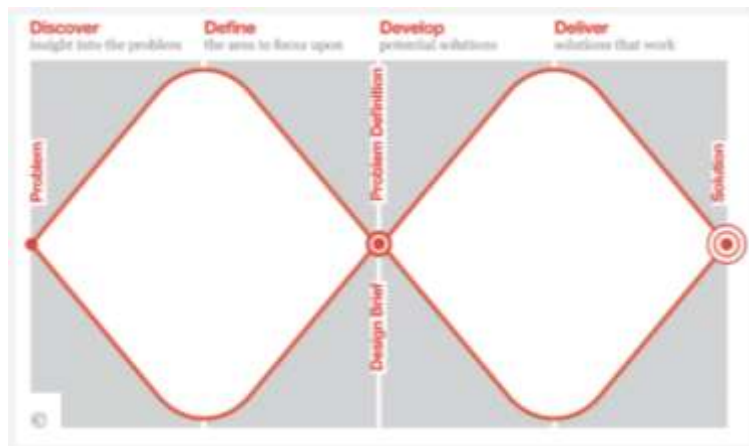
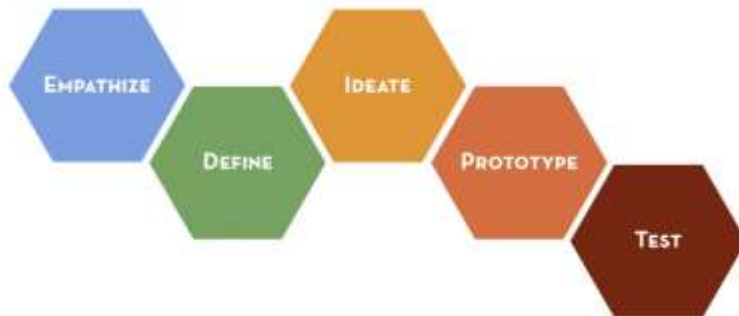
HCD is a close cousin to some other innovative practices:

- *Design Thinking*
- *Design Sprints*
- *Agile Development*
- *Lean Manufacturing*
- *Scenario Planning*
- *Adaptive Leadership*
- *Six Sigma, Etc.*



But these are more specific tools and tactics developed by organizations for (or from) particular applications in their work. HCD is a complimentary discipline which can include, but is not wholly defined by, these sorts of methods and mindsets.

HCD Process Diagrams



Noise / Uncertainty / Patterns / Insights

Clarity / Focus



Research & Synthesis

Concept / Prototype

Design



INSPIRATION

In this phase, you'll learn how to better understand people. You'll observe their lives, hear their hopes and desires, and get smart on your challenge.



IDEATION

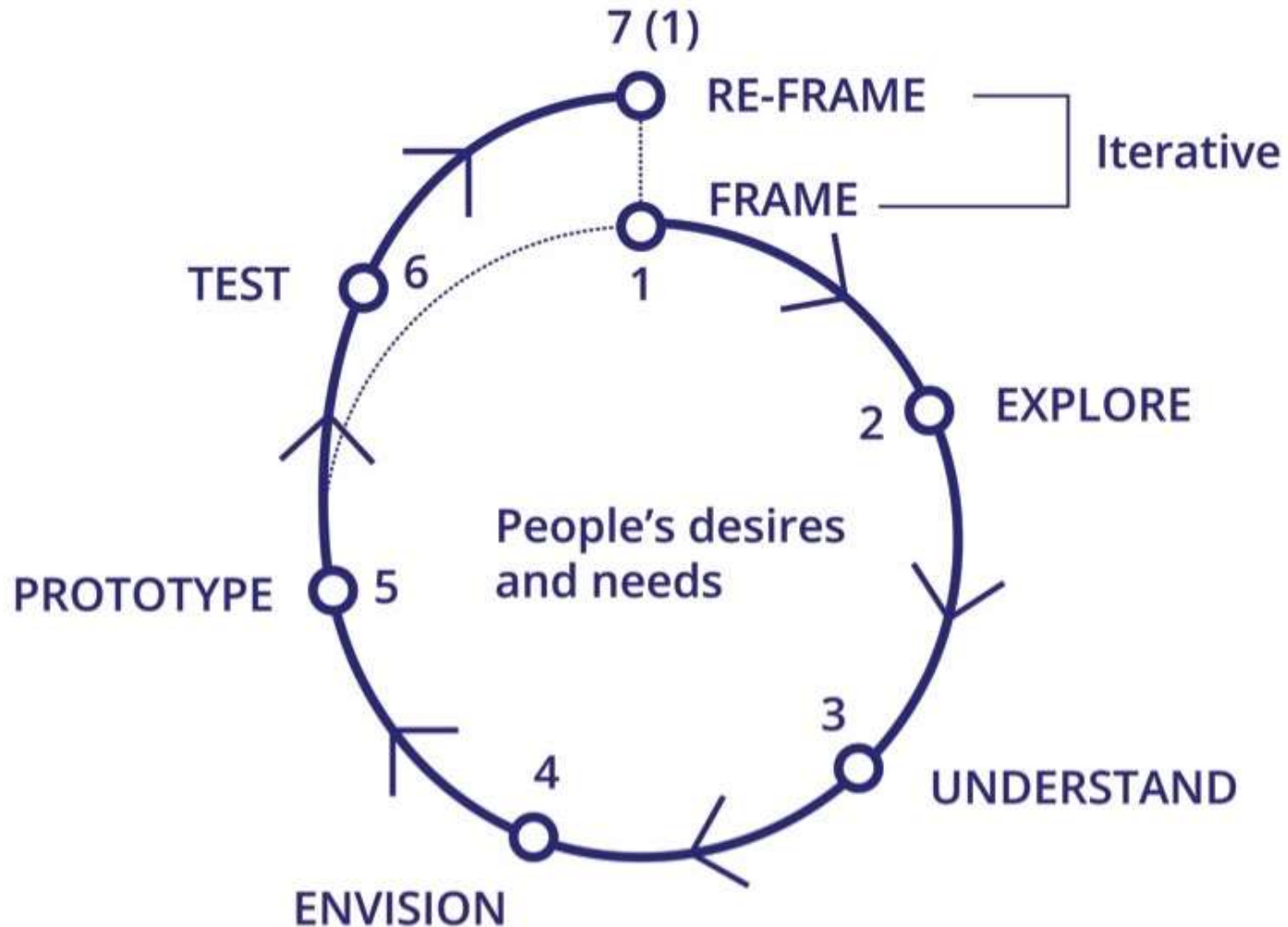
Here you'll make sense of everything that you've heard, generate tons of ideas, identify opportunities for design, and test and refine your solutions.



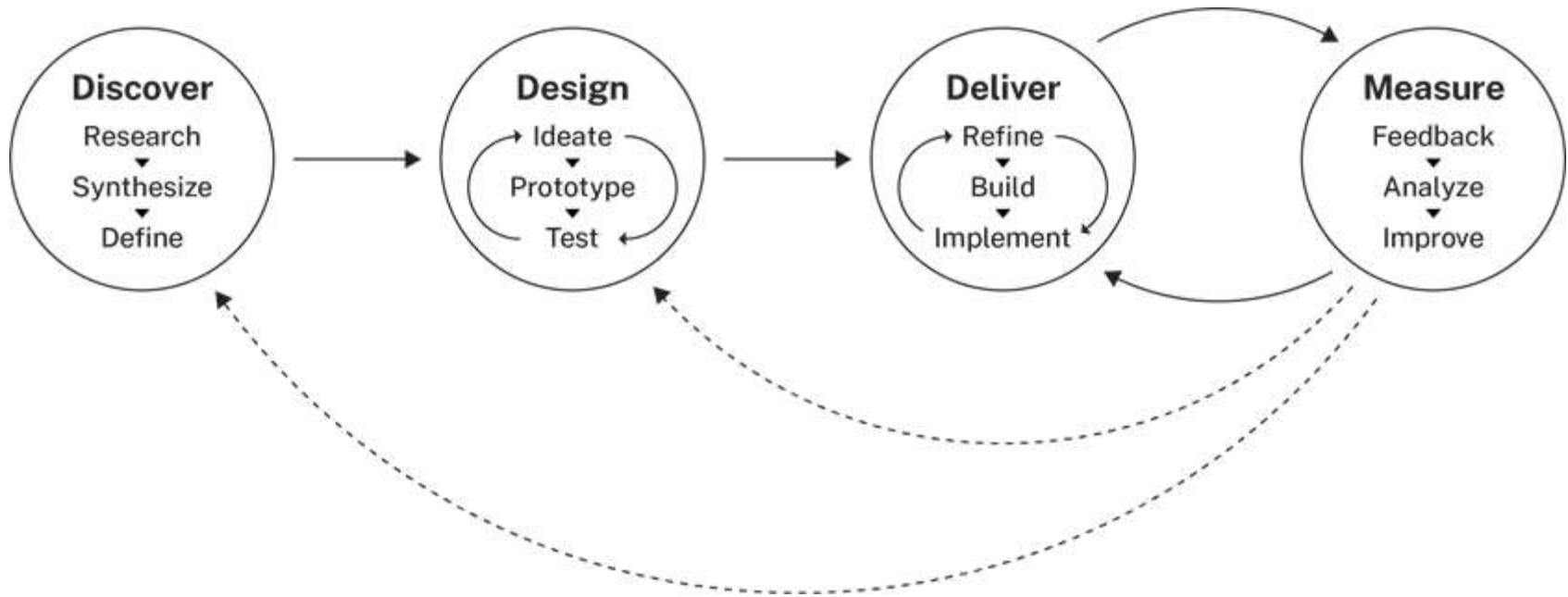
IMPLEMENTATION

Now is your chance to bring your solution to life. You'll figure out how to get your idea to market and how to maximize its impact in the world.

HCD Process Diagrams



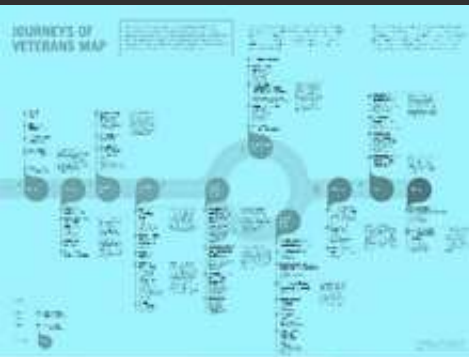
HCD Process Diagrams



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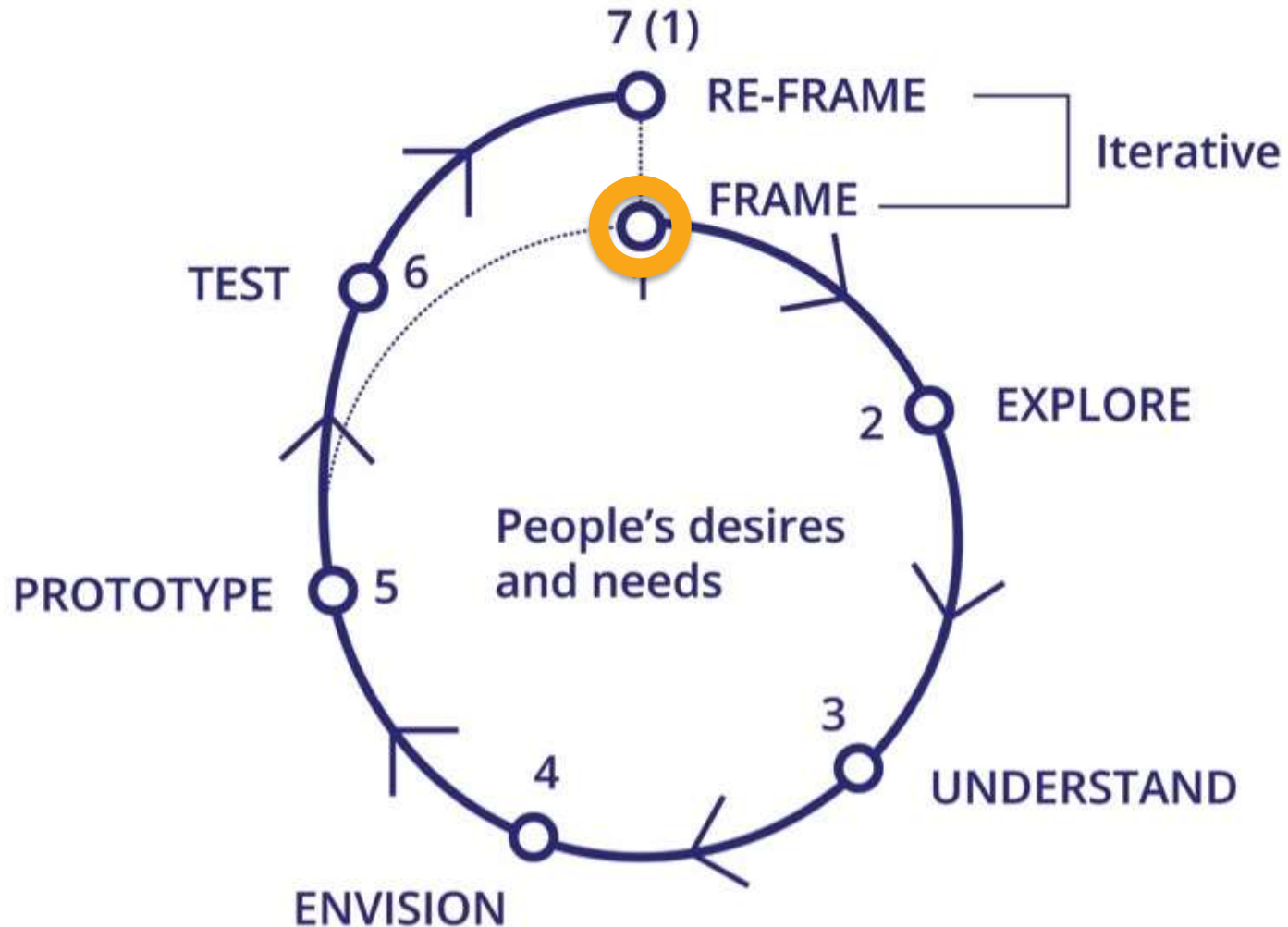
Break

15 min.

FRAME: Problem Framing



HCD Process Check-In





“

“The mere formulation of a problem is far more often essential than its solution, which may be merely a matter of mathematical or experimental skill. To raise new questions, new possibilities, to regard old problems from a new angle requires creative imagination and marks real advances in science.”

[And design!]

**Problem
Framing**

– **Albert Einstein**
Physicist

**Problem
Framing**

Let's give it a try first...

Design a flower vase.

Let's give it a try first...

~~Design a flower vase.~~

Design a way to enjoy
flowers in your home.

Why do problem framing?

Breakthrough innovation is often the result of simply seeing old problems and opportunities in new ways.

Effective problem framing and reframing allows us to:

- **Avoid wasting resources on solving the wrong problems**
- **Expand the range of possible solutions to any given problem**
- **Maximize creative leverage and innovative potential of HCD**



WARNING

This respirator helps protect against certain particles. Misuse may result in sickness or death. For proper use, see supervisor or box or call 3M 1-800-247-3941. NIOSH



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Objectives + Expectations

Our Design Challenge*

**a task or situation that tests someone's abilities*

Your challenge for these three days will be:

How DOL might further promote the success and wellbeing of DC **food-service workers**



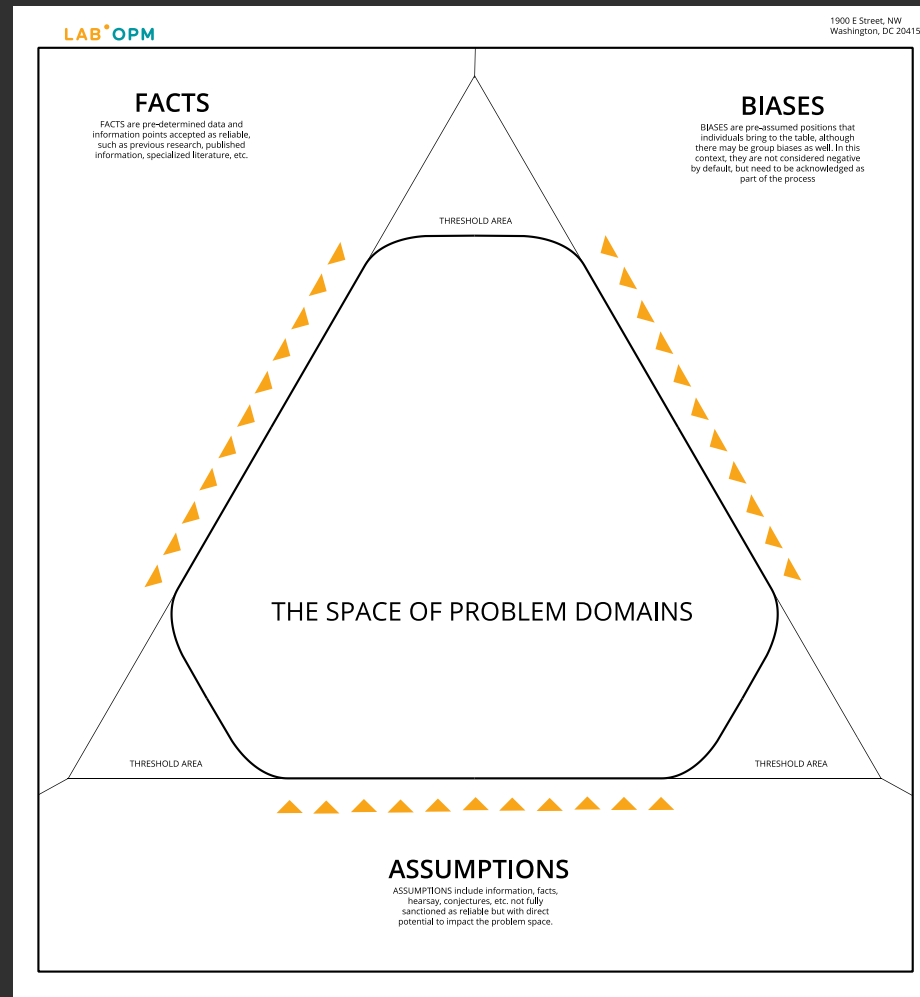
Domain Mapping: What We're Focused On

DOMAINS are factors that will help define the problem. They may be people, places, circumstances, etc. and they may change through the design process.

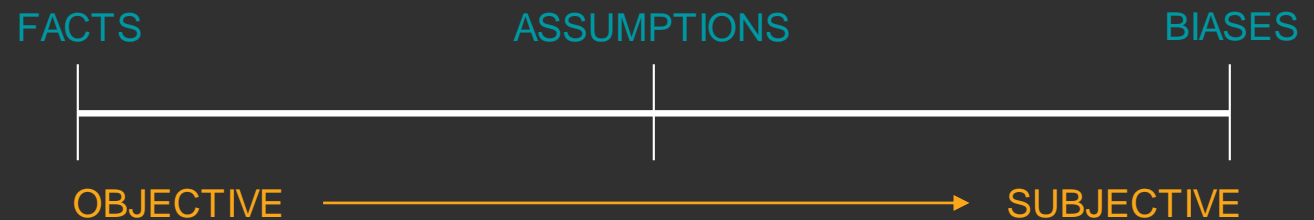


Problem Framing

Domain Mapping



Domain Mapping: What We Think We Know



1. **FACTS** are pre-determined data and information points that the team may accept as reliable, for example, previous research, published information, specialized literature, etc.
2. **ASSUMPTIONS** include information, facts, or conjectures that have not been sanctioned as reliable but may be important.
3. **BIASES** are pre-assumed positions that individuals bring to the table. There are group biases too. In this context, biases are not negative by default, and need to be brought to the table and seen as part of the process.

PLANNING DATA COLLECTION IN THE FIELD

URS | GPM

DOMAIN MAP

ASSUMPTIONS are the foundation for the entire project. They are the starting point for the entire project and are the basis for the entire project.

BIASES are the result of the project. They are the result of the project and are the result of the project.



FACTS ASSUMPTIONS BIASES

PLANNING DATA COLLECTION IN THE FIELD

DOMAIN MAP



FACTS ASSUMPTIONS BIASES

Design Criteria

Explicit goals that your project must achieve in order to be successful

Fieldwork
Debrief

Design Criteria Worksheet

With your group of 4-5 members, determine the Design Criteria and fill the worksheet



Break

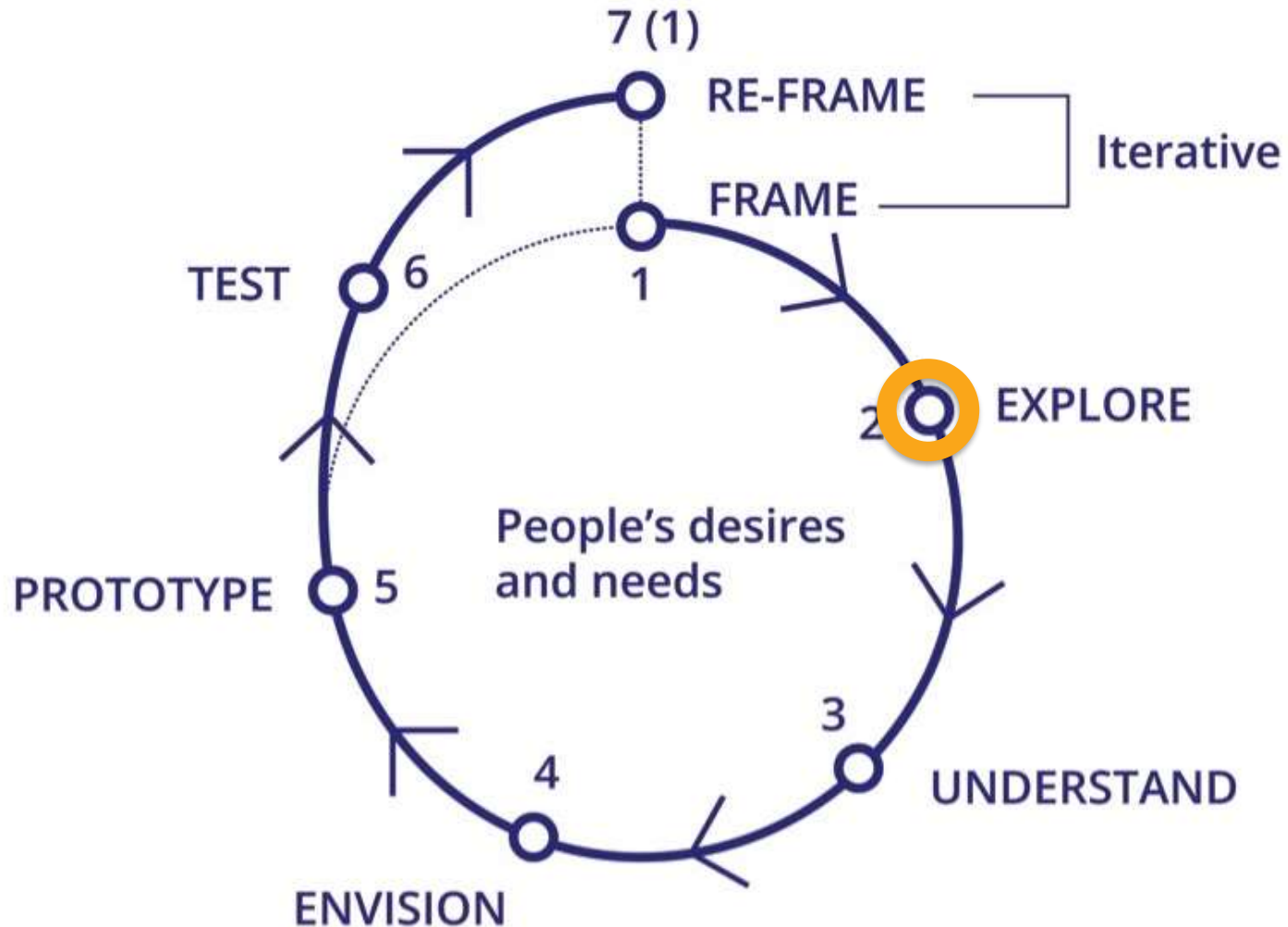
15 min.

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EXPLORE: Design Ethnography



HCD Process Check-In





“

“What people say and what people do and what they say they do are entirely different things.”

[Not to mention what
we think they do...]

Design
Ethnography

– Margaret Mead
Anthropologist

Design Ethnography: A Definition

Design ethnography can be described as **making the strange familiar and the familiar strange.**



MAKING THE STRANGE FAMILIAR implies accepting the unknown, the unusual, and the unexpected, as the new normal



MAKING THE FAMILIAR STRANGE means developing a renewed curiosity for what you know, giving it a new value.

Design Ethnography: Types of Data

Quantitative data
deals with numbers

Qualitative data
deals with descriptions



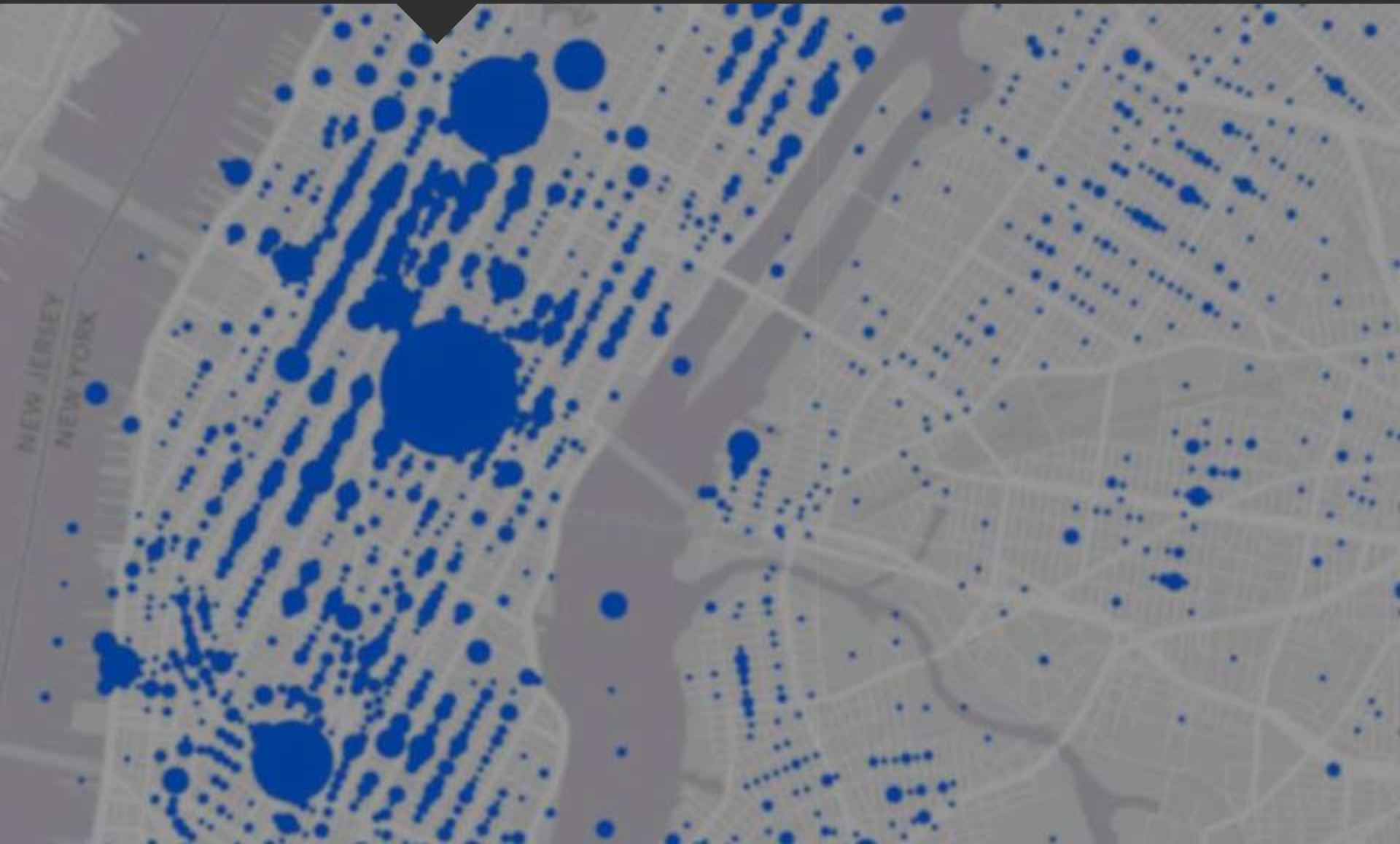
The age of a painting is
QUANTITATIVE DATA.



The pleasure or displeasure
it provokes in the viewer is
QUALITATIVE DATA.

Design
Ethnography

Hurricane Sandy Twitter Map



Design Ethnography: Observation



Design Ethnography: Interviewing



Design Ethnography: Intercepts



Design Ethnography: Shadowing



Design Ethnography: Walk-A-Mile



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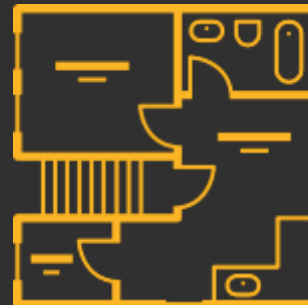
How DOL might further promote the success and wellbeing of DC **food-service workers**



EXPLORE: Fieldwork Preparation

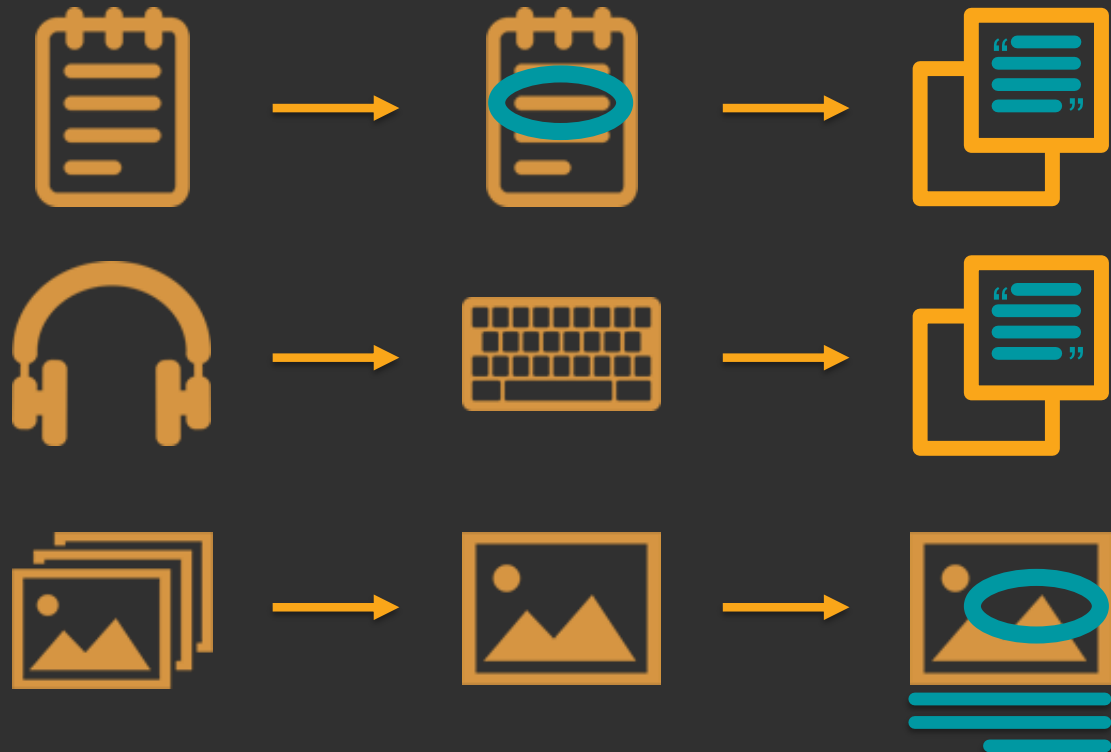


Research Tools



Fieldwork
Preparation

Data Collection



Observation Tips

- Observe the big picture. Look at the larger environment and detect relationships between the parts and the whole.
- Observe the details. Focus on specific aspects that may provide clues. Be Sherlock Holmes.
- Consider hidden connections. Look for hidden forces shaping the situation at hand.
- Observe with all your senses: sight, smell, sound and touch.

Interviewing Tips

- Interview in pairs when possible.
- Use facial expressions, body language, and non-verbal cues—not sounds—to show you're listening and understanding.
- Ask interviewees to "Tell me more," and echo back what they're saying.
- Don't be afraid of a little silence. Welcome it. Don't rush the person you're interviewing
- Don't try to rescue or provide answers. (e.g. "Did you mean this?")
- Ask questions you think know the answer to.
- Ask "Why?"
- Follow the conversation where it leads, but steer things back on track when you need to.

Closed vs. Open Questions

Close-ended questions are good for:

- gathering quantitative data for group profile
- helping understand the context in which people tell stories
- helping warm up the interviewee or giving them a breather (because they're easier to answer)

Open-ended questions are good for:

- uncovering people's point of view
- revealing how people make sense of and explain their experience
- uncovering key metaphors, ethical codes, and images that resonate most with people or groups

Discussion Guides

Introduction and Background:

Introduce yourself, explain what you're doing, and why you're doing it.

Warm-Up Questions

Start with questions that make the person feel at ease and introduce the context for your conversation.

Cross-Cutting Questions

Try questions that you will be able to ask universally but will still draw responses focused on the topic.

Follow-Up Questions

Listen and respond with questions that provide room for the person to tell a story.

Wrap-up Questions

End with questions and statements that naturally wrap things up. Say thanks!

Sample Questions

Topical Questions (Open and close ended)

- Can you tell me how you spend your lunchtime?
- How long have you been doing that?
- What kind of interactions do you have?
- Ever have problems during lunchtime?
- What might improve your lunchtime experience?

Follow up Questions (open ended)

What does that mean to you?

- How do you make sense of that?
- How does that make you feel?
- How would you describe _____?
- Can you say more about that?

Fieldwork Mission

1. Create Discussion Guide

Review the discussion and interview guide and write down 4-5 questions for the people you speak with in the field, and consider questions for different groups—base staff, local residents, restaurant employees, etc.. (Not your self or people in the class or the instructors!)

2. Decide Researcher Roles

Decide who will be your interviewer, note taker(s), photographer(s), and observer(s) for each interview. You can rotate roles and divide up to cover more ground.

3. Conduct Your Fieldwork

Speak to as many people as you can at cafes, food trucks, delis, etc.. Take plenty of notes and pictures (if allowed). You will need this data for the work ahead.

Email photos for printing:

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Lunch + Fieldwork

Reflect: Fieldwork Debrief



Fieldwork Debrief

How'd it go?

- Any funny moments to share?
- Any key insights or revelations?
- Any surprises or challenges?
- Anything you'd do differently?

What's next?

- Capture any last observations.
- Tidy up and compile your notes.
- Email us any pictures to print.
- Have your data handy tomorrow.

*Rest up, and we'll
see you tomorrow!*



Thank You

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