Contextual Inquiry

Morgane Flores - Emma Fournier - MoSIG 2 - 2021/2022
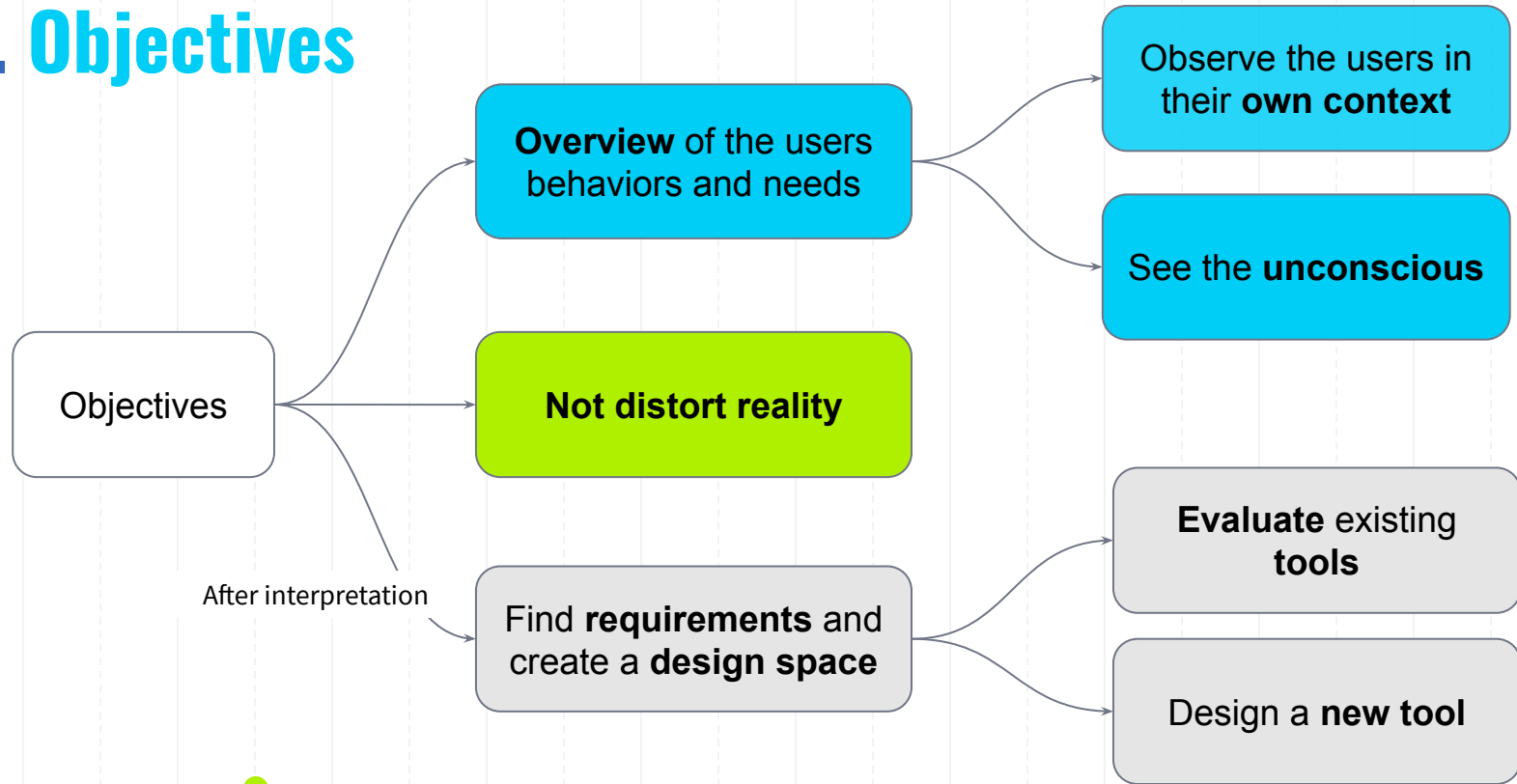
Table of contents
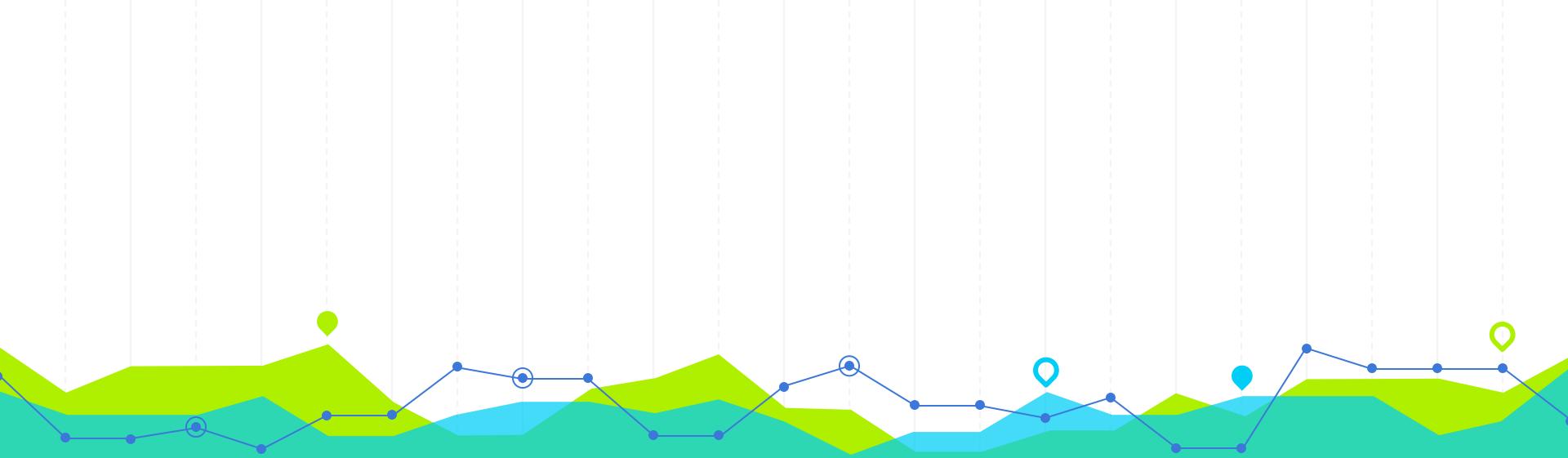
Objectives

What does it allow to evaluate?

1

1. Objectives

◉ **Qualitative analysis**

◉ Conducted within a **specific project**

◉ Mostly related to **HCI** and **New Tool Design**

1. Objectives

Objectives

- **Overview** of the users behaviors and needs
  - Observe the users in their **own context**
  - See the **unconscious**

- **Not distort reality**

After interpretation

- Find **requirements** and create a **design space**
  - **Evaluate** existing **tools**
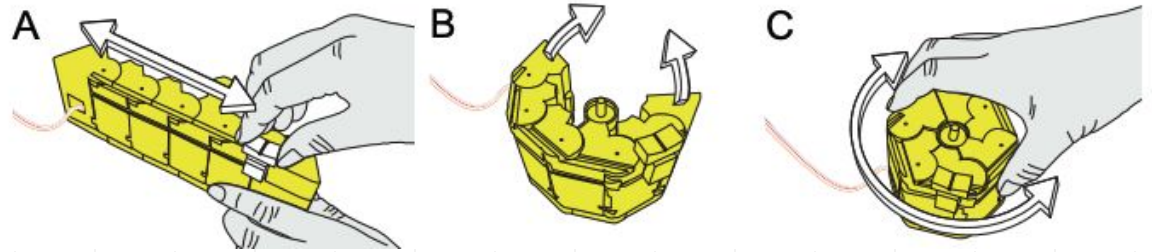 - Design a **new tool**

1. Objectives

⇒ Our case study:

KnobSlider: Design of a Shape-Changing UI for Parameter Control

Hyunyoung Kim, Céline Coutrix and Anne Roudaut

How to conduct a contextual inquiry?

Explanation of the method

2

2. How to conduct a contextual inquiry?

2.1. Settings

Selection of participants

Between 4 and 10 persons

→ Usually 8 persons

Vary the profiles

For a large context, select people with a wild variety of backgrounds (jobs, ages, genders, countries…)

Interview Settings

Limited to 1-2 hours

At home, at the office… ecological place

KnobSlider

8 persons with **wild** variety of professions and critical usage of knob / sliders

Limited to **2 hours**

2. How to conduct a contextual inquiry?

2.2. Leading the interview

At the start
- See the subject during his work
- Ask for recent work / project
- Thinking aloud

During interview
- Correct ideas if wrong
- Ask to tell stories / talk about projects
- Open but precise questions

KnobSlider

Gather **requirements** for interfaces, focus on **unsolved problems**

Interview in **ecologically valid** settings
- While doing their job
- Ask for situation requiring **flexibility**

2. How to conduct a contextual inquiry?

2.3. Main Principles
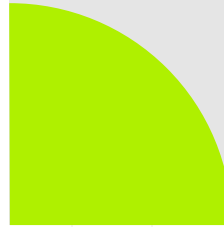
Based on "Contextual Design" Book

CONTEXT

Ecological context : while doing the activity we are interested in

Ask question about recent work: trigger memories
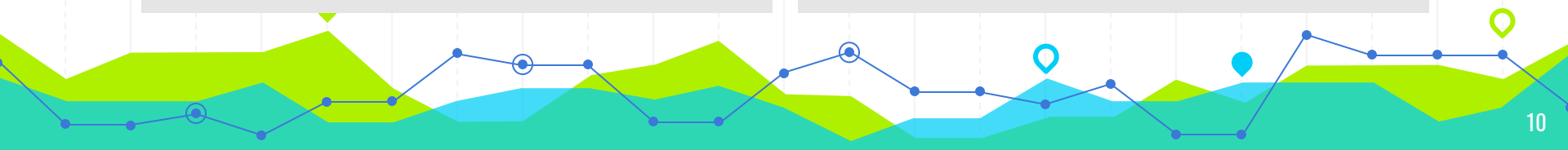
PARTNERSHIP

Let the user lead the interview

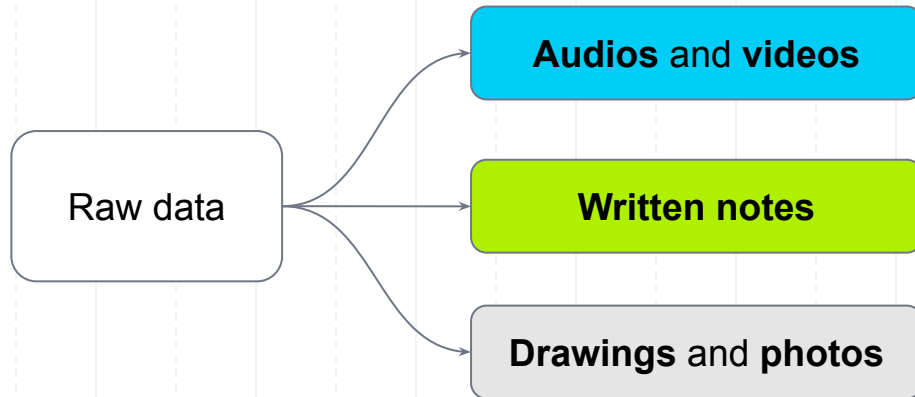Share your interpretation and let the users correct you

INTERPRETATION

Stay on the meaningful topic
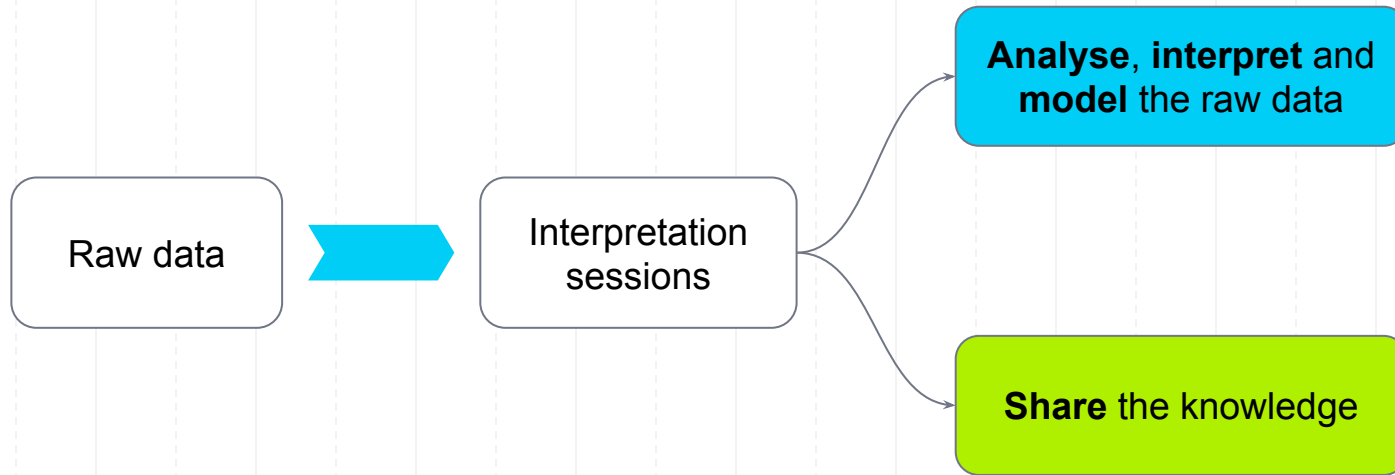
FOCUS

2. How to conduct a contextual inquiry?

2.4. Raw data and analysis

```
Raw data  →  Audios and videos
          →  Written notes
          →  Drawings and photos
```

KnobSlider

Written notes
Photos
Drawings
Audios
Videos

2. How to conduct a contextual inquiry?

2.4. Raw data and analysis

Raw data → Interpretation sessions

Analyse, **interpret** and **model** the raw data

Share the knowledge

2. How to conduct a contextual inquiry?

2.4. Raw data and analysis

Raw data → Interpretation sessions → Results

- **Scenarii**
- **Storyboards**
- List of **requirements** and **user needs**
- **Summary** of the observations

2. How to conduct a contextual inquiry?

2.4. Raw data and analysis

Raw data → Interpretation sessions → Results

KnobSlider

Requirements and a **design space** for the new tool

Summary of the observations: **Quotations** / **Anonymous examples**

Thematic analysis

Codification
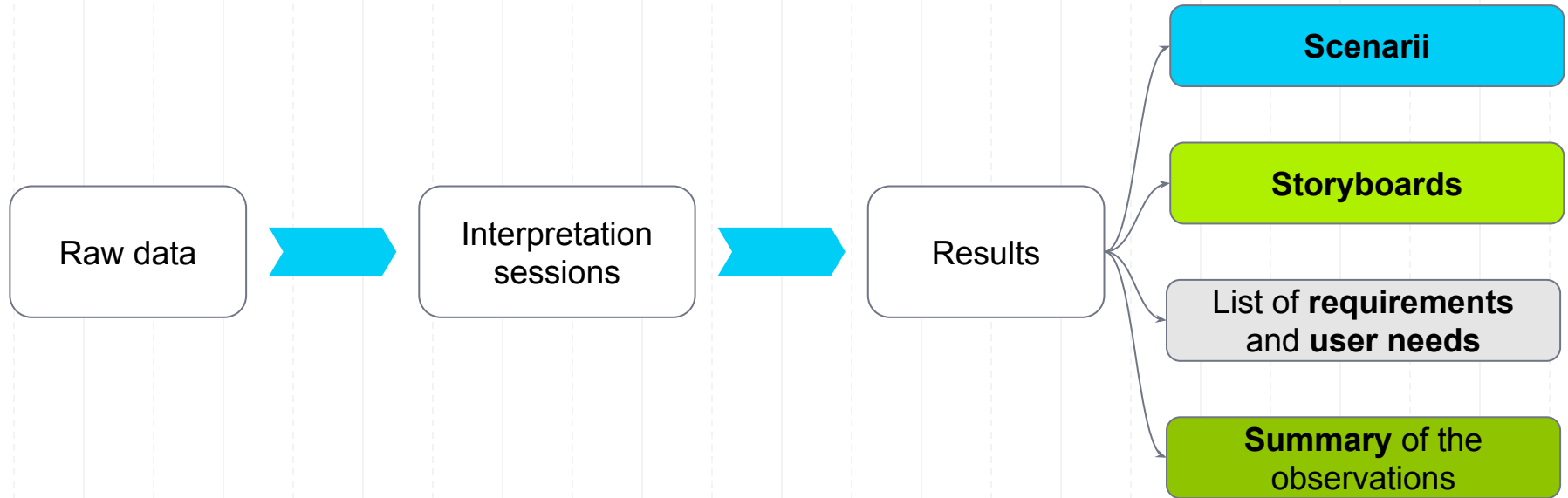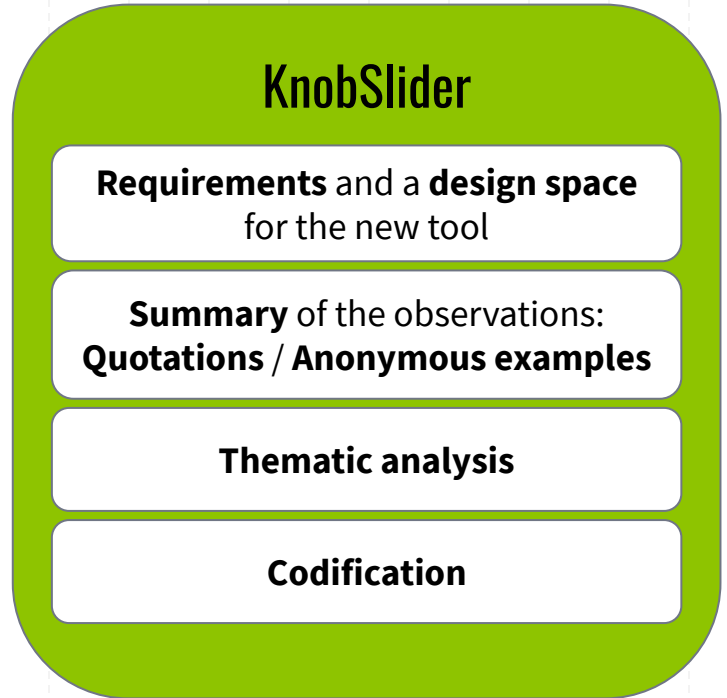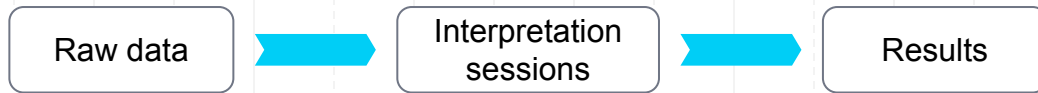
2. How to conduct a contextual inquiry?

2.5. What's next?

⇒ One step of a **whole project**

Make **design choices**	Build a **prototype**	Conduct **qualitative tests** on the prototype
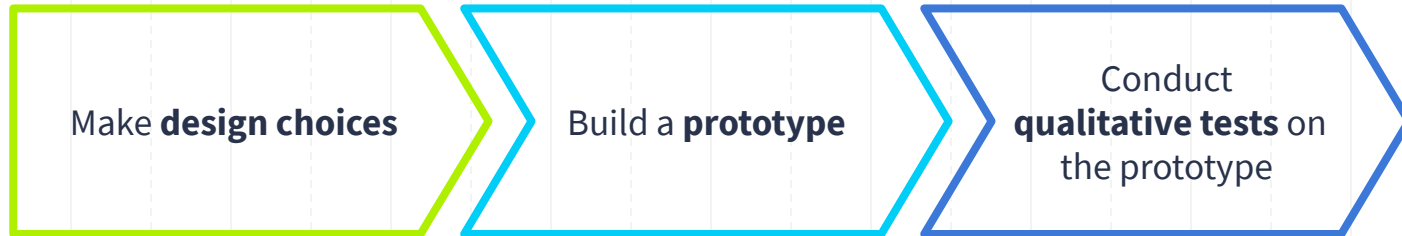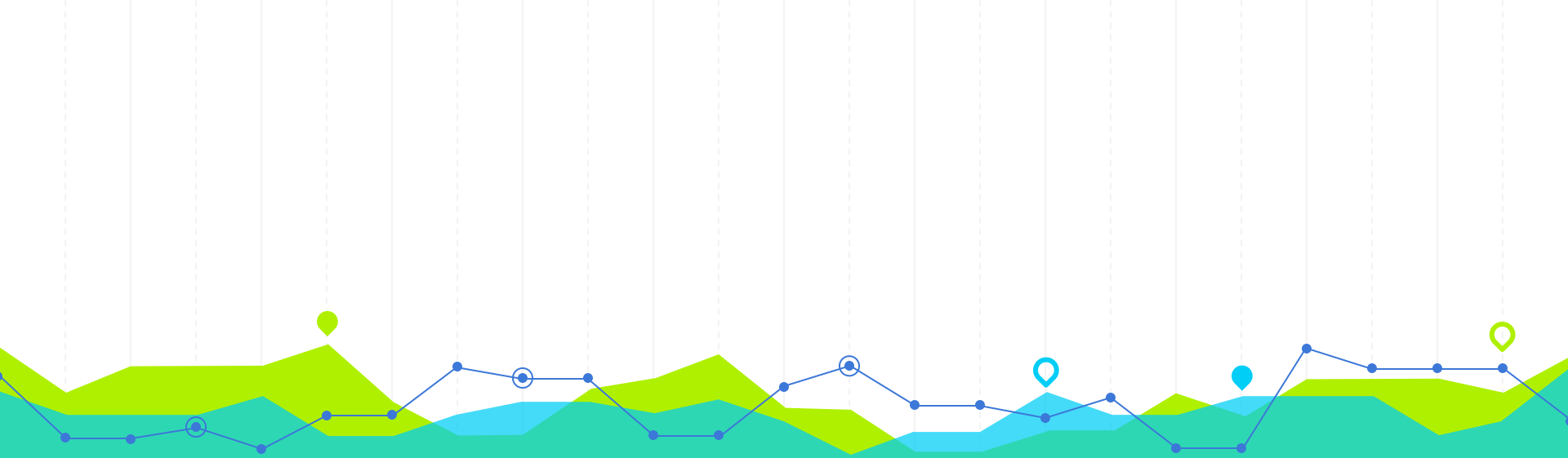
Examples in the litterature

Similarities and differences

3

3. Examples in the litterature

3.1. Color Portraits : From Color Picking to Interacting with Color

3. Examples in the litterature

3.1. Color Portraits : From Color Picking to Interacting with Color

Why ?

Find **requirements** for a **public expert** on **color manipulation**

How ?

Observe **professionals** during **creative process**

Interviews :
- Tell stories about recent projects
- Tell situations about effective / difficult usage of colors

3. Examples in the litterature

3.1. Color Portraits : From Color Picking to Interacting with Color

From Observations

> **Videos** of **user interactions** with colors

> **Photos** of their work

> **Screen capture** of their interactions with **color tools**

Collect Data ?

From Interviews

> **Audio Records**

> **Notes**

Figure 2: Eight artists and designers demonstrated how they manipulate color to achieve effects in both physical and digital media.

3. Examples in the litterature

3.1. Color Portraits : From Color Picking to Interacting with Color

Parameter Settings?

- **Professionals** : artists and designers

- **Experts** : color is essential in their work

- **8 users**
- **Parity** of genders
- Between **23 and 45 yo**

- Interviews of **1 hour**

- At **home** or **studio**

3. Examples in the litterature

3.1. Color Portraits : From Color Picking to Interacting with Color

Figure 4: Each storyboard includes a photograph of the artifact and drawings of each step in the color process
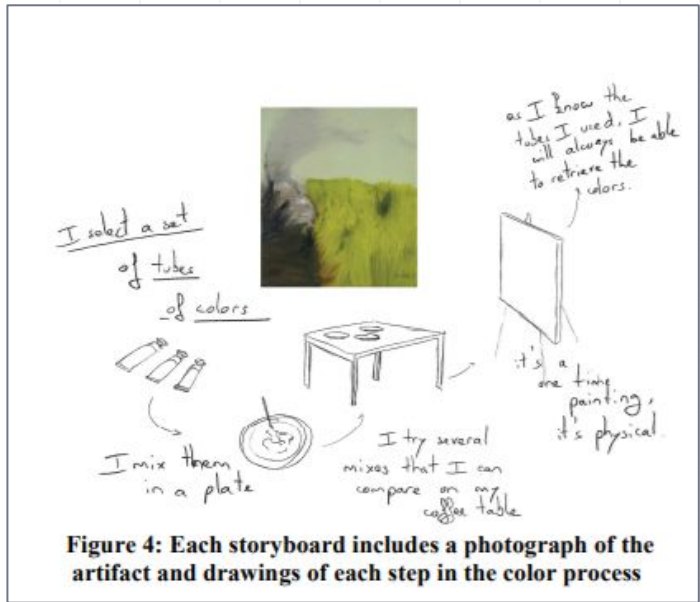
Form of results ?

- Storyboards

- Definition of categories of manipulation

- Examples and Quotations

3. Examples in the litterature

3.2. Non-Visual cooking : Exploring Practices and Challenges of Meal Preparation by People with Visual Impairments

Non-Visual Cooking: Exploring Practices and Challenges of Meal Preparation by People with Visual Impairments

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ABSTRACT

The reliance on vision for tasks related to cooking and eating healthy can present barriers to cooking for oneself and achieving proper nutrition. There has been little research exploring cooking practices and challenges faced by people with visual impairments.

1 INTRODUCTION

Vision is an important sensory modality for humans. Many activities of daily living (ADLs), such as cooking and eating, can be difficult without visual support. Jones et al. [26] revealed that people with visual impairments tend to have poor nutritional status.

Example in a different context :
find out **problems**, **only mention** possible **solutions**

Goal here :
have a better idea of the **problems** some people encounter, particular importance of the **interview**

=> And more in annexe ...
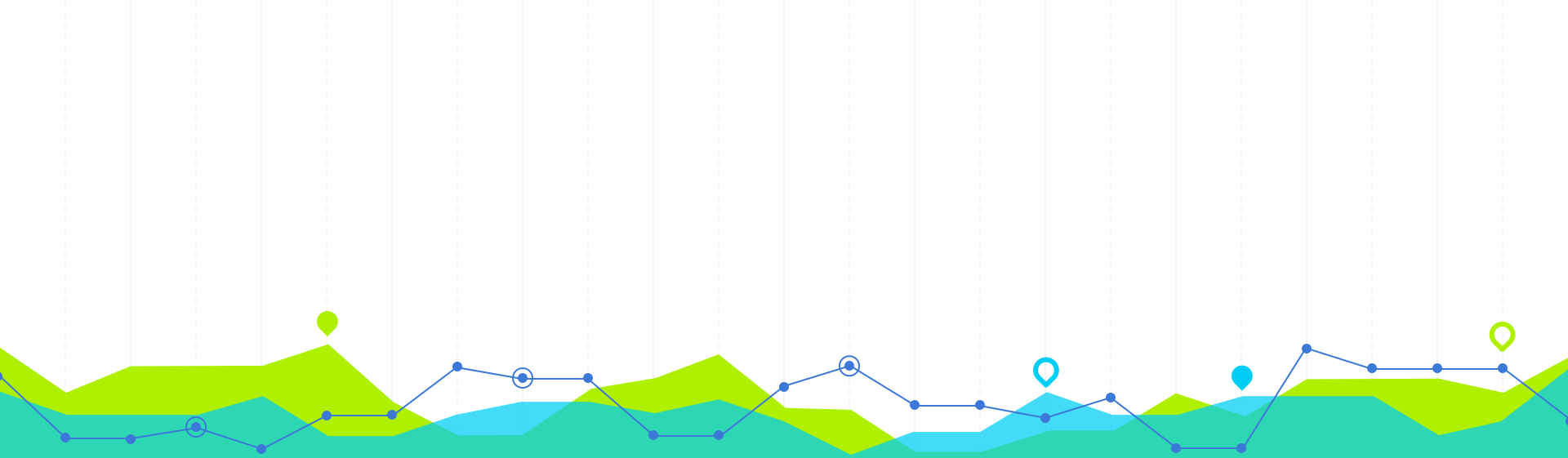
Benefits and drawbacks

of conducting a contextual inquiry

4

4. Benefits and drawbacks

4.1. Benefits

Benefits

- **Understand** a specific user context **quickly**
- Put the **user** at a **central place**
- Access to **more details**
- Observations closed to the **reality**
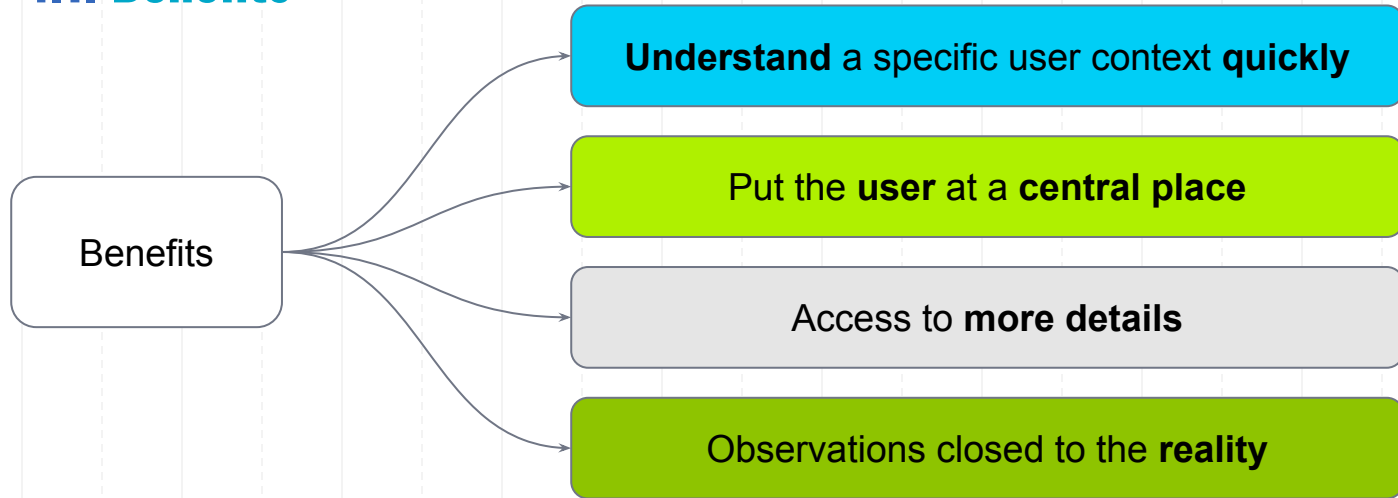
4. Benefits and drawbacks

4.2. Drawbacks

Risk of not being representative: choose your user panel well!

Drawbacks

A lot of data to analyse: **time** and **human resources** consuming

Qualitative analysis

Can not prove relation: data are **insights**

Hard to replicate
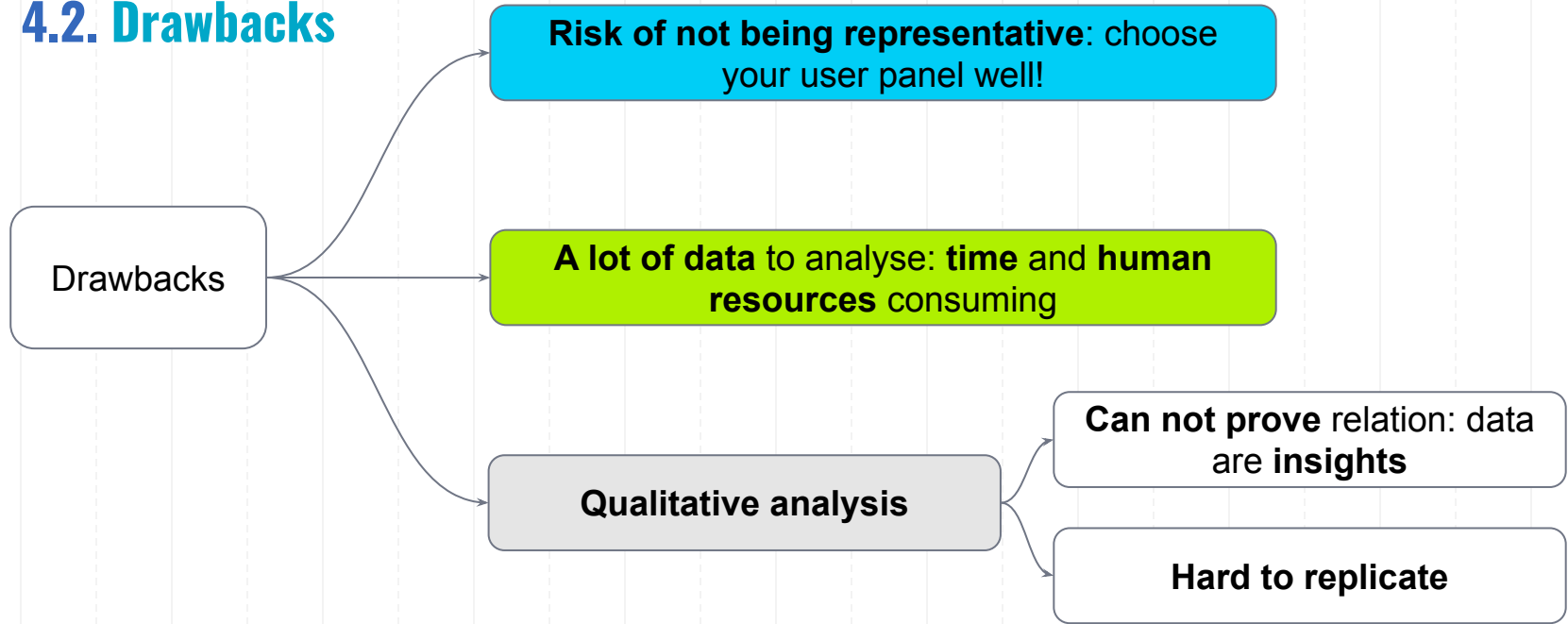
5. Sources & references

◉ **_Augmenting the Scope of Interactions with Implicit and Explicit Graphical Structures_** (article)

Raphaël Hoarau, Stéphane Conversy (Université de Toulouse, ENAC, IRIT)

◉ **_Color Portraits: From Color Picking to Interacting with Color_** (article)

Ghita Jalal, Nolwenn Maudet, Wendy E. Mackay (Inria, Université Paris-Sud, CNRS)

◉ **_KnobSlider: Design of a Shape-Changing UI for Parameter Control_** (article)

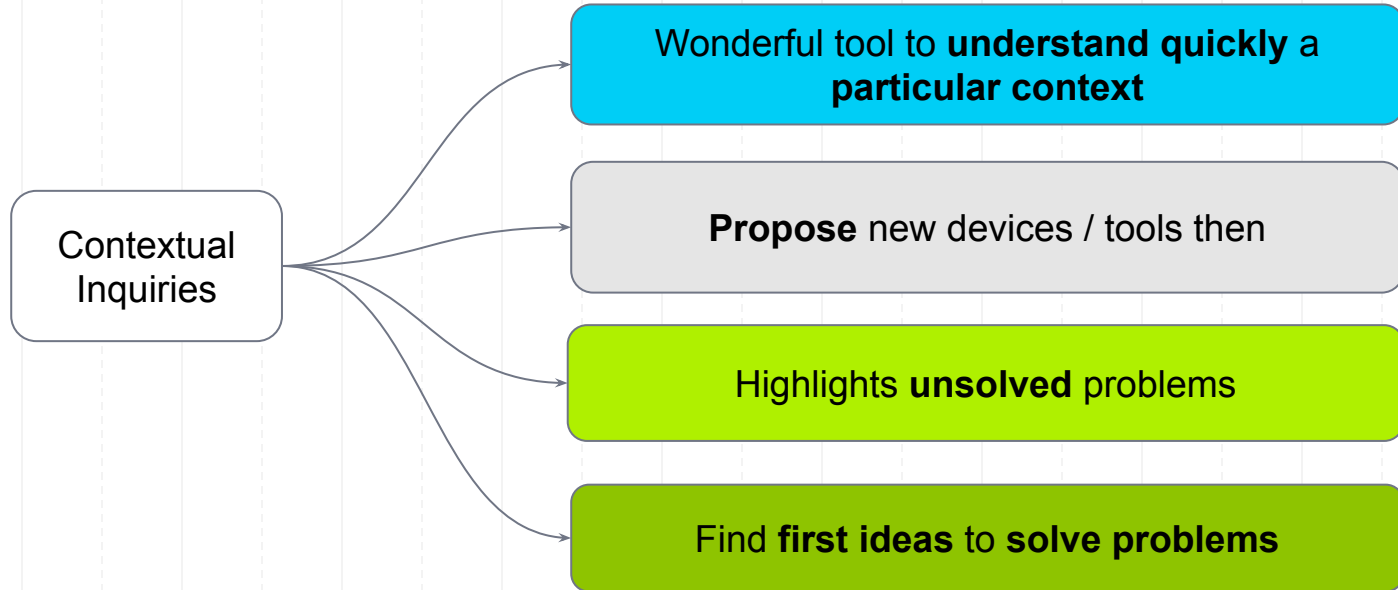Hyunyoung Kim (Université Grenoble Alpes, CNRS, LIG), Céline Coutrix (University of Stuttgart), Anne Roudaut (University of Bristol)

◉ **_Contextual Design_** (book)

Karen Holtzblatt, Hugh Beyer

◉ **_Non-Visual cooking : Exploring Practices and Challenges of Meal Preparation by People with Visual Impairments_** (article)

FRANKLIN MINGZHE LI, JAMIE DORST, PETER CEDERBERG, PATRICK CARRINGTON (Carnegie Mellon University, United States)

5. Conclusion

Contextual Inquiries

- Wonderful tool to **understand quickly** a **particular context**
- **Propose** new devices / tools then
- Highlights **unsolved** problems
- Find **first ideas** to **solve problems**

Thank you for your attention
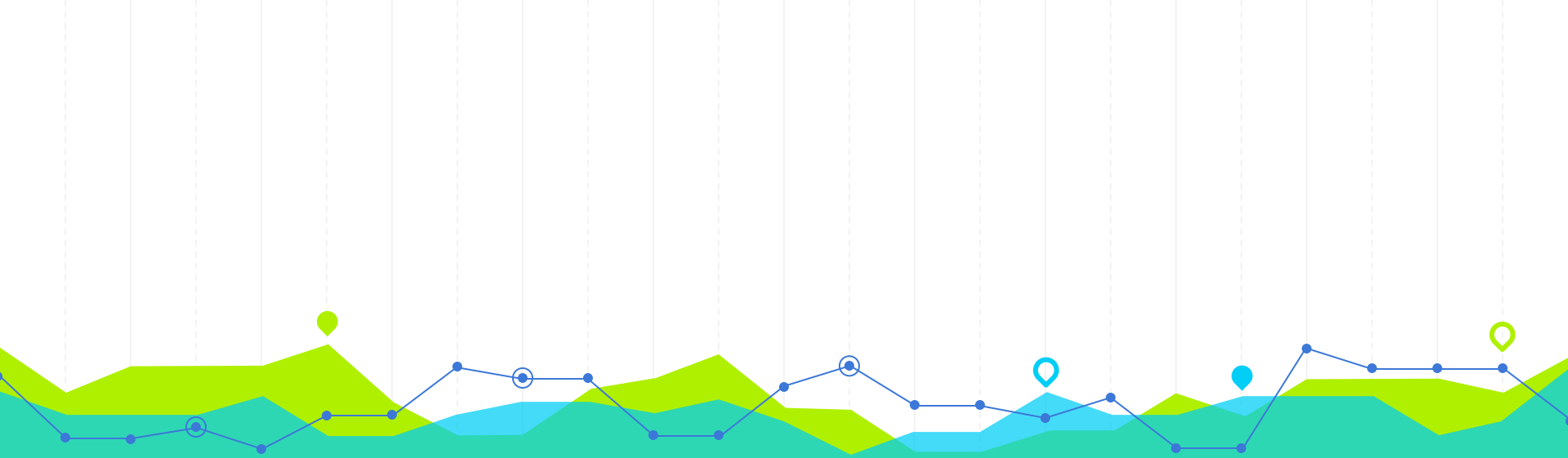
Any questions?

Annexes

3. Examples in the litterature

3.2. Non-Visual cooking : Exploring Practices and Challenges of Meal Preparation by People with Visual Impairments

Why ?

Understand key **challenges**, **concerns**, **risks** encountered while preparing meals by **visually impared people**

How ?

Watch Youtube Videos

Interview impaired persons

3. Examples in the litterature

3.1. Non-Visual cooking : Exploring Practices and Challenges of Meal Preparation by People with Visual Impairments

Collect Data ?

From Observations

122 Youtube Videos :
Mean of ~700s duration

From Interviews

Transcript of the interviews

3. Examples in the litterature

3.1. Non-Visual cooking : Exploring Practices and Challenges of Meal Preparation by People with Visual Impairments

Parameter Settings?

Table 3: Participants' demographic information

Participant	Age	Gender	Vision Impairment Description	Learned Cooking *Before or After* Vision Loss
P1	25	Male	Totally Blind, Congenital	After
P2	33	Male	Legally Blind, Congenital	After
P3	32	Non-binary	Legally Blind, Congenital	After
P4	19	Male	Totally Blind, Congenital	After
P5	36	Male	Totally Blind, Acquired (7 years)	Before
P6	24	Female	Legally Blind, Congenital	After
P7	22	Male	Totally Blind, Congenital	After
P8	35	Male	Legally Blind, Acquired (1 year)	Before
P9	28	Female	Totally Blind, Congenital	After
P10	31	Female	Legally Blind, Congenital	After
P11	55	Male	Legally Blind, Congenital	After
P12	48	Female	Legally Blind, Congenital	After

- Average age : **32**
- **60 to 75 min** interviews

3. Examples in the litterature

3.1. Non-Visual cooking : Exploring Practices and Challenges of Meal Preparation by People with Visual Impairments

Form of the result ?

Code to determine **common themes** in the participant's answers

Comparison of users **feeling** on the spotted themes

Use a lot of **quotations**