

design method booklet

ACTIVITY BASED NEED PROFILING METHOD

sijuan huang & Marinka Roest

The activity-based need profiling method

design method booklet

August 2024

Design method

Siyuan Huang and Marinka Roest
Pieter Desmet and Haian Xue

Text and layout

Marinka Roest

Contact

Marinka Roest

Table of contents

| | |
|--|-----------|
| Introduction | 5 |
| A design method overview | 6 |
| | |
| Background information | 8 |
| The typology of fundamental needs | 9 |
| Introspective activities | 12 |
| | |
| The preparation phase | 14 |
| Get to know the design method | 15 |
| Define a scope for your design project | 16 |
| | |
| The data collection phase | 17 |
| Through external participants | 18 |
| Through introspective activities | 19 |
| | |
| The data overview phase | 21 |
| The visual need wheel | 22 |
| A set of narrative cards | 24 |
| A data sheet with statements | 25 |
| | |
| The exploration phase | 26 |
| The quick start play mode | 28 |
| The adventure play mode | 30 |
| The deep dive play mode | 32 |
| | |
| The realisation phase | 34 |
| Ideation | 35 |
| Evaluation and iteration | 36 |
| | |
| Further reading | 38 |
| Design project inspiration | 39 |
| Reading materials | 43 |
| | |
| Glossary | 44 |

Introduction

This guide provides a detailed walkthrough of the activity-based need profiling method, a design process grounded in the typology of thirteen fundamental needs by Desmet and Fokkinga. It aims to offer a practical approach for integrating this typology into the design process.

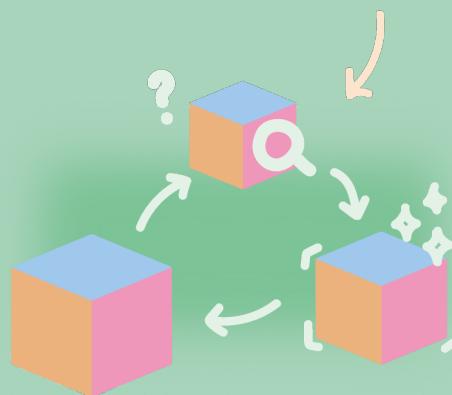
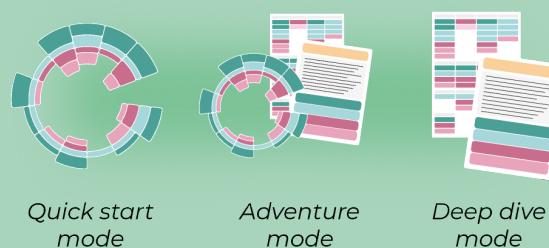
By examining how each of the thirteen fundamental needs is fulfilled within a specific activity, the method categorises four need fulfilment states: satisfied, harmed, drivers and non-drivers, that explain how a fundamental need is affected by the experience. This assessment yields a comprehensive snapshot of the activity's impact on need fulfilment. The guide further introduces three distinct strategies, or play modes, to analyse this data, enabling the formulation of innovative and original design briefs to advance the design process and create design concepts.

While this booklet outlines the method with instructions and examples, it's important to remember that there is no one-size-fits-all approach. We encourage you as designers to exercise your intuition and creativity, adapting the method and toolkit to suit your project's unique requirements.

Happy designing!

A design method overview

This overview summarises the five phases of the activity-based need profiling method through its design activities and its supporting materials.



BACKGROUND INFORMATION

This chapter introduces some background information on the activity-based need profiling method, which will help you to understand the basis of the design method, what frameworks it uses and some necessary information to complete the design process.

The activity-based need profiling method investigates an activity (*activity-based*) and which needs this activity fulfils and how (*need profiling*). An activity is useful for this type of research, because it encompasses users, contexts, interactions, products and how these aspects are connected.

The typology of fundamental needs

The typology of fundamental needs is developed by Pieter Desmet and Steven Fokkinga to support design for wellbeing. The typology consists of thirteen fundamental needs. These thirteen needs are universal, which means that everyone experiences and fulfils these needs, consciously or unconsciously. Though, the ways in which they fulfil their needs may differ, because everyone is unique. The satisfaction of each of these thirteen needs can positively influence a person's feeling of wellbeing. The thirteen fundamental needs and their descriptions are listed on the next page.

Visit needtypology.com or scan the QR-code to find more information on the typology of fundamental needs

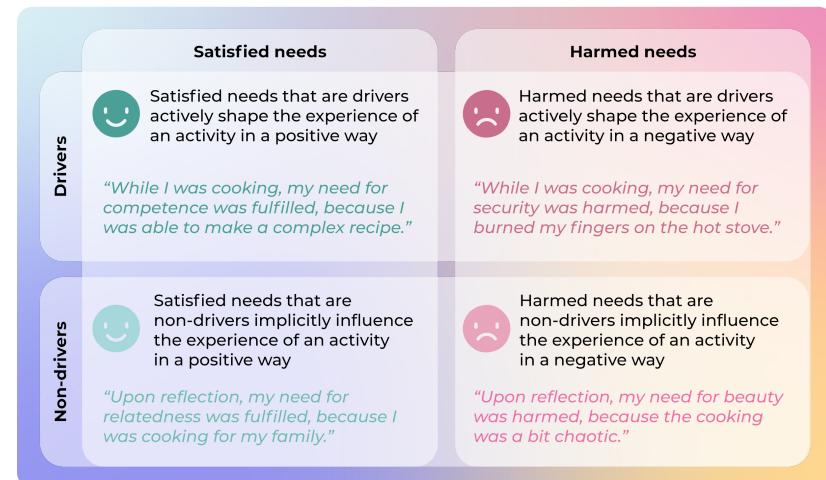


| | |
|--------------------|--|
| Autonomy | Being the cause of your actions and feeling that you can do things your own way |
| Beauty | Feeling that the world is a place of elegance, coherence and harmony |
| Comfort | Having an easy, simple, relaxing life |
| Community | Being part of and accepted by a social group or entity that is important to you |
| Competence | Having control over your environment and being able to exercise your skills to master challenges |
| Fitness | Having and using a body that is strong, healthy, and full of energy |
| Impact | Seeing that your actions or ideas have an impact on the world and contribute to something |
| Morality | Feeling that the world is a moral place and being able to act in line with your personal values |
| Purpose | Having a clear sense of what makes your life meaningful and valuable |
| Recognition | Getting appreciation for what you do and respect for who you are |
| Relatedness | Having warm, mutual, trusting relationships with people who you care about |
| Security | Feeling that your conditions and environment keep you safe from harm and threats |
| Stimulation | Being mentally and physically stimulated by novel, varied, and relevant impulses and stimuli |

Need fulfilment categories

The ways in which an activity affects a person's need fulfilment are called 'need fulfilment categories'. There are four categories, divided over two dimensions: satisfied and harmed needs, drivers and non-drivers.

- **Satisfied needs** are fundamental needs that are positively affected by an activity. They can be drivers or non-drivers.
- **Harmed needs** are fundamental needs that are negatively affected by an activity. They can be drivers or non-drivers.
- **Drivers** are satisfied or harmed needs that actively shape the experience of an activity
- **Non-drivers** are satisfied or harmed needs that implicitly influence the experience of an activity.



Need fulfilment styles

Need fulfilment styles explain another angle of looking at an activity in relation to fundamental needs. Where the need fulfilment categories explain the effect of an experience on need fulfilment, need fulfilment styles describe more concrete ways or strategies in which people consciously or unconsciously fulfil their needs through the activity. An overview of the four need fulfilment styles and their subcategories is shown on the next page.

Introspective activities

Introspective activities describe ways of collecting data through your own experiences. When introspecting, you treat your own experiences, thoughts, feelings, emotions, moods and sensations as valuable data and actively record and document this.

Introspective data can be useful especially when researching subjective topics, such as need fulfilment, like in this design method. It can also be a useful approach when you're researching something that is difficult to access otherwise (e.g. sleeping) or when you want to research something over a longer period of time.

If you want to read more about introspection and dive deeper into the topic, read the paper '**Researcher introspection for experience-driven design research**' (2019) by Haian Xue and Pieter Desmet.



Temporal need fulfilment

Retrospective need fulfilment

Needs are satisfied or harmed by something that has happened in the past

"Seeing the flowers my friend gave me when I was cleaning the house, fulfilled my need for relatedness."

Anticipatory need fulfilment

Needs are satisfied or harmed by something that is to happen in the future

"Putting the watermelon away after grocery shopping made me feel excited about eating it later, which fulfilled my need for stimulation."

Postponed need fulfilment

Needs are harmed or not satisfied in the present, but are planned to be satisfied in the future.

"I've been working behind my laptop for quite a while now, so I will take a walk later to fulfil my need for fitness."



Strategic need fulfilment

Visionary need fulfilment

Needs are harmed or not satisfied in the present, in order to satisfy them in a more pleasing way in the future.

"I could read my new book now to fulfil my need for stimulation, but I would prefer to wait until this evening, when I have more time to really get into the story."

Prioritising need fulfilment

Needs are harmed or not satisfied, in order to satisfy another need.

"Running for more than a few kilometres is not comfortable, but I am happy to work on my need for fitness."



External need fulfilment

Action-based need fulfilment

Needs are satisfied or harmed through the activity in itself or aspects of the activity.

"Solving this crossword puzzle satisfies my need for competence."

Contextual need fulfilment

Needs are satisfied or harmed through external, environmental factors present in the context.

"When participating in a bicycle race, my need for recognition is satisfied by the cheers from the crowd."



Internal need fulfilment

Cognitive need fulfilment

Needs are satisfied or harmed through mental processes like thoughts, moods or feelings, instead of actual external happenings.

"My roommates want to discuss our upcoming holiday, but I'm not in the mood; it harms my need for relatedness."

The PREPARATION phase

This chapter introduces the preparation phase of the design process. In the preparation phase, you will (re) familiarise yourself with the background information and the design method and choose an activity to investigate.

Get to know the design method

Most of the background information is threaded throughout the whole process, so (re)familiarising yourself with the information introduced in the previous chapter ensures a smoother and more efficient design process. It also helps you to understand what the goal of each phase is.

Next to the background information, it can be helpful to flip through the booklet to get to know the design method and its phases and look at the project inspiration. Being familiar with the process makes it easier for you to decide whether the method is suited for your project or how you can adjust it to support your project better. Some prompting questions are listed below to help you assess how the design method fits with your design project. Feel free to add your own!

Will I do this project **individually or collaboratively**? In what way are the phases best suited for individual or collaborative projects?

What is the **time frame** of my project? Which phases do I prioritise and which specific parts have the most value to my project?

In what way will I **collect the information** on the topic I will investigate? Will I use my own experiences as input (introspection) or those of others?

Define a scope for your project

The activity-based need profiling method investigates an activity based on its experience and how it fulfils people's fundamental needs. The design method supports research into many different types of activities, but it's up to the you to clearly define the scope of the activity, to make use of the design method to its fullest. Listed below are some guidelines. The last guideline is specifically useful when you use introspective activities in the data collection phase. You are also free to add your own criteria!

The scope of the activity is **clearly defined**. Clearly define the frame of the activity, for example where it begins and ends and which interactions and types of activity instances you want to investigate in particular. A clearly defined activity will make the rest of the process more efficient.

The activity is **subjective and experiential**. The design method will be of the most value when the activity is a subjective and experiential one. The design method is equipped with strategies to deal with these nuanced and personal types of activities and to develop novel and authentic design concepts.

The designer is a **complete member researcher**. When you are doing introspective activities to collect data, it is important that you are a complete member of the target group of your activity. Your collected data is more valuable when you have previous experience in the activity and are familiar with its background.

The DATA COLLECTION phase

This chapter introduces the data collection phase of the design process. In the data collection phase, you will collect information on the need fulfilment in the chosen activity through the four need fulfilment categories: satisfied needs, harmed needs, drivers and non-drivers. You can collect this data through external participants or through introspective activities.

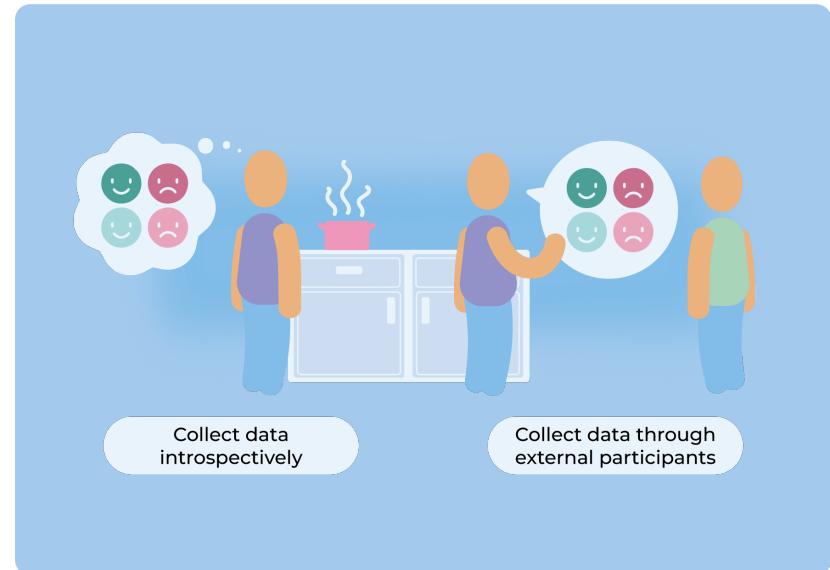
Data from external participants

With this approach, you collect your need fulfilment data from external participants, people who engage in your chosen activity on a regular basis other than yourself.

You ask them about their experiences with the specific activity, what they like, what they don't like and why. Shape your questions in such a way that it helps you to find out which needs are satisfied, which are harmed and in what effect they have (driver or non-driver). If it suits your project and target group, you can introduce the typology of fundamental needs in a way that suits them and use this as a prompt for your questions. Keep in mind that the reasoning behind their answers is important to document, as this is what makes your data personal and authentic.

You can collect your data in two different ways; through surveys or through interviews, possibly supported by observation. The output of the data collection can be a set of short statements or quotes, or a set of longer narratives or stories, accompanied by a list of fulfilled needs.

Statements or quotes are more suited to large numbers of participants or a short-term project. In other cases narratives are more suitable to include more nuance in your data.



Data from introspective activities

With this approach, you collect your need fulfilment data from your own experiences when you engage in your chosen activity. This approach is especially valuable to gather rich and detailed data on the activity, or when an activity is difficult to access or observe otherwise.

Through introspection, you aim to learn more about your own need fulfilment within the activity over a period of time, so that it contains multiple instances of the activity. You document any type of data that is relevant to the activity instance and your need fulfilment, e.g. things that trigger a reaction or an emotion, the time of day, the types of interactions. You use the four need fulfilment categories (satisfied and harmed needs, drivers and non-drivers) as a guideline.

To structure the introspective process and create some transparency, you can create a data collection plan, where you define what, when, where and how you're introspecting. See below an example setup of a data collection plan.

The output from introspective data collection is a set of narratives, accompanied by a list of fulfilled needs. Each of the narratives describes one activity instance. The narrative can include anything that you find relevant to your need fulfilment, such as triggers that elicited a reaction or the motivation behind an activity instance.

To keep the analysis of the data manageable yet valuable, we suggest writing narratives of 100 to 200 words and collecting between 15 and 25 narratives.

When working collaboratively, you can each introspect individually and combine your data in the data overview.

| | |
|---|--|
|  | Data collection goal Collect introspective data about the activity of preparing food in a home kitchen environment, within the frame of the typology of fundamental needs and their need fulfilment category (satisfied, harmed and neglected) |
|  | Topic of investigation The topic of the study is ' food preparation-related activities in a home kitchen environment '. To qualify, the activity instance has to contain multiple steps or interactions. |
|  | Study duration The introspection takes two weeks (14 days). This ensures variety in the activity instances (e.g. weekends and workdays etc.) |
|  | What data will be collected and when? At the start of the activity: activity instance basics (type, reason, steps etc.) During the activity: feelings, emotions and reasons for these reactions; positive or negative After the activity: short narratives for each activity instance, involved needs and categories |
|  | How will the data be collected? During the activity: through messages to myself (texts, audio, photo) After the activity: collect data and narratives in a spreadsheet overview |

The DATA OVERVIEW phase

This chapter introduces the data overview phase of the process. The data overview contains a visual need wheel and a more detailed part, which summarise the information gathered in the data collection phase. The data overview will support the formulation of design briefs in the next phase.

When working with external participants or collaborative introspection, you combine your data into one data overview. When working individually, your data overview will consist of your data only.

The visual need wheel

The need wheel is a visual summary of your data, which will show you directly which fundamental needs are affected in which way.

The outer two layers concern the satisfied needs (green-blue) and the inner two layers concern the harmed needs (pink). The darker shades represent the drivers and the lighter shades represent the non-drivers. There are three different layer sizes. The larger the layer segment, the more that need and need category are represented in the activity. The layer size is dependent on the amount of representations on the activity, and it is up to you to create a suitable distribution.

To create the need wheel, you need to know how many times each of the fundamental needs is experienced during the activity and in which need fulfilment category.

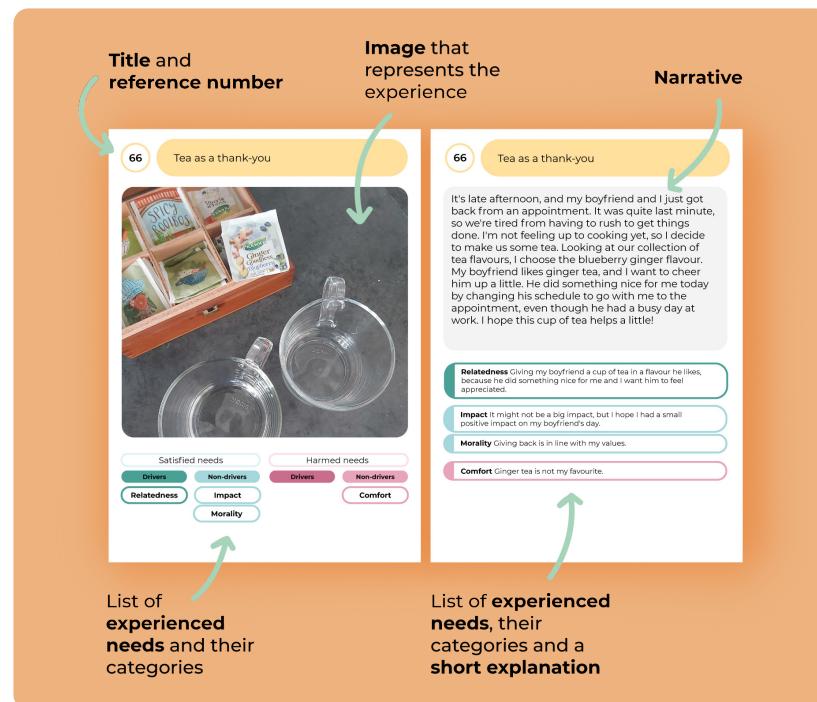
An example of a need wheel is shown on the next page.



A data sheet or a set of narrative cards provide you with the opportunity to take a deeper look into the experiences and find explanations for the different need fulfilments.

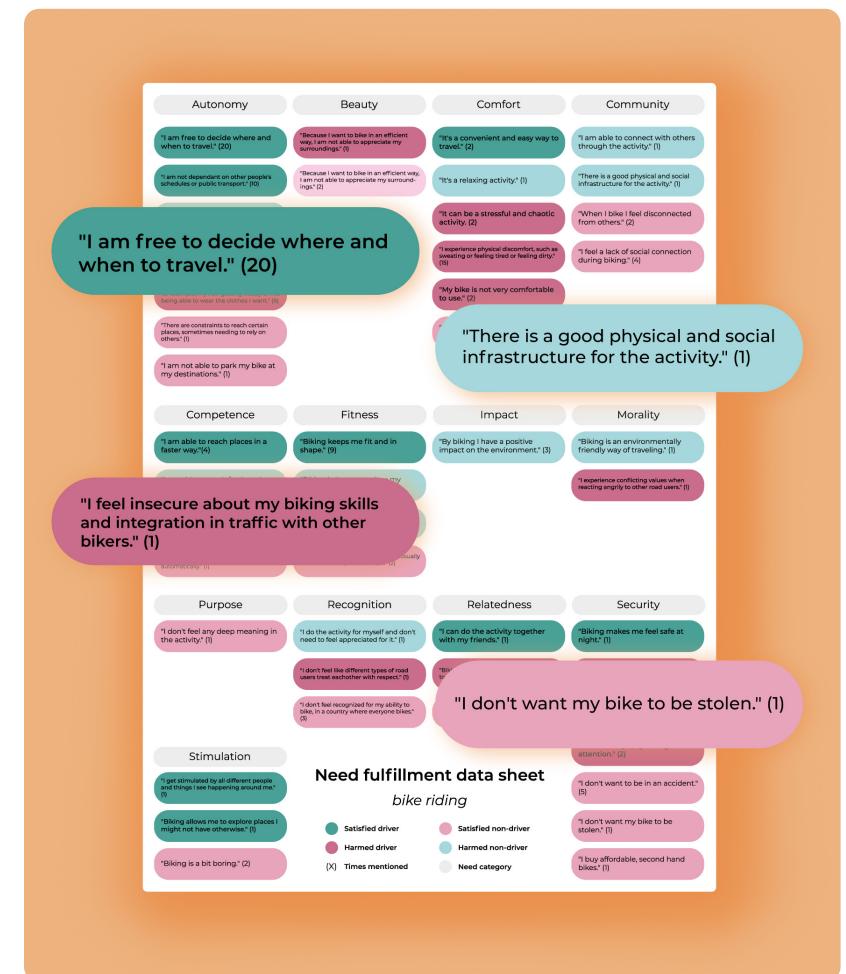
A set of narrative cards

Narrative cards are suited when you have collected narratives in the data collection phase. Narrative cards are two sided cards that represent one activity instance each, which means that narrative cards are always used as a set. One side of the narrative cards represents an overview of the activity instance with an image and a list of experienced needs. The other side is more detailed, with the written narrative and the list of experienced needs with a short explanation.



A data sheet with statements

A data sheet collects your data in one place, and is most suited when you have collected statements or quotes in the data collection phase. These statements can then be organised based on the fundamental need and need fulfilment category they support.



The EXPLORATION phase

This chapter introduces the exploration phase, which consists of three play modes to translate the data overview into design briefs. The three play modes each contain a set of focuses or approaches.

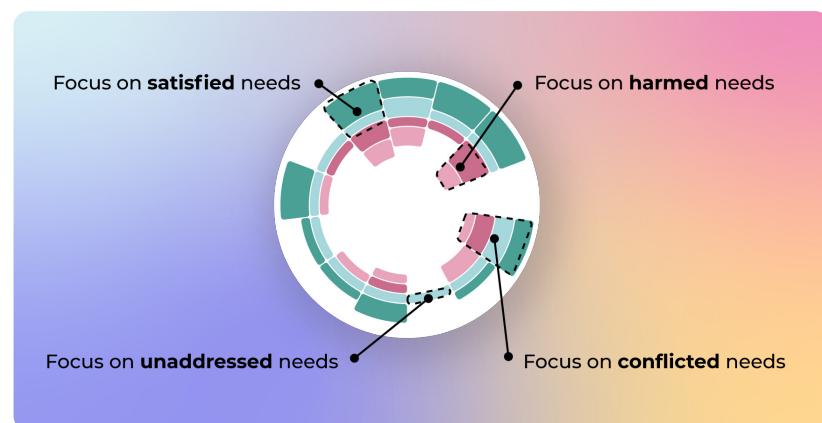
The three play modes: quick start mode, adventure mode and deep dive mode use different aspects of the data overview to gather insights. You can use these insights to formulate a design brief. Each of the play mode is accompanied by a corresponding design brief card. Design brief cards guide you through the play modes, from focus to design brief.



The quick start play mode

The quick start mode looks at the need wheel only. There are four aspects you can focus on.

- **Satisfied needs:** Focus on what works well in the activity and the needs that are experienced in a positive way. Here, your attention is on the green-blue ring of the need wheel, both drivers and non-drivers.
- **Harmed needs:** Look at aspects of the activity that don't work well and the needs that are experienced negatively. This involves looking at the pink layer of the need wheel, both drivers and non-drivers.
- **Unaddressed needs:** This focus looks at the individual needs or 'pizza slices' that are (almost) empty. You look for needs that are less represented in the activity.
- **Conflicted needs:** This approach is about focusing on needs that appear to be both satisfied and harmed at the same time.



Quick start mode



1 Focus What are you focusing on?



Satisfied needs

Needs that are represented in the wheel in a positive way



Harmed needs

Needs that are represented in the wheel in a negative way



Unaddressed needs

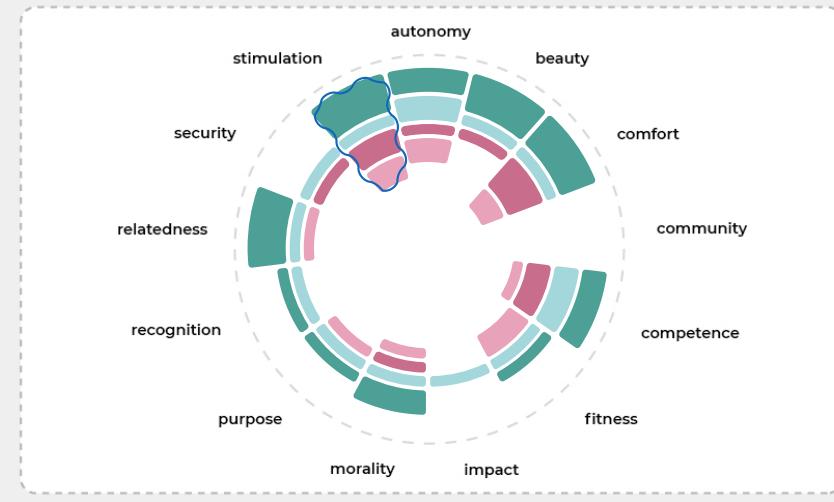
Needs that not or barely represented in the wheel



Conflicted needs

A single need that is satisfied and harmed at the same time

2 Exploration Which wheel segment(s) are you looking at?



3 Insights Why is this wheel segment interesting to you? What insights does it provide?

Stimulation can be both physical (senses) and mental (boredness etc.). Food-related activities can satisfy and harm both of them at the same time in multiple ways.

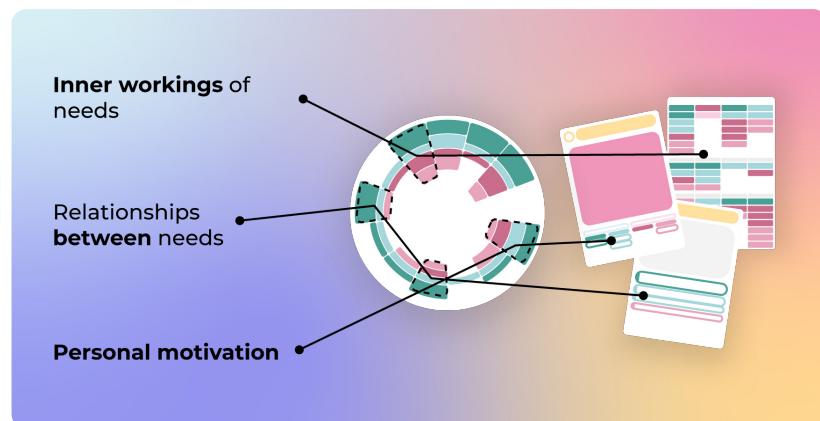
4 Design brief Write down your design brief here. Which design opportunities do the insights address?

My design makes users aware of how different types of stimulation can influence their experience in the kitchen.

The adventure play mode

The adventure mode looks at both the need wheel and the more detailed data part and the connections between them. There are three approaches to take.

- **Inner workings of needs:** This focus concerns the buildup of needs; the structure of the satisfied needs, harmed needs, drivers and non-drivers. Narrative cards or the data sheet can provide background information on this buildup.
- **Relationships between needs:** This focus looks at relationships between needs. These can be needs that are related to each other or needs that have similar buildups.
- **Personal motivation:** You can use this approach when there is a specific segment in the need wheel that catches your attention. You can also look at segments that are specifically related to your design project.



Adventure mode

1 Focus What are you focusing on?



Inner workings of needs
Exploring the buildup of single needs, focusing on the drivers and non-drivers.

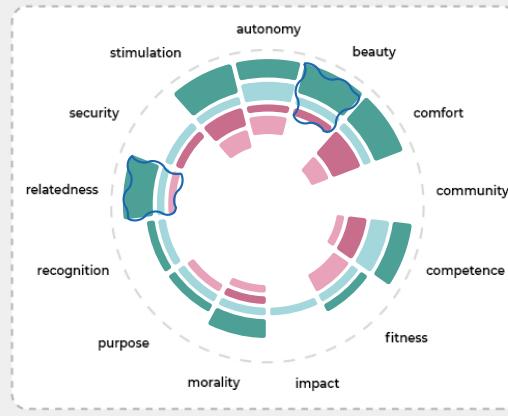


Relationships between needs
Exploring relationships between needs, possibly focusing on drivers and non-drivers.



Personal motivations
You have a project goal or are curious about something, leading you to focus on a specific piece of the data overview.

2a Exploration Which wheel segment(s) are you looking at?



2b Exploration Which narrative connects to the wheel segment?

#65 Collaborative coffee brewing

#68 Putting away the groceries

#83 Gnocchi, music and being appreciated

#85 The pros and cons of emptying the dishwasher

3 Insights Why is this connection interesting to you? Are there drivers or non-drivers involved? What insights does it provide?

Why do these needs follow the same pattern? Beauty is mostly about things being 'right'. Relatedness is mostly about care and attention. Combinations are about being in tune with each other. The pattern is based on the needs being based on the same kind of personal intuition.

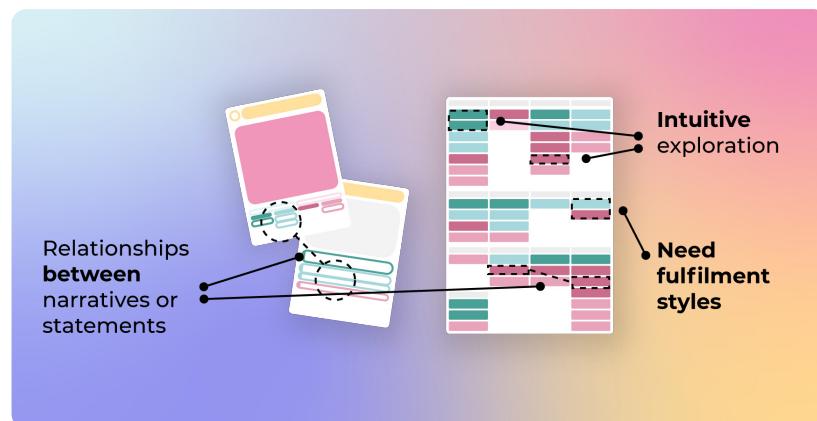
4 Design brief Write down your design brief here. Which design opportunities do the insights address?

My design helps people living together to create rituals for food-related activities through intuition and feelings of harmony.

The deep dive play mode

The adventure mode looks at only the data sheet or the narrative cards. This mode allows you to dive deep into the detailed data that you've gathered. There are three approaches you can take.

- **Relationships between narratives or statements:** This approach looks at relationships or patterns between narratives or statements. For example, patterns in time, activity type or needs.
- **Intuitive exploration:** This approach allows you to focus on anything that catches your attention or sparks your imagination. You are free to follow your intuition.
- **Need fulfilment styles:** This approach relies on the need fulfilment styles, introduced in the chapter 'Background information'. The need fulfilment styles allow you to understand underlying motivations for the activities or uncover patterns between narratives or statements.



Deep dive mode

1 Focus What are you focusing on?



Relationships between narratives
Exploring similarities or patterns between narratives and their attached needs and need fulfilments.



Need fulfilment styles
Exploring the narratives through need fulfilment styles by identifying patterns or similarities.



Follow your intuition!
Explore the narratives and follow your intuition. Is there any narrative or statement that sparks your imagination?

2 Exploration Which narrative(s) speak to you? Which patterns do you see?

I want to look further into the need for morality, to learn more about value-based needs.

- #66 Tea as a thank-you
- #72 Loud kettles and empty cupboards
- #74 A simple lunch
- #80 Eating fries for dinner
- #81 Heating up leftovers
- #86 Cleaning after cooking

3 Insights Why is this narrative or pattern interesting to you? What insights does it provide?

Morality is often about how I think another need should be fulfilled or is related to need fulfilment.

- *Fitness: value to eat healthy*
- *Purpose: value to be productive (which is ambiguous)*
- *Relatedness: value to help or care for others*

Morality is often the motivation to do or not do something. Some values are outdated but persistent.

4 Design brief Write down your design brief here. Which design opportunities do the insights address?

My design assists users in determining whether values are personal values or learnt values and to mitigate conflicts that arise (in kitchen related activities)

The REALISATION phase

This chapter introduces the final part of the design process, the realisation phase. The realisation phase is kicked off with an ideation process, which results in a design concept. Following ideation, it is important to test and validate your concepts, and make iterations.

Ideation

In the ideation phase, you use the design brief(s) you formulated in the exploration phase to come up with design concepts. You are free to use as many or as little design briefs as you like, or combine some to create a more extensive design goal, as long as it fits your design project. Sometimes it can be difficult to come up with ideas, so below are listed some tips to get started!

Define a goal for ideation. Determine what you would like to get out of the process. One elaborate design concept? Several smaller ideas?

Write down your initial ideas. You might have collected some initial ideas during the design process. Writing these down can help you to clear your mind.

Go back to previous parts of the process. Going back to the data overview or even your collected data can be inspiring! It will also help connect your concepts back to actual experiences.

Switch between different types of ideation. Switching between ideating and prototyping can help to reset your mind. Switching environments or looking at existing products might also help!

Evaluation and iteration

Once you have developed your design concepts, it is of importance to test and validate them.

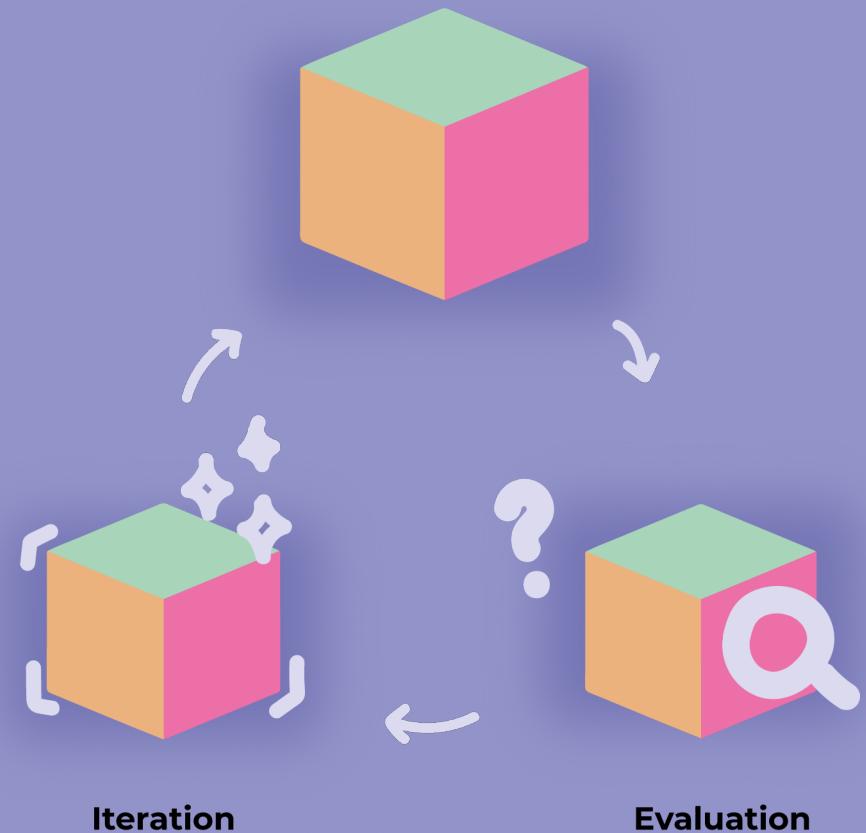
Because your design concepts are based on something that is as subjective as the typology of fundamental needs, it is valuable to understand how members of your target group receive your design concepts. Often, people experience situations and products through the lens of their own values or previous experiences, which could affect how they perceive or use your design concepts.

When you have used introspection in your data collection phase, it is also good to keep in mind that this means that only your experiences, or those of you and your project group, are the basis of your design concepts. To be able to generalise your design concepts, it is a good idea to investigate whether your concepts resonate with others as well.

Based on your testing and validations you can iterate on your design concepts. For example, you can choose to adjust your concepts to support your design intentions better, or you can make sure your design concept supports the different perception that people might have.



Ideation & prototyping



Iteration

Evaluation

FURTHER READING

This chapter introduces some materials for inspiration and further reading. You can take a look at three design projects as inspiration for your own project. There is also a list of reading materials if you want to dive deeper into the design method and its background.

Design project inspiration

The following three pages show three different design projects that use the activity-based need profiling method. They differ in amount of time needed to finish the project, in whether you do them individually or in a group and in which parts of the design method they use.

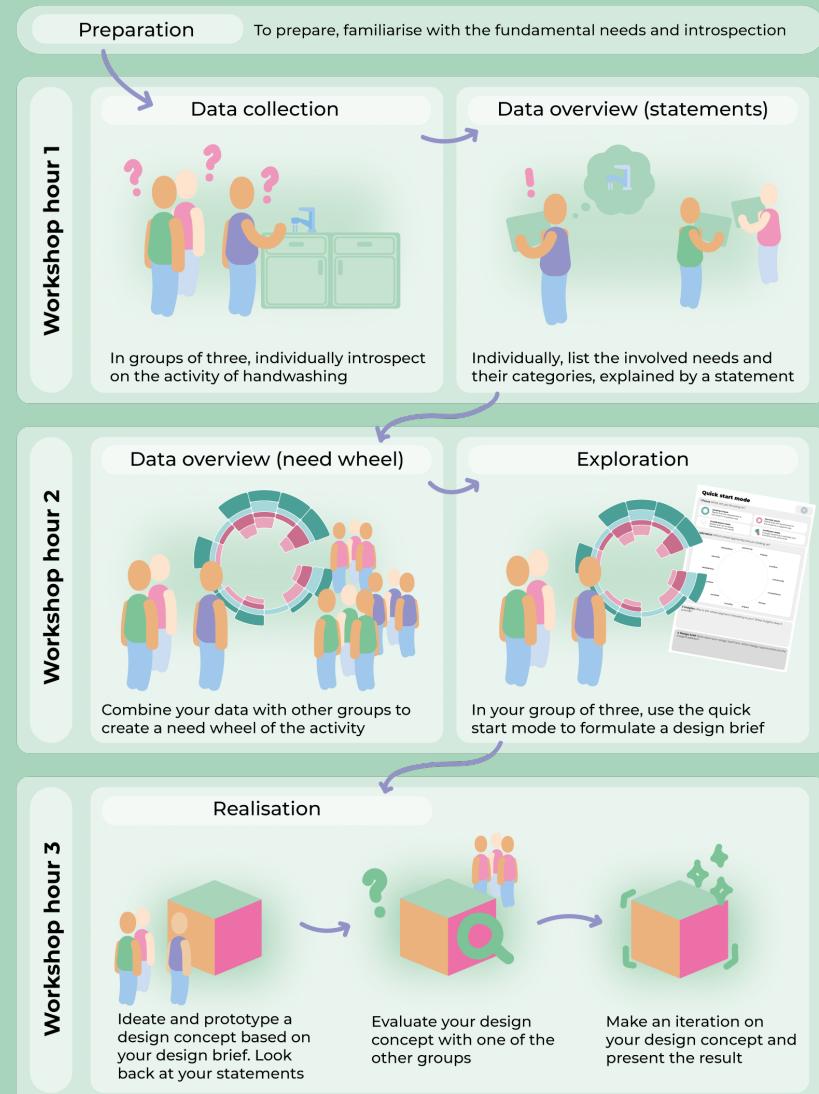
A design sprint. This design project suggestion covers an afternoon workshop with 12 designers. You alternate between working individually, in smaller groups and in larger groups.

A short design project. This individual, five-day design project suggestion uses data from external participants. Individually, you interview members of your target group and use the quick start mode and adventure mode to create a design concept.

A design project for a course. This design project suggestion covers a complete 10-week design course. You work together in a group of three to turn your introspective data into a design concept, using all three play modes.

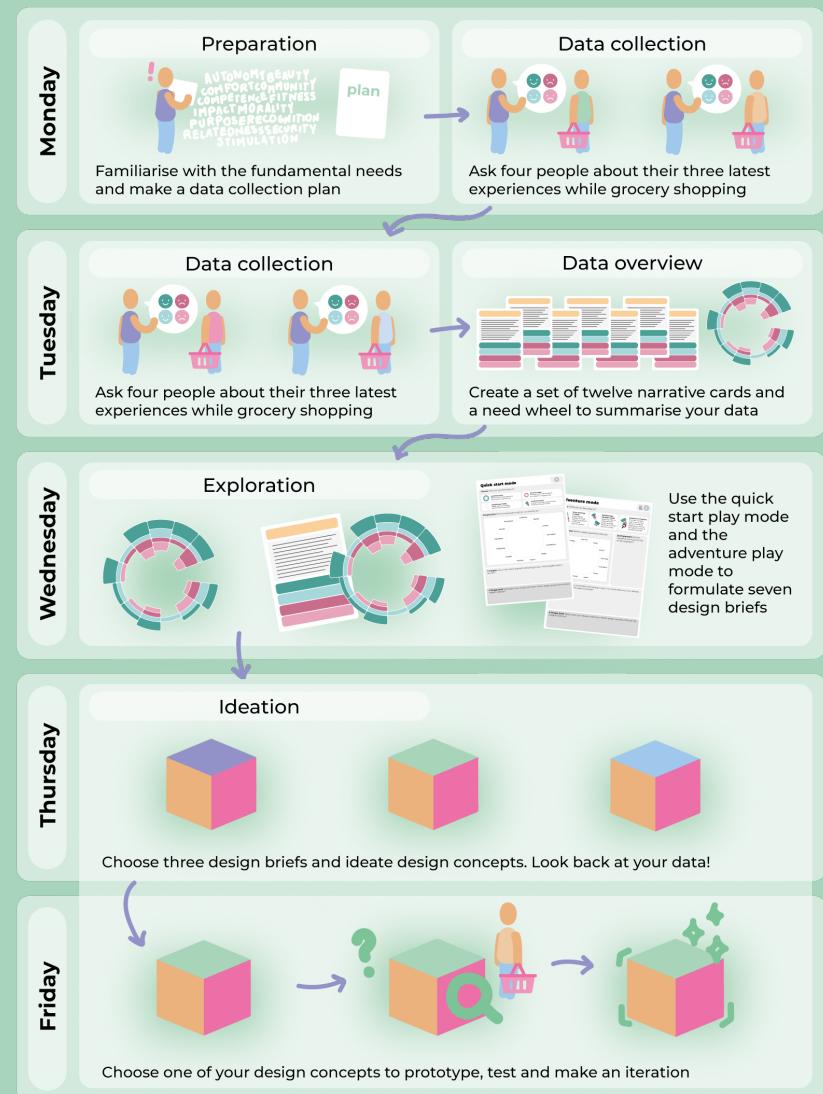
A design sprint

A collaborative afternoon workshop with 12 designers



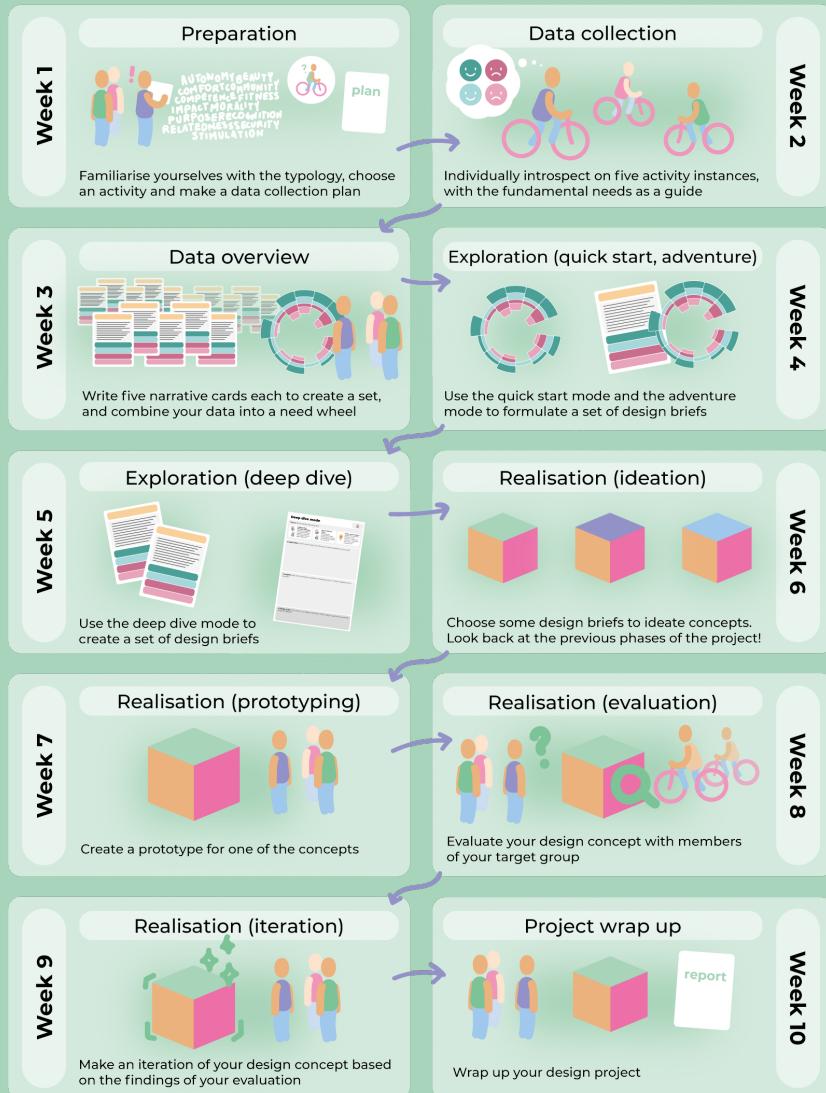
A short-term design project

An individual, week-long project with one designer



A design project for a course

A collaborative, 10-week design project with 3 designers



Reading materials

On the background and development of the activity-based need profiling method

'Introspection by design: Expanding the activity-based need profiling method with introspective activities through two case studies' by Marinka Roest (2024)

- » Available via the TU Delft Repository for master theses or via the Delft Institute for Positive Design

On the typology of thirteen fundamental needs

'Beyond Maslow's Pyramid: Introducing a Typology of Thirteen Fundamental Needs for Human-Centred Design' by Pieter Desmet and Steven Fokkinga (2020)

- » <https://doi.org/10.3390/mti4030038>

On introspection in relation to design

'Researcher introspection for experience-driven design research' by Haian Xue and Pieter Desmet (2019)

- » <https://doi.org/10.1016/j.destud.2019.03.001>

An essay about the context of design

'...in the dimension of Time. Thoughts about the context of designing' by J. Christopher Jones (1980)

- » [https://doi.org/10.1016/0142-694X\(80\)90025-3](https://doi.org/10.1016/0142-694X(80)90025-3)

A digital template folder

If you want to use the materials of the design method for your own project, you can download a digital template folder from the Delft Institute for Positive Design (diopd.org)

Glossary

Activity-based need profiling method

A human-centred design method that investigates activities and uses fundamental needs as its framework; described in this booklet.

Data sheet

A collection of statements about the need fulfilment in an activity, divided by their fundamental needs and need fulfilment categories.

Introspection; introspective activities

A way of collecting data that uses one's own experiences.

Narratives

Short stories that describe an experience.

Narrative card

A card that contains a narrative that describes an experience of an activity instance, as well as the need fulfilment and need fulfilment categories.

Need fulfilment categories

Describe how a need is affected by an experience. Contains satisfied needs, harmed needs, drivers and non-drivers

Need fulfilment styles

Describe strategies in which people use activities to fulfil their fundamental needs, consciously or unconsciously.

Need wheel

A visual representation of the need fulfilment in an activity

Play mode

A strategy to translate the collected data into a design brief. Contains the quick start mode, the adventure mode and the deep dive mode.

Typology of thirteen fundamental needs

A collection of thirteen needs that are considered universal and can be used for human-centered design.

PREPARATION



DATA COLLECTION



DATA OVERVIEW



EXPLORATION



REALISATION

