

Human-Computer Interaction

CS 449 | 649 – F26

Week 3: Sept 21 – 25

Understanding people:

- Personas

- Empathy + journey mapping

- Exploratory methods

- Interviews

* Updated Sept 21 2026

Week 2 Recap

What and why HCI, Design process, Value propositions

Reminder - Week 2 To-Dos & 3 Studio Prep (P3)

T1 and **D1** Due **12pm** the day before your studio this week.

P3 – Individual persona drafts and recruiting pilot* interviewees.

Overdue P1 – **8** of **76** mandatory ethics training certificates are outstanding... You cannot continue in the course (i.e., conduct interviews, analyze interview data, ... help your team) without this certification. Submit ASAP°.

* i.e., fellow 449 students outside your group | ° Tomorrow 11:59 is the add / drop deadline.

Week 3: Understanding People

Personas, Empathy + journey mapping, Exploratory methods, Interviews

Understanding People

Think about purpose, not just technology

Solve a problem, not create a new one...

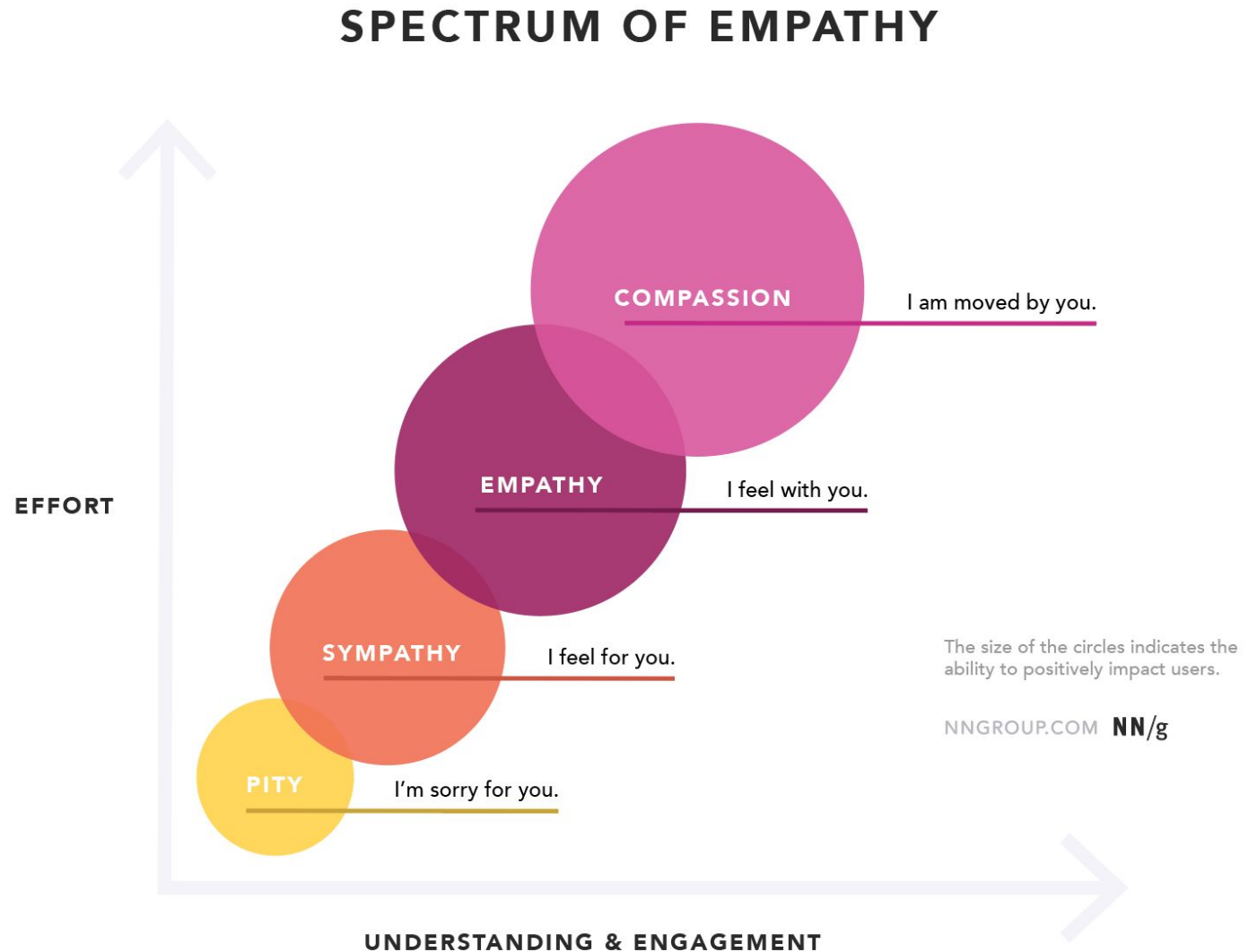
People need to know why they need your product...

Features are useless without purpose...

Empathy and UX

Sympathy is the acknowledgement of the suffering of others.

Empathy is the ability to fully understand, mirror, then share another person's expressions, needs, and motivations.



How to Practice Empathy in UX

Use qualitative research methods

Recruit diverse interviewees / research participants and watch recorded interviews / observations

Make an **empathy map**

Use videos of participants when presenting findings to stakeholders

Invest in a diverse team

Build empathy into your design guidelines

Personas

Definition, what's included, creating them in 10 steps...

Two Approaches for Describing Potential Users

“Average Users”

A general description based on a set of statistically-driven characteristics

Personas

A rich, specific description based on fictional characters

Two Approaches for Describing Potential Users

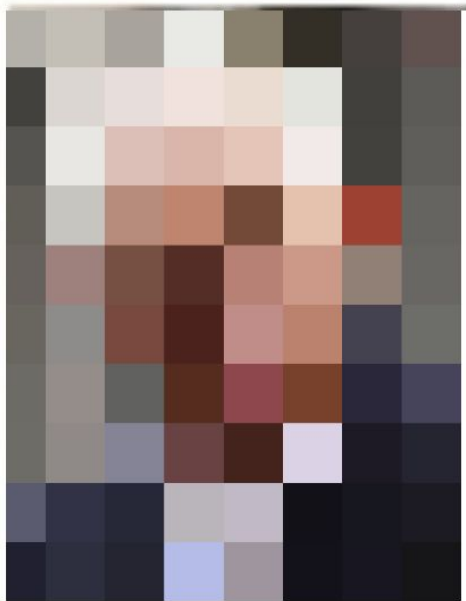
“Average Users”

A general description based on a set of statistically-driven characteristics

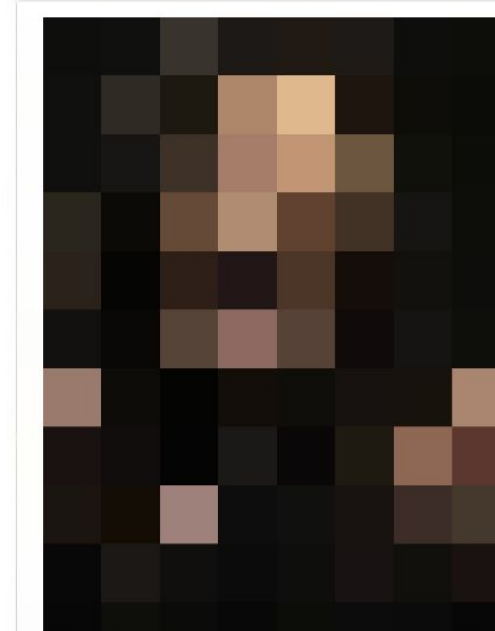
Personas

A rich, specific description based on fictional characters

Who am I?



- Male
- Born in 1948
- Raised in the UK
- Married twice
- Lives in a castle
- Wealthy & famous



- Male
- Born in 1948
- Raised in the UK
- Married twice
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Personas

Rich, specific descriptions based on fictional characters.

Purposes:

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

“The more specific the persona is, the more effective they are as design tools. With more specific, idiosyncratic details, the persona becomes a ‘real’ person in the minds of the developers.”

Alan Cooper: *The Origin of Personas*, in Innovation:
The Quarterly Journal of the Industrial Designers Society of America (2004)

Cameron Williamson



AGE	27
EDUCATION	Masters in Business
STATUS	Single
OCCUPATION	Sales Manager
LOCATION	Sydney
TECH LITERATE	High

“ I am used to with online service and I usually do my online shopping from Instagram.

Personality

Extrovert Reader
Spender Tech-savy

Bio

She currently lives in Sydney. She finished her master in business and has just been promoted to Sales Manager. She is currently single and like to go out with friends on long holidays.

Core needs

- Need to find people with similar skills that can help her tackle company goals.
- View all her hirings in an overview
- The price of the service is very important

Frustrations

- Price is high related to quality they provide
- Currently finds perfect people from past work relations, family, friends and within my circle and online which is tedious
- Not much choice and comparison not available

Brands



Payment medium



Digital Payment

Platform



Mobile App

Creating Personas

Name:

Realistic and easy to remember

Tagline:

Short description in a few words.

Photo:

Usually a stock photo. Avoid celebrities, coworkers, or familiar faces. Prefer "normal" looking people.

Quote:

Short quote written in their own voice.

Bio:

Brief backstory to make the person relatable. What was their childhood like? Why did they choose their current job? How do they spend their free time? These details could influence strategic choices down the road.

Demographics:

Age, job title, income, location, family status, major, ... whatever attributes are relevant to your product.

Motivations:

Create 4 – 5 "standard" motivations for your product and rank how important each motivation is to the persona.

Goals and Pains:

The scope of these is in direct relation to your needs. A lifestyle company would keep to general life and career goals, while a tech company could hone in on more specific goals like tasks they hope to accomplish with their software.

Preferred brands and influencers:

You can tell a lot about a person based on which brands they like and what kind of people influence their decisions. Look at those brands' marketing strategies to see if their tactics might apply to you as well.

Personas are Hypotheses!

During the design process you will testing out these hypotheses and assumptions...

Try to find ways to prove yourself wrong... Look for surprises and unexpected findings ...

Keep an open mind and listen to new data from interviewees that will continue to come into the picture over the term.

Week 3 Studio P3 (Part 1)

Draft personas

P3 Studio Prep (Part 1) – Personas

Each team member should prepare one rough persona. Write a brief paragraph (3 - 4 sentences) of a person that would use your application.

In studio will you will refine discuss these personas in with your team, working with persona canvas.

Try be realistic! It will help you identify people for the interviews you'll be doing soon.

Empathy Maps

that enrich your personas

Empathy Map

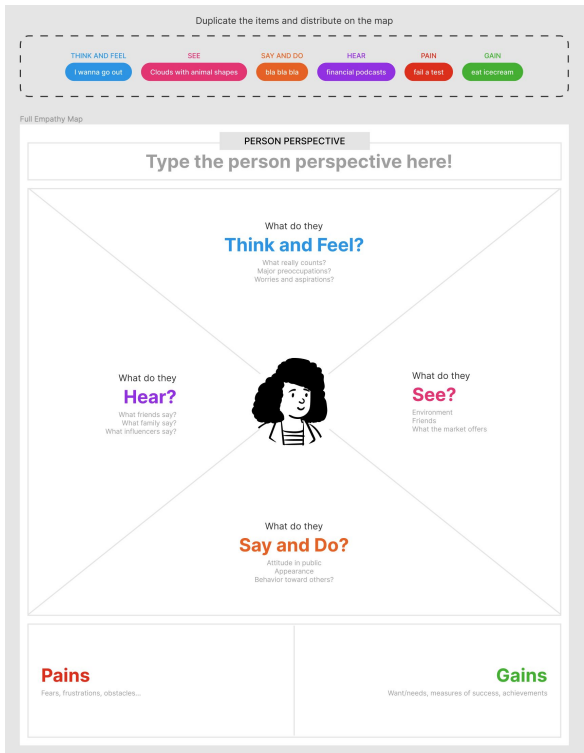
Visualization about a person's behaviours and attitudes

Usually created in a workshop with stakeholders

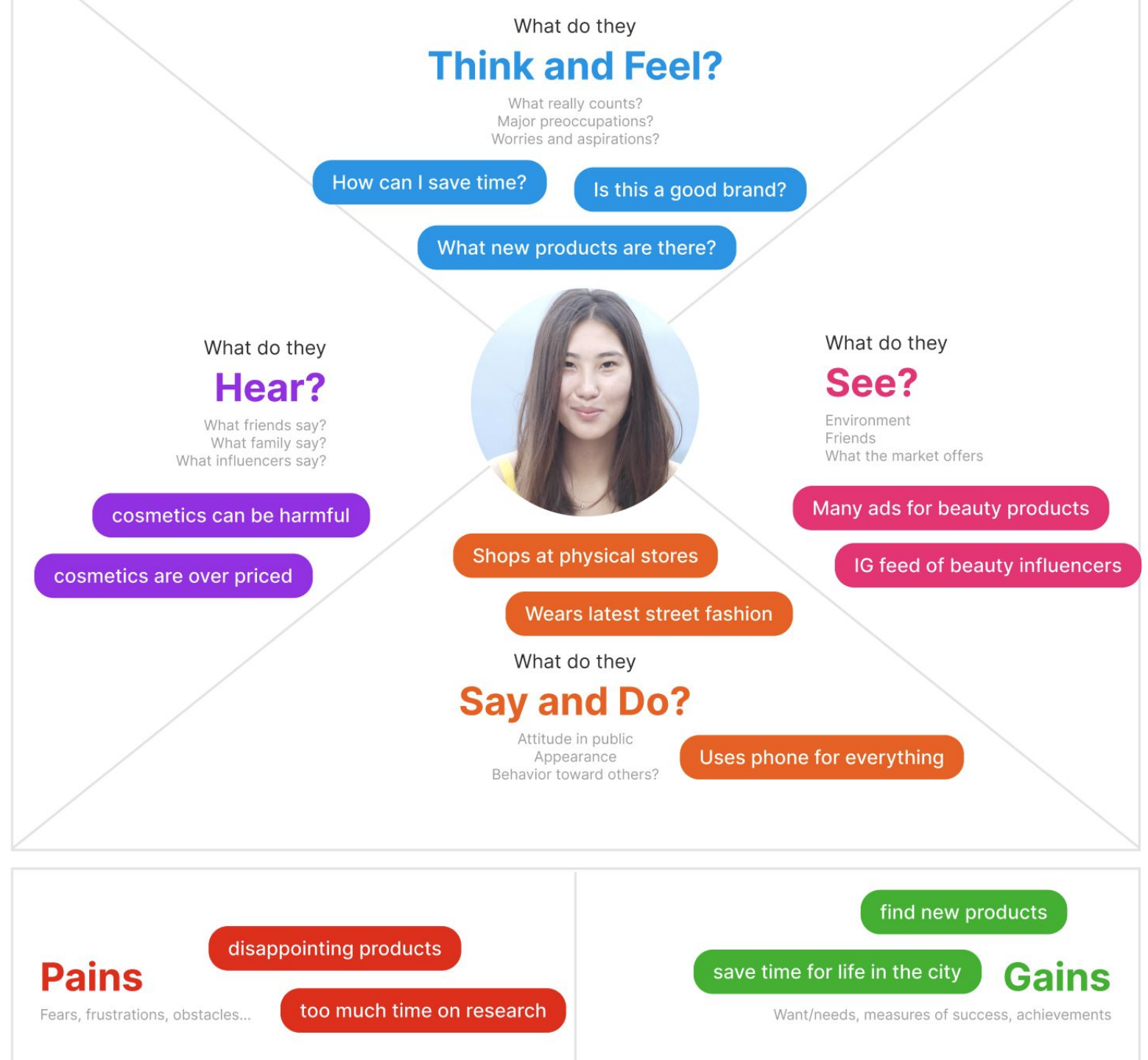
Externalizes knowledge about people in order to:

- Create a shared understanding of needs
- Aid in decision making
- Draw out unexpected insights

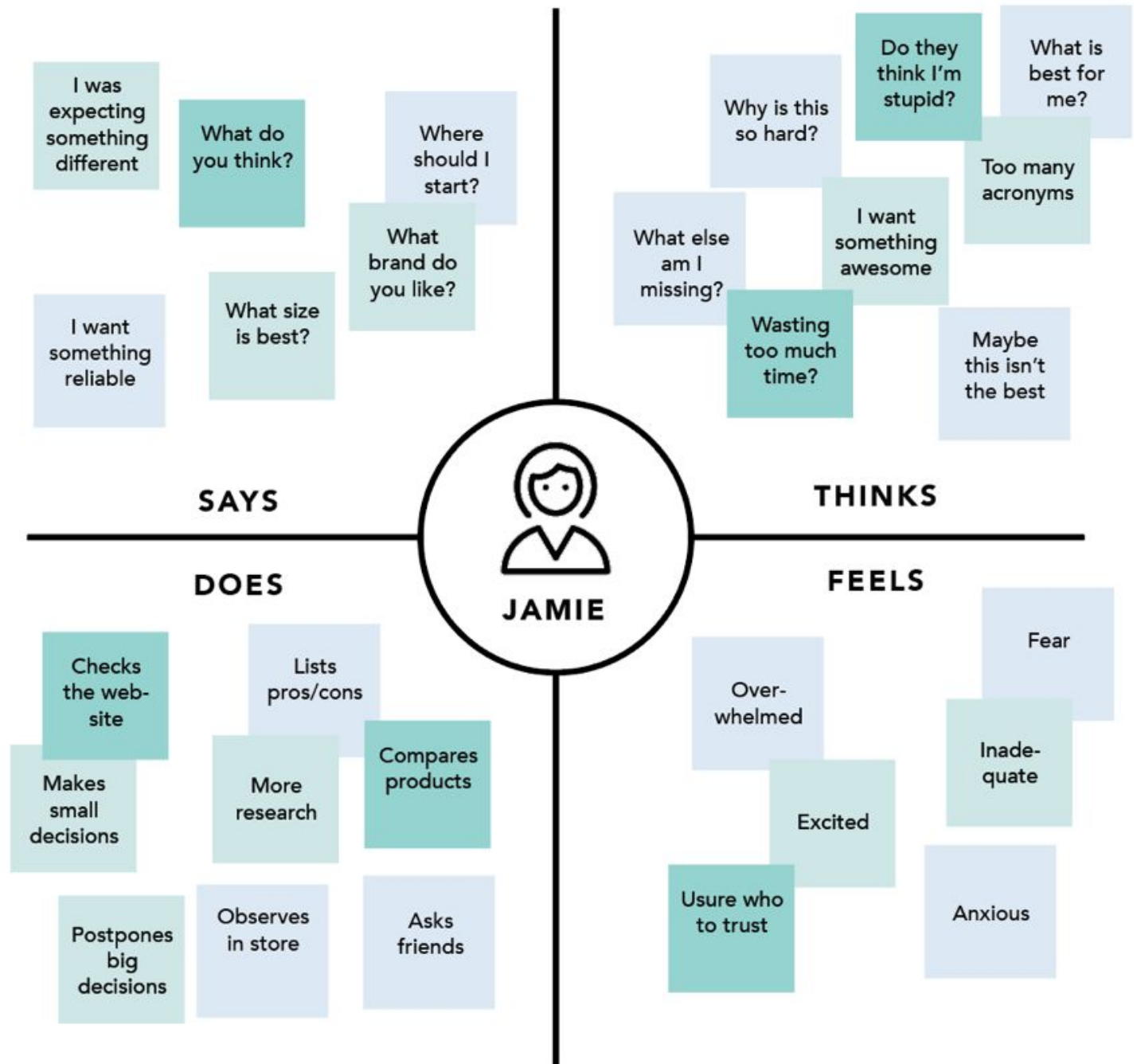
Empathy Map



Empathy Map Examples



Empathy Map Examples



Empathy Mapping Elements and Steps

Establish focus and goals: Who is the persona? What is the outcome?

Capture the outside world: Sees, says, does, and hears

Explore inside the mind: Think and feel

Summarize and share

Journey Maps

A visualization of the process that a person goes through to accomplish a goal

Journey Map

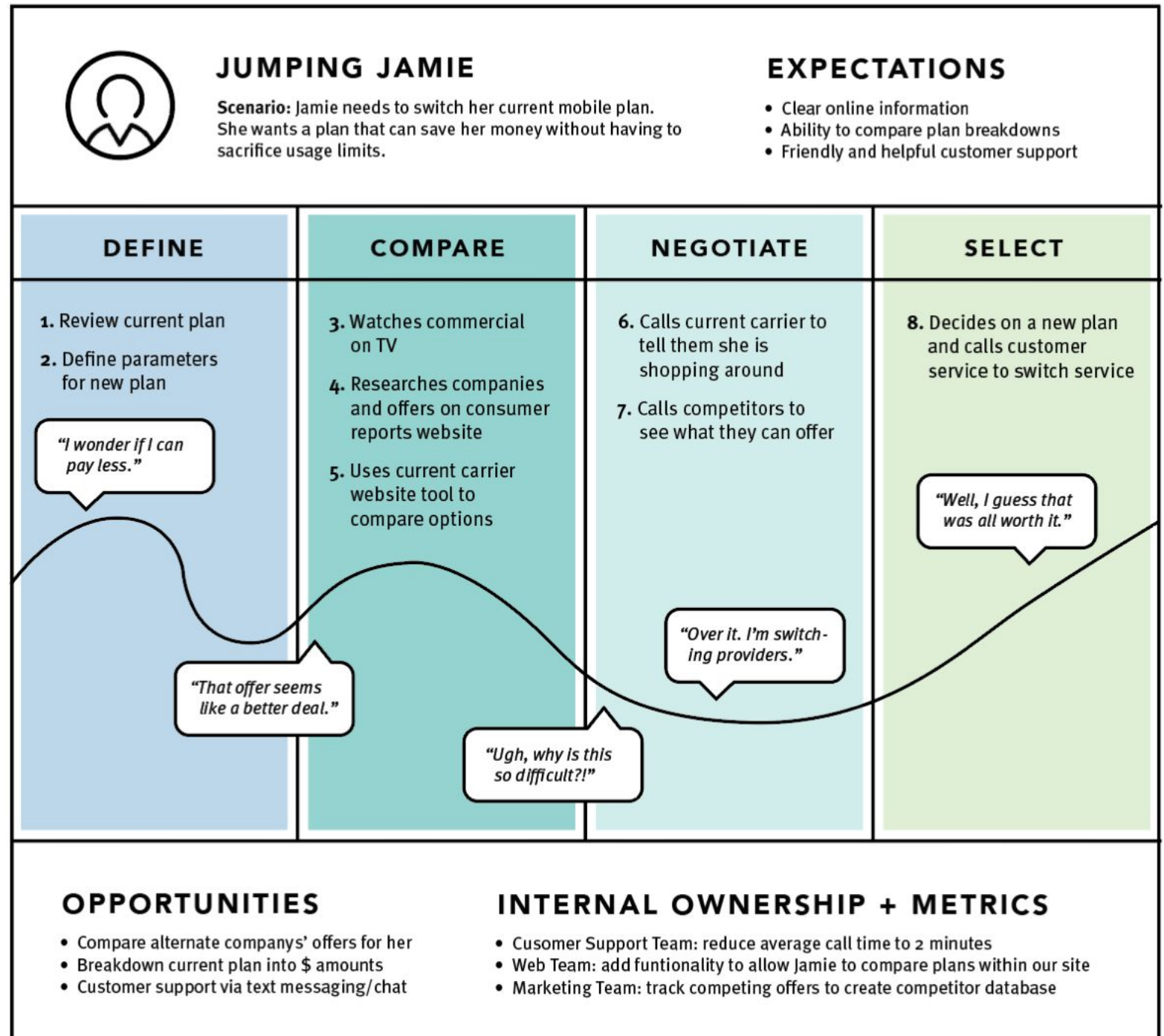
Enables a shared understanding of the customer experience

Offers the chance to contribute to improving that experience

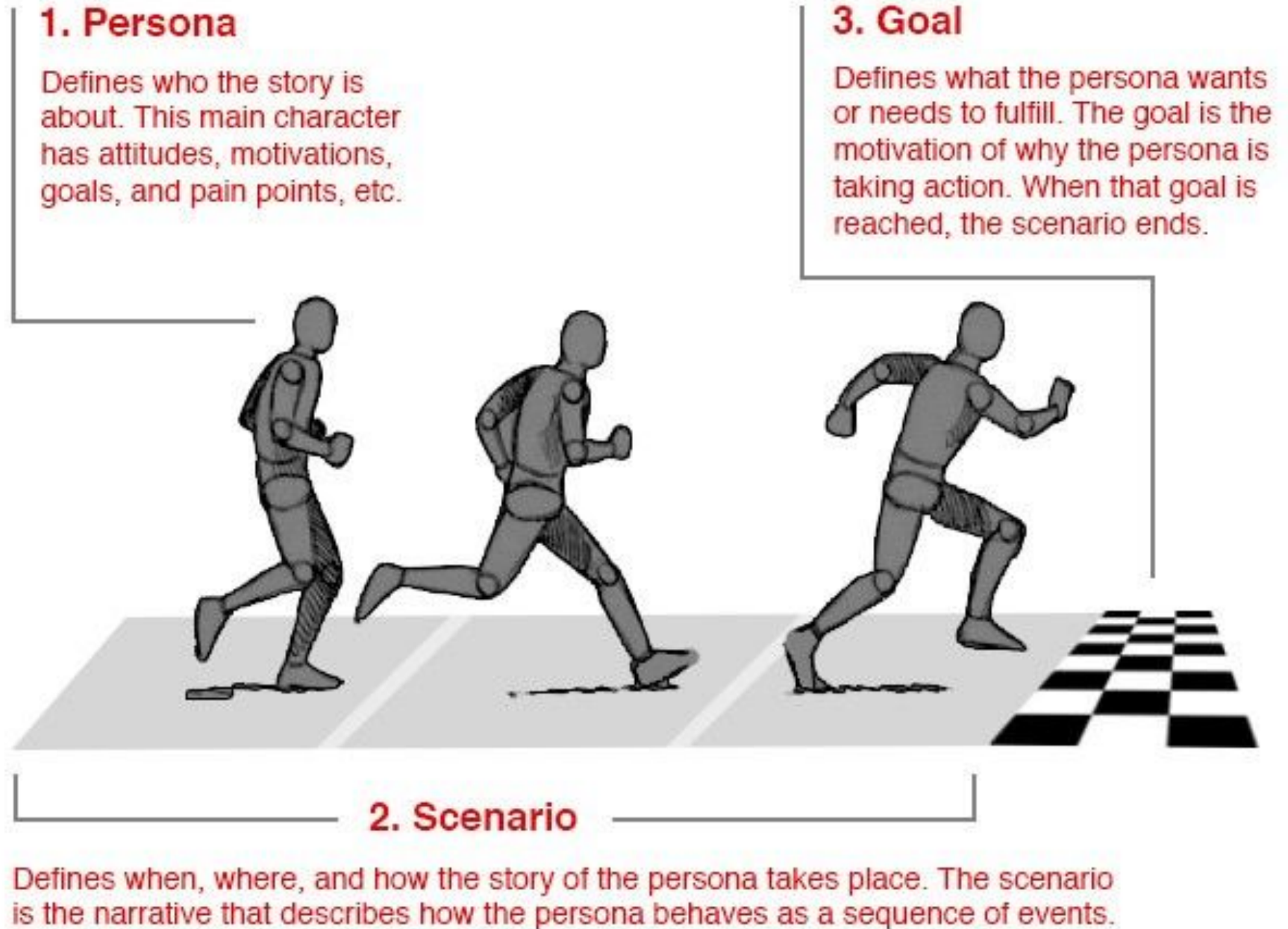
Key components:

- Actor
- Scenario + Expectations
- Journey Phases
- Actions, Mindsets, and Emotions
- Opportunities

Journey Map Examples



Persona + Journey



Exploratory Methods

Qualitative data analysis as an aggregate of people's experiences... beyond individual anecdotes

Gathering and Integrating Data from Different Sources

Quantitative

Fixed & measurable
reality
Analyzed statistically



Qualitative

Narrative & stories.
Dynamic & descriptive reality
Analyzed by themes.

Field

Natural environment
Uncontrolled



Lab

Artificial environment
Well controlled

Behavioural

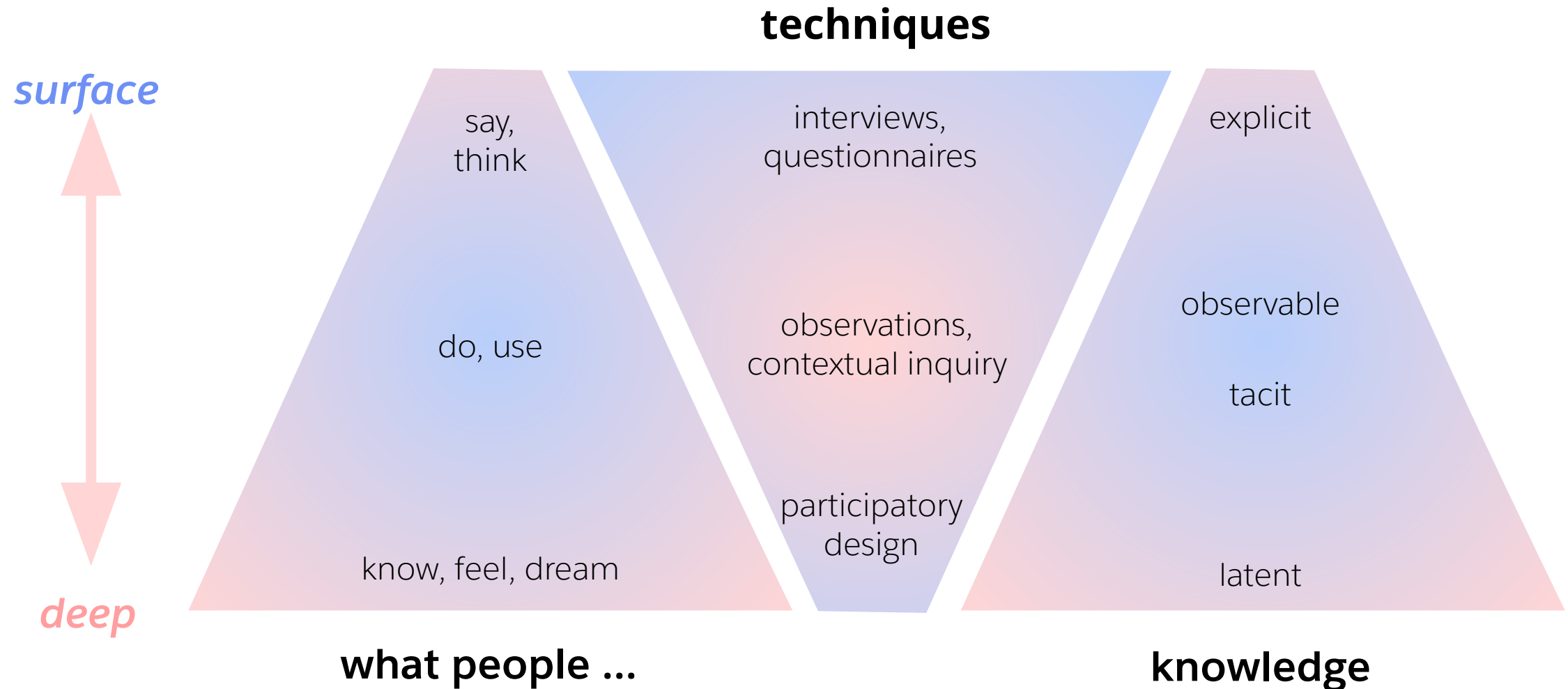
What people do



Attitudinal

What people think and feel

Exploratory Data Gathering Methods



Interviews vs. Questionnaires

Participants answer (mostly) predefined questions.

- **Interviews** typically use questions that may change based on answers
- **Questionnaires** typically use predefined questions

A questionnaire and interview can be combined into one session. Both are often used as part of an observational study. In this class, we'll focus on **interviews***

*See Week 3 notes extra slides on how to develop questionnaires toward the end should it be helpful for your project goals

More on Exploratory Methods for CS 649 Students

- ... useful for the R1 and R2 Research Report Deliverables
- ... see F26 CS 649 Reading List on course website
- ... see supplementary slides at the end of this deck.

Conducting Interviews

For in-depth discussions about a topic with participants

Interviews

Usually one-on-one with facilitator and participant ...but very helpful and safer to have a notetaker/observer too.

Usually recorded as written notes... audio, video recording also possible if consent permits it.

Interviews in CS 449 / 649

Informational (Exploratory) Interviews (PO1a):

Understanding people, their needs, and their unique circumstances

Evaluation Interviews (PO1b): Assessments of your prototype!

These interviews can have similar structure, but their different purposes mean their execution is different overall.

Types of Interviews

Structured

Same set of questions

Standardized process

Little freedom of expression

Often self-reported

Essentially a questionnaire

Unstructured

Focus and goal guide the discussion

Open-ended questions

Freedom of expression & little control

Popular in ethnography

Types of Interviews (cont.)

Semi-structured

List of guiding questions / topics

Trajectories in a conversation

Often preceded by observation

One of the more common methods

Focus groups

Semi-structured in a group

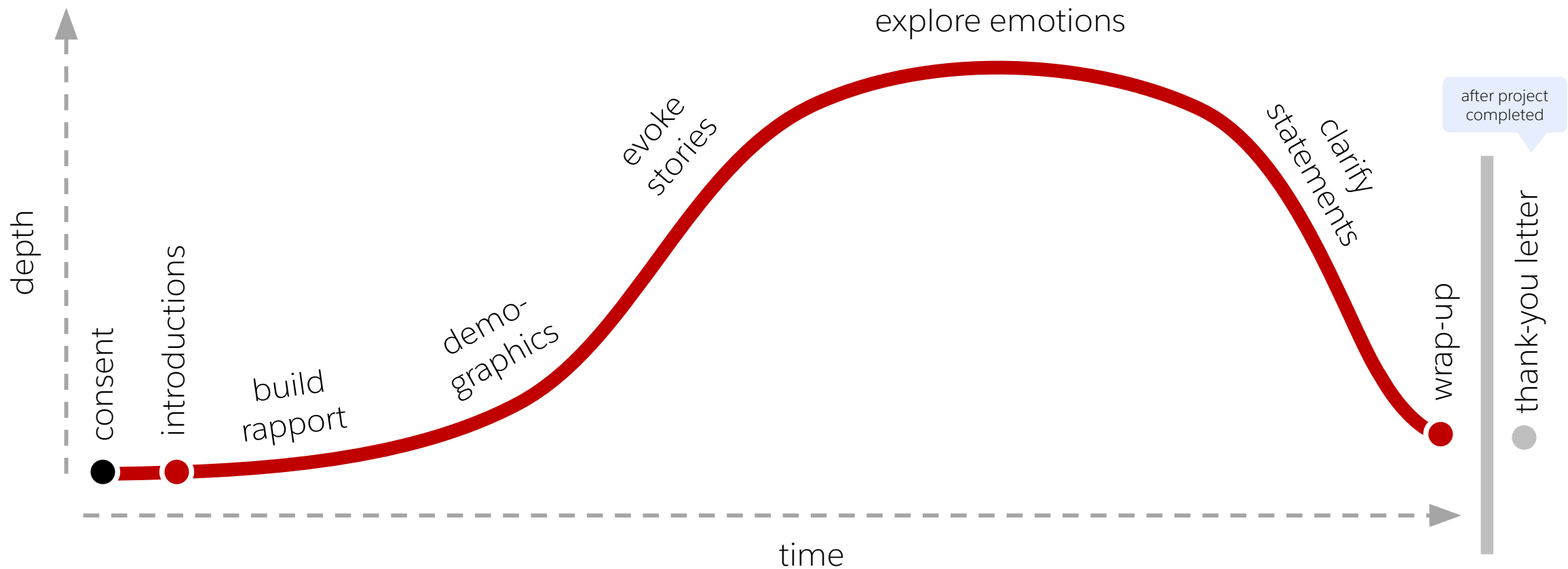
Moderated

6 – 10 strangers

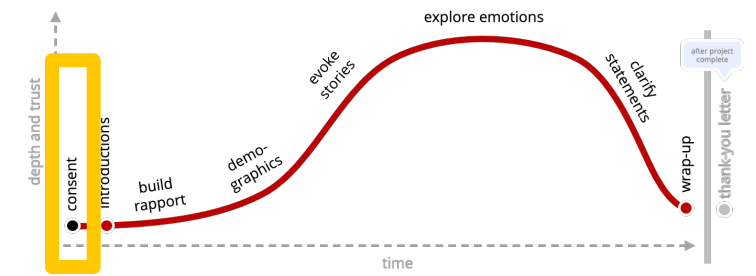
May permit discussion

Emerged in the 1940s

Ideal Interview Timeline



Obtain Consent



It's critical you receive each participant's consent before gathering data. Your participant needs to understand key things to give their consent:

- who's running the study
- details of project and session
- any risks when participating
- confidentiality of their participation and their data
- that participation is voluntary and they can withdraw at any time
- are they being "remunerated"? (receive anything for participating)

Confidentiality and Data Retention

Consider all data related to participants as confidential

- ... use participant codes (e.g. P1, P2, ...) in all notes, data, quotes, etc.
- ... ensure no identifying information is revealed in reports (e.g. faces)
- ... only the instructors and project group should have access to "raw" data
- ... only exception is a list of participant names and session dates stored in a secure spreadsheet, with a record of their written or verbal consent

All data* must be retained for a minimum of 1 year on a secure server

- ... "secure server" means password-protected (and preferably encrypted) computer and/or cloud service

CS 449/649 Consent Materials – See Resources page

Recruiting text to use for email, social media, phone, etc.

Information letter and consent form (in-person and online)

Manager consent materials (if interviewing someone at their workplace)

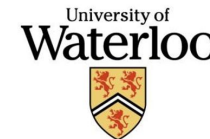
Thank-you letter/text (usually sent after all interviews/tests are done)

Don't change anything except from what's between {{ and }}



Following the CS 449/649 consent process and using the provided consent materials **is mandatory**.

More details in "Resources" on course website



Technology Design Course Project for CS449/649
David R. Cheriton School of Computer Science
University of Waterloo
Course Instructors: [Instructor 1 Name]; [Instructor 2 Name]
Email: [Instructor 1 Email]; [Instructor 2 Email]

Participant Information Letter and Consent Form

P1 TCPS2 Ethics Training



All team members **MUST** complete the TCPS 2: CORE-2022 (Course on Research Ethics) **BEFORE** any interviews are conducted with anyone other than students taking current CS 449/649

TCPS 2: CORE-2022



Welcome

TCPS 2: CORE-2022 (Course on Research Ethics)

The Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2) provides ethics guidance that applies to all research involving human participants – including their data and/or biological materials – conducted under the auspices of an ethics board (REB).

TCPS 2 is applicable to all research involving humans.

TCPS 2 also has implications for research involving animals and the environment.

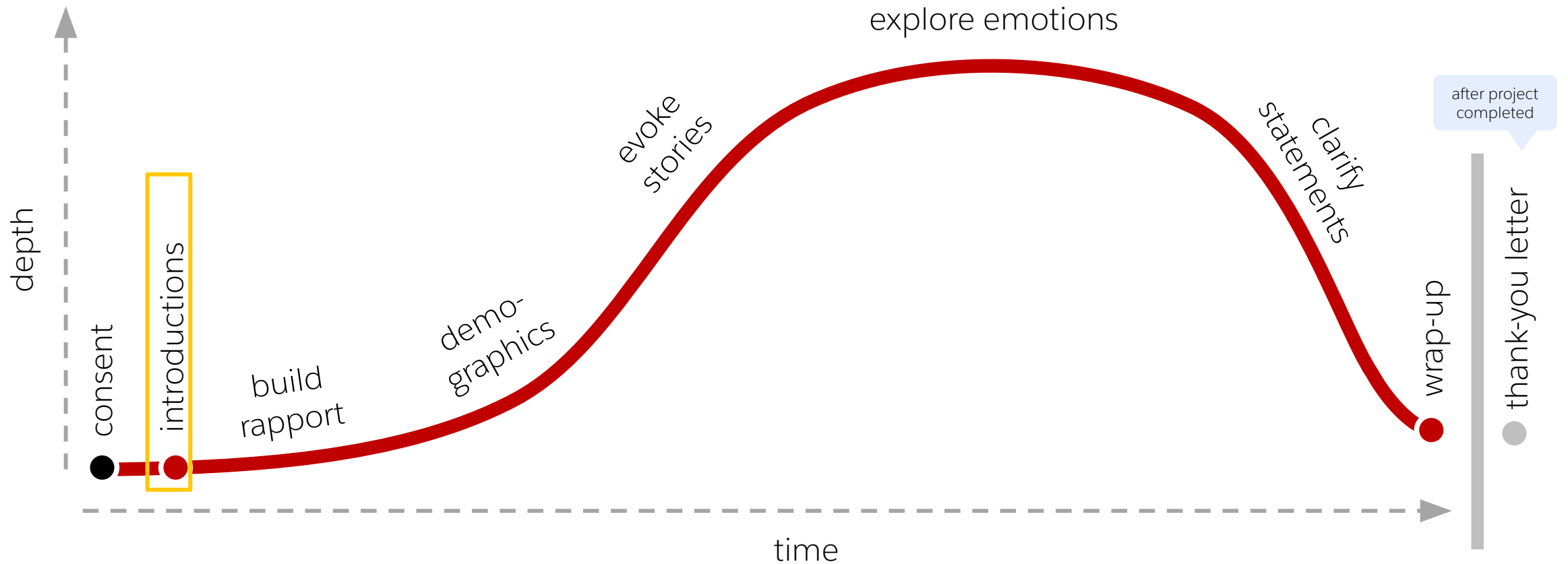


[Login to CORE/Create Account](#)

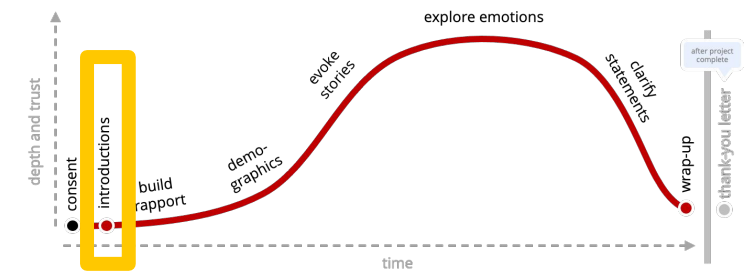
CORE-2022 consists of nine modules and a knowledge consolidation exercise:

- Module A1 – Introduction
- Module A2 – Scope of TCPS 2
- Module A3 – Risks and Benefits
- Module A4 – Consent
- Module A5 – Fairness and Equity
- Module A6 – Privacy and Confidentiality
- Module A7 – Conflicts of Interest
- Module A8 – Research Ethics Board Review

Ideal Interview Timeline: Introductions



Introduction



Verbally explain what it is you are doing.

Use language that a layman can understand

... “easy to use” instead of “user-friendly”

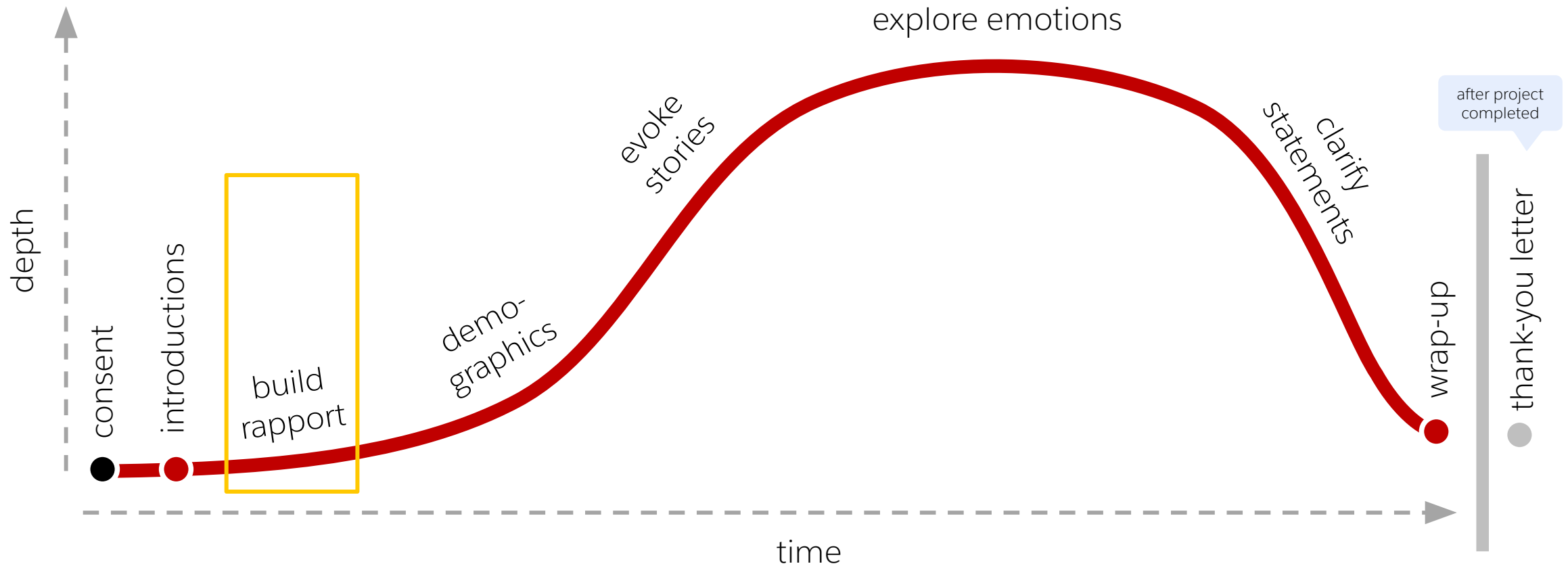
... “computers”, “software” instead of than “systems”, “applications”

Show that you are there to learn as an HCI / UX practitioner

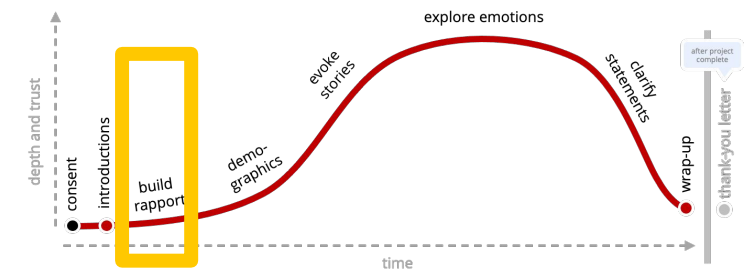
Remind them they don't have to answer if they don't want to

... “Remember, there is no right or wrong answer. Just answer honestly ...”

Ideal Interview Timeline: Build Rapport



Build Rapport



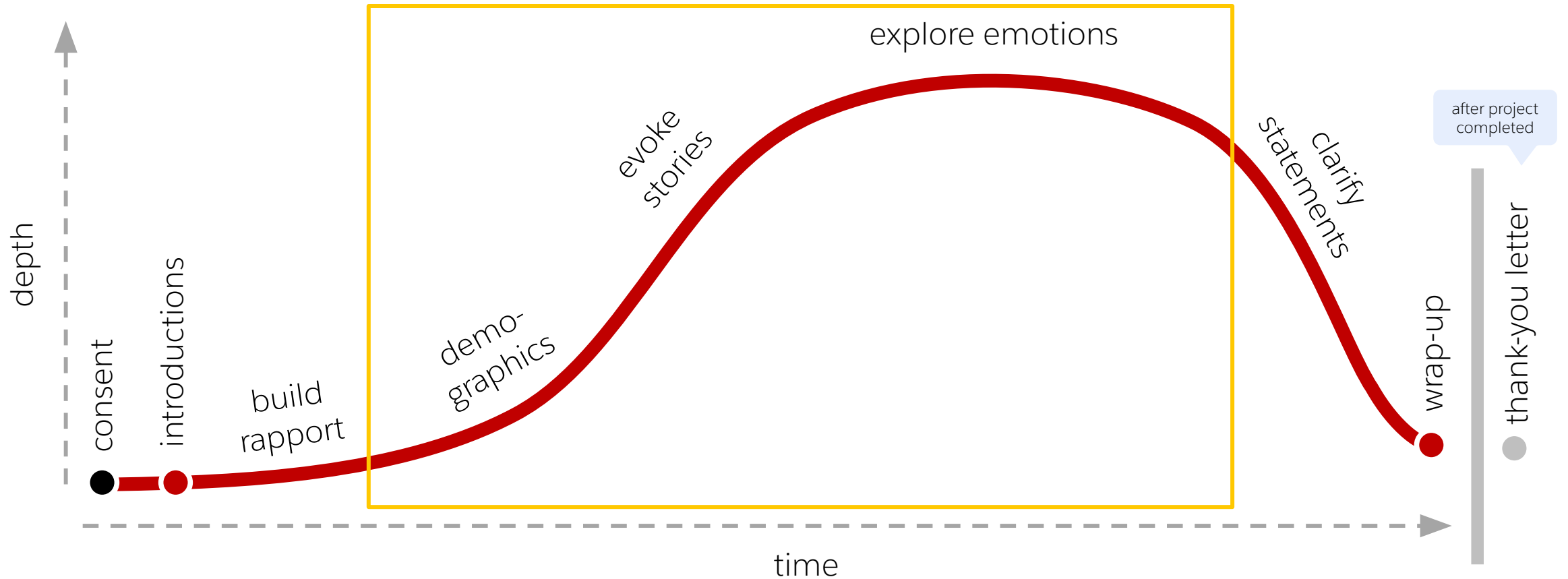
Ask basic, non-threatening questions:

- ... make them comfortable: *"Have you been interviewed like this before?"*
- ... talk a bit about yourself, *"I'm a 4th year CS students interesting in ..."*
- ... avoid personal or potentially controversial topics

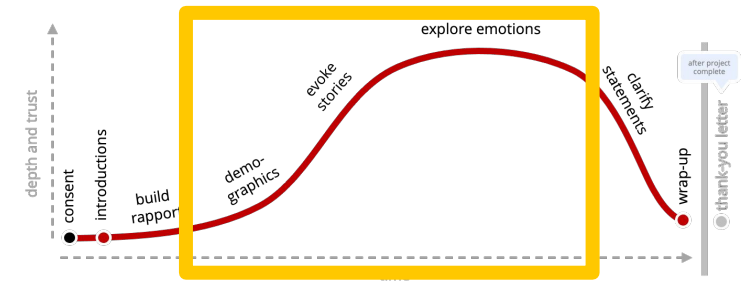
This should not be checklist of items as this sets the wrong tone
Examples:

- ... *"So I see you are a {{ X }}. What does that mean, really?"*
- ... *"How long have you been doing that?"*

Ideal Interview Timeline: The Grand Tour



The Grand Tour



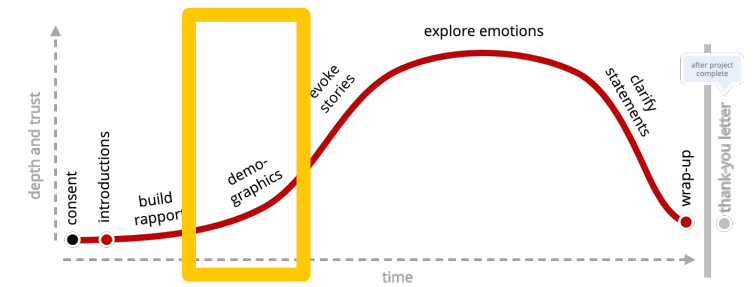
Once you have a general overview of their role, you will move to the “**grand tour**”...

This is a transition from fairly narrow questions to very open-ended questions that enable the person to fully describe, from their perspective, how they get work done.

You may want to ask :

- ... Demographics : more about who they are
- ... Evoking Stories : understanding their experiences and needs
- ... Exploring Emotions: how they feel about specific problems and challenges (especially those you aim to solve!)

The Grand Tour: Demographics



Gather basic characteristics that are relevant to your research

- ... age and gender commonly asked to show basic diversity

- ... sometimes education level or geographic region

- ... level of experience with related products or technology (e.g. tablets, phone, web)

- ... avoid personal or culturally sensitive questions that are not relevant: (e.g. income, religion, political support, etc.)

 Note about gender question for demographics:

- ... almost never about "sex" (a biological attribute)

- ... usually about social construct of "gender identity"

- ... consider not asking about gender if not needed

What gender do you identify with?

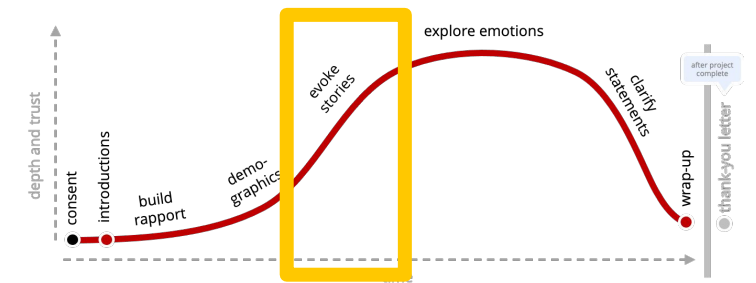
☐ Man

☐ Non-binary

☐ Woman

☐ Prefer to self-disclose: _____

The Grand Tour: Evoke Stories

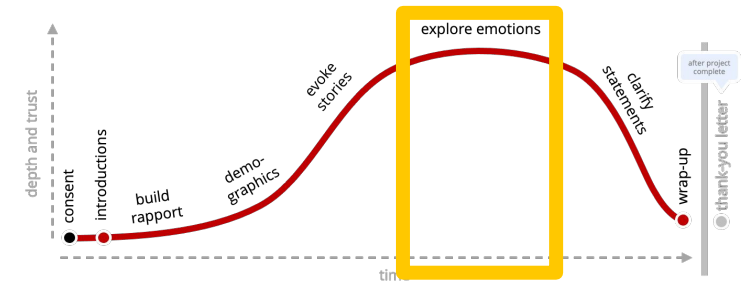


Open-ended questions to help discover relevant topics for inquiry

... *"Can you tell me about the first time you ... ?"*

... *"What do you remember about that day?"*

The Grand Tour: Explore Emotions



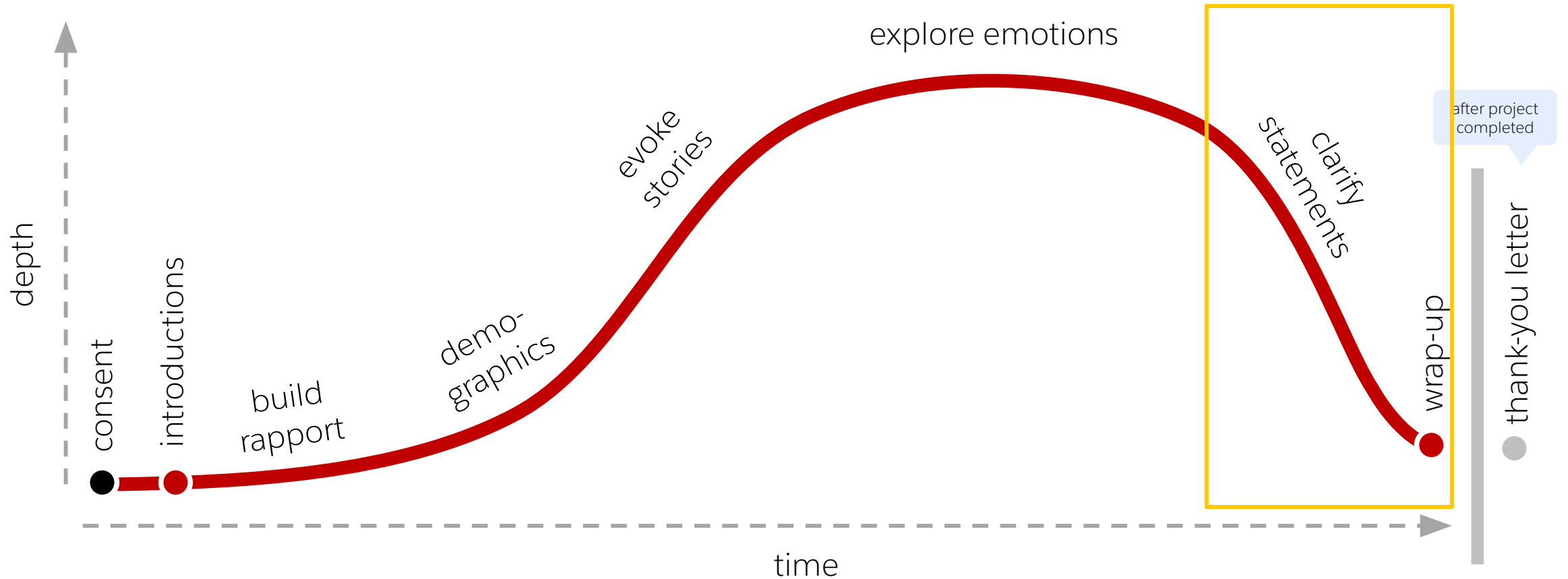
Typically open-ended questions to expand on relevant stories
(but some closed-ended questions useful too)...

... *"How did you feel at that moment, when X happened?"*

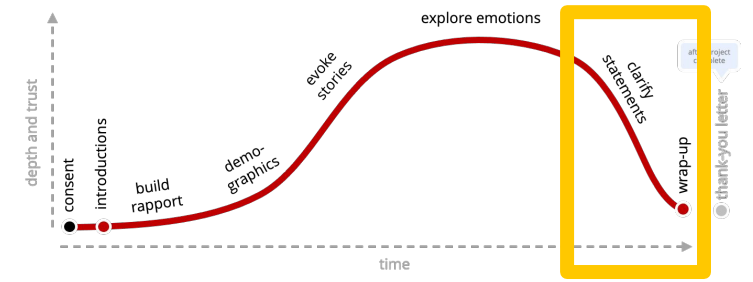
... *"Why did you use X at that moment?"*

... *"On a scale of 1 to 5, how satisfied were you with your outcome? Why?"*

Ideal Interview Timeline: Wrap Up



Wrap Up



Summarize the main things learned

Return to what was said and clarify details

... *“You said you felt like X, can explain what you meant?”*

... *“You mentioned both X and Y, is there one you prefer?”*

Often leads to a bit more information from participants

... *“Is there something you want to tell me that I haven’t asked you about today?”*

Make sure to **thank them** for their time!

How Many Interviewees?

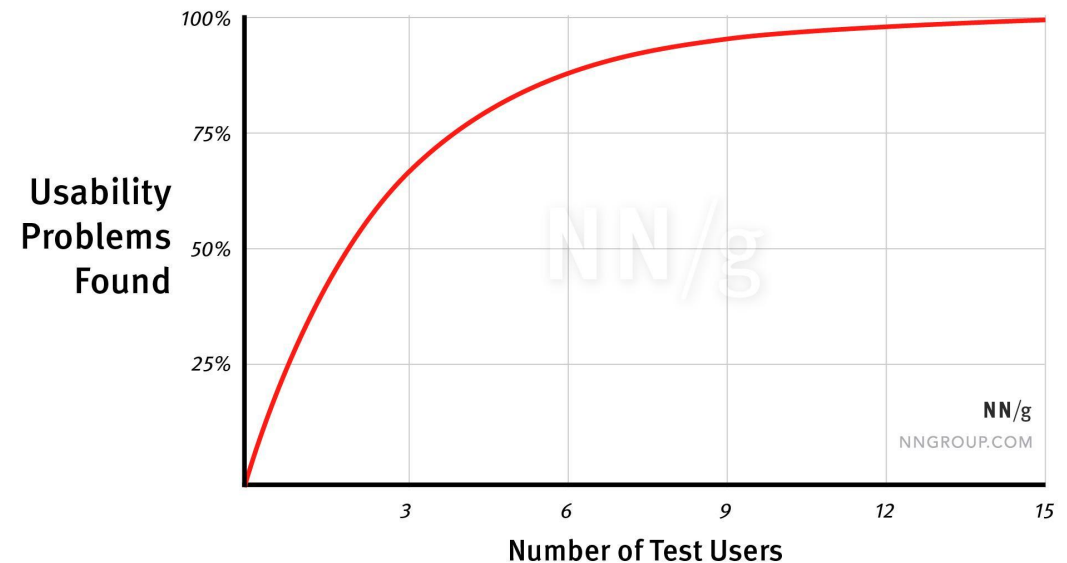
$$N (1 - (1 - L)^n)$$

n is a number of people

N is the total number of usability problems

L is the proportion of usability problems discovered while testing a single participant (typical value of L is 31%)

5 Users: The Optimal Sample Size for Qualitative Usability Studies



Interview Questions

... how do you figure out what to ask? You develop an interview script!

What Questions to Ask

Use your value proposition and personas as a guide ...

... form research questions, identify hypothesis to confirm

Avoid asking too many questions ...

... a long questionnaire will significantly reduce response rate

Include relevant high-level demographic questions ...

... e.g., age, gender, experience, geographic region

Don't ask intrusive irrelevant questions ...

... e.g., *"who did you vote for?"*

Good practice to make important questions "required" ...

... if sensitive question, give an "out" (e.g. "I prefer not to answer")

What Not to Do ...

... ineffective ways to ask questions ...

Leading Questions

“This application was recently ranked #1 in customer satisfaction. How satisfied are you with your experience today?”

Leading Questions

Prime respondents into giving a certain answer by providing biasing content or suggesting information researcher is looking to confirm ...

Can lead in wording, intonation, syntax ...

... *“You would never do that, right?”*

... *“Do you really like this system?”*

... *“What do you think of our design?”*

Instead, ask questions that are neutral, where person can easily answer in any way.

Acquiescence Bias

“I use my smartphone more often than my tablet. Agree or disagree.”

Acquiescence Bias

People assume that researcher agrees with the statement (deferential agreement bias)

People have a tendencies to be agreeable—they will say “yes” because social conventions suggest a “yes” response is most polite.

To minimize, avoid agree/disagree, yes/no or true/false questions

Closed Questions

“Do you like this interface?”

Closed Questions

Closed question are those that do not provide the person with the opportunity to describe their experience in rich detail

Do you like this interface?

“No”

Broad Questions

“Describe a typical day for you”

Broad Questions

Lack focus and include items not clearly defined or can be interpreted in multiple way,

e.g., “*describe the way you use your phone.*”

Double Barrelled Questions

“how satisfied or dissatisfied are you with your smartphone and tablet computer?”

Double Barrelled Questions

Asking about multiple item (smartphone and tablet) but only allowing for one answer (satisfied or unsatisfied)

Break this up into multiple questions

Hypothetical Questions

“Would you purchase more groceries if you could order them directly on your phone?”

Hypothetical Questions

Asks respondent to anticipate a future behaviour or attitude, resulting in biased and inaccurate response.

... e.g., *“Which of the following future features would make you more satisfied with the app?”*

Try to focus on **current behaviors** and asking questions around those to extrapolate to problems and needs

Don't ask people what they want! Ask people what they do.

... e.g., faster horse vs car

Ineffective Interview Summary... What not to do:

Go through a checklist of questions

Ask short-answer, closed questions

Leading questions that bias participants towards a particular answer ...

Ask questions that encourage generalizations ...

Interrupt the person ...

Shoehorn the person's words into your world-view, ignoring the specific terms they use and substituting your own ...

Correct the person or attempt to teach them ...

Don't look at the person ...

Look like you don't want to be there ...

Effective Interview Summary... What you should do:

Learning to see the world through the person's eyes...

Ask open-ended questions, encourage stories ...

Don't ask closed, binary questions ...

Always ask why: be curious, and let people teach you ...

Look for inconsistencies: it reveals implicit needs ...

Look for non-verbal signs ...

Don't be afraid of silence ...

Never suggest answers: keep your question neutral ...

Keep questions concise: 10 words ...

Stick to one question at a time, one person at a time keep it concrete – never say “usually”, instead ask about a specific and recent event
e.g., “tell me about the last time you ...”

Hints & Tips

You don't need to use a tool like Google Forms ...

Find a good way to record answers and notes (paper, type in doc, etc.) ...

Write a **script** so you know what to say and do during the interview ...

You should improve your questions based on the mock-up interview ...

Don't skip consent: doing so could have serious repercussions ...

Be safe when conducting interviews with the public ...

... see recommendations on "Resources" page on course website

Week 3 Studio P3 (Part 2)

Identifying pilot interviewees

P3 Studio Prep (Part 2) – Interviews

In this course, you'll aim to conduct interviews between 6 - 8 people **who are not your classmates**. To prepare for these interviews, you'll first conduct some preliminary interview with two CS449/649 classmates from other teams.

Before this studio session, **identify at least two classmates** to conduct mock-interviews. To prepare for subsequent interviews with real people, also **identify at least two non-classmates** (or a general recruitment strategy) that you want to interview as you design and evaluate your course projects.

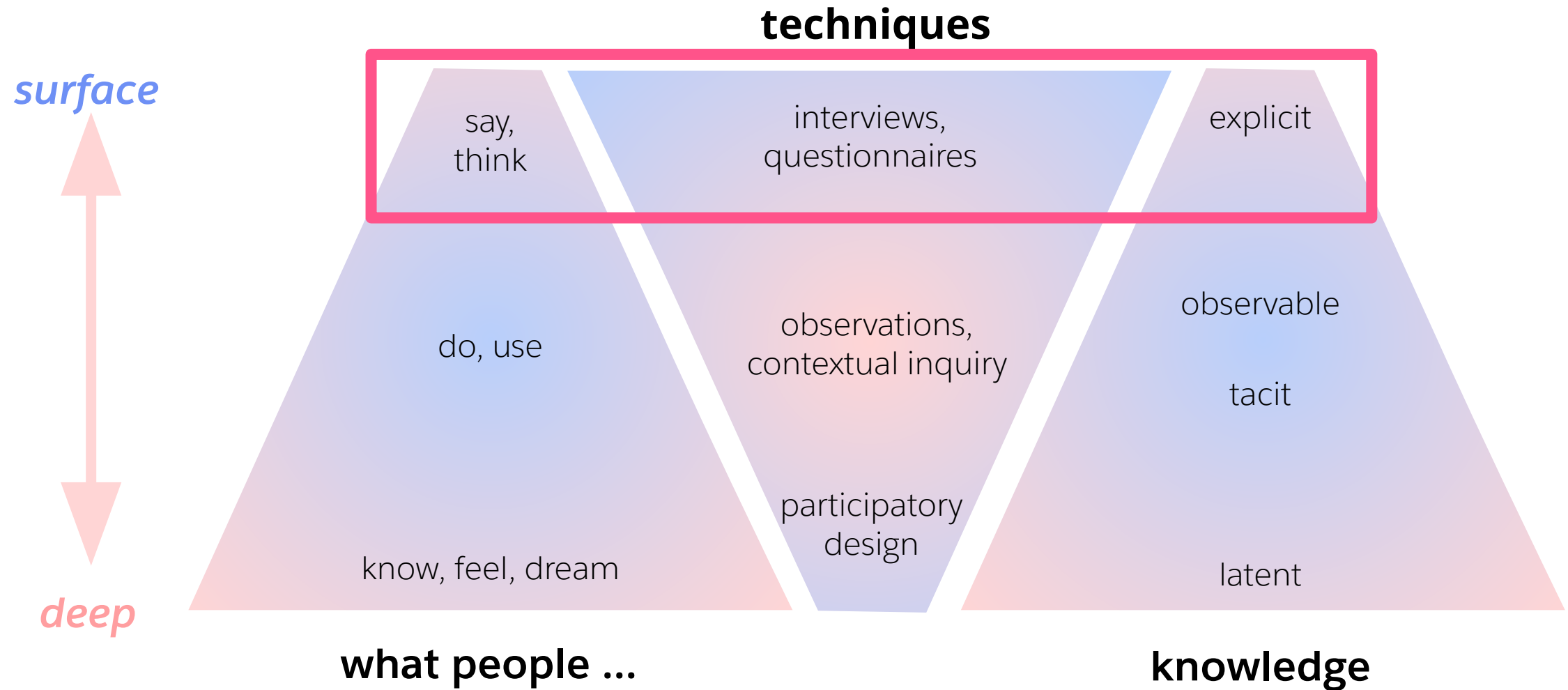
Looking Ahead to Week 4

Drawing insights from data, Affinity Diagramming

Exploratory Methods ... Continued

Supplemental resources for CS 649 students

Exploratory Data Gathering Methods



Questionnaires

A predefined series of questions for a participant ("respondent") to answer.

... excellent for gathering data from many people ...

... relatively fast to use and can be more economical than interviews ...

... often used remotely, but can be administered in-person in an interview ...

Question Types

Closed-ended questions have a limited set of possible answers

- ... can be analyzed using statistical methods
- ... can be summarized in descriptives and charts
- ... easy to validate: will produce "clean" data
- ... narrow scope of data

Open-ended questions allow an unconstrained free-form answer

- ... broad and open scope of data
- ... more difficult and time consuming to analyze or summarize
- ... hard to validate: data can be useless (e.g. "I don't know", "kjhgds kfdjgfd")

Question Types

Closed

Multiple choice

Rating Scale

Semantic Differential

Likert-item

Matrix

Open-ended

Association

Completion

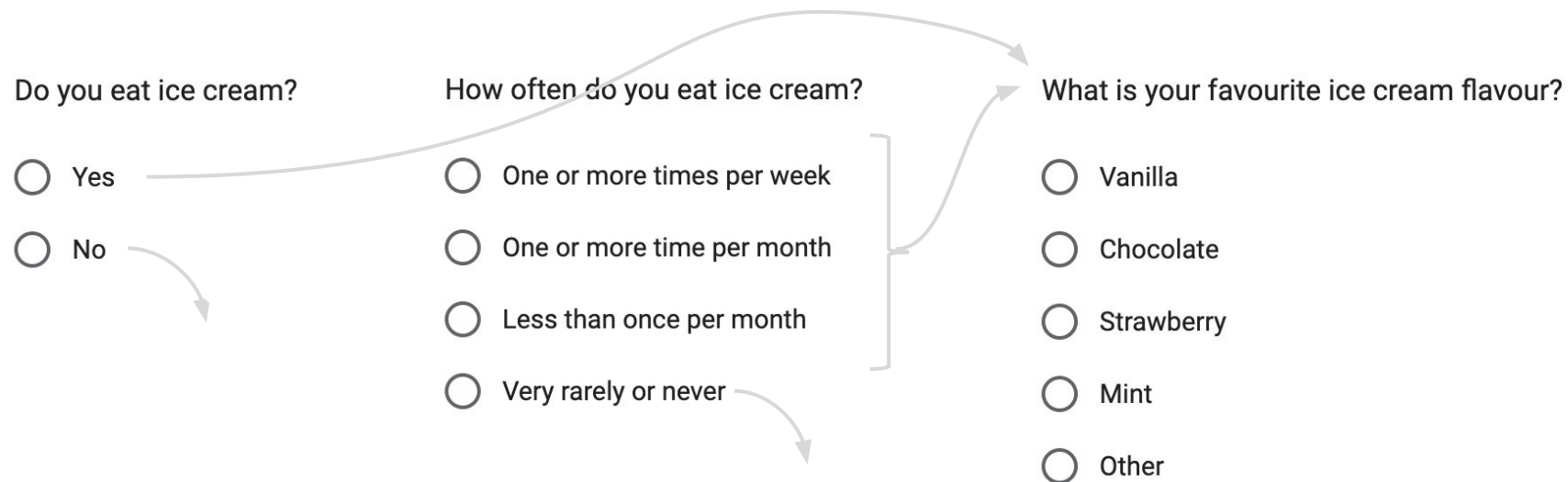
Explanation

Unstructured

Multiple Choice Questions

Respondent chooses one answer among multiple possible answers

- ... be inclusive and comprehensive (e.g. "Other" choice, pre-screening)
- ... answers have logical order and are clear, concise, and unambiguous
- ... think about data you need to gather (e.g. yes/no vs. frequency)



Rating Scale Questions



Numeric scale to provide quantitative answer

- ... Make it clear which way the scale (e.g. usually higher is better)
- ... Provide enough scale for nuanced choice without overwhelming (e.g. 5 to 10 numbers)
- ... Can include "0" (but may not be necessary)
- ... Using a slider or stars may be used

How **important** is the taste of the ice cream cone?
Higher numbers mean more important.

1	2	3	4	5
☐	☐	☐	☐	☐

Semantic Differential

Rating scale with bipolar choices at extremes

- ... avoid too few or too many choices on scale (usually 5 to 9)
- ... odd number lets participant select a neutral choice
- ... even number forces participant to make a choice
- ... polar choices should express same level or degree from neutral
- ... (e.g. "Awful ... Awesome" not "Satisfactory ... Awesome")
- ... Polar choices typically adjectives or adverbs, and usually antonyms

How important is the ice cream cone?

	1	2	3	4	5	
Unimportant	☐	☐	☐	☐	☐	Important

How would you describe the taste of this ice cream?

	1	2	3	4	5	
Boring	☐	☐	☐	☐	☐	Exciting

Likert Item

The participant responds to a statement with their level of agreement.

... Pronounced "Lick-ert" not "Lie-curt"

... A Likert scale is the sum of responses of several Likert items

... Agreement choices should be symmetrical and balanced

... Typically use non-numeric, ordinal statements (e.g. Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree)

The taste of the ice cream cone is important.

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neither agree nor disagree
- ☐ Agree
- ☐ Strongly Agree

Please provide your level of agreement with the following statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I like ice cream.	☐	☐	☐	☐	☐
The cone is important.	☐	☐	☐	☐	☐
I eat ice cream at home.	☐	☐	☐	☐	☐

Likert Scale Response Anchors

Citation:

Vagias, Wade M. (2006). *Likert-type scale response anchors*. Clemson International Institute for Tourism & Research Development, Department of Parks, Recreation and Tourism Management. Clemson University.

Level of Acceptability

- 1 – Totally unacceptable
- 2 – Unacceptable
- 3 – Slightly unacceptable
- 4 – Neutral
- 5 – Slightly acceptable
- 6 – Acceptable
- 7 – Perfectly Acceptable

Level of Appropriateness

- 1 – Absolutely inappropriate
- 2 – Inappropriate
- 3 – Slightly inappropriate
- 4 – Neutral
- 5 – Slightly appropriate
- 6 – Appropriate
- 7 – Absolutely appropriate

Level of Importance

- 1 – Not at all important
- 2 – Low importance
- 3 – Slightly important
- 4 – Neutral
- 5 – Moderately important

My beliefs

- 1 – Very untrue of what I believe
- 2 – Untrue of what I believe
- 3 – Somewhat untrue of what I believe
- 4 – Neutral
- 5 – Somewhat true of what I believe
- 6 – True of what I believe
- 7 – Very true of what I believe

Priority:

- 1 – Not a priority
- 2 – Low priority
- 3 – Somewhat priority
- 4 – Neutral
- 5 – Moderate Priority
- 6 – High priority
- 7 – Essential priority

Level of Concern

- 1 – not at all concerned
- 2 – Slightly concerned
- 3 – Somewhat concerned

Level of Support/Opposition

- 1 – Strongly oppose
- 2 – Somewhat oppose
- 3 – neutral
- 4 – Somewhat favor
- 5 – Strongly favor

Level of Probability

- 1 – Not probable
- 2 – Somewhat improbable
- 3 – Neutral
- 4 – Somewhat probable
- 5 – Very probable

Level of Agreement

- 1 – Strongly disagree
- 2 – Disagree
- 3 – Neither agree or disagree
- 4 – Agree
- 5 – Strongly agree

Level of Desirability

- 1 – Very undesirable
- 2 – Undesirable

Matrix

More compact way to gather related data.

- ... columns can be any form of closed-form questions
- ... rows should all be conceptually related
- ... can use tick boxes or multiple choice

Where do you buy the following desserts?

	Grocery Store	Restaurant	Vending Machine	Online
Cake	☐	☒	☐	☒
Pie	☐	☒	☐	☐
Chocolate bar	☒	☐	☒	☐

Question Types

Closed

Multiple choice

Rating Scale

Semantic Differential

Likert-item

Matrix

Open-ended

Association

Completion

Explanation

Unstructured

Association Questions

A short and impulsive question that can be answered with a few words.

... good for obtaining a "gut feeling" of respondents

What is the first word that comes to your mind when you think of ice cream?

Your answer

Completion Questions

The participant completes a statement with one or more blanks.

... look for certain patterns in your hypothesis

... leads to more structured answers

Complete the following statements:

My favorite ice-cream flavour is _____ .

I like ice-cream because _____ .

I usually eat ice-cream at _____ when I am _____ .

Explanation Questions

A long format answer related to a previous answer.

... usually revealed when respondent picks previous closed-form answer

... unlimited length of response allows participant to be detailed

You selected chocolate as your favourite flavour, explain why:

Your answer

Unstructured Questions

Most common type of open-ended question.

... unlimited length of response allows participant to be detailed

... can be very specific and detailed

Where do you usually buy ice cream?

Your answer

Think back to the last time you bought ice cream. Describe the setting and the steps you went through to decide on a flavour and make your purchase.

Your answer

Making Good Questionnaires

Set realistic expectations at start ("this survey will take about 5 minutes") ...

Ordering of questions is important: start with easy questions, progress to more difficult ...

Provide clear instructions: concise, consistent, careful wording ...

For self-serve questionnaires, visual design is important ...

- ... good typography and layout means higher quality responses

Only ask necessary questions: strive for SHORT questionnaires ...

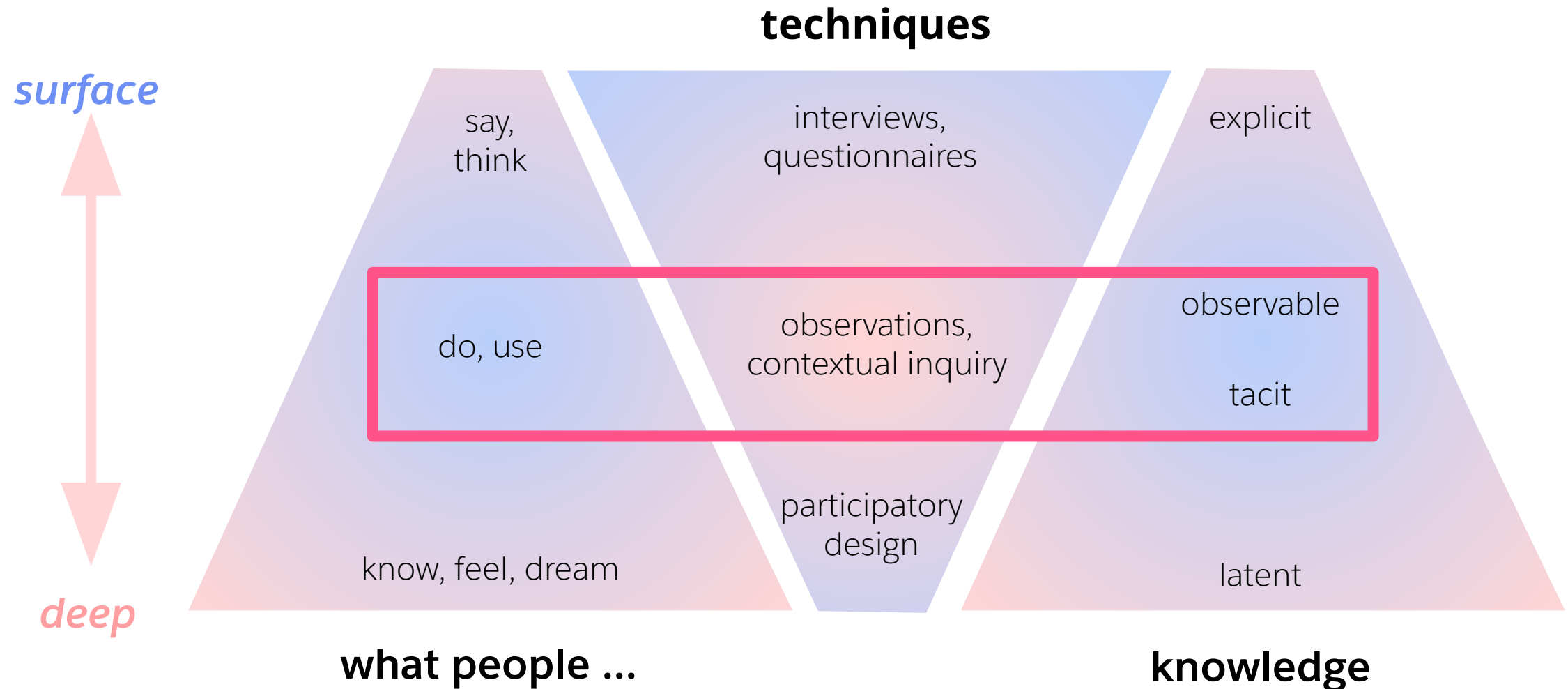
- ... don't ask intrusive irrelevant questions ("who did you vote for?")

- ... if long, use sections to break it up and organize topics

- ... communicate progress ("20% complete")

Consider different versions for different population.

Exploratory Data Gathering Methods



Observations

Watching participants performing some activities

What is the person doing?

How is the person doing that?

Why is the person doing that? in that way?

Formats

Passive or active

Naturalistic or controlled

Data collection

Written notes, audio, video recording

Observation Methods

Direct

i.e., “you are there”

Controlled (lab)

Think-aloud protocol

Naturalistic (field)

Indirect

i.e., “you are not there”

Diaries

Interaction logs

Web analytics

Data scraping

Contextual Inquiry

Direct observation takes place in the person's natural context (their home, their workplace) and facilitator is active by asking clarifying questions

- **Context:** take place in the context of use
- **Partnership:** collaborative between the researcher and the participant
- **Mutual interpretation:** the researcher explains; the participant corrects
- **Focus:** on the topics

Hawthorne Effect

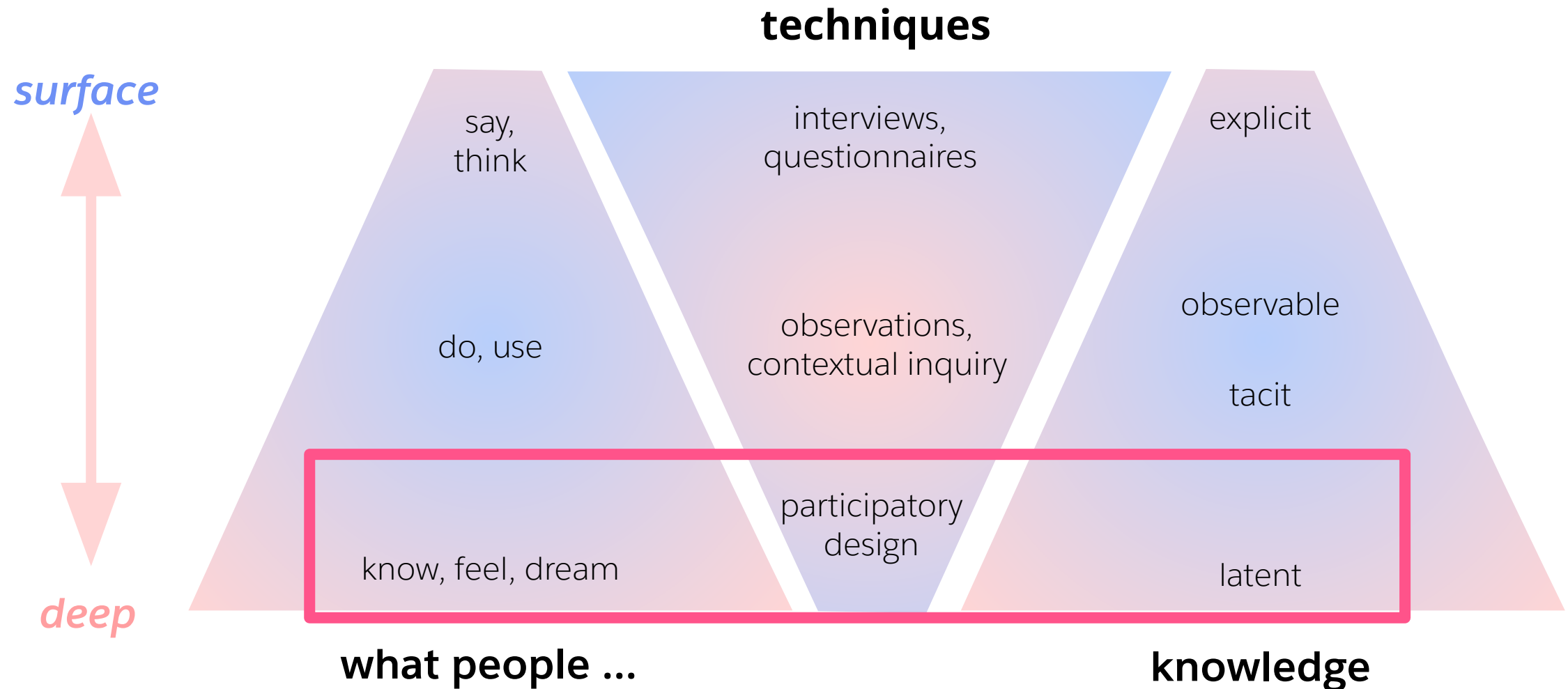
Individuals modify an aspect of their behavior in response to their awareness of being observed...

- ... 1930s study of factory workers suggested increased attention from researchers led to temporary increases in worker productivity (Landsberger)



Later analysis found awareness of being observed may not be source of the effect, but participants' interpretation of the situation is critical (Adair)

Exploratory Data Gathering Methods

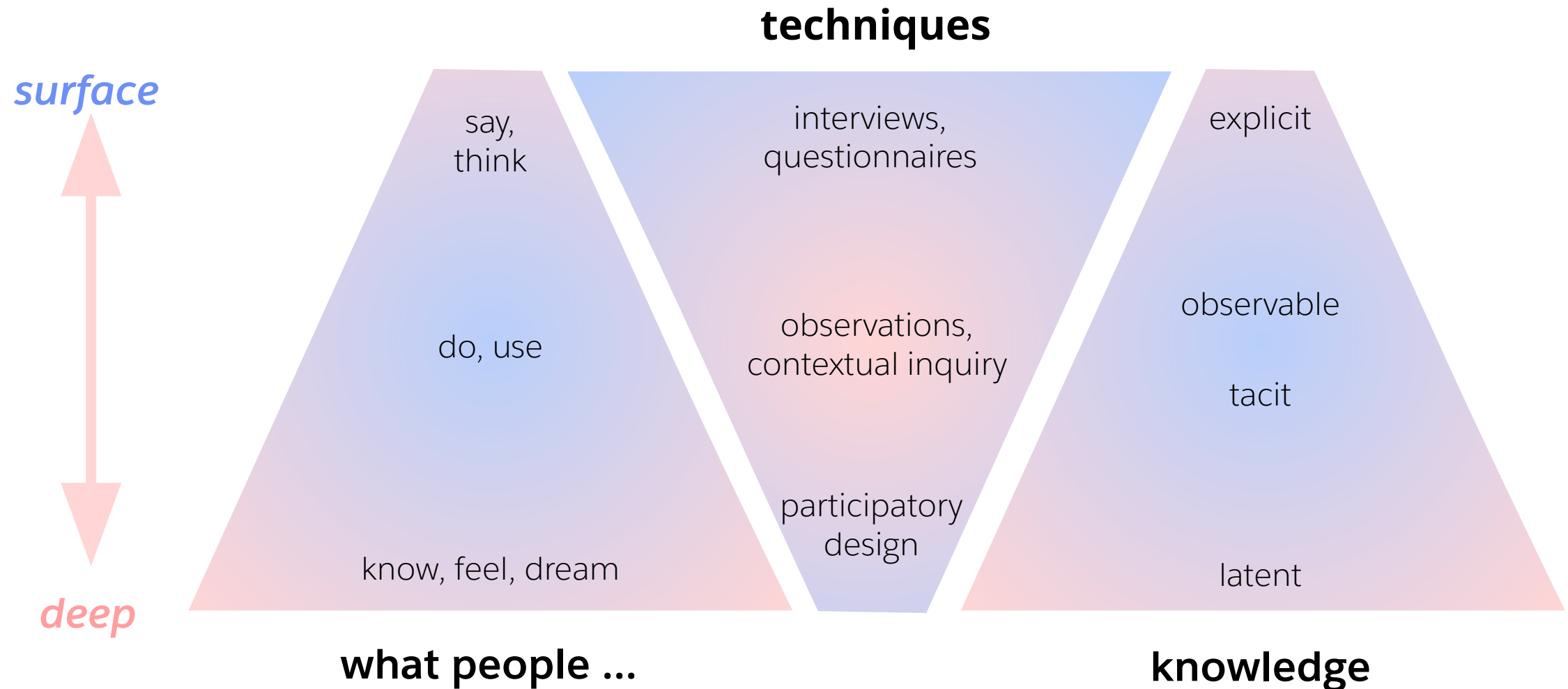


Participatory Design

A process and strategy which actively involves stakeholders in the design process ...

- ... stakeholders can include: end users, customers, designers, researchers, developers, marketers, ...
- ... origins in 1980s, related to "workplace democracy movement" ...
- ... idea: integrating diverse views in design process leads to better outcomes ...
- ... *co-creation* can be considered the ultimate form of participatory design ...
- ... different than empathetic design process, but still focuses on empathy.

Combining Exploratory Data Gathering Methods



Triangulation

Triangulation of data: Draw data from different sources at different times, in different places, or from different people (possibly by using a different sampling technique)

Investigator triangulation: Involve different researchers (observers, interviewers, and so on) in collecting and interpreting the data

Triangulation of theories: Use different theoretical frameworks to view the data or findings

Methodological triangulation: Employ different data gathering techniques