Image: Beyer & Holtzblatt, 2012

AFFINITY DIAGRAMS

CPSC 544 Fundamentals in Designing Interactive Computational Technology for People

Class 08 – 2023W1

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LEARNING GOALS

- Describe Affinity diagrams as an analysis method
- Understand when and why we use Affinity diagrams vs. other kinds of qualitative analysis, e.g., content or thematic analysis
- Explain how to analyze data using the Affinity diagram method

WHEN TO USE AFFINITY DIAGRAMS

Affinity diagram vs. (other) qualitative analysis

- When we don't have a lot of time AND a less rigorous analysis is acceptable – just want a first pass on sense-making
- Not typically used for research paper that is purely qualitative (e.g., Hoarding and Minimalism paper)
- Common for research where the qualitative analysis is secondary
- Where we are in the design process, i.e., transition from "problem" to "solution"

WHY AFFINITY DIAGRAMS?

- Lighter-weight / discount method
  - At least, as typically done by HCI researchers.
    (Note that Holtzblatt describes a relatively rigorous process)
- Physicality promotes discussion
- Efficient: informative result in relatively small time

"You can read a good affinity [diagram] from beginning to end to see every issue in the practice and everything the team has learned so far, all tied to real instances. There is no better way to see the broad scope of the problem quickly…"

Holtzblatt, K., and Beyer, H. (2016). Contextual design: Design for life, Elsevier.

AFFINITY DIAGRAMS

- A tool for organizing field data and consolidating insights from collected data.
  - common technique to find recurring patterns/themes
- Arranges the notes from interpretation sessions into a hierarchy that reveals common issues and themes across all users.
- Can be used for many purposes (including analysis) - e.g.,
  - brainstorming about design ideas
  - comments from users
  - problems observed/reported by users

AFFINITY DIAGRAM

Holtzblatt & Beyer, 2016

INPUT TO THE AFFINITY DIAGRAM PROCESS

Basically – anything that you can organize onto sticky notes and want to understand themes, dimensions, bigger ideas.

In qualitative analysis:

- Direct notes from interview / observation data (today's activity)
  - One observation per sticky-note
- Codes from qualitative analysis
  - A little more heavy-weight (you've already done some analysis when you get to the affinity diagram step)

Other uses besides qualitative analysis!

- Literature review insights
- Brainstormed ideas – cluster to understand the idea space
- … ?

AFFINITY DIAGRAMS CONSIDERATIONS

- The Affinity is built **bottom-up (inductive)**
  - **Do not** start with known categories, e.g., 'Quality,' that might be familiar to the team
- Keep note-group-size **small**: 4-6 notes per note-group
  - → Make more groups, find more issues or more insights
- **Label** each group. Use color to identify **levels**
  - Group into **hierarchical structure** that breaks the data about the topic/user into manageable chunks
- Larger note-group
  - → Leads to wider range of perspectives

AFFINITY DIAGRAMS PROCESS

Key to remember:

1. Keep in mind your project or research focus
   - What kind of insight are you after?
   - This drives the **meaning** a team gets from a note and the **way they group them**.
2. Let note-groups **emerge** – do not bias yourself with predefined groups.
3. Don't need to justify why notes go together
   that comes later

Think about: *Why are #1, #2 not contradictory?*

AFFINITY DIAGRAM AFTER CONSTRUCTION

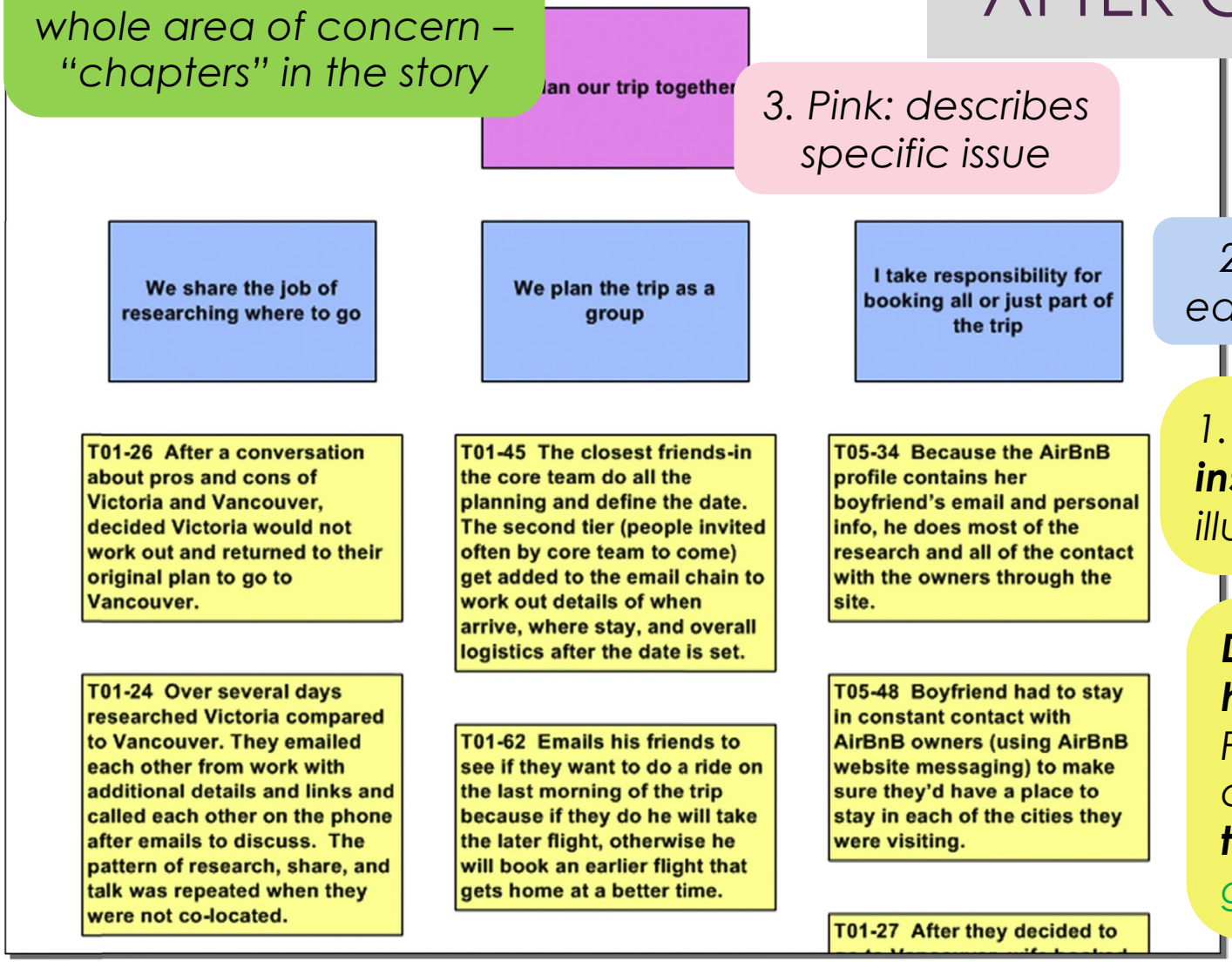
4. Green (not pictured): Highest level, describes whole area of concern – "chapters" in the story

3. Pink: describes specific issue

2. Blue: describes each aspect of issue

*1. Yellow: **original data instances** which will illustrate the **blue** label*

During construction, start here:
*Find natural groupings of data instances, then **name them** at blue pink and green levels*



AFFINITY DIAGRAMS PROCESS

- **Step 1 (individually):** Record each idea, observation, problem, etc. on an individual card or sticky note (in no particular order). Write as many out as you can.
- **Step 2 (team): Place notes one at a time.** As each note is placed, other team members may add similar notes (from their pile) in close proximity.
- **Step 3a: Arrange the notes into a hierarchy.**
  - Look for notes that seem to be related.
  - Iteratively reform groups til groups seem stable

Not done – more steps later…

Image: Beyer, H., & Holtzblatt, K. (1999). Contextual design. *interactions*, 6(1), 32-42.

MORE TIPS

Two "commandments" from Holtblatz (2017):

- Never do it online
  - *Why?*
- Do over hours or days
  Let the insights breathe.

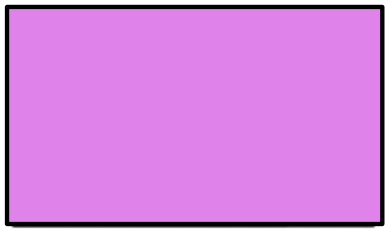
These days, common to use online tools like Miro.

- Miro (founded 2011) became ascendent method in pandemic
- Probably works better than in

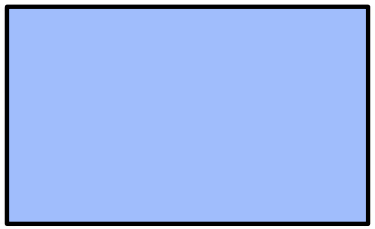
AFFINITY DIAGRAMS PROCESS

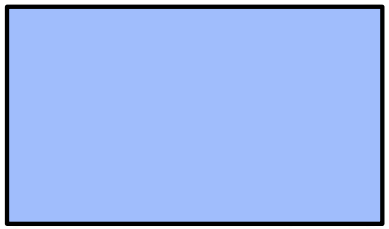
- **Step 3b: Label higher levels of hierarchy.**
  - Give each item at each level a label representing the insight suggested by the group.
    - The label is the synthesis of the detailed data
    - Labels written from the user's perspective
    - Labels will drive design
  - Sort and resort into larger clusters subgroups as necessary

*Blue: describes each **aspect** of issue*



Pink: describes specific issue





T01-26 After a conversation about pros and cons of Victoria and Vancouver, decided Victoria would not work out and returned to their original plan to go to Vancouver.

T01-45 The closest friends-in the core team do all the planning and define the date. The second tier (people invited often by core team to come) get added to the email chain to work out details of when arrive, where stay, and overall logistics after the date is set.

T05-34 Because the AirBnB profile contains her boyfriend's email and personal info, he does most of the research and all of the contact with the owners through the site.

T01-24 Over several days researched Victoria compared to Vancouver. They emailed each other from work with additional details and links and called each other on the phone after emails to discuss. The pattern of research, share, and talk was repeated when they

T01-62 Emails his friends to see if they want to do a ride on the last morning of the trip because if they do he will take the later flight, otherwise he will book an earlier flight that gets home at a better time.

T05-48 Boyfriend had to stay in constant contact with AirBnB owners (using AirBnB website messaging) to make sure they'd have a place to stay in each of the cities they were visiting.

BUILD AN AFFINITY DIAGRAM

General idea:

- In groups of 3-4, *on paper*
- We provide you with the data snippets
  - "Yellow stickies" – normally you'd generate these yourselves
  - Each student will get ~5 quotes
- On Paper today! Option to work vertically or horizontally
  - Whiteboard: use tape and whiteboard markers. Usually nicer to stand up!
  - On a table: don't need tape, but a little klunkier otherwise.
- Build your diagram
  - Collaboratively and iteratively sort the quotes
  - Then add blue and ping category names
- IF time, we'll go around the room and look at what different groups did.

REFLECTION

What worked? What didn't work?

What questions and confusions remain?

- We worked on paper today, for 30-60 minutes.
  - In your project analysis, can do this or try Miro; but spend more time at it.
- How are field notes broken down in 1st place?
  - Today: transcripts → quotes. What about coding? Other?
- How do you document / report /archive the results?
- ??

WHAT MAKES A GOOD AFFINITY DIAGRAM?

- Hierarchical structure
- Clear language of the labels
  - Short, succinct, invite immediate understanding
- Story language
  - moving through data quickly so that the mind can be free to generate ideas
- Communicative
  - Bridges the gap between data and design

HOW FAR DO YOU TAKE ANALYSIS?

- As far as is helpful for your needs
- Useful until you have uncovered with some rigor, e.g.,
  - what are the most important activities/tasks to support
  - where task dependencies occur
    people, resources, order
  - what is essential vs. nonessential in an implementation
  - ….etc.

→ from here, key elements for design begin to emerge