CS377E: DESIGNING SOLUTIONS TO GLOBAL GRAND CHALLENGES: *SMART EDUCATION*

Needfinding

Prof. James A. Landay
Computer Science Department
Stanford University

Autumn 2020

September 23, 2020

* some slides based on those of Julie Stanford, Stanford & Sliced Bread Design

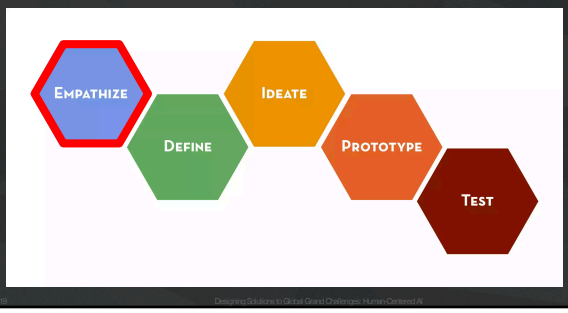
1

Outline

- Needfinding
- Exercise
- Unpacking

2

Design Thinking Process



3

Empathy: Feel what they feel

Principles

1) Immerse
2) Observe
3) Engage

http://hci.stanford.edu/courses/cs147/2016/au/readings/FIELDGUIDE-Screen-DTBC-March-2015-V2.pdf

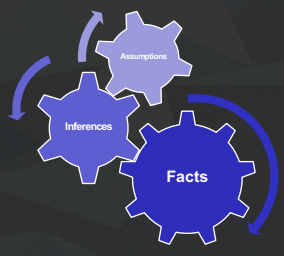
4

"You Can Observe a Lot Just by Watching"

–Yogi Berra

5

Technique: Active Observation



Observe & interview
without knowing what
you are looking for

6

7

8

9

10

Pay attention to *all* the artifacts

Look for workarounds & hacks

"Errors" are a goldmine

11

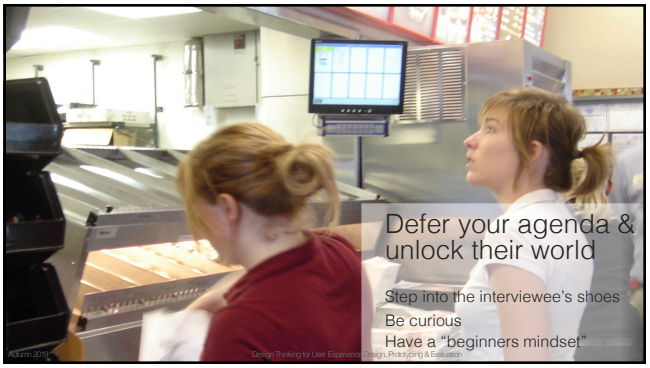
Needfinding starts with basic questions of everyday experiences

But moves from
- closed ended questions to *open ended* questions
- "whats" to "whys"
- actions to feelings

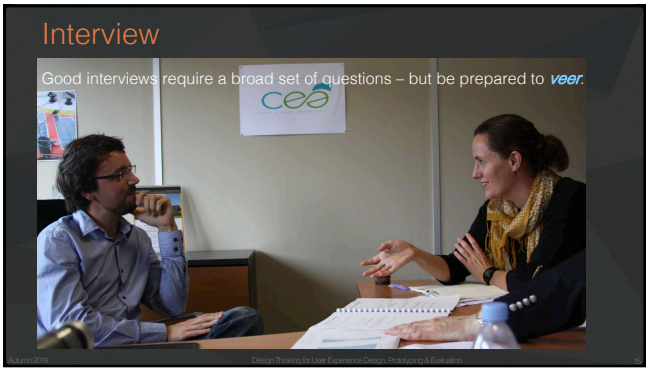
Engage people in their environment

12

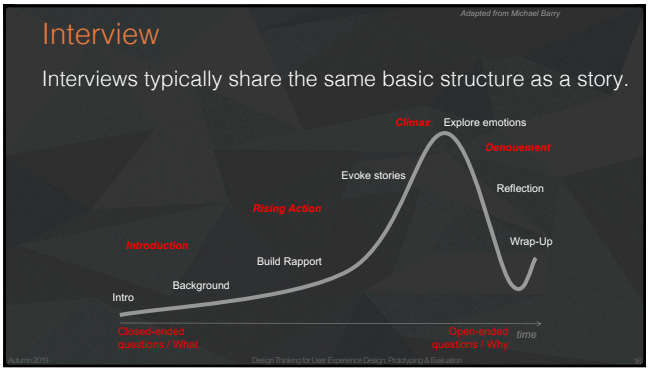
13



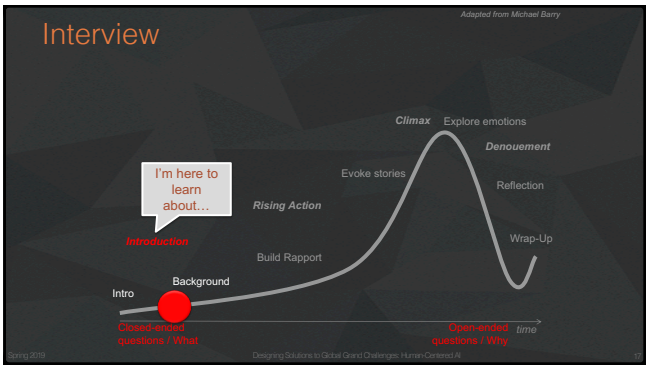
14



15



16

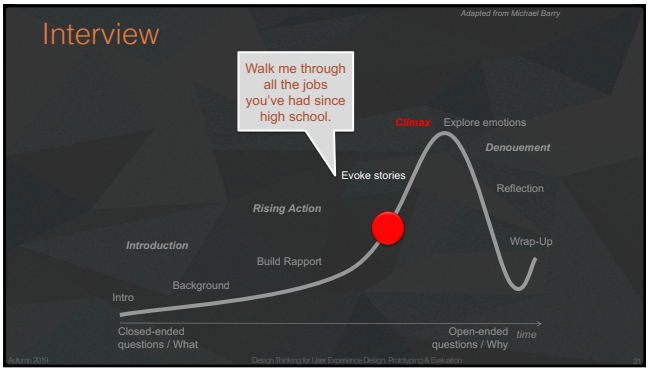


17

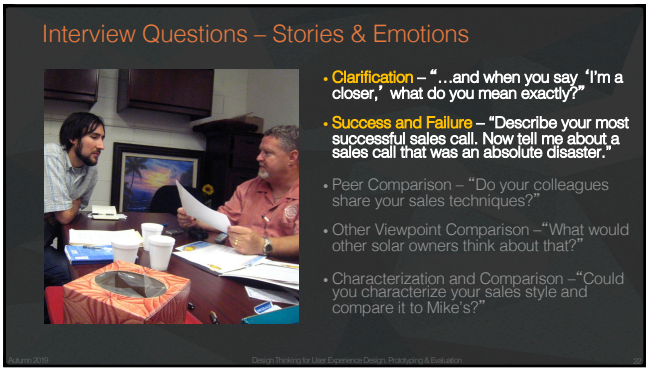
18

19

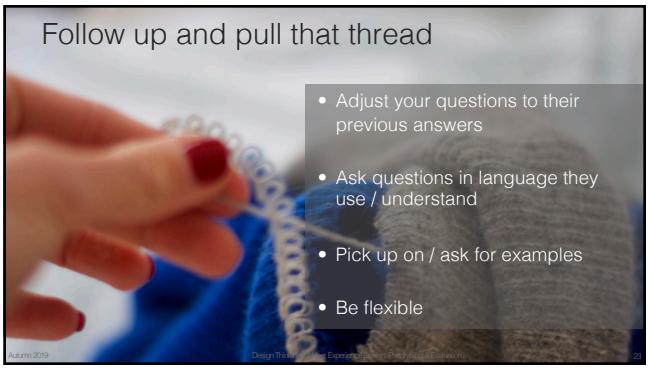
20



21



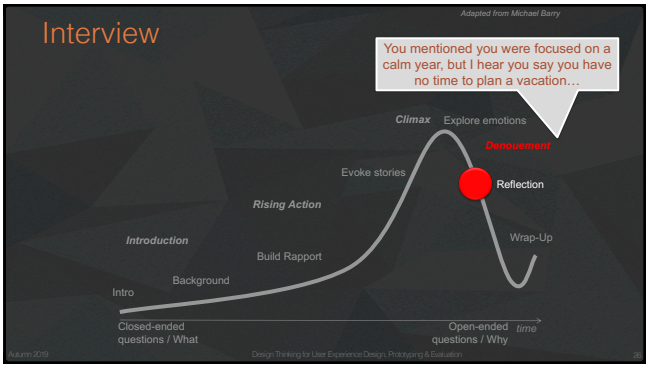
22



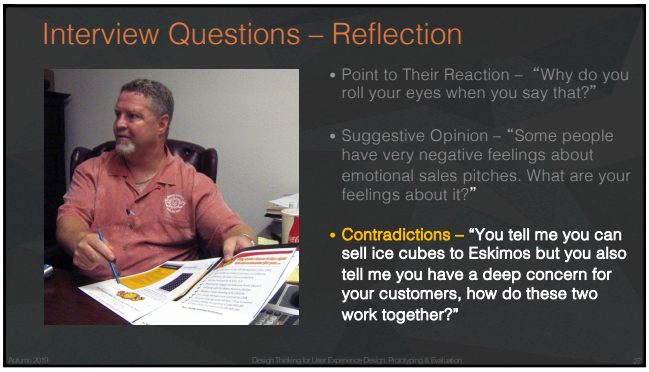
23

24

25



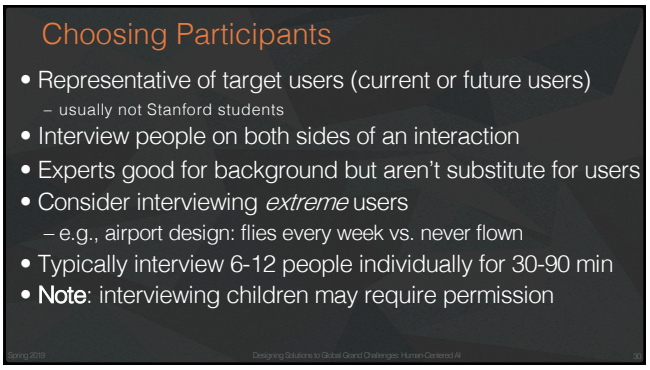
26



27

28

29



30

Where to Recruit

- Depends on target audience…
- Nextdoor.com
- Facebook / wechat groups
- Craig's List
- Local email lists (e.g., parents, etc.)
- Snowball sampling – when you recruit someone ask them to pass it on to others they think would be good…
- What's worked for you????

31

Types of Questions to Avoid

- What they would do / like / want in hypothetical scenarios
- How often they do things
- How much they like things on an absolute scale
- Avoid ***binary*** questions
- "Tell me a story about yourself"

32

Common Pitfalls – Suggesting Answers

"How was that decision reached? Was there a big meeting? Did your boss decide without you?…"

- Let the informant paint his or her own categories of meaning
- Avoid suggesting answers
- Trust the question – ask it & stop talking

Let there be silence

33

(a little bit of)

Silence is Golden

34

Common Pitfalls – Hypothetical Situations

"What if I designed something that wasn't as round and soft and annoying as your current thing and instead bounced up and down. Would that work for you? "

"What about your friends? What would they do?"

- Ask about events & things that **actually happened/exist**
- Get their point of view, **not what they think someone else might do**

35

There is More Than One Way to Ask "Why?"

- Tell me more about that
- Tell me what you mean when you say XXX
- [last phrase the person said]?

36

What are the gems?

- You've uncovered a ***surprise***/found what is ***missing***
- You can explain why people ***do unusual things***
- You ***want to tell others*** about what you learned

37

Share with your team

- Stories
- Photos
- Sketches
- Quotes

38

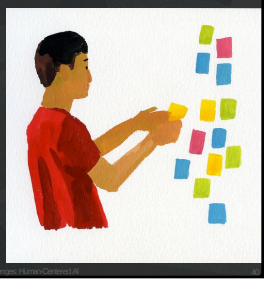
Getting Started on Unpacking

one color PostIt per participant, take notes with a sharpie, write down snippets of everything

39

Using the Data Collected in the Field

- Figure out what is important
- Affinity diagramming
  - group info & find relations between groups
  - Post-Its on large surfaces



40

Users: Unique or One of Many?

"Take the attitude that nothing any person does is done for no reason; if you think it's for no reason, you don't yet understand the point of view from which it makes sense.

Take the attitude that nothing any person does is unique to them, it always represents an important class of customers whose needs will not be met if you don't figure out what's going on."

(p. 63, *Contextual Design*)

41

Ethical Considerations in Needfinding

Testing/fieldwork can be **coercive** if there is a power imbalance (e.g., in under resourced communities)

People may feel no option but to speak to you or give you their time even though they may not get anything of value in return.

42

Needfinding Summary

- Build empathy with customers
- Listen to them to discover interesting insights

43

Next Time

- Lecture
  - 1) Define: define the problem/domain of interest
  - 2) Ideate: How might we solve the problem?
- Readings
  - d.school's Empathy Fieldguide
- Watch
  - Unpacking/Journey Mapping (17 min.)

44