

DESIGNING FOR WELL-BEING DURING COVID-19

Converting daily activities into
[un]conscious pursuits of joy



Ezgi Orçun
MSc Design for Interaction
Graduation Thesis

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Graduation project

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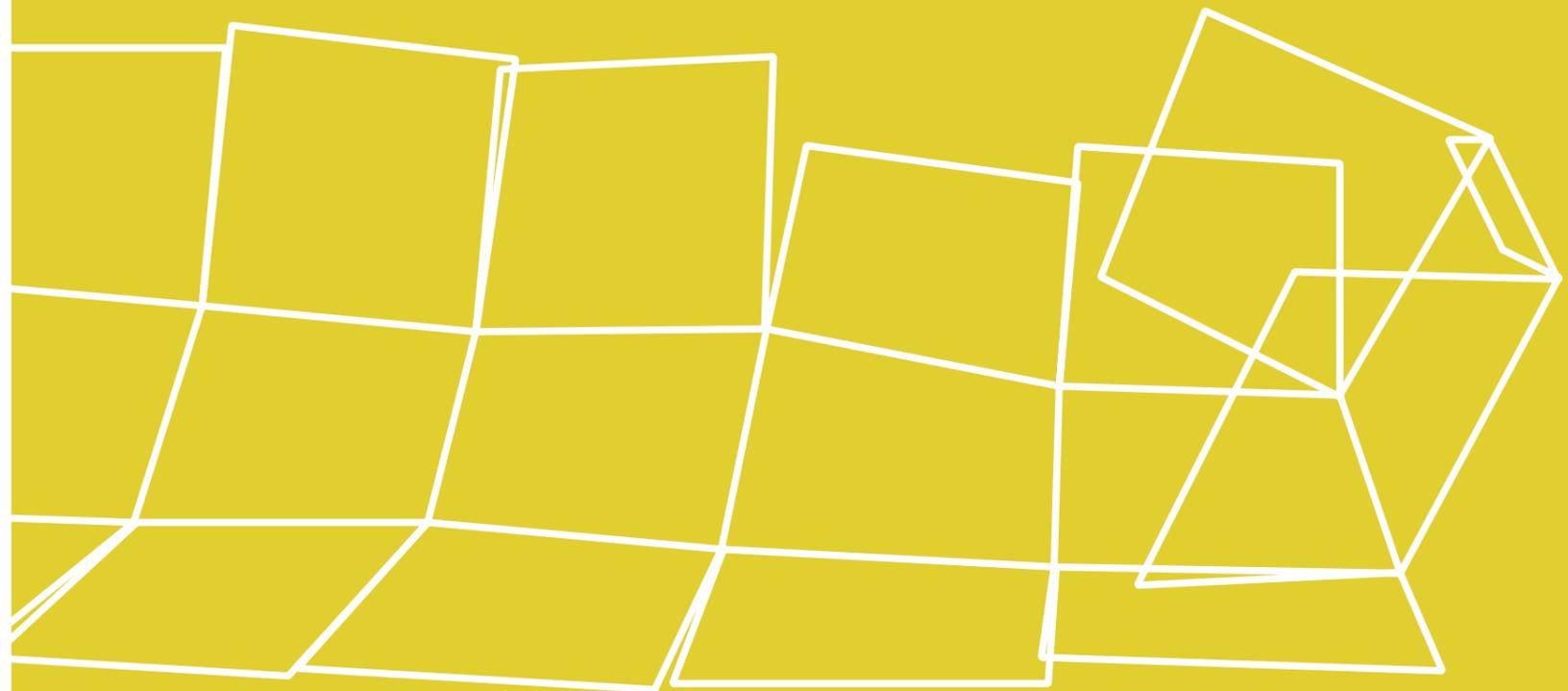
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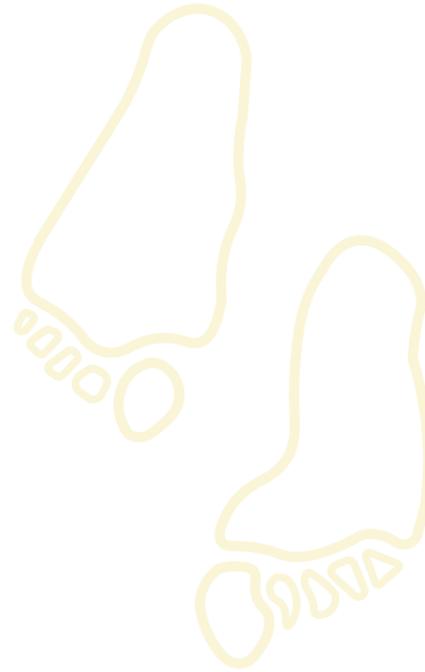
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Executive summary

The ongoing Covid-19 pandemic has led to an unprecedented public health crisis worldwide starting from the early days of 2020. Alongside the medical concerns, a set of measures called non-pharmacological interventions (NPIs) affected daily lives of people drastically, in turn having a negative impact on subjective well-being (Berg, 2021; Wang et al., 2020a, b).

One of the evident reasons for this is the obstruction of daily activities and disrupted routines of people. From a humanistic perspective routines and habits are built towards positive experiences as our behaviors are motivated by need fulfillment, and hence they are reliable sources contributing to one's subjective well-being.

Research by Desmet and Fokkinga (2020) states that there are 13 universal psychological human needs that are the basic requirements for the functioning of an organism. Supported by a body of research, these needs are 'built-in' to the human nature that fulfillment of them is subject to enhance a person's feelings of well-being (Ryff & Keyes, 1995; Ryan & Deci, 2000). This project focuses on contributing to the subjective well-being of young adults in daily life in the context of Covid-19, and for this theory of 13 Fundamental Needs is chosen to be operationalized.

The dynamics of 13 Fundamental Needs were explored for future possibilities to operationalize the theory and to understand the daily manifestations of need fulfillment by collecting daily moments. Through this intervention research, how the theory can be operationalized was explored. The observations of the intervention using this need-based theory showed an opportunity to lead people towards new and fulfilling engagements in daily life within the limits of the current NPIs.

Based on this understanding a constructive framework, influenced by experiential learning model, was built on sustaining enjoyable engagements.

According to this framework people would be motivated to repeat engagements either when they find or they think they will find joy through these engagements.

Generative interviews were conducted with 11 young adults to understand the effect of Covid-19 on their daily lives and routines, and in terms of need fulfillment. These interviews showed five main influential factors within the context, leading to languishing: not feeling in control and not motivated to take action, accompanied by a limited perception of behavior space.

Personas were developed in order to understand and address each of their needs better. The framework was detailed further as the findings were implemented. This new layer added to the framework defined the point of intervention using a need-based tool as well as the moment. The scope of the project was narrowed down to converting daily activities into pursuits of joy. Design criteria was refined and design vision was set as: encouraging young adults who are languishing to pursue joy in daily life by facilitating an experiential understanding and exploration of 13 sources of joy. Towards this goal a concept was created and refined through an iterative design process. Cue cards under 13 categories were created that lead to authentic and fulfilling experiences that makes the user focus on each of the 13 Fundamental Needs individually through the same activity. The concept was tested as a card set through the final test with 6 users over the course of 10 days, and the framework was validated as the need-based intervention led to sustained enjoyable experiences. A last set of iterations were made to design the user journey of the concept better to accompany long term use.

Unravel_cooking kit was created as the design implementation of the final concept: an explorative journey that aims to show how a mundane activity that has been overlooked can bear so many enjoyments.

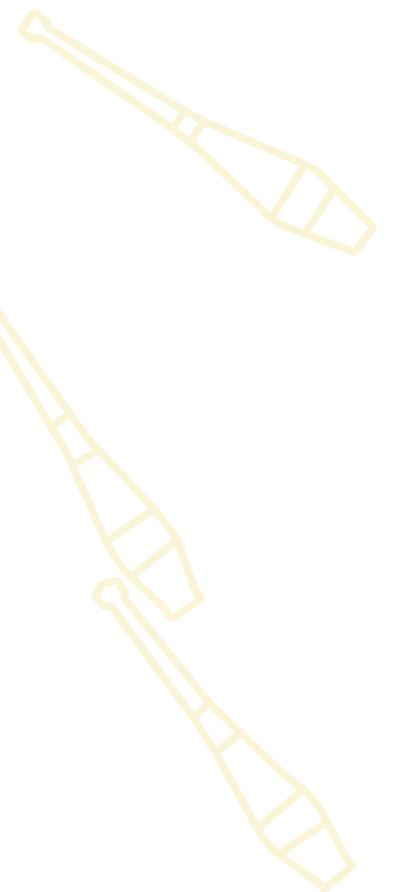


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Reader's guide & the framework narrative

This project has proceeded in line with the co-evolution model as the problem and solution spaces evolved together through constant iterations throughout the process (Dorst & Cross, 2001). The design problem was re-framed according to the findings of these first two phases until the design vision was defined at the end of phase 3. Two research phases took place independently from each other in the first half of the course of the project. Connecting these two research phases into the final concept is a framework on how to sustain joy through action. In order to present a coherent narrative to the reader, this framework is presented at the end of each research phase to show how the findings contributed towards the design concept. However, in real life, this framework took its current form during the conceptualization phase (3). This guide will give an overview of the phases in this thesis in regard to this framework.

Phase 1

How can the theory be used towards contributing to psychological well-being?

A framework on sustained enjoyable behavior from the findings

Phase 2

What is the impact of the context of Covid-19 on individuals in daily life?

Implementation of context findings to the framework

Phase 3

Where and how to trigger a pursuit of joy in the context?

Using existing actions to show diversity of and give control over sources of joy

Phase 4

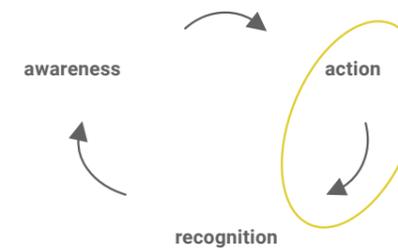
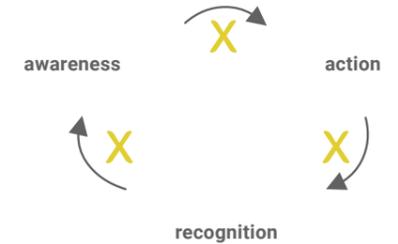
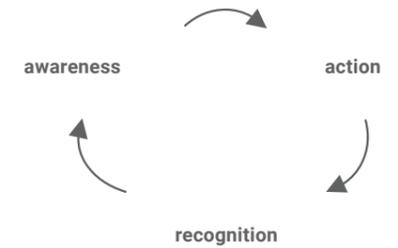
How to design for an experiential exploration of enjoyment in daily life?

A (cooking) card set for exploring sources of joy in mundane activities

Phase 5

How to implement the concept towards the desired interaction in the long term?

Unravel kit: An explorative journey that converts daily activities into pursuits of joy



The first phase starts by exploring how to operationalize the theory of 13 Fundamental Needs with the goal of designing a tool that contributes to subjective well-being in the context of Covid-19. The intervention with the theory reveals three possible uses that have a positive affect. From these findings it is theorized that there are three steps involved in engaging in enjoyable activities: awareness, action and recognition. A cycle combining all three steps can be used to establish a sustainable approach towards joy in daily life. Theory of 13 Fundamental Needs is positioned as 13 sources of joy to encourage initiating and sustaining enjoyable actions. The framework can be supported from each one of the steps using a need-based intervention.

The second phase explores the context of Covid-19 pandemic and seeks answers to the question of 'how did Covid-19 affect people's daily life and what is in the way of pursuing joy in life?'. Findings being applied to the framework shows lack of motivation for awareness to become action, limited behavior space and weariness for joy in action to be recognized and a state of languishing against recognition of enjoyment that would lead to affording awareness.

In the third phase design direction is set to emphasizing diversity in sources of joy to trigger action. Creative session facilitated during this phase shows a fear of failure towards taking action in pursuit of joy in life. This suggests a safe space is required for explorations in this domain. The point of intervention is defined as organic behavior; existing actions that are regularly engaged within routine. Concept 'recipes for joy' is chosen aiming to facilitate an experiential exploration that converts daily activities into pursuits of joy. Specifying further, mundane activities that are organically embedded into daily life are chosen to trigger this journey.

The fourth phase shows the design implementation of the findings so far towards the design vision. Cooking is chosen as the mundane activity to implement and develop the concept. A card set is designed with small, relevant and actionable cues to practice cooking tapping onto 13 sources of joy individually. Testing long term interaction with the concept validates the framework.

In the final phase a last set of iterations takes place to design the journey around the cooking card set to facilitate long term interaction. This last step is to make the interaction more engaging and encourage dynamic phases of exploration, aiming to accompany the user through four stages of the desired journey. Unravel_cooking kit is created as the design implementation of the final concept.

 Key insights leading to decisions towards the final concept are shown in these boxes.

Glossary

Covid-19 pandemic: The ongoing global health crisis that has been declared a pandemic by the World Health Organization on 11 March 2020.

Non-pharmacological interventions (NPIs): Preventive measures that are enforced by the government including personal restrictions and physical-distancing policies, such as social distancing, wearing face masks in public, limitations on number of people indoors as well as mass confinement and compulsory home isolation. NPIs have the potential to modify, for better or for worse, lifestyle behaviors.

Subjective well-being (SWB): is the scientific term used to describe how people experience and evaluate their lives. It refers to momentary happiness and one's enjoyment and satisfaction of life in general; thinking and feeling that your life is going well. In this project, fulfilment of 13 Fundamental Need(s) is adopted as the underpinning of positive experiences that contribute to subjective well-being.

13 Fundamental Needs (13FN): A typology of 13 psychological human needs developed by Desmet and Fokkinga (2020). Fulfilment of these needs are the source behind the feeling of enjoyment and delineates many of the meanings and purposes underlying human actions towards personal growth, integrity, and well-being.

Joy: In this study this term, including feeling joy, is used in the sense of enjoyment and experiencing positive emotions as a result of fulfilling Fundamental Need(s). A joy moment is used to describe a moment one experiences as pleasant and enjoys themselves.

Behavior Space: A term adopted from machine learning algorithms, within this project, used to indicate the scope of one's engagements. It encapsulates both past and possible actions, as well as the physical/functional spaces that the person non-exclusively places them within. Individuals engage in a set of activities within their own 'behavior space' that constitute their unique routines and habits that fulfill their needs.

Languishing: A state in the continuum of subjective well-being that is in between well-being (flourishing) and ill-being (depression). It's the absence of well-being that can appear as burnout, no motivation, and numbness. In this project the term languishing is used to describe anyone who is neither flourishing nor depressed.

Introduction

*“This kind of small joy is actually not so normal to me as probably I started feeling a small joy more often after the pandemic. **I feel joy on something much simpler or something I took it for granted before.**” Study of Joy Moments (Orcun, 2021)*

Project Context: The Covid-19 pandemic

The ongoing COVID-19 pandemic has led to an unprecedented public health crisis worldwide starting from the early days of 2020. Given the lack of effective treatments for Covid-19, non-pharmacological interventions (NPIs) have been mandatory to decrease disease transmission (Balanzá-Martínez et al., 2020). Particularly in the beginning of the pandemic (first quarter of 2020), the main focus of The WHO and many other health organisations are heavily on medical research and containment of the virus among the public as they recommend measures such as social distancing and quarantine. During this period there has been little emphasis and intervention on the impact of Covid-19 pandemic and NPIs on mental health and subjective well-being on the individual level. (World Health Organization, 2021)

Throughout the pandemic, a vast amount of research has shown negative implications of living in a world of pandemic on individuals' well-being. Even from the early stages of the pandemic, the studies show (Wang et al., 2020a, b) that the pandemic caused high distress among people regardless of location, culture, and social structure. Another study by Yang & Ma (2020) shows that the onset of Covid-19 pandemic led to a 74% drop in subjective well-being. Especially during the first wave (March 2020), the most evident trigger for increased symptoms of distress has been the disruption in the sense of safety (Kimhi et al., 2020). The safety concerns and various NPIs caused limitations that caused continuous emotional and behavioral difficulties that were accompanied with changes in daily activities even starting from the early phases of the pandemic during the first wave (Soffer-Dudek, 2016). According to the study of Mascherini et al. (2021), some of these changes are a decrease in casual physical activity along with an

increase with sedentary behaviour, change in eating habits with an increase in the quantity of meals as well as snacking, and an increase in alcohol consumption. Overall, subjective well-being has decreased significantly by 15.1% in comparison to measures before confinement that came with the pandemic. Study shows significantly large reductions on the domains of vitality and positive thinking. Meanwhile, all six domains of well-being have found to be worsened: anxiety, depression, subjective well-being, self-control, general health and vitality.

Evidently the NPIs that came with Covid-19 pandemic have had a prevalent negative impact on subjective well-being. This effect had gradually become prominent as the process became longer and the length remained unknown. As the NPIs caused rapid and abrupt changes in daily life, the routines that people have built in line with what makes them happy got disrupted. With attempts to adjust this new way of living came a wide range of experiences and emotions, which did not necessarily allow for new habits and routines.

Routines are a set of activities we engage with in a repetitive manner. Adopting the term from machine learning algorithms, we may say individuals engage in a set of activities within their own 'behavior space' that constitute their unique routines and habits (Eagle & Pentland, 2009). These routine activities that people normally engage in have been disrupted as behavior spaces significantly shrunk by NPIs towards minimizing social contact, regarding travel restrictions and restraints on shops and cafes as well as other social and cultural engagements.

Embracing a humanistic perspective

The humanistic approach evaluates the individual as a whole and considers the uniqueness of each person. It assumes that people are inherently good, and have an innate will to make themselves and the world better. All individuals desire and are motivated to achieve their potential. The approach emphasizes the centrality of human values as well as the creative and active nature of human beings. From a humanistic perspective, needs are the foundation of our motivation system, hence all the activities one engages in are fundamentally aspirations of need fulfillment (Ford, 2013). Thinking in terms of daily activities, routines are the established set of behaviours one engages in towards fulfilling their needs within their behavior space. In other words, routines are optimized ways of need fulfillment in a person's given context that makes them happy. However, when one's life circumstances change, this requires an adjustment period where a new routine is established. The Covid-19 pandemic has been a major cause of change in how people live their lives on a daily basis. Findings from the study by Almeida et al. (2002) shows that stressors that are appraised as disrupting daily routines are among unique predictors of symptoms of stress and highly negative mood. As routines of many people around the world have been forced to change since the beginning of the Covid-19 pandemic, it had major reactions on the individual, group, and even societal levels (Northrup, 1989). The group of people whose routines are expected to be highly affected in a negative way are (young) adults (age between 20-35) who are working or studying (university level or higher). Due to the intertwined nature of their leisure and professional activities, the changes in their manner of work are assumed to have an impact on their subjective well-being. A study conducted later in 2021 shows that young adults (millennials and partly generation

z) are more likely to experience decreased subjective well-being accompanied by struggles of mental health during the Covid 19 pandemic (Berg, 2021). In this regard, considering the context of daily life and aforementioned negative effects of the Covid-19 pandemic on subjective well-being, it is also expected to be challenging for them to establish enjoyable habits that contribute to their subjective well-being. **Within the scope of this project, the loss of balance regarding need fulfillment is deemed crucial in terms of understanding the negative impact of Covid-19 on subjective well-being and eventually exploring the design space for intervention on the individual level.**

How to enable flourishing? A need-driven approach to well-being

The literature of subjective well-being offers a wide range of approaches in terms of definition and tools for measurement. As a whole, subjective well-being can be perceived as both the outcomes that are to be achieved and as a part of the process that helps individuals to achieve other goals (Diener, 2009). Subjective well-being refers to reaching a state of flourishing which can be defined as optimal psychological functioning and experience (Ryan & Deci, 2001). Although the term is highly open for interpretation as a concept, there is no doubt that it includes various affective and cognitive components that comes down to being happy.

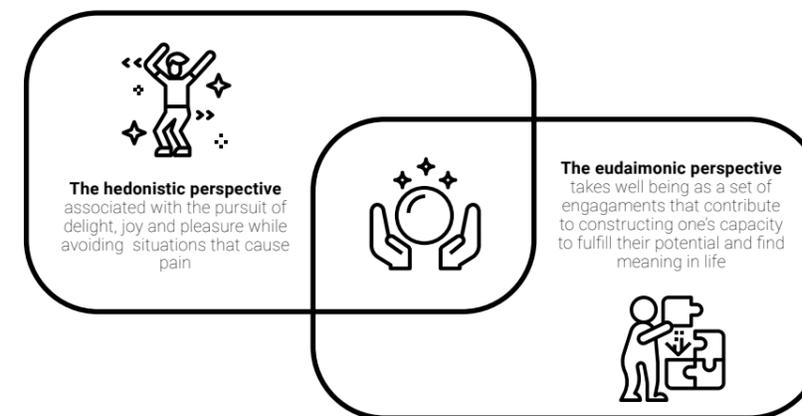
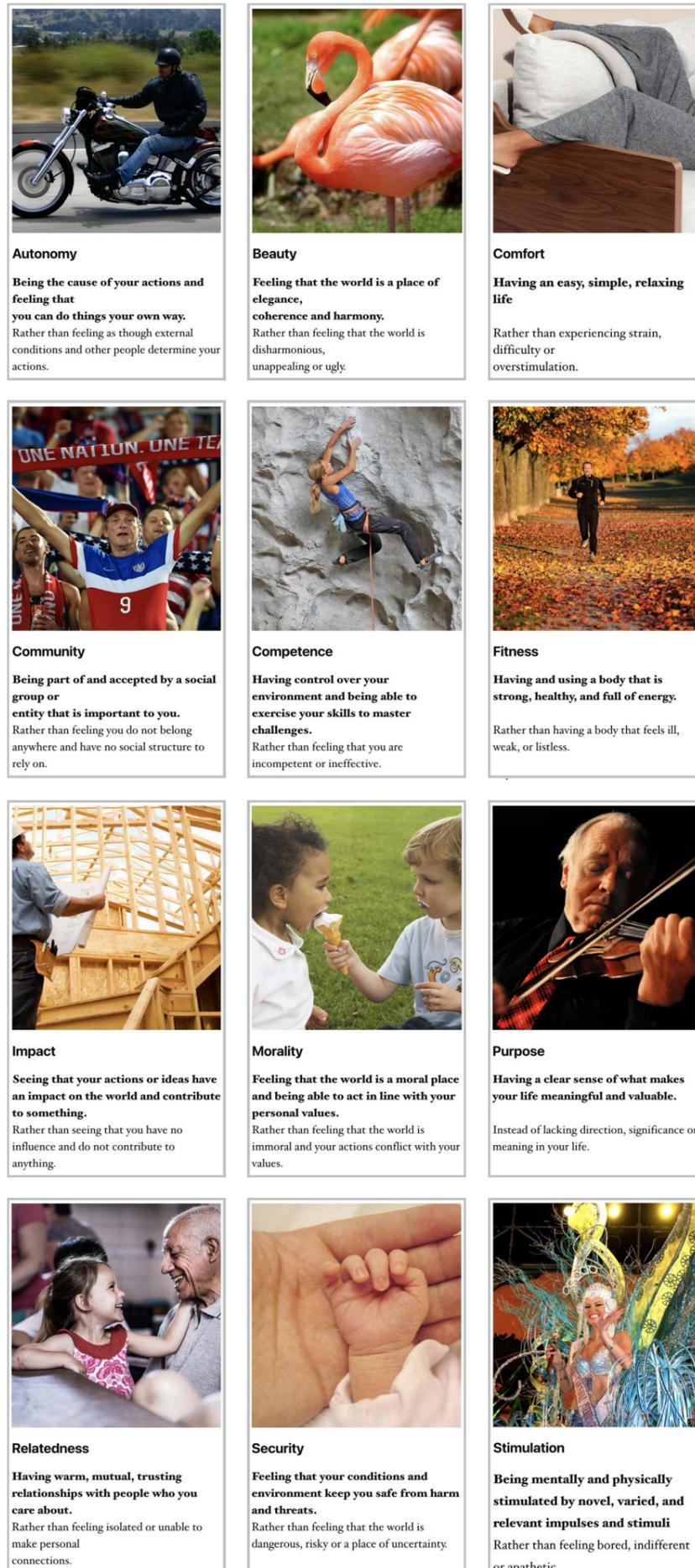


Figure 1: 2 approaches to well-being

There is a clear distinction that has been made in the literature of subjective well-being in terms of how to reach this state of flourishing: Hedonic vs Eudaimonic approach (see Figure 1). Hedonic approaches to subjective well being refers to happiness in terms of pleasure attainment and pain avoidance (Kahneman et al., 1999). Whereas the eudaimonic approaches focus on meaning and self-actualization in life through specified constructs that are 'good for' people. It is in the sense that they contribute to constructing one's capacity to fulfill their potential, not necessarily depending on momentary pleasure or pain. The latter, the term coined by Waterman (1993), conveying the belief that well-being consists of fulfilling or realizing one's true nature in a consistent manner.

13 Fundamental Needs



Within the scope of this project, a need-driven approach to well-being is adopted, which suggests that in order to survive and thrive psychologically humans must have certain psychological needs satisfied (Deci & Ryan, 2000; Kasser, 2002; Maslow, 1954). Although need-based approaches have been mostly associated with eudaimonic philosophy (Goldstein, 1940; Rogers 1967; Maslow, 1967), it is also the case that events and activities that fulfil fundamental human needs are strong sources of meaning and pleasure (Sheldon et al., 2001). Approaching self-actualization as a manner of self-expression, focus on subjective well-being can be emphasized in terms of 'good feelings are to be pursued in life' (Berne, 2016). Simply put, in an attempt to motivate people towards flourishing from a state of languishing, the overlap of the hedonic and eudaimonic foci of well-being is embraced in this project.

Within the scope of this project, need fulfilment is defined as the basic requirement of human functioning towards ongoing psychological growth, integrity, and well-being (Deci & Ryan, 2000) while being adopted as a guiding source of momentary pleasure and joy.

The theory of 13 Fundamental Needs

Research by Desmet and Fokkinga (2020) states that there are 13 universal psychological human needs that are the basic requirements for the functioning of an organism (See Figure 2). Supported by a body of research, the theory is based upon the argument that these needs are applicable among world regions (Morrison et al., 2011; Tay & Diener, 2011) and 'built-in' to the human nature that fulfilment of them is subject to enhance a person's feelings of well-being (Ryff & Keyes, 1995; Ryan & Deci, 2000). Satisfaction of human needs are found to be correlated with greater reports of well-being (Milyavskaya & Koestner, 2011; Patrick et al., 2007), as well as deprivation of needs with ill-being (Chen et al. 2015).

Although originally developed as a typology of (13) psychological human needs, the theory aims to provide a practical resource for user-centered design as well as for research with a focus on user experience and well-being (p.1). In this project, the 13 Fundamental Needs by Desmet and Fokkinga are chosen as the tool to enable people to feel enjoyment and flourish in the context of Covid-19 pandemic.

The assignment and the approach

It has been established that subjective well-being of the individuals declined during the Covid-19 pandemic, as well as their engagement in daily activities that they enjoy due to NPIs. This project focuses on individuals' enjoyment of life through reestablishment of daily activities that bring people joy. In order to do so, the theory of 13 Fundamental Needs is chosen as the foundation of enjoyment to be explored in an attempt to design a tool towards this goal.

As mentioned before, the humanistic approach employed in this project emphasizes the potential of people and the ultimate good they can achieve while addressing creativity, health, hope, meaning, connection, purpose, and the abil-

→ Fulfilling needs naturally provide enjoyable moments, however 13 FN as a theory on well-being could be used to design as a guide that contributes to well-being.

Figure 2: 13 Fundamental Needs by Desmet and Fokkinga (2020). Retrieved from needtypology.com

ity to self-actualize (Crain, 2011). Specifically, one school of thought underlying the humanistic approach will be explored in this project, the phenomenology: the exploration of conscious perspectives and experiences of phenomena, subjective well-being, and the meanings which are attributed to those experiences. The idea behind this approach is to understand the meaning of an experience that contributes to subjective well-being in terms of what was experienced and how it was experienced (Neubauer, 2019; Teherani, 2015). This contribution can be further supported by Dewey's experiential learning theory (1938), which states knowledge is socially constructed and based on experiences. Providing a context for information, a completed experience would enable the learner(experiencer) to have the knowledge and ability to apply it to differing situations. This understanding will be explored further with the specific focus of 13 Fundamental Needs and the context of Covid-19.

Moving on with this initial understanding, the next goal is set out to trigger a proactive attitude towards building a new routine that suits the individual. Wiese et al. (2020) suggests that an entry point to subjective well-being that is to be sustained is not necessarily through preventing negative experience, but can be approached by supporting activity based engagements. In line with Hassenzahl et al. (2010), this project positions need fulfillment as a source of positive experiences. Rooting from these positive experiences, the goal is to enable people to establish fulfilling routines in their day to day life. With this perspective, the goal is to **explore the use of the theory towards exploring, understanding and adopting daily experiences that are enjoyable.**

Ultimately, this project is set out to discover a way to operationalize the 13 Fundamental Needs and design a tool that contributes to subjective well-being for individuals to use daily within the context of Covid-19 pandemic.

PHASE 1

Explorations with the theory: 13 Sources of Joy

In this phase the dynamics of 13 Fundamental Needs were explored for future possibilities to operationalize the theory. The research during this phase explored the daily and relatable occurrences of the 13 Fundamental Needs which, in nature, come as abstract to people. In this regard, daily moments that are pleasant and unpleasant were collected for a week from young adults residing in the Netherlands. Combined with data from existing research on daily moments, a total of 783 pleasant and 230 unpleasant moments from daily life were analyzed in relation to underlying Fundamental Needs that are depicted by the participants themselves. The moments corresponding to each need were studied in order to understand how each fundamental need manifests itself on a day to day basis. The understanding gained in regard to how needs are perceived in real life is used to pinpoint the need related effects of Covid-19 pandemic in the following phase. A framework has been established from the understanding of operationalization of theory of Fundamental Needs. The rich collection of moments was further analyzed later in the project and converted into daily activities corresponding to each need, establishing the foundation of the final concept.



From theory to practice

The theory of 13 Fundamental Needs operates on the statement that all human activity is essentially fuelled by the aspiration of need fulfilment. According to Ford "People not only react to events, they also appear to initiate and direct their behaviour toward objectives and ideals." (2019, pp. x). This chapter consists of activities that explore how 13 Fundamental Needs are realized in daily life.

In theory, each moment of enjoyment is fundamentally rooted from one or more underlying needs that are fulfilled. But how do these 13 abstract notions are actualized in real life? What kind of activities are reinforcing certain need fulfillments? Is it possible for individuals to connect these needs to real life experiences, and if so, how do they perceive it?

In order to understand and operationalize 13 Fundamental Needs, the initial dynamics of need fulfillment had to be understood as well as the moments they are fulfilled in real life experiences.

1.1 Study of Daily Moments

The aim of this study was to understand daily manifestations of each fundamental need as well as the dynamic of needs in a relatively long period of time. To do so, daily moments in relation to fundamental needs were collected over the course of 8 days. 20 young adults participated in this study (see Figure 1.4). See Figure 1.1 for an overview of the steps involved in the study.

The previous studies on collecting daily moments (Desmet, 2021; Orcun, 2021) were based on joy. Meaning that the moments collected were aiming to understand the underlying needs that are fulfilled through moments of enjoyment. In this study, alongside these kind of pleasant moments, unpleasant moments were also collected in relation to 13 Fundamental Needs. The pleasant moments were associated with need fulfillment and lead to **enjoyment** while the unpleasant moments were associated with need deprivation and lead to **misery**.

1.1.1 Method

In this study, logs of daily moments were collected using Qualtrics Online Survey software. The first day of the study the participants received information on 13 Fundamental Needs, and asked to log 1 pleasant and 1 unpleasant moment to get familiar with the method. The moments from the pilot day were checked to see whether the terms of the study are clear and the moments are connected to underlying needs in a way that makes sense. At this stage, the participants were also asked to sign consent forms regarding the use of their data. See Appendix B.1 for the introduction of the study.

Throughout the following 7 days, the participants were asked to log moments on a daily basis. 3 pleasant and 3 unpleasant moments were asked as a reference, although the number of entries was not obligatory (see Figure 1.3a). With each moment logged the participants were asked to depict the reason for the positive or negative feeling. Following this, they were first asked to choose the primary need and then other secondary needs underlying the enjoyment felt in the moment (fulfilled for pleasant or disrupted for unpleasant moments). To see the logging screen, see Figure 1.3b.

All operations of the study were managed through the Whatsapp group of the study. This was formed in order to send announcements and reminders to all participants at the same time in a non-personal manner. This was deemed necessary in order to emphasize the anonymity of participation. Each day of the study, the participants received 2 messages through this group. At the end of each day, at 8 pm, the link for the corresponding day's survey was shared and the participants were asked to log their moments from the day (See Figure 1.2). At 10 am each morning, a reminder was sent to allow for logging for the previous day. This was a finding in the previous study that some people preferred logging their moments the morning after, after the day is complete. Naturally, it also serves as a reminder for the participants that simply forget to do so.

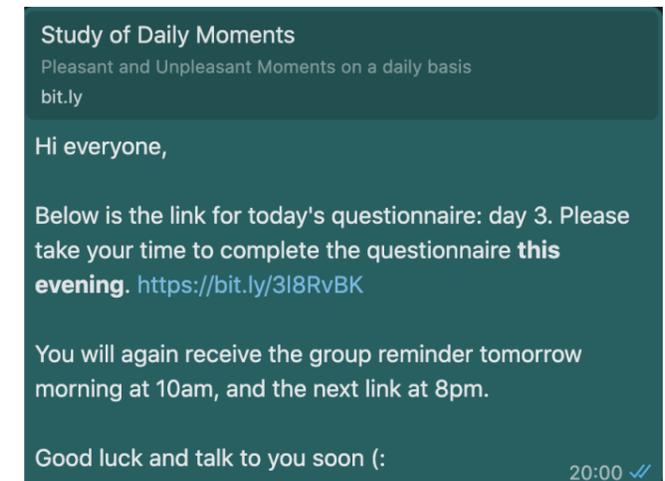


Figure 1.2: Screenshot of a reminder from the Whatsapp group

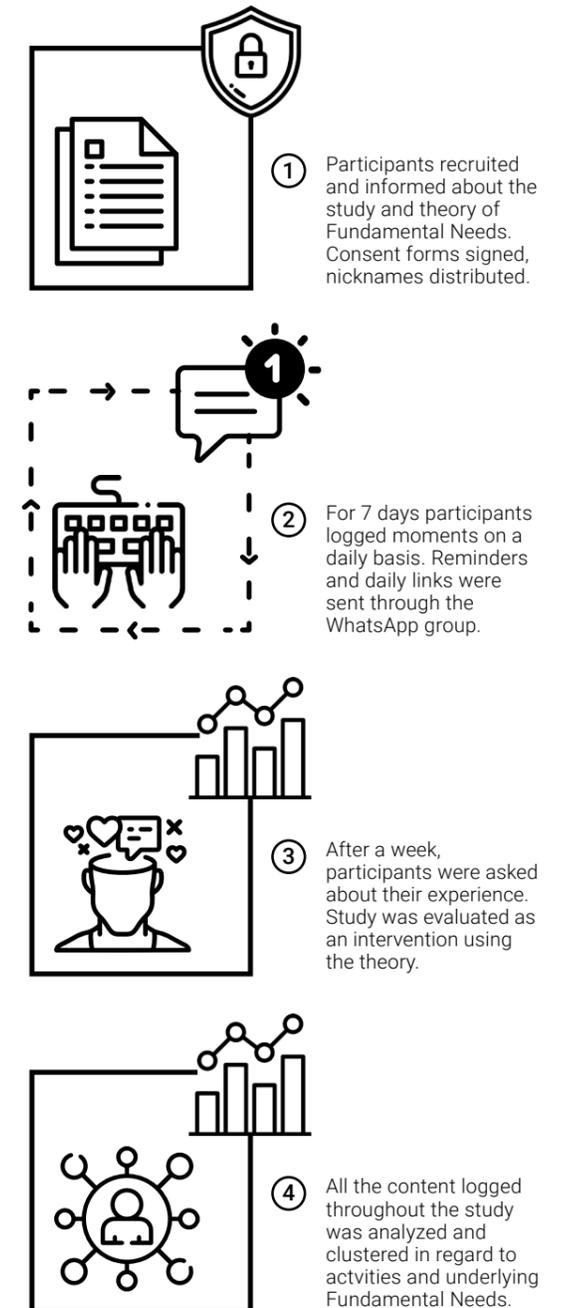


Figure 1.1: Overview of the study

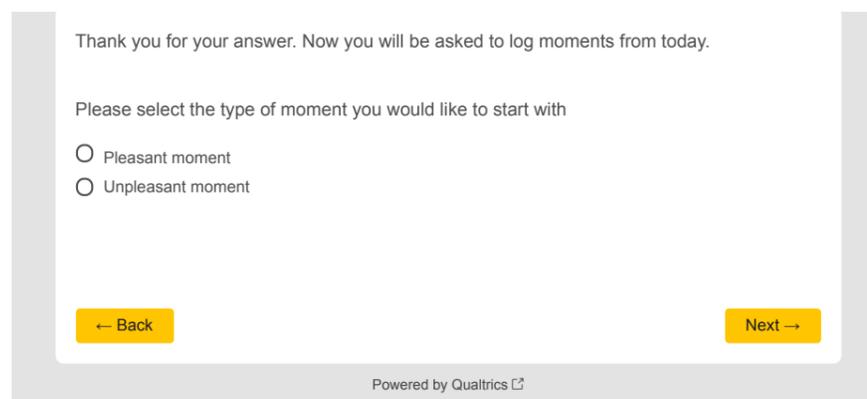
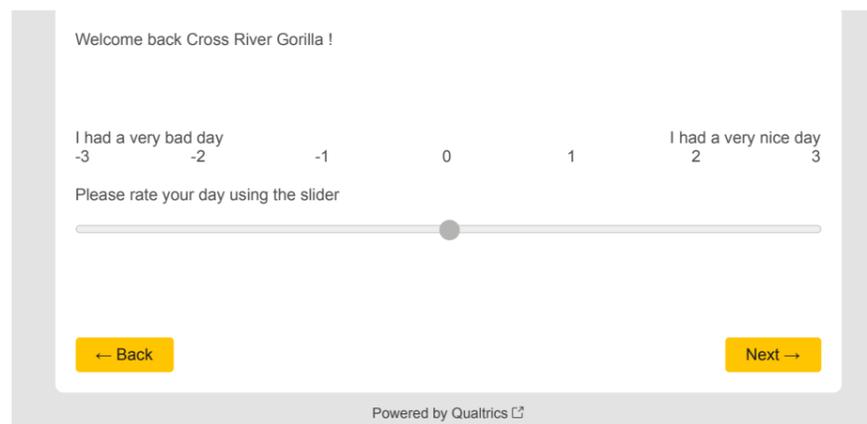
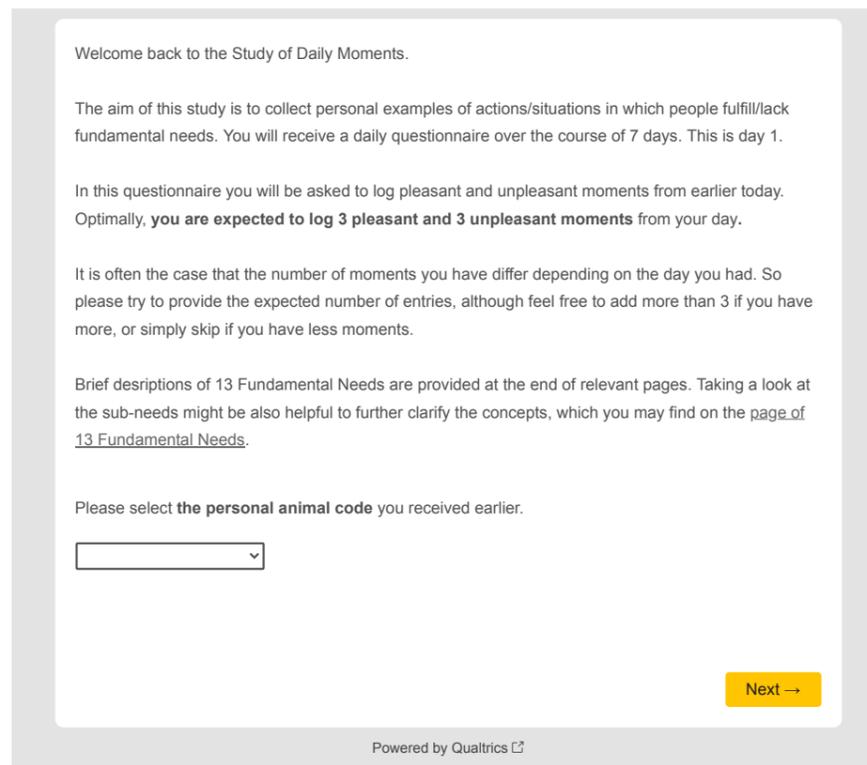


Figure 1.3a: First three screens that is presented before logging

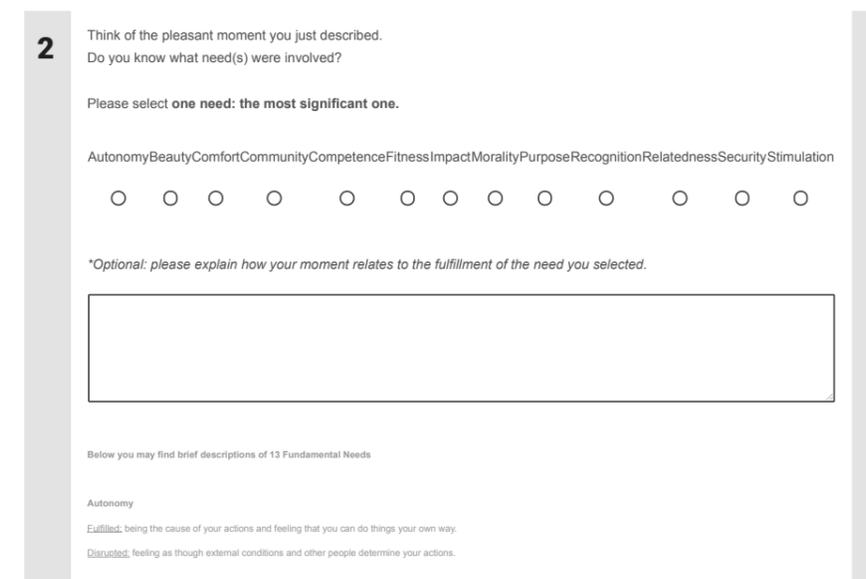
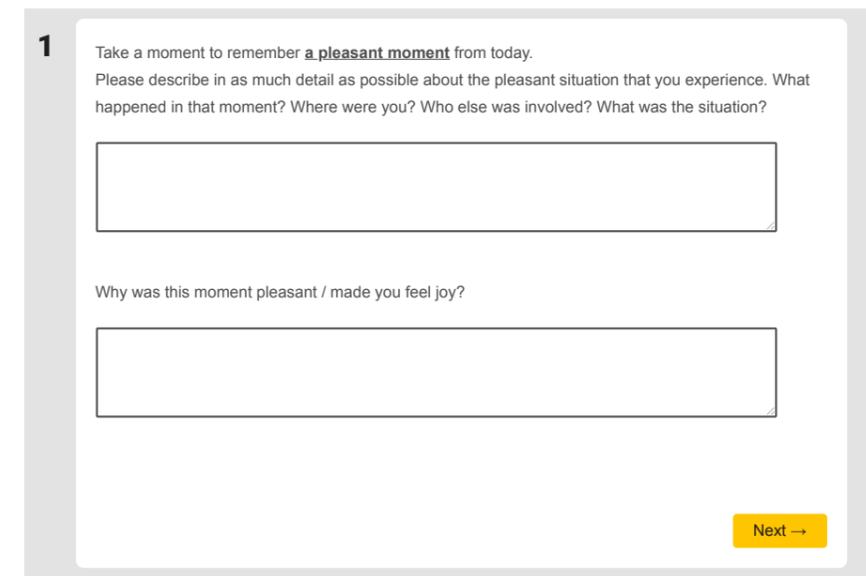


Figure 1.3b: Logging screens (pleasant moment) from Qualtrics. (1)Logging the moment, logging the (2)primary and (3)other underlying need s fulfilled

Unpleasant moments. Need-driven approaches to well-being not only state that fulfillment of needs lead to greater well-being but also deprivation of needs lead to ill-being (Chen et al. 2015; Maslow, 1943; Ryan & Deci, 2000). From this understanding, in the previous study of moment collection (Study of Joy Moments), it was hypothesised that certain needs would be less visible in the moments of joy collected from the participants. Needs such as relatedness and community were expected to be less salient in the moments of joy due to NPIs of Covid-19 pandemic that are limiting social interactions. However, these two needs consisted of 21% of the primary and 20% of the secondary needs that were associated with a moment of enjoyment. This suggests that it needs to be understood whether these needs were not affected by the context of the pandemic or they were disrupted as much as they were fulfilled. Thus it is deemed important to understand how the disruption of 13 Fundamental Needs manifest in real life.

Distinct experiences. As Desmet and Fokkinga (2020) critically states, it is hard to pinpoint one need that is fulfilled at a given moment. Generally, it is a combination of needs fulfilled through a single moment of joy. However, at any given experience there might be one need that is prominent among others that are also fulfilled. In order to understand distinct experiences corresponding to each fundamental need and to be able to compare the unique aspects, collection of daily moments is done with the emphasis on one primary and one or more secondary needs that are fulfilled.

Participant demographics. In order to collect a wide range of daily moments, 20 participants were selected from diverse groups (See Figure 1.4). In an attempt to understand whether there are common patterns in need fulfilment on a daily basis among diverse demographics, 4 focus groups were defined. Participants were selected on the basis of 1-their current professional status (student vs young professional) and 2- their nationality (Dutch vs international). The criteria forming the focus groups were selected based on high variations in daily engagements and long term goals. Internationals residing in a foreign country (the Netherlands in this case) were expected to engage in different social networks and interactions than the Dutch participants. Young professionals in comparison to students, were chosen due to higher autonomy in both professional and daily engagements. 2 participants were recruited outside the Netherlands to provide a control group.

Data collection tool. In the previous research on need fulfillment (Or-cun, 2021), the method of collection was chosen to be a digital journal (an interactive PDF document) where the participants would log their pleasant moments and corresponding needs in a digital journal for 10 days. Iterating on this method, the collection for this study was decided to be conducted online for 2 reasons. First, when logged daily on an online platform, data can be checked daily, allowing for timely reminders as well as checking whether the shared content is in line with the requirements of the research. Secondly, it allows participants to reach

the platform from any device of their preference. Earlier research with the digital journal showed that the tool was limiting in the sense that it required the participant to use their personal computer for logging. This in turn caused inconveniences especially during the weekends where the participants are not using or do not have access to their computers and, in some cases, led to dropouts from the study.

Anonymity. During the recruitment phase, all participants received a unique nickname to be used throughout the study. This was deemed necessary regarding the sensitive nature of the content they were expected to share. All activities related to the study were conducted using these nicknames.

Participant #	Residing	Nationality	Occupation	Age	
#1	The Netherlands	Dutch	young professional	29	Focus group 1
#2	The Netherlands	Dutch	young professional	28	
#3	The Netherlands	Dutch	young professional	29	
#4	The Netherlands	Dutch	young professional	31	
#5	The Netherlands	Dutch	young professional	25	
#6	The Netherlands	German	young professional	28	Focus group 2
#7	The Netherlands	Greek	young professional	28	
#8	The Netherlands	Turkish	young professional	28	
#9	The Netherlands	Indian	young professional	26	
#10	The Netherlands	Dutch	graduate student	25	Focus group 3
#11	The Netherlands	Dutch	graduate student	24	
#12	The Netherlands	Dutch	graduate student	25	
#13	The Netherlands	Dutch	graduate student	24	
#14	The Netherlands	Chinese	graduate student	26	Focus group 4
#15	The Netherlands	Turkish	graduate student	29	
#16	The Netherlands	Turkish	graduate student	26	
#17	The Netherlands	Taiwanese	graduate student	27	
#18	The Netherlands	Hungarian	graduate student	29	
#19	Turkey	Turkish	young professional	25	Control group
#20	Turkey	Turkish	young professional	26	

Figure 1.4: Participant demographics and four focus groups

1.1.2 Analysis and Findings

The collected data was analyzed based on content (qualitative) and emerging patterns (quantitative). Twenty participants logging daily moments over the course of 7 days yielded a total of **317 pleasant and 230 unpleasant moments**. The moments were clustered in terms of activities as well as each fundamental need was analysed in terms of unique aspects that define the categories. 2 datasets from previous (unpublished) studies on 13 Fundamental Needs were used to compare the findings of the current study in order to understand the trends as well as giving a complete understanding of daily life occurrences of each Fundamental Need.

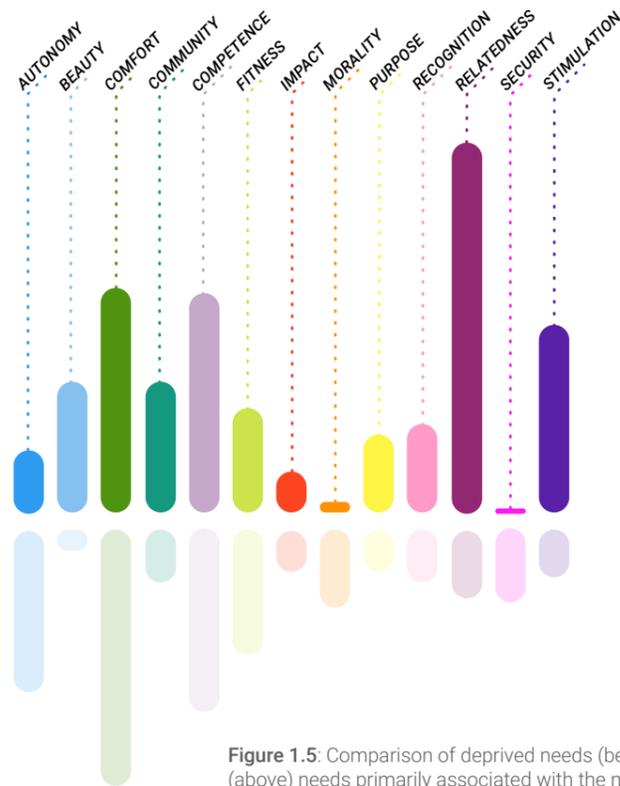


Figure 1.5: Comparison of deprived needs (below) with fulfilled (above) needs primarily associated with the moments collected

1.1.2.1 Initial Insights

Hot Needs. The character of the person in addition to the living context has been observed to have the biggest impact on focusing on different sets of needs. In addition to this, depending on the life stage and the current living context (physical environment, social interactions, life goals, level of professional life) of a person, some of the needs become more salient, or “hotter”, than others. These emerged as 4 fundamental needs on average for each individual, and has dominance towards experiencing various domains in life independent of the activity or context.

“I realised I was highly affected by autonomy and the lack of it, it was a highlight in both of my moments.” - TS

“I realized that most of the time I chose community, autonomy and comfort when I define my needs. I was upset when there were events or external actions determine my life. And not making any impact after all of my efforts getting me depressed.” - BND



Design opportunity 1: 13 Fundamental needs could be used as a guide to explore other domains leading to joy through emphasizing unique aspects of needs that are not salient (hot) for the individual at a given time.

Hot needs could be used as motivator towards new experiences in life.

1.1.2.1 Is there a hierarchy of needs?

In line with Desmet and Fokkinga’s (2020) criticism on Maslow’s hierarchy of needs, there has been no universal priority/hierarchy found in terms of need fulfillment. On the other hand, the data analysis showed a differentiation of ‘deficit needs’ vs ‘growth needs’. The moments were analysed in terms of the ratio of a need to total needs logged in corresponding categories (pleasant vs unpleasant). In accordance with their rating, impact scores of each fundamental need was calculated. This provided a map of impact scores which show whether a need is more salient when fulfilled or disrupted (See Appendix B.5).

1.1.2.2 Were there differences among focus groups?

A significant difference between focus groups was not observed in terms of specific needs neither fulfilled nor disrupted. However, the activities logged by different types of participants in the study later contributed to personas developed in phase 3. For the graphs showing logs of each group see Appendix B.6.

1.1.2.3 What was found in terms of need deprivation?

The deprived needs (See Figure 1.5, bars below) underlying unpleasant moments were analyzed on the basis of 2 hypotheses:

1- Due to the limitations of the NPIs, it was hypothesised that the needs for Relatedness, Community, and Stimulation would show high numbers of deprivation as much as they were fulfilled. This was not observed in the data. On the contrary, the unpleasant moments associated with these needs were relatively low in comparison to the rest of the needs. However, 37% of the pleasant moments collected in the study were primarily associated with these needs. This is interpreted as these needs becoming “hot” in the context of Covid-19 pandemic, meaning that since they are not casually fulfilled, they become more salient and associated with enjoyment when fulfilled more than before.

*“Much of my pleasant moments were caused by the need of feeling related, which might be obvious, but it was still striking. I think many people have that **but I also think that now in this lockdown these moments of feeling related are more unique...**” - IMJ*

2- So far, needs for Security, Morality and Impact have been observed to provide the lowest number of moments that are enjoyed among all 3 studies of moment collection. The data from the current study showed a high number of unpleasant moments associated with these needs. This is interpreted as the confirmation of the distinction between growth and deficit needs. Meaning that some needs are not salient as long as they are not deprived.



Due to no hierarchy found among needs, design implementation need not to be based on a selection of needs. All needs could be included.

Due to no significant difference among and characteristic trends within focus groups were found the design implementation need not to specify the target group further. An extensive tool designed for young adults would be applicable among variety of groups.

Understanding the Fundamental Needs that are deprived due to a specific context can be used to design meaningful interventions.

A reflection tool. Thinking of moments in life in terms of 13 Fundamental Needs, both pleasant and unpleasant, gave perspective to people where they became more aware of their needs and fulfilments in life. In turn, for an unpleasant moment, this perspective helped people to stay calmer and interpret their negative feelings as a consequence of need disruption rather than experiencing a negative sentiment of “being mad at the world”.

“In the moment when logging unpleasant activities i thought the 13 needs already provided an interesting frame to analyse the situation.” - MB

“It was an interesting experience, deconstructing daily moments in terms of these needs. It also made me recognize the disturbance caused by some things and I would be able to take a calmer stance towards unpleasant moments.” - CRL

Design opportunity: *As this is promising as a constructive approach towards minimizing the ramifications of unpleasant moments for both individual and social context, it may offer a rational framework for understanding negative experiences and emotions in future studies.*

Community ties. Although the experience of logging moments were on a strictly individual level, a social aspect emerged out of the study. Sharing moments with others, and reading moments of others created a connection among the members of a community. However, this insight is mediated by the closeness of the community as strong positive emotions were evoked only in communities consisting of close friends. In such cases, the sharing of moments acted as a way of sharing intimate moments and made both the sharer and the reader feel closeness and appreciation for the other party and their relationship.

Design opportunity: *Sharing pleasant moments can be used as a way to strengthen ties within a community in the context of covid-19, where the extended social circles are feeling more and more detached from each other. Additionally, pleasant experiences can be used in the form of advice for joy, acting as a way of support among individuals.*

Deprived Needs. The findings from the unpleasant data showed that people didn't necessarily enjoy remembering unpleasant moments. Additionally, even though the theory provided a new perspective on these moments, it did not lead to constructive actions in the following engagements. Secondly, the unpleasant moments were overall very much linked to a person's character and perspective as well as specific dynamics with others. The intervention through fundamental needs stayed very much on the awareness level, which did not allow any space for intervention within the scope of this project. In this regard, unpleasant moments and need deprivation were no longer pursued in design activities in the later phases of the project.



Design opportunity 2: 13 Fundamental needs could be used to dissect components of an experience.

For pleasant moments this could enhance enjoyment.

1.1.2.4 Different layers of responses: understanding pleasant moments in life

The moments collected showed four clusters of reactions that led people to define a moment as 'joyful'. This finding suggests that a pleasant moment is not only about what we do but dependent on many contextual factors as well as everyone's own journey.

1- Hedonic response: enjoying more sensual aspects of an experience. Comfort, beauty, fitness, and stimulation were the needs mostly underlying these moments. These are the kinds of activities that there is the biggest agreement on what is the underlying need. Little interpretation by the experiencer. I.e. watching a movie on the couch -comfort.

2.1- Reflective response: these logs were more dependent on the character of the experiencer. These moments are situations more than simple events with multiple occurrences. The descriptions of the feelings of joy or misery were on a reflective level where the experiencer took a step back from the moment and came to conclusions about a bigger pattern. When the underlying need is asked, especially the primary need chosen is highly dependent on the perspective of the experiencer. There were even occurrences where the same moment was depicted by multiple participants, all choosing a different need that was fulfilled in regard to enjoyment. These types of moments were also underlying the values of people which are depicted as "hot needs". They were also apparent among other moments of the same person, illustrating a tendency to feel enjoyment through these certain "hot needs". These needs were depicted as more salient in a person's life, having bigger impact on pleasantness of a moment when compared to other Fundamental Needs.

2.2- Deliberate response (compensating moments): An interesting cluster of moments were about compensating for the disrupted needs. The enjoyment was associated with a deprivation that is known by the experiencer and the joy came from finally fulfilling the need. I.e. if one is feeling the need for competence is disrupted on the previous days, a moment of being recognized becomes a moment they enjoy. These types of logs also included simple moments of Covid-free engagements. When the reason for feeling enjoyment is asked, in a fair amount of cases it was explicitly expressed that the need was lacking for a while which is now fulfilled. This was represented as a cluster of pleasant moments marked "compensating for a disrupted need". (See Appendix B.8 for other clusters)

3- Identity response: There was another type of logs among moments that were highly connected to the identity of the person. Meaning that moments that are defining/confirming the idea one has of themselves. These logs were associated with needs that the individual has been struggling with and which has been deprived for a long while. In line with the proposition of Deci & Ryan (2000), needs that have been thwarted for a long period of time have the potential to shape what people strive for in the future.



Compensating for a need that was disrupted earlier is recognized as a joyful moment. The source of this joy was feeling autonomy and control, as well as a natural relief.

Design interventions could use depth of reflection as a guide.

Gaining insight about oneself was logged as a joy moment, fulfilling the need for stimulation. 'Hot needs' could be visualized as personal data that is meaningful/stimulating.

1.2 How is the theory of Fundamental Needs perceived as a design intervention?

1.2.1 Evaluating the experience of logging daily moments

The Study of Daily Moments was also a rough intervention on operationalization of the theory. At the end of a week of logging moments in relation to 13 Fundamental Needs, participants were asked to evaluate their experience. These evaluations gave a perspective on how the theory of 13 fundamental needs was perceived as a design intervention. The evaluations were clustered under 6 categories and provided insights into possible operationalization of 13 Fundamental Needs (See Appendix B.7 for the full list of evaluations). The insights listed below were used in later phases of the project to shape design concepts.

1- Logging moments everyday is an interaction that is hard to sustain. There was an agreement on the logging moments being a demanding task to keep up every day. **This suggests employing a different method if regular interaction is to be used in future interventions.**

2- Pleasant moments were nicer to log. Mostly, remembering the unpleasant moments at the end of the day did not make people happy, especially if they have already forgotten about it.

"I did not enjoy logging unpleasant moments. I got energy from logging the positive moments. During the study I recognized I was a bit too tight/stressed so this week I just took a step back and chilled more :)" - HB

"It helps me reflect on my day. I like to do the pleasant moments because while I do it, I feel the happiness again." - GB

3- Increased awareness 'in the moment'. Understanding the 13 Fundamental Needs underlying enjoyment acts as an enhancer at the moment of joy. Helping to recognize the enjoyment at the time that it is happening created an awareness of the moment and increased the enjoyment. **Research shows that present-moment awareness is associated with psychological benefits such as reduced anxiety and depressive symptoms, lowered perceived stress, increased mood and improved well-being (Brown et al., 2007; Weinstein et al., 2009).**

"It made me feel more conscious about my life." - SM

"I am more conscious about my daily activities. I pay more attention to what am I doing in the moment." - GB

4- Evoked awareness on time. Recognizing moments, especially pleasant ones, helped people to cherish the small differences between each day and appreciate them as unique experiences.

"It is nice to be aware of the pleasant moments in your life, especially these days when days can be very similar... Just that every day has some moments in it that makes it different from the day before. **That is nice to understand in Corona times.**" - MP"

5- Increased awareness of self. Without guidance people started realizing trends and found meaning in Fundamental Needs. Seeing the same -recurring- needs underlying their moments gave people a personal insight. Getting a sense of what gives them joy helped them to reflect and find meaning in their engagements.

"I liked it. When looking at these needs, you can reflect on what seems to be important to you. After a couple of days, you start to see patterns in what you appreciate and dislike. It's not that I didn't know I liked/disliked these things before, but it just helps to be self-conscious in an environment linked to so many routines and habits that it is unusual in a positive way to be able to take time for them. (When I am travelling and by myself in unknown places, usually these types of reflections happen more naturally. **So now these reflections are brought to a known environment.**" - HB

"Quite interesting actually! Although it always took some time, it felt like a very healthy thing to have this reflective moment of the day. I feel like I know a bit better what my struggles really are and what I become happy from." - WM

"Yes, that I need to make changes in my job. Also it made me appreciate the time I spend with people I love and my love for sports and nature." - SM

"I am affected a lot by competence, autonomy and fitness for some reason..." - KD

"I really enjoyed how mindful it made me about my feelings." - TS

6- Created a new perspective for exploring sources of joy. Realization of some notions (like fitness) being depicted as a Fundamental human Need gave people an understanding of the importance in terms of subjective well-being and encouraged them to act on it. **Being able to pin the source of enjoyment gave a feeling of control in regard to pursuing similar feelings in the future.**

"Sometimes I would think, nah non of the needs describes how I feel right now (without looking at them), but then I go over the list and there is always one that perfectly describes the situation. The fact that fitness is there was actually quite an eye opener somehow. I always do sports, in these corona times sometimes I wonderd why to even do it haha. But the fact that fitness is listed on the list of the 13 fundamental needs reminded me how 'mentally' important it is." - PRF

"I think it creates a good awareness, **whenever I want to have a pleasant moment then I can just chase the need.**" - KD

"It was great. I never thought of my Day as such a dissectable experience. I like to identify the causes of happiness and unhappiness and it can certainly help me to become happier." - SM



A need-based intervention gives awareness on enjoyment and related engagements.

It establishes a granulated view on enjoyment which triggers a moment of reflection.

Being able to pinpoint what gives one joy evokes a feeling of control. A intervention can be designed to enable these engagements to be recreated.

1.3 Operationalizing the theory: 3 approaches towards contributing to well-being

A holistic understanding of all activities included in this phase provided three ways that the theory can be operationalized as a tool for individual use in daily life. The three opportunities are explained below on the basis of how they diverged significantly in the period of time that they are associated with and possibly provide an intervention.



13 Fundamental Needs as a reflection tool: a retroactive approach. When the time to reflect is taken, 13 Fundamental Needs can be used as a tool for reflection. As mentioned in the findings, it is good for gaining perspective and rationally approaching unpleasant moments, as well as recognizing the small moments of joy. Acting almost like a gratitude journal, this approach is more of a passive stand, meaning that it is working on an awareness level, towards understanding past moments in one's life. This use of the theory depends on the motivation of the individual as it requires active engagement with the tool on a regular basis.

13 Fundamental Needs as a new perspective: present moment approach. Logging moments observed to give the individual an awareness 'in the moment'. If engaged intensely with the theory, the tool evoked an awareness of small moments of joy at the moment they were happening. Although this is a great accomplishment in terms of getting people to be in the moment and recognizing small moments of joy in life, feedback shows that it is coming from the activity of logging moments, which is again, an effortful process that is not sustainable without high levels of motivation.

13 Fundamental Needs as an explorative journey: encouraging for future action. encouraging for future action. The study also showed that an understanding of underlying needs fulfilled at a given moment triggered an aspiration to pursue the positive feeling in future engagements. This is a particularly important finding for the course of the study towards designing a humanistic tool since encouraging new engagements and evoking a sustainable understanding of joy is the goal of the project. However, the current interaction (logging of joy moments) did not appear to be enough as a tool to take the leap towards pursuing joy. One promising aspect was the awareness that came from the experiential aspect of joy moments. Feedback from the study showed that knowing the moment of joy and the source -from first-hand experience- can be a good starting point to recreate joy in the future.

Reflection on need graphs: validation on representativeness

Finally, at the end of the study, a weekly need graph for each participant was generated based on the moments they logged in (See Figure 1.6). These graphs were shown to the participants for evaluation. The graphs were found to be representative of the past week (rated 4/5 on average) and representative of the participant's life in general (rated 4.5/5 on average). The needs logged for pleasant moments were found in line with how they identify themselves and needs logged for unpleasant moments were representing the struggles they were aware they have in life. Having the graph and seeing overall need fulfilments directed most of the participants to identify their long-term challenges and set long-term goals for themselves. **The finding confirmed the theory as applicable to daily life. As need fulfilment found representative of real life, the application proved to be valuable and meaningful by the participants.**

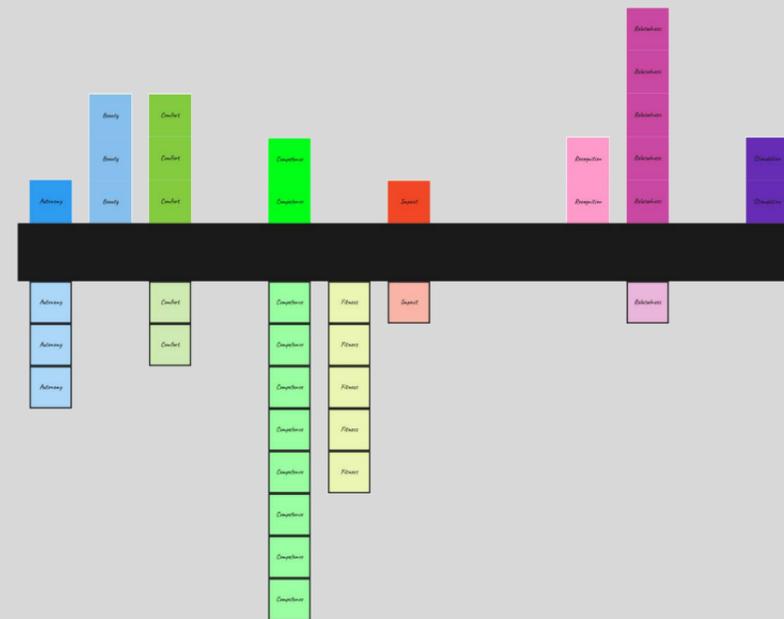


Figure 1.6: An example of the need graphs presented to participants

 A design intervention using the theory can have an effect towards future engagements.

1.4 Wrap-up on daily moments: 13 Sources of Joy

Study of Daily Moments was a highly explorative research on real life implementation of the theory of 13 Fundamental Needs. The goal of the study was to understand the daily manifestations of need fulfillment. Firstly, an in depth understanding was gained in terms of what constitutes each Fundamental Need in daily engagements.

Another valuable finding was the simplicity of moments. The characteristics of a joy moment was defined by how it is experienced subjectively rather than an extraordinary aspect of the event. A side study to investigate this further was conducted on daily objects (See Appendix B.9). This study emphasized the learning that **enjoyment is not necessarily about what we do , but the motive of doing it and how we perceive it**. So it is **a matter of perspective instead of a specific object or activity**. The material collected in this phase was used in later phases to create concepts and used as a direct source for the content of the final concept.

This phase established promising insights into operationalization of the theory. The design intervention of implementing 13 Fundamental Needs into daily life gave an understanding of repeated actions (See Figure 1.7). The intervention was observed to have contributed to understanding of enjoyment and motivation for engagement. These insights are elaborated in the next section.

In an attempt to turn the perspective towards future actions, the theory was repositioned in the scope of this project. The 13 Fundamental Needs were reformulated as **13 Sources of Joy** that can be touched upon towards enjoyable engagements. Meaning that, it is not only about which need we fulfill at a given moment, but in times of mind-numbing routines and confining NPIs, it also can become all about what we pursue. This understanding established the foundation of design activities in phase 3 and onwards.

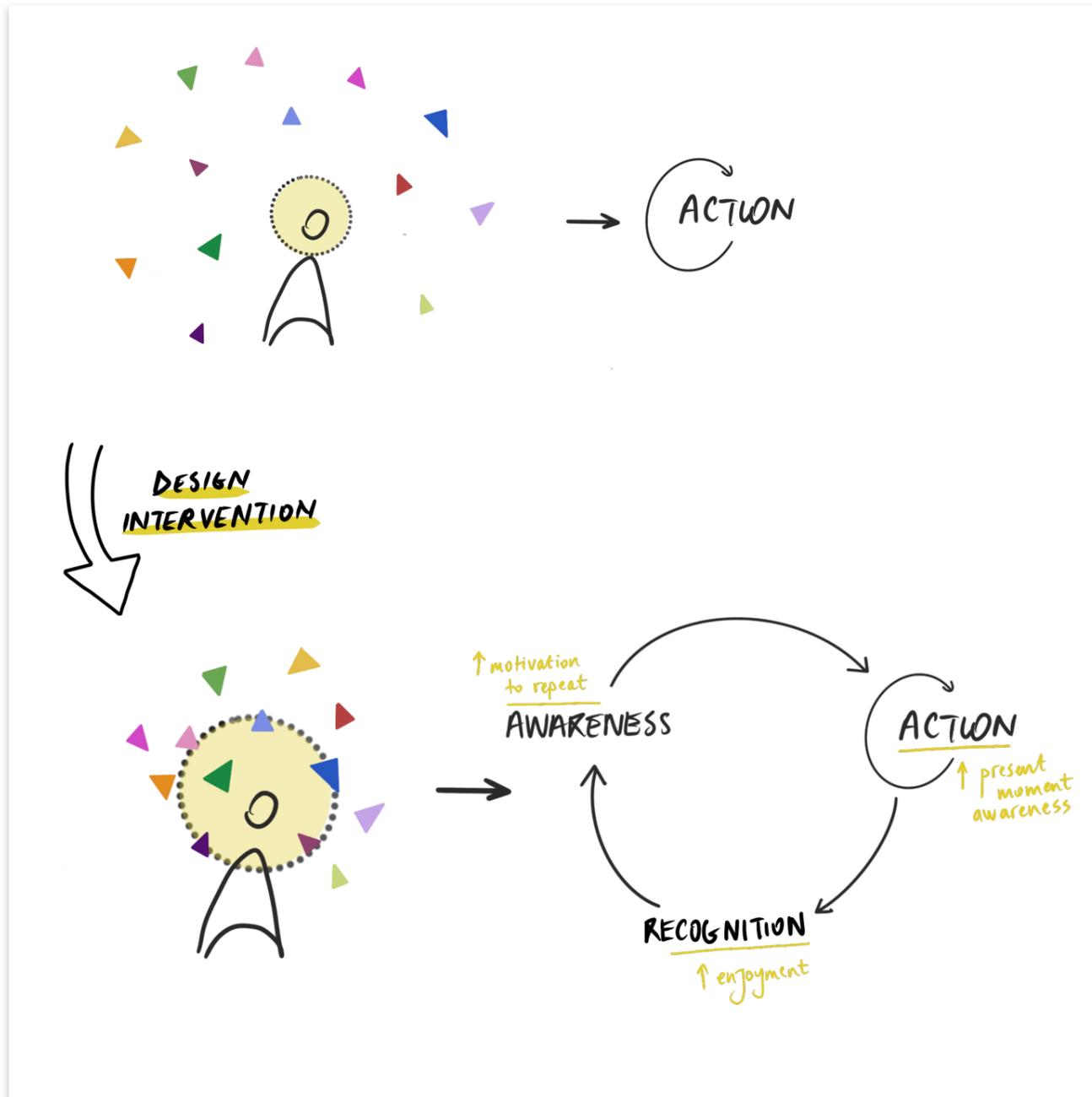


Figure 1.7: Implementation of 13 Fundamental Needs into daily life gave insights into repeated behavior. The intervention was observed to positively contribute to enjoyment as well as the overall understanding of enjoyment. The triangles represent the 13 Fundamental Needs.

F.1 A constructive Framework: The cycle of enjoyment

Awareness - Action - Recognition

The initial goal of the project was using the diverse sources of joy to expand behavior space, and eventually building new habits that are fulfilling. Thus the project approach is framed as triggering **a sustainable pursuit of enjoyment**. The design intervention using 13 Fundamental Needs in phase 1 was observed to have three effects on people in regard to enjoyment and motivation to repeat behavior. Having an understanding of Fundamental Needs enhanced the enjoyment through recognition of enjoyment during action and clarified the link between enjoyment with the action awareness. This awareness in return increased the motivation to repeat the action. In this regard, three steps were identified underlying repeated behavior: awareness, action and recognition. From this understanding, **it is hypothesized that triggering this cycle will convert a pleasant experience into a future action**.

Derived from the findings of operationalization of the theory, all three steps can be supported individually through the theory of Fundamental Needs. Understanding and sustaining enjoyment could be initiated through each step which is expected to facilitate the cycle. In this framework of a circular understanding of enjoyment in action, these 3 steps complement each other towards a dynamic pursuit of these moments in life. The mechanism underlying this framework and how it is expected to convey this sustainable understanding can also be explained by the basic principle of experiential learning: a process of learning by reflection on doing.

This approach can be understood in terms of learning, in this case learning the mechanisms that help understand what is the source of enjoyment and how to sustain it in times of need (lacking joy). The theory of Experiential Learning focuses on the individual, while emphasizing the importance of (1) active experimentation, (2) concrete experience, (3) reflective observation, and (4) abstract conceptualization.

The whole cycle is the active experimentation where every new attempt is informed (awareness) by a cyclical pattern of previous experience. The concrete experiences are represented as action in this framework, as personal experiences were found to be key as it enables the individual to relate with the 13 Fundamental Needs, which are originally perceived as too abstract. This is also in line with Kolb's model of experiential learning (Fry & Kolb, 1979), as one's own experiences (action) are positioned as a valuable starting point for more personal and applicable recognition of the sources of joy.

From this dynamic, 3 research questions emerged to be further explored for a design intervention. Research activities in the next phase will help determine points of intervention within this framework that are applicable to the context of the pandemic.

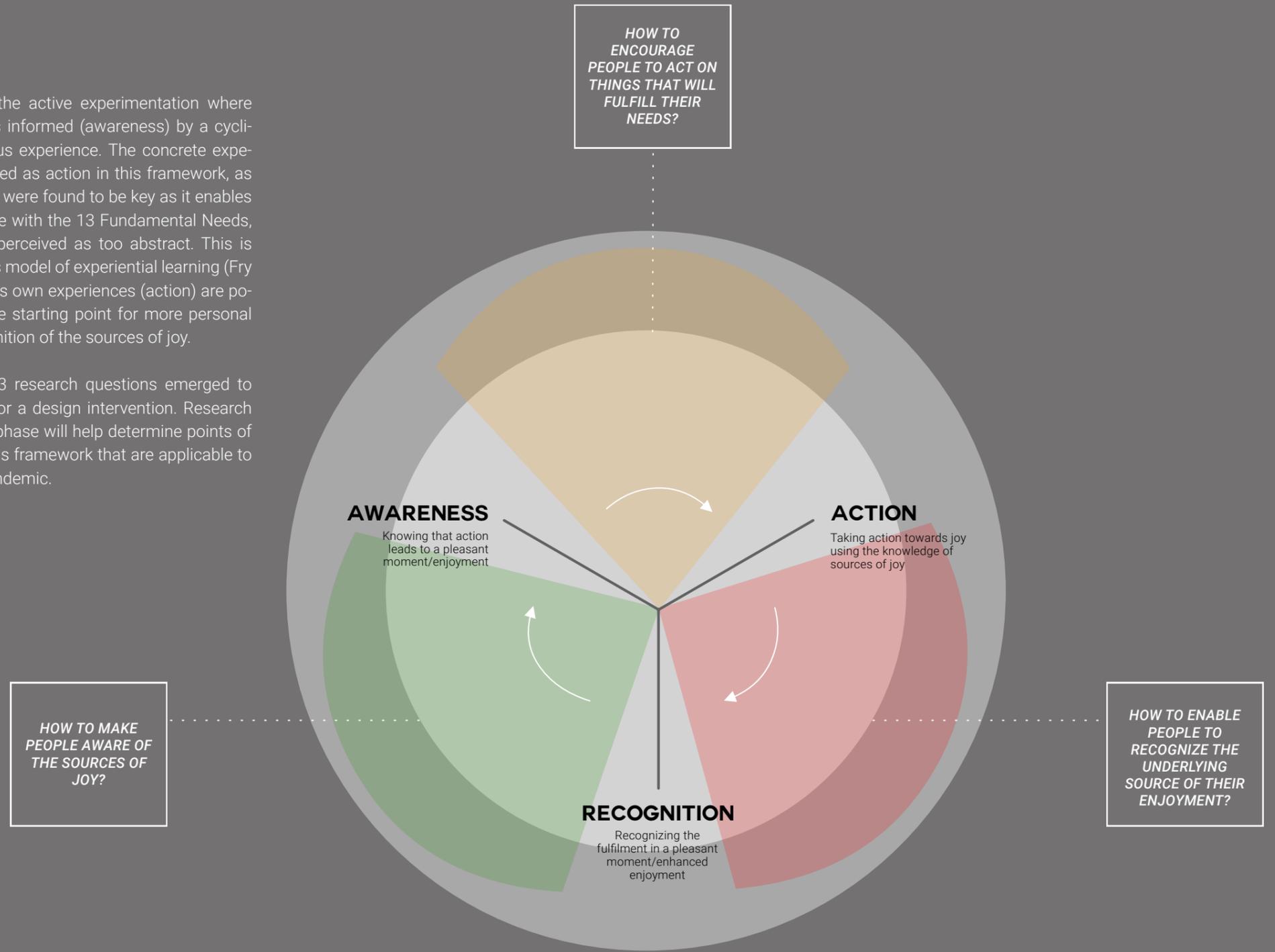


Figure F.1: Framework of repeated enjoyable behavior. Showing how the theory of Fundamental Needs contribute to this dynamic in each step and could facilitate future actions that are fulfilling.

PHASE 2

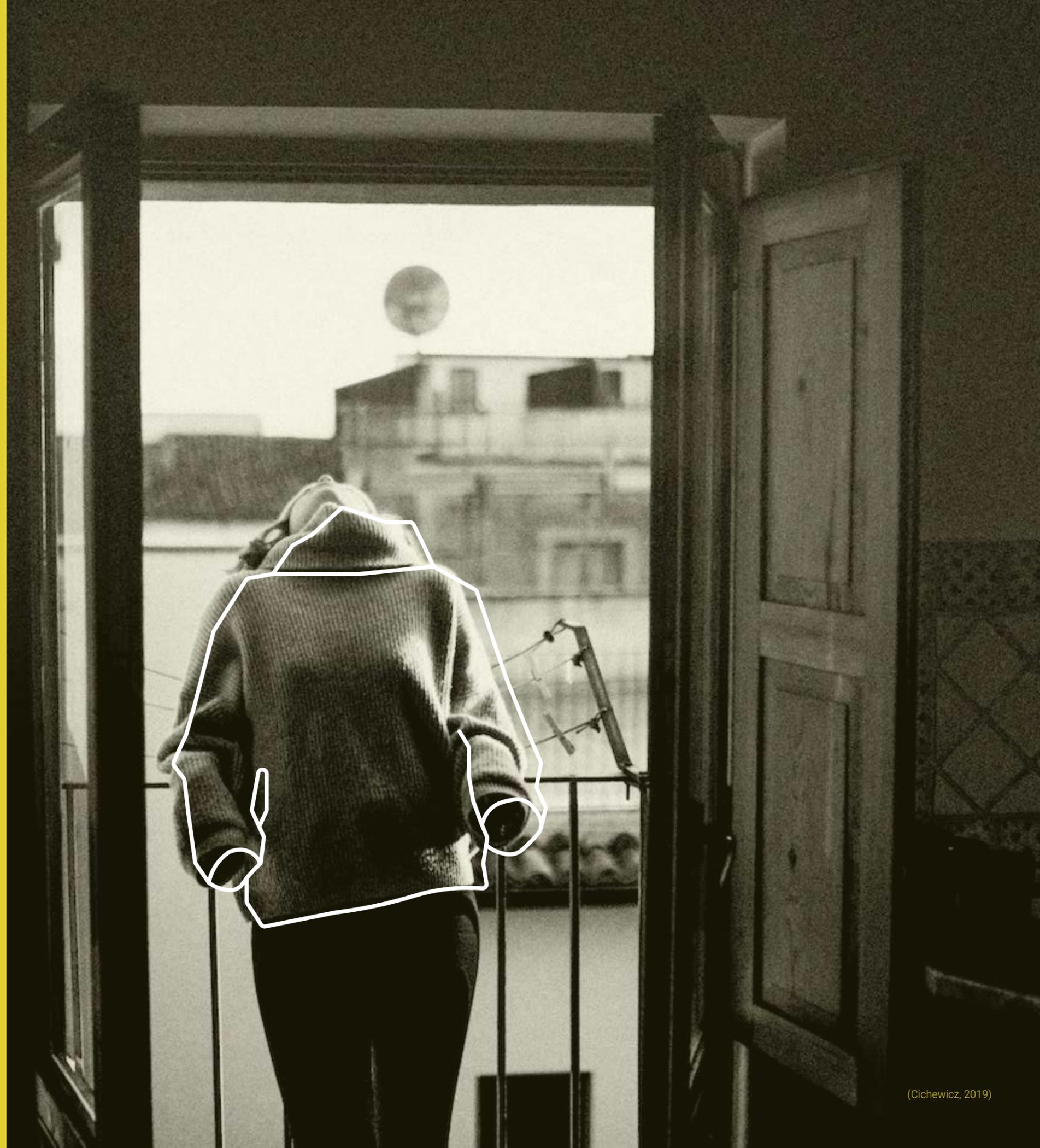
Understanding the Context of Covid-19: A state of languishing

*"it's not like I stopped doing stuff. But **I just stopped enjoying the stuff.**" -HB*

What is so challenging and depressing about the pandemic during which so many people have been struggling to enjoy themselves? This has already been a widespread topic of discussion since it all started in March 2020. The limiting circumstances and quite a lot of restrictions around daily activities naturally impacted life as we know it in a negative way. What is the fundamental block in the way of enjoyment during the pandemic? What are young adults struggling with during this process and are there specific Fundamental Needs that are deprived in relation to those? How did Covid-19 affect daily life in terms of fulfillment?

The previous phase has established an understanding on how the 13 Fundamental Needs can be used to design a humanistic tool for well-being. As the goal of the project is to design this tool for the context of Covid-19, in this phase the space for intervention within that context was explored.

Interviews were conducted to understand how Covid-19 affected the daily lives and routines of young adults in terms of need fulfillment. Five context factors were defined that lead to a state of languishing. The relation of these factors to Fundamental Needs were explored, identified and later used to define design criteria. From the interviews, different characteristics, priorities and responses to this new way of living set the foundation for personas in the next phase. The framework was further detailed as the contextual insights were implemented regarding enjoyment and motivation to pursue it. Gaining a holistic understanding of the problem at hand then set the stage for conceptualization in the next phase.



What is going on?

In April 2020, a month after Covid-19 was officially declared as a worldwide health crisis, an estimated 2.6 billion people – one-third of the world’s population – were living under some kind of lockdown or quarantine. (Jankowicz, 2020). This period in world history was argued to be the largest psychological experiment ever conducted. Since then, there has been growing evidence of psychological distress among the population (See Figure 2.1). While some of the underlying reasons for decreased well-being are external such as loss of a loved one, loss of job or financial struggles, some internal factors have also been in play. This chapter consists of activities that explore the impact of living in a world of pandemic on subjective well-being of individuals with regard to daily engagements, and how have the Fundamental Needs been affected from this context.

The pandemic changed what we take for granted as a lot of things we used to do were not possible anymore. Our routines which are normally built around what makes us feel joy and fulfill us without conscious effort were also not exactly the same in this period. With the NPIs came with Covid-19 pandemic, it came to a point where we had to decide between our well-being and the safety of our loved ones/society/ourselves. This choice has not been evident until the heavy consequences of isolation started to show up. Some people did the best they could and discovered activities that are outlets to unwind, and found new sources of joy in life. But for most of the people, a heavy and seemingly debilitating state has already been established right in between well-being and ill-being.

We all know that it hasn’t been the best of times, but why does it seem like it’s getting worse and how can we do something about it? As the goal of this project is to design an intervention towards joy in the context of Covid-19 pandemic, the context needs to be understood extensively. In order to do so, first, covid-related content of two online forums were analyzed. (See Appendix C.1). Using these findings, an overall structure was formed for generative interviews to be conducted.

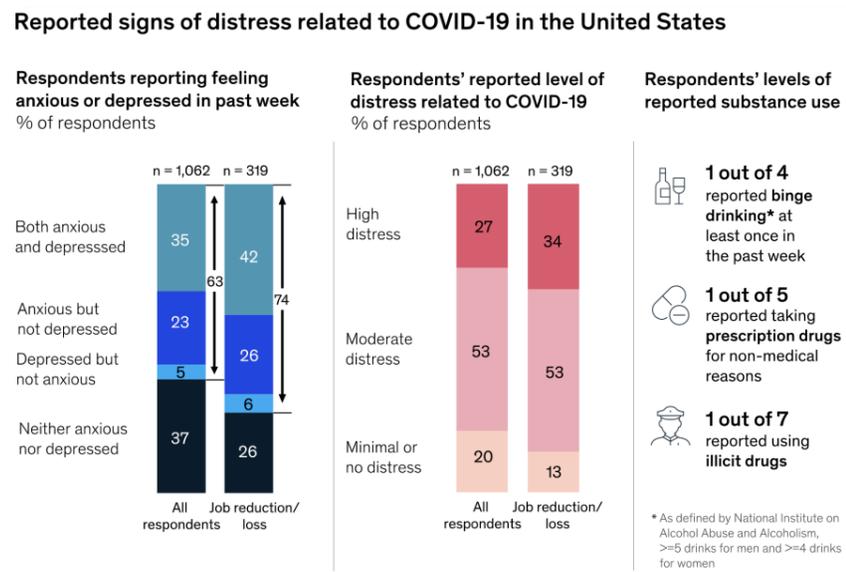


Figure 2.1: Reported signs of distress due to Covid-19 in the US (Coe & Enomoto, 2020)

2.1 Studying the context: Generative Interviews

How did the context of Covid-19 affect people’s daily lives and routines in terms of fulfillment? 11 young adults were interviewed in a generative manner to gain in-depth insights on the impact of Covid-19 pandemic on individuals as well as uncover the emerging activities to overcome the challenges they have faced.

2.1.1 Method

A series of semi-structured interviews were conducted with 11 young adults in a generative manner. The interviews were conducted online, using Zoom video calling. Miro online collaboration platform was used to conduct interviews in an interactive manner. Through the platform, pre-prepared boards were provided to the participants in order to visualize their social circles, daily interactions, new and old routines as well as mapping their perception of their need fulfillment during the period of Covid-19 pandemic. See Appendix C.3 for the boards used in the interviews.

The pandemic has affected people from a wide variety of aspects, and the way of coping with these effects is also diverse. However, the group of people that forms the focus of this project are young adults who went through changes in their manner of their professional activities (work/study) and experienced changes in daily engagements. In this regard, within the scope of this project the interviews were primarily focused on day-to-day activities and 13 Fundamental Needs. Figure 2.2 shows an overview of the topics covered in the interviews (See Appendix C.2 for the interview questions).

2.1.2 Analysis and Initial Findings

The interviews were built around the changes in daily life and how people found a way of living their lives that fulfills them in the current context as well as what kind of things that make them happy. However, the interview sessions uncovered deeply sensitive stories of people during the pandemic. All the people that were interviewed expressed going through a hard time adjusting to this new way of living. Although the ways of dealing naturally differed among participants, a common pattern of low spirits and despair was prevalent. One way or another all participants from different backgrounds struggled with the NPIs and the ramifications of this new way of living.

During this process a big change came with the NPIs. Abiding by governmental measures regarding the pandemic were found highly related to acting morally (need for **Morality**) and staying safe (need for **Security**). However, taking how long the world has been living in this pandemic into account, high disruptions of needs for **Stimulation** and **Autonomy** were observed in the long run. These two sides presented a dilemma, where both cannot be fully satisfied at

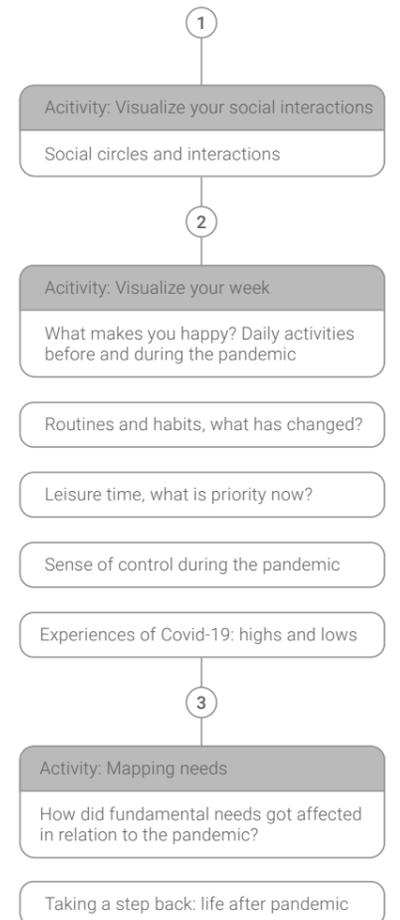


Figure 2.2: Overview of the interview structure

the same time. How people coped with the pandemic heavily depended on the needs they prioritized. For the people who chose to abide by the NPIs, act morally and/or towards staying safe, the long process until now has uncovered a cognitive journey and complex dynamics that led to a state of emptiness and lack of enthusiasm.

In the literature of mental health, this state is called 'languishing'. It can be explained as "the void between depression and flourishing - the absence of well-being. You don't have symptoms of mental illness, but you are not the epitome of mental health either. You're not functioning at full capacity. Languishing dulls your motivation, disrupts your ability to focus, and triples the odds that you'll cut back on work." (Grant, 2021)

2.1.2.1 Understanding Fundamental Needs in context

A part of the interviews specifically focused on need fulfilment. The Fundamental Needs that got affected - both positive and negative - due to the pandemic were mapped by the participants. Figure 2.3 shows an example of the Miro boards used for mapping these needs. The activity of mapping needs was based on the experience of living with the pandemic for a long period of time. The boards were used as a starting point for a conversation of need fulfilment during the interviews

To understand how each Fundamental Need manifested in relation to the context, these boards were first analyzed separately. Figure 2.4 shows an overview of needs depicted as either fulfilled or disrupted from a single aspect. Each circle represents the mapping of one participant. The disruptions marked X on the fig-

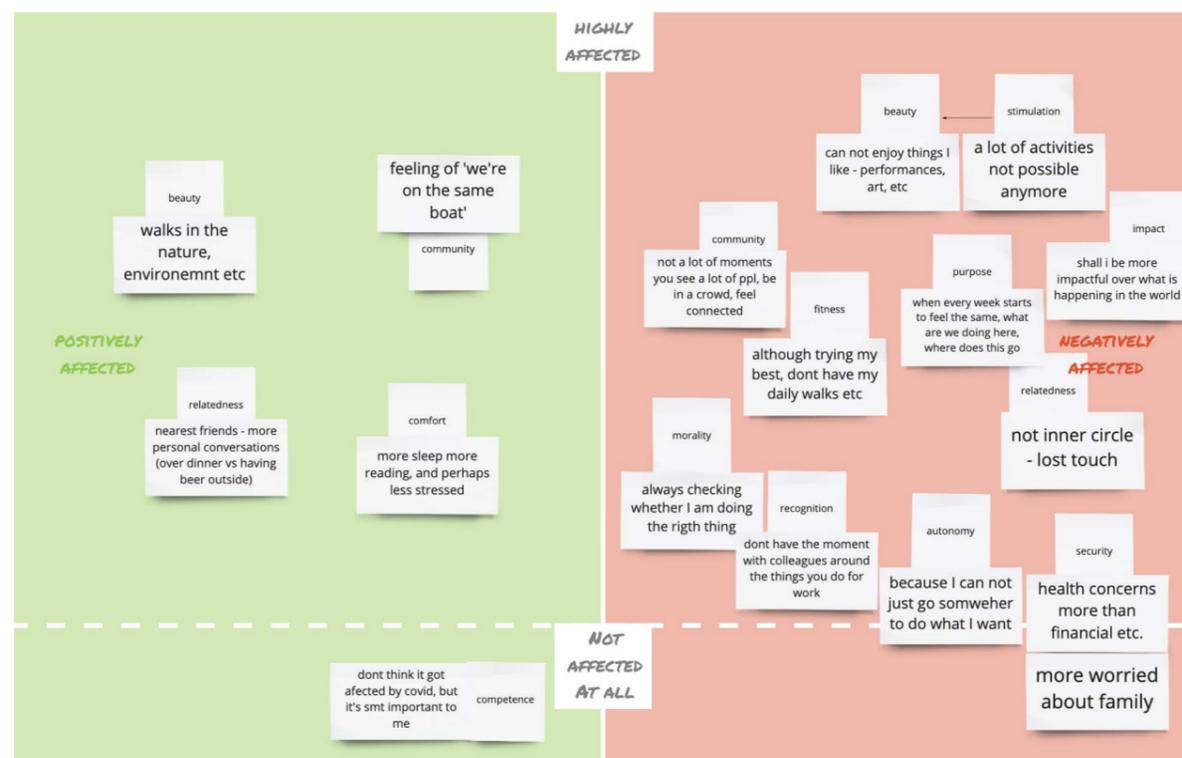


Figure 2.3: Mapping needs on Miro: board of one participant

ure are positioned as severely affected (placed upper and outermost corners of the Miro boards shown in Figure 2.3). See Appendix C.4 for the combinations of fulfilled needs and how each fundamental need is *individually related* to the context of the pandemic. A holistic analysis of the interviews showed more complex struggles in daily life. Based on this understanding of Fundamental Needs, the insights from the analysis were linked with the underlying disrupted needs. These showed a combination of or a chain reaction among several Fundamental Needs. These dynamics are shown in the figure through dashed lines, which will be explained in the following chapter.

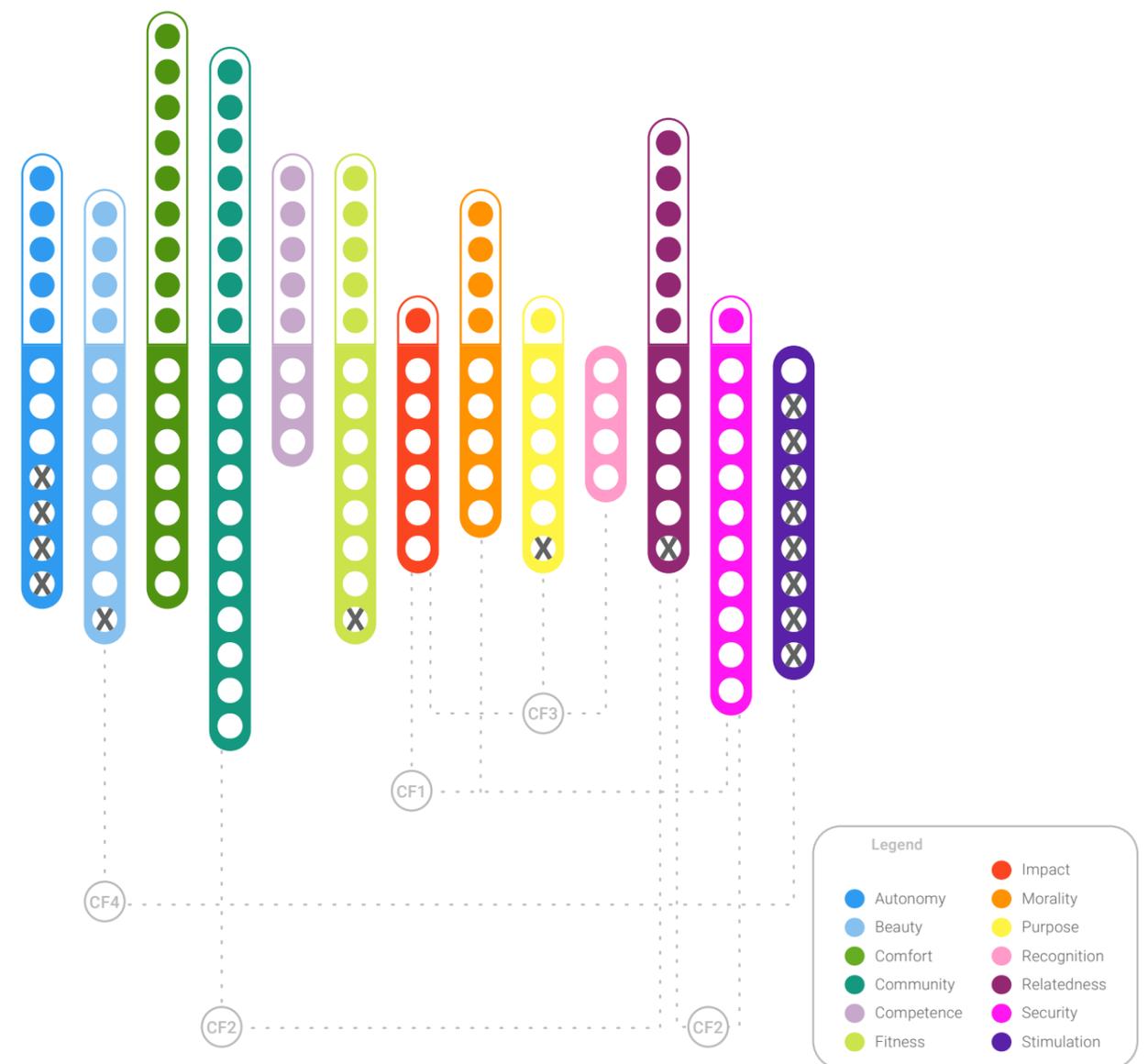


Figure 2.4: Needs that are depicted positively (above) or negatively (below) affected by the pandemic context according to the participants

2.1.2.2 A holistic analysis: insights and clusters

Large amount of qualitative data was generated by the filled out digital boards, interviews and their transcripts (See Figure 2.5). This data was translated into insights for each participant regarding engagements and underlying motivations in daily life during the pandemic. All insights were linked to original quotes from the transcripts to enable tracing. Afterwards, these were clustered into recurring themes that are consistent among participants with different factors on motivation to engage or not to engage in activities in daily life. Needs that are depicted as disrupted in relation to a factor are included in these themes. From these themes, more inclusive clusters emerged (orange boxes in Figure 2.5). These clusters eventually defined overarching context factors which illustrate the struggles that gradually emerged during the pandemic. The clusters under these factors are shown in relation to each other in Figure 2.7. See Appendix C.5 to see the description of each cluster and the Fundamental Needs that are found as disrupted in relation.

2.1.2.3 A narrative of context factors

Five context factors emerged from the clusters, as shown in Figure 2.6. The relation of these factors can be understood in a narrative. Figure 2.7 gives a glimpse of how the insights gained in this phase are in a dynamic play with each other in a step by step narrative. Starting with NPIs taking away two aspects of daily life and one's extended behavior space, the narrative shows how the events unfolded towards a state of languishing. Each context factor corresponding to different parts of the storyline is explained separately in the following section. The Fundamental Needs that are plainly disrupted are also shown within this storyline.

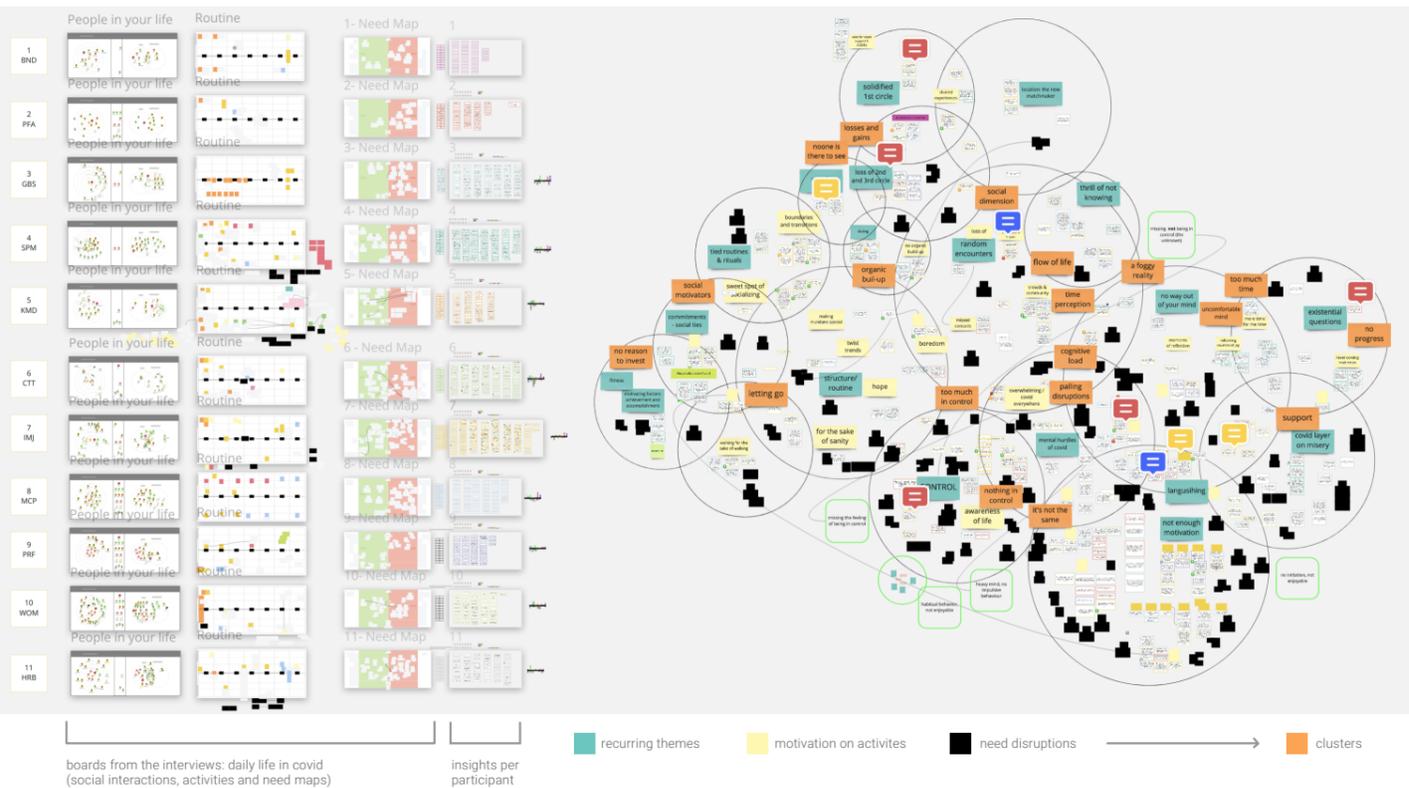


Figure 2.5: A screenshot of the Miro board used for analysis



Figure 2.6: From the analysis: The clusters(1-24) and overarching context factors (CF#1-5) that negatively effected the subjective well-being and eventually led to languishing. See Appendix C.5 for the description of each cluster and the Fundamental Needs that are found as disrupted in relation.

Public Spaces

Throughout the last year, workspaces and educational institutions were shut down, as well as gyms, museums, cafes, etc... Classes people take and places people visit were all transferred to online platforms like Zoom.

The social component and organic interactions were taken out of daily activities. In the meantime, the chain of rituals were broken, the small acts we perform around our schedules disappeared.

Maintaining almost all daily activities from home did not allow for light exercises among locations as well as any change of location - and consequently change of mindset. As 'life' people encounter in between places disappeared, people stopped finding themselves in the flow of opportunities and lost random encounters.

In the meanwhile, the work people do started to feel aimless. People were completing tasks with no mental closure, they were achieving high quality of work with no one to see and they would succeed in projects with no one to high five afterwards. Work relationships also started to get tense. And seeing each other only through screens was not helping for empathy.

Living rooms became literally "living rooms", people started struggling with the thoughts in their minds because there was no dissociation from their existing thoughts and mindset. There was no mental escape as well as physical escape. So everybody started to take walks. That was also a way of compensating for our disrupted need for fitness.

Having no one around meant not being recognized. No recognition led to deficiency in feeling competent and questioning whether anything they do has an impact. In turn, all the effort put in 5 days a week started to feel empty, leading towards losing the sense of purpose.

Having complete control over what happens, and having to initiate everything that people wanted to happen created an overwhelming sense of autonomy. In the meanwhile, if people did not have the motivation to initiate new things and take action, the comfort of their houses, and the simplicity of their lives due to inactivity became overwhelming. "The comfort zone" became a state of "bleh" that people got more and more sucked in instead of a joyful moment of peace and relaxation. At this point people "would love to have other things having an impact on their lives".

In some cases this led to major existential crises followed by big decisions of changing jobs or careers, or dropping/freezing studies. The job market being slowed down also caused problems in people acting on and succeeding in their decisions. This in turn caused a feeling of hopelessness and being stuck in a very depressive state.

#3

Context factors explained in depth in chapter 2.1.3.

Social Interactions

People were forced to eliminate their social circles as they formed smaller circles where they were safe. In the meantime gathering in groups were not possible by the NPIs.

As people weren't gathering in groups the friends of friend's got out of the picture. The peripheral relationships that build a community got disappeared. Not being in any kind of social space such as sports activities, offices or campuses also caused the loss of community and interaction among extended social circles.

Losing secondary and third circle people from life, being with solely people from inner circles and having only planned meetings, locked the conversations and interactions they have. As people all go through the stress of Covid-19, the depressing conversations around the pandemic covered the existing mental load of the NPIs. Forcing interactions to be fun in a safe way became overwhelming. In the meantime, light conversations, activities that are still safe to socialize during, and fresh perspectives from others became very much of a need.

Whatever people were doing, they started to feel stuck. If something was going wrong, it was the perfect time to overthink. Looking for inspiration, the only channel was again through the screen of a computer. People were feeling tired of their own thoughts, while being extremely aware of their actions. Nothing was happening that is not planned.

Having overwhelming thoughts in mind also got accompanied by NPIs. Having to think how to act according to the measures in every step they want to take became an overwhelming thought itself. Even when going out and doing something, it was either heavy talks around pandemic or stories that were not interesting at all. Neither light chats to bring air to the conversations and strangers with fresh perspectives, nor anything that is somewhat unexpected were happening. People could literally live through what's going to happen before even going out to somewhere.

Having nothing stimulating going on at home, being at the same place with the same people doing same things, not having new faces, not having new opportunities and even losing the motivation to initiate something new for self at this point created a locked position for mental well-being. Life was not flowing but at this point people also had enough of pushing it. People "became the master of Netflix", "did drugs to make nights pass", and "cried and found relief more and more often". Nothing new was happening, there was no stimulation of any sort. People were stuck in a languishing state.

explaining high amount of joy moments of relatedness collected in study 1

In the meanwhile, the the relationships with friends whom are already closest to us, and friends live close by got closer. Deep conversations and going through hard times together brought people closer and help them build deeper connections. People were feeling a deep sense of relatedness.

In the meanwhile, these circumstances made it harder for people who are going through hard times to heal, and prolonged their misery. No social events to drink and forget, no distractions to fill the void, no organic chance of meeting someone new, no way of escaping by taking a vacation and having to stay at home with their thoughts pushed people to be miserable alone for longer periods of time. For some people this was a disruption for feeling secure and having beauty in life.

While acting in line with the NPIs, thinking of others and complying with the measures, created a high cognitive load. Having to think before almost every step on top of an already a cloudy mind started to overwhelm people. In some cases, having to think whether something is 'worth the risk' turned into excuses not to attend to events/activities.

The realization that no matter how much effort is put as an individual, seeing that only the actions of big corporations and governments having a significant effect against the virus made people feel like their actions have almost no impact. In the meanwhile, seeing others that are not complying to the measures disrupted people's sense of morality.

#1

#4

Figure 2.7: Step by step narrative of living in the context of Covid-19 in relation to 13 Fundamental Needs, as found in the interviews.

2.1.3 Five context factors and the prominent need disruptions

2.1.3.1 The bigger picture

The findings showed a cognitive journey and complex dynamics that led to a state of languishing. Figure 2.7 presented a step by step narrative of how this process has come to play. How five context factors differ from each other can be seen in this narrative. Even though the Fundamental Needs were highly intertwined, a number of needs that are disrupted characterize each context factor. All factors were found to have a negative impact, that is gradually increasing, on subjective well-being over the course of a year. The combination of these factors affected the individuals on a bigger scale than described here in terms of need disruptions.

1) Feeling powerless against Covid-19

This category can be described as the initial factors caused by the pandemic. NPIs were the most defining character of this period. Starting from the beginning, people put great effort to act in line with their values as well as to stay safe and healthy. However, living with these kinds of rules does not come natural. Throughout time having to always consider the pandemic aspect before doing almost anything put a great mental load. Even being outside or simply thinking of wanting to do something felt like it's wrong and it's too much to people. A chain disruption of needs was observed for Morality, Security and Impact regarding this category. Further effects can be seen in clusters 1, 2, 5, 6 and 20.

Morality // Security // Impact. Finding ourselves in the middle of an international health crisis, the need for security has been the first to be disrupted. The feeling of 'being in this together' put an emphasis on acting morally as a society and abiding by the NPIs. Eventually, this triggered another chain disruption as time passed by and the pandemic seemed to be here to stay as an international health crisis regardless of the NPIs and individual efforts. Feeling as though one's efforts have no impact in the bigger picture, the motivation decreased in the long run. In the meanwhile, seeing others not acting responsibly also disrupted the sense of morality. Having no control over the situation, and seeing no unison in efforts contributed the feeling of not feeling secure.

2) Loss of social Dimension

This aspect of the pandemic goes hand in hand with losing public spaces and mobility. This was accompanied by a very limited behavior space as public events or any activity outside one's home were non-existent. The immediate effect was the social interactions that came with these places. Overall, this aspect of the pandemic caused everything challenging about the pandemic to become more personal, alone, and overwhelming. Disruptions of needs were highly observed for Community, Relatedness and Safety underlying this aspect.

Community X Relatedness. Needs for community and Relatedness have been heavily disrupted during the pandemic. Very early in the process, the communities started to disappear due to loss of events and public spaces as well as institutions that brought people together. As a consequence, people also lost touch with their extended social circles which consist of people who are not within the immediate circle such as not so close friends, friends of friends, coworkers, or 'hi-bye' friends from the faculty. These factors combined led the casual social dimension of life to disappear. The ramifications of losing interactions beyond the inner circle can be seen in clusters 8, 9, 10, 11, 12, 14, 15, 16, 22, 24 and 21.

However, the more people lost touch with their extended social circles, the more they became closer with their inner circles. Going through the hard times with the people closest to you strengthened these relationships.

Security X Relatedness: Social support systems were also disrupted during the pandemic. Initially this was caused by everybody going through somewhat similar processes and no one having the capacity to support each other. However, people still showed higher motivation to be there for loved ones than for themselves (see cluster 5). On the other hand, as life kept going, some people went through hard times not fundamentally related to the pandemic. During these, not being able to reach people that could provide support heavily disrupted the sense of security. The loss of support systems can be seen in clusters 5, 7 and 23.

3) Moment of reflection

Being alone with a full mind challenged a lot of people during the pandemic. For some people, this led to a moment for thinking about the purpose and direction of their life. In terms of work-career, this can be explained in a chain of events disrupting the needs for Recognition, Impact, Competence and eventually Purpose. The range of this aspect can be seen in clusters 9, 10, 15 and 22.

Recognition // Impact // Purpose. Loss of communities and the social dimension of life in general triggered a chain reaction that disrupted the needs for Recognition, Impact and Purpose. When there are no people around anymore, the things people do -work, projects etc.- were not recognized. Without recognition, it was hard to see the impact of one's actions. In the context of professional and educational work, this triggered people to question the purpose they serve through their engagements. In most cases, this chain of events caused a moment of existential crisis, and in some cases some life-changing decisions were made.

4) Flow of life

This category can be summarized as life stopping to play its part. This is described further in the analogy in section 2.1.5. This context factor can be understood also as an outcome of social dimension (2) and public space. However, it seems to have bigger implications on one's view of life. This was mostly associated with complete lack of stimulation and losing the harmony in life.

"Sometimes if something is really nice, but you do it only by yourself. Yeah, sometimes it's not even worth doing. I don't think it's better or not better. It's necessary to share it" - SM

"To send a message check with my friends and keep updating. Yeah. So I should do this more. Although I don't feel like doing it. Do you understand how I feel? I don't know. So yeah, no motivation, I have no more motivation even see other people." - GS

"I'm sometimes thinking 'should I go do something else? ... I find it hard to distinguish or pinpoint the effect. Sometimes you're like me, I feel myself, I feel like this, this and this. But then you're constantly asking yourself, does it have to do with Corona? Or does it have to do with the fact that me... There are also some just normal thoughts going on. But the fact that every time you've got to ask yourself, or is it Corona? Yeah, I don't know. I find it really, really exhausting." - IMJ

"...quite negative because if you don't see that many people, I think that's also partly why I like to work together with people, to get recognition of what I'm doing. And then if I don't have any people around I'm not sure if I'm doing the right thing." - WM

"Right now it's like, I cannot do anything. I feel handicapped. Yeah." - GS

"I try not to try not to get too upset about this and this because it's not it's only making me sad, but it's also very passive, the passive attitudes with some regulations... "It could also be that you're, you know, like the frog, the frog in the water, and then they're slowly heating the water and then at some point, it's cooking. Um, sometimes I wonder if I shouldn't be more actively reading stuff. If this is happening, but then yeah, I don't know." - MP

“During this conversation, it kind of makes me feel like **it all happened very slowly. So every time I had the chance to just be like, okay, sucks, but it’s okay. Let’s keep going.** But now, like compared to before Corona, it’s like, that sucks, man. Stupid. Bullshit...it **makes me feel like there’s absolutely nothing happening right now. In my life. I’m just passing time, mostly waiting until Corona is over.**” - PFA

Stimulation // Beauty. On account of NPIs a lot of aspects of daily life as we know disappeared. From public spaces of all sorts, to leisure activities and even gathering with friends and family were all out of reach at some point. Over time, life slowed down to a point of almost nothing happening. The ‘flow of life’ stopped: having nothing that requires changing physical space, having no public events to attend, seeing no one besides intentionally planning, having no space for any kind of random encounters. Absolutely nothing happening in daily life beyond one’s own actions that are consciously initiated blocked channels of stimulation. A long period of under-stimulation went on with recurring events and faces. Beauty in life as perceived has disrupted as no (artistic) experiences to attend an experience and not (accidentally) witnessing environmental beauty due to having no reason to be around in the city/nature. Overall, there was no sense of harmony and balance in life left due to not much happening in general. Struggles associated with losing the flow of life can be seen in clusters 1, 6, 12, 13, 14, 15, 16, 17, 18, 21 and 22.

“...when every week starts to feel like the week before, you can have the idea like **What is it? What? Yeah, what is this? What are we doing here? Where does it go? I don’t have goals anymore in my life.**” - MP

Comfort. It has been agreed upon that it has been very comfortable during the pandemic in the sense that being in the comfort of our houses and at some point having it too simple that not even changing out of pajamas. However, life being so simple and ‘easy’ was due to lack of “flow of life” and it started to feel like being stuck in the “comfort zone”. A detachment from life outside came with a feeling of a foggy reality and living in one’s own bubble. Even when appreciating comfort, due to minimal variety of activities, it became “boring”. This state of too much comfort became depressing as people felt under-stimulated over long periods of time. Further effects of under-stimulation can be seen in clusters 4, 13, 17, 19 and 22

5) Shift in locus of control

The locus of control has (temporarily) shifted towards the external as people have not been able to control or make an impact over the course of life. Developed by Julian B. Rotter in 1954, locus of control is the degree to which one believes to have control over the outcome of events in their lives. An internal locus of control represents belief that one has control over the outcome of events as opposed to external forces (beyond their influence) and vice versa for external locus of control. The continuum of locus of control influences how one responds to the events that happen in their life, as well as the motivation to take action. If a person believes they have control over life actions, it is more likely that they would take action to change their situation when needed. However, people who have an external locus of control frequently feel hopeless or powerless in the face of difficult situations (Rotter, 1966). The environment throughout the pandemic has left very little control for people to act as they want. In turn people experienced moments of hopelessness as they felt less and less in control over the course of life. The prevalent disrupted Fundamental Need was indeed Autonomy. However, an interesting finding was the feeling of too much control. Within a world where people feel they have no control, everything that happened around them was very much in their own control. Being too much aware of one’s own thoughts, actions and impact on how they live life caused an uncomfortable mindset. Living in this irony ended up causing inertia. Feeling of no control can be seen in clusters 1, 2, 7, 19 and 20.

“...like in the evenings with the clock. **I feel like control is taken away,** because that’s the only time you can you can do what you want because you don’t have to work and then you have to be home. So yeah, I think control is a very good point, that control is influencing a lot of feelings, as well.” - HB

“Like it’s it’s kind of mindfulness, but then **push too much to the limit, that it becomes, well, illness and not mindfulness.** Like being too much aware of the moment, I think that’s something that I’m afraid of.” - PRF

Autonomy. Initially, a feeling of no control has been dominant. Not being able to decide and act as one wishes has heavily disrupted the need for autonomy. On the other hand, lack of interactions with people and having no external factors ended up with leaving very little happening in life. In turn, people needed to take charge of whatever they wanted to happen and act on it. This gave a feeling of too much control over what happens in one’s life as well as a constant pressure to act. However, due to limited behavior space, the same things were happening over and over again. Nothing unknown was being experienced as one could almost live through an evening with friends without even going there. At some point people lost the motivation to put in the effort. Feeling too much in control is also associated with clusters 6, 13, 14, 22 and 21.

“**What is out of control is having these things that happen when you’re not in control,** everything feels very controlled. So weeks look very much the same. Like I said, dinners feel very much the same, even though they’re all very nice, but **you can already sort of scribble it out** like, Okay, I will see them and this will sort of happen around this time.” - MP

2.1.3.2 Time perception and Well-being (Cluster 17)

It is said that time is open to psychological interpretation rather than being just a physical phenomenon, monitoring of which underpins cognitive functioning (James, 1890/1950; Suddendorf & Corballis, 1997). Literature on time perception operationally defines fast perception of time with better emotional health alongside high scores of effectiveness and (internal locus of) control, and purposefulness in life. While faster time perceptions are associated with better psychological functioning the contrary shows high correlation with depression (Baum et al., 1984; Drake et al., 2008; Oyanadel & Buela-Casal, 2014). It is found that those who had no or less purposeful activity experiences time as moving slower than before while feeling in control is related to time perception in the direction of greater perceived control and a sped-up sense of time.

Highly consistent with the literature, the interviews also showed very slow perception of time accompanied by minimum effectiveness, feeling very little control over life as well as a lack of purpose, and hence decreased well-being. In turn, when looking back, big chunks of time feels like it went very fast due to nothing considerable happening.

When there are no new experiences, the model of time we use to navigate through life (manifest time) feels slower. One way to overcome this is found to be trying new things in order to vary your daily routine.



Diverse sources underlying pleasant moments can be used to emphasize variety and bring vitality to routine.

A conscious exploration could also emphasize the feeling of control.

2.1.4 Difference in responses

Not everyone experienced the pandemic in the same way, and naturally they responded to it in different ways. The interviews showed some patterns among participants in perceiving this new world as well as the way of responding to it. Even though the reactions of young adults, who experienced disruptions in daily life, varied throughout the year depending on personal circumstances, a somewhat new balance in daily life has been established over the course of one year. These responses were clustered into three groups (See Figure 2.8). In a general sense, these three groups of people experienced and reacted to the pandemic in a 1- passive, 2- compliant, and 3- resisting manner in regard to their engagements and routine activities. Each group's activity engagement was represented with a simple overview. Later in phase 3, the Mental Health Continuum Model was used to understand what kind of responses are considered as low levels of subjective well-being (Lamers et al., 2011). The second group was found in between well-being and ill-being. This group established the focus group and used to build 3 personas in the following phase.

- Activities that are no longer possible with the pandemic: Lost sources of Joy
- Activities that are not (much) affected from the NPIs
- New found sources of joy that became a part of the new routine

Passive manner: One group of people had a hard time adjusting to the period of pandemic. Seeing the pandemic as a temporary period, these people did not see the value of engaging in activities that could not be done in the same way as before. As the pandemic slowly proceeded and settled as the new normal, these people were left with almost nothing in terms of activities they engage in daily life. A year with the pandemic has passed in a slow and depressive manner.



Figure 2.8: Three groups of responses observed in the interviews. Distribution of the participants are shown with quotes representing each group.

Compliant manner: Another group of people employed an adaptive approach to this period. In fact, there are 2 groups within this manner with nuances. Some of them with already introverted tendencies did not lose much from their lives and kept going on with their routines with minimal compromise. What has challenged them was the lack of social push which left them too comfortable in their 'comfort zone'. People from this group seem to benefit from guidance and cues for action. They do not necessarily explore new things or take initiative but they adapt well to situations. The others with more extroverted nature lost more of what gave them joy in life. Feeling a stronger need for social stimulation than the former group, they put effort into keeping social connections as well as put more time in hobbies that made them feel good that are still possible. However, their efforts were still on the coping level as they did not explore and establish new habits and routines and they also got overwhelmed from time to time due to understimulation.



Resisting manner: The last group of people can also be called as the fighters, as they did not let go without a fight. Just like everyone else, these people also had a hard time in the beginning of the pandemic. However, eventually they reached a point where they took charge of their lives and started exploring new ways to get out of this depressive situation. They explored new sources of joy as some of the old ones became unavailable, embraced new hobbies, or found ways to diversify the needs fulfilled through ones they are still able to engage with. Having moments of reflecting on their goals and ambitions in life during the pandemic like others, people from this group are the ones who managed to act on and realize those changes in their lives, such as finding a new job, changing studies or moving to a new city.



2.1.5 An analogy: When life stops playing its cards

The last year spent in the world of a pandemic is seemingly revolving around a lack of flow of life. Even though the interviews were based on what young people do with their time during the pandemic and what kind of activities they enjoy, conversations brought out feelings of weariness towards life and reluctance to be a part of it from time to time. Especially among people who were depicted as showing a 'compliant manner', the ramifications of this lack of flow led to a state of languishing. The experiences they shared regarding how this way of living feels like can be explained with the analogy below.

*"...everything should be planned. I mean, you're either home or at someone's place or outside. But it doesn't happen that people are sitting on the terrace and calling you and asking you do you want to join or the sort of spontaneous events are not happening. **So you have to do everything, and everything is very structured and you could fill it in upfront what it will look like.**" - IMJ*

Imagine living is like playing a card game. Your opponent is life itself, and the cards it plays are everything that is happening around you. The things that happen to be without your initiation, recognition or sometimes without your knowledge that they even exist. The events you find out about and decide to go to, the people you meet at those events, the conversations you find yourself in with those new people, the ideas you bring home with you from those conversations...

We can see NPIs as reducing the number of cards that life can play. And the less cards life is putting on the table, the less interesting the game becomes. But the game needs to keep going, as responsibilities, work, studies, engagements with people are still 'in play'. So you need to keep playing.

In the beginning, you're playing on life's behalf. Choosing cards for it to play as you come up with safe versions of events, or ways to gather with people again like old times. But it's not the same. The game becomes too predictable, and there's nothing exciting about it. You stop pretending as if it's still nice and fun. You're doing the bare minimum as you focus on obligations like work or essentials like family.

At some point, there is so little input from life that it starts feeling like you're playing on your own. Almost all the cards that are on the table are coming from you. It all becomes very underwhelming. There is nothing neither surprising nor engaging about what is going on. There is nothing unknown. You would like to do something about this but you can't do much else than playing your cards at this point in this game. It is not playing anymore, but more like throwing cards for the sake of throwing cards. It is as if nothing would change if you stop playing for a while.

→ How to use one's own set of cards to make the game interesting again?

Efforts on well-being and self-help: why did they not work?

During the pandemic period so many apps were built to support well-being, which did not seem to work (Jaworski et al., 2021). Interviews showed, especially in the beginning, people put the effort into their well-being through methods such as using meditation apps, building an exercising routine or holding a gratitude journal. However, conversations with these people showed that these kinds of engagements faded away during the process. Four reasons stood out for this to happen:

1) The engagement faded away due to not having structure in life. Not having clear transitions among activities, the exercises for mental well-being could not be positioned among other activities, hence the habit could not be maintained as a regular engagement.

2) Most people associated exercise with feeling well and having a clear mind. However, for some, losing the social aspect of exercising made it easier to bail on their routines. For others, exercising from home was not as effective and enjoyable from home (i.e. instead of a yoga studio), which led to decreased engagement despite awareness of the benefits.

3) There is a perceived **high threshold for initiation**. People seem to have the perception that if they start engaging with an activity, it needs to be perfect, or 'as much as before'. This in turn required a high level of commitment to the exercise which, in some cases due to lack of motivation, caused not even trying to get into the habit.

4) The mental weight of the pandemic has been a popular topic among people since the beginning. Having too much focus on this, and sometimes being too much aware of these struggles became overwhelming and pushed people to act on ways to unwind. Nevertheless, not being able to take steps to create a difference caused feeling powerless. Thus, the idea of mindfulness became seemingly useless without any change in action. Having a full mind and inability to put in practice, **the idea of being mindful** lost value.

→ The design implementation should fit among other daily activities.

The threshold for engagement should be kept as low as possible.

Focus should not be heavily on the 'idea of mindfulness' but rather applicable steps towards a daily life one enjoys.

Design concept should aim for making the impact of their actions visible to the user and/or allow for putting learnings in practice.

2.2 Learnings

Stimulation. The overall finding of the research is that lack of stimulation has been blocking a lot of experiences lead to joy even though they normally would. Lack of new experiences, meeting new people, an extended social circle, spontaneous events and random encounters in life left a pretty disrupted need for Stimulation behind. Among all of the 13 Fundamental Needs, Stimulation seems to be the one that got out of hand and could not be replaced regarding the overall decline in motivation.

People were observed to feel mentally blocked. Due to losing the extended circle of socialization, there is no room for inspiration, fresh perspectives, and 'air into the conversations'. Same topics revolve around the same people through the same activities in the same contexts. This blocks the way for solutions to the hurdles in mind. This whole dynamic is based on lacking the 'flow of life'. It may have started by the things people are not allowed to do, but in time life became a drag. Minimal room for random encounters is one of the biggest reasons for lack of stimulation, as well as self-limiting behaviors due to perceiving the behavior space smaller now more than ever.

Control and routine. Not feeling in control, social isolation, and an unknown future. These are some players leading the way to languishing that were found in the interviews. Alongside with these external determinants on daily life, individuals were also found to lose confidence in their ability to make a change in the way they feel. A powerless state took over that diminishes the motivation to pursue enjoyment even more. Languishing has been associated with a state of emptiness and stagnation, constituting a life of quiet despair that is accompanied by descriptions of life and self as "hollow" and like "a void" (Cushman 1990; Keyes, 2002). In a state of languishing, it is really hard to get motivated, act on things that would make one happy, or even keep up with daily activities like cooking or cleaning. But what can be done about this? In order to overcome the state of languishing, the key is to take small steps. Celebrating small achievements, setting boundaries for self and activities, dividing time into blocks as well as keeping focus on one thing at a time and being aware of the progress one makes are suggested in the literature (See Figure 2.9). At this point within the context of Covid-19, it is really important to remember and find joy in small things, and build a routine around them. We need to "rediscover new ways to experience joy and build routines into our lifestyle to reestablish feelings of control." (Jarret, D. qtd in Prendergast, C. (2021)).

Awareness of the present moment: why we do things we do. As mentioned in the findings of phase 1, present-moment awareness is associated with reduced anxiety and depressive symptoms, lowered perceived stress, increased mood and improved subjective well-being. After the findings of how people feel during the pandemic, it is more important to emphasize the moment one is in and rec-

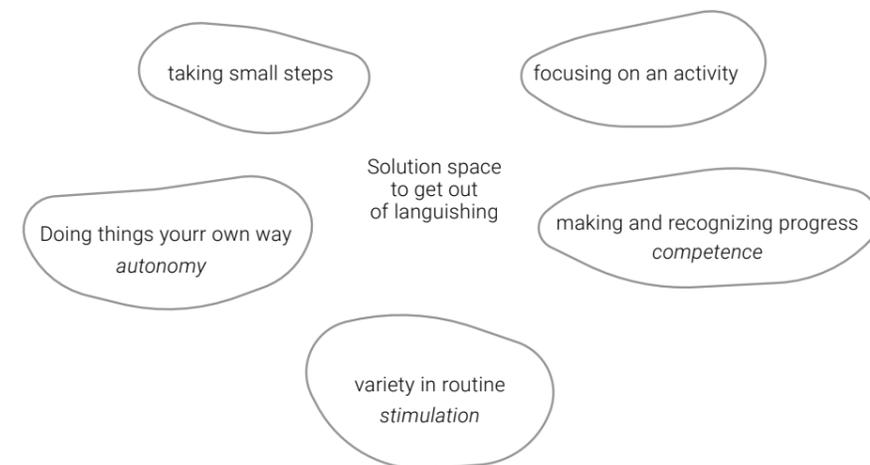


Figure 2.9: Findings from the literature on getting out of a state of languishing

ognize the enjoyment. A foggy mind cluttered with overwhelming thoughts is a hard place to start for this. **Focusing on the moment and getting in the flow of an activity is one of the ways to overcome the state of languishing. In order to do so, people need to actually engage in activities** (action). The next step, there needs to be a sense of purpose in a given moment, that leads the person to focus on what they are doing, and why they are doing it (recognition). Finally, the joy found in these engagements needs to be sustained in order to build a routine that contributes to subjective well-being in the long term and not to fall back into a languishing state.

2.2.1 What's next?

A variety of negative aspects were discovered regarding the context of Covid-19 as well as inspiring and confirmative leads on daily activities and need fulfillment. Starting with the NPIs in effect until the aforementioned state of languishing, an extensive understanding was gained about the underlying reasons of decreased subjective well-being within the context through research activities in this phase. The interviews showed variations in engagement with life, and daily activities. Some people were observed to find their balance back after an initial disruption of routine. These people managed to **fulfill most of their Fundamental Needs through expanding the activities they were still able to do within the limitations of the NPIs**. The rest found to be closer to ill-being than well-being on the MHC model. Languishing, or not flourishing, these people were struggling initiating and/or enjoying daily activities. Not being able to do so, their engagements ended up becoming boring due to repetition. Staying too much indoors and not having many social interactions, this group of people was observed to be suffering from decreased subjective well-being compared to before the pandemic.

Most of the underlying causes, the NPIs that are still enforced, can not be intervened with. However, there are two findings that are deemed crucial to take into account for the design implication. Found state of languishing is the key guideline for designing for this context, regarding the vicious cycle of decreased enjoyment of daily activities and reluctance to act on this lack of enjoyment due to decreased motivation. Secondly, two of the Fundamental Needs were severely -and pervasively- disrupted during the process. The need for Stimulation remaining unfulfilled was found to be the most relevant for intrinsic motivation, followed by the disruption of need for Autonomy manifesting as low levels of confidence and feeling powerless.

Within the scope of this project, the factors that are on the individual level are chosen as the focus for the following steps as it provides a realistic solution space. These findings set the guidelines for the design intervention as the user is understood in terms of level of motivation and needs that are desired to be fulfilled. It is evident that there is a need for new engagements (stimulation), motivation and action (autonomy), and variety in life (beauty-stimulation). Hence, the further steps in the project will be based on exploration of **diversity** through sources of joy as well as maintaining it within the **limited motivational and behavior space** of the pandemic context. Following chapter will implement the findings into the framework and further explore **how to facilitate fulfilling engagements in the context of Covid-19**.



Future design interventions should be focused on the need for stimulation. A good way of doing this is emphasising variety.

Due to current state of SWB, motivation and confidence, small and relatable cues should be used to lower the threshold for action.

Pursuing individual sources of joy can provide a sense of purpose in one's actions. The source pursued should be clear to the user to increase recognition and give a sense of control.

F.2 Back to the framework: Implementation of the findings

Why are enjoyable actions not pursued in the pandemic context?

Insights gained showed several notions hindering this framework to be realized. It is observed in phase 2 that presence of pleasant moments did not lead people to pursue these engagements as expected but on the contrary, it was reduced. The findings of phase 2 are implemented on the framework that was built earlier to trigger a sustainable pursuit of joy (See Figure F.2a). Each step that is represented in the framework is found to be blocked in the context of the pandemic.

On the individual level, the lack of motivation to act -low energy and giving up on self- in a state of languishing is depicted as the key reason that even when there is awareness of what might give enjoyment it is not being translated into engagements.

When engaged, on the action level, there is very little enjoyment left due to limitations. As shown in the findings, the repetition of the same activities due to limited behavior space reduced the enjoyment gained from engagements.

On the recognition level, a number of reasons are found that causes the individual to have a foggy mind, hence already preventing one to enjoy engaging with an activity. Activities that used to be liked are either not recognized as enjoyable due to high repetition, or compared to the before-pandemic versions and not perceived as enjoyable as it could be.

The context shows a state where people either cannot or do not take action even though they are overwhelmed. The insights gained on every step are converted into one's approach on a step 1- that are expected to take place for the cycle to work and 2- that are existent in the current context that blocks this framework. What kind of an approach is existent in the current context are shown in boxes around the framework (See Figure F.2b).

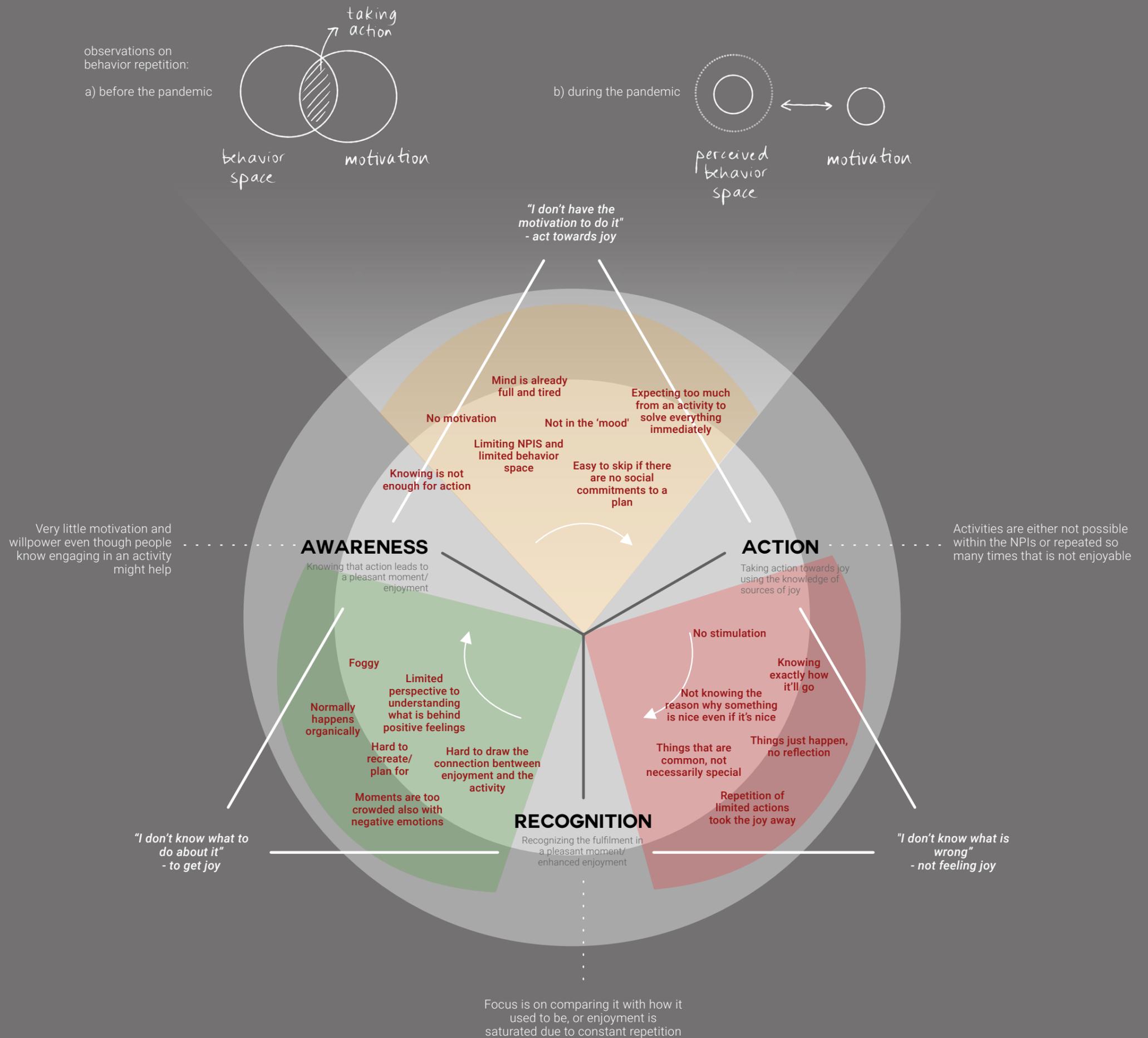


Figure F.2a: Implications of findings blocking a sustained approach to enjoyment

Awareness. In terms of awareness of the mindset and what can be done, currently there is a prominent passive awareness. This is the awareness of being overwhelmed and not being happy at a given moment. The focus is on what a person is not able to do as well as the negative factors that lead to the moment. A general foggy mind is present where the feelings seem like the reality and it is suffocating. This awareness is debilitating and no action follows.

The kind of awareness that is wanted to be triggered is affording awareness. This is the kind of thinking that even though some things lead to an unpleasant state that feels stuck, there are other sources of joy in life. The focus on the possible actions beyond the current state. The person is aware of the behavior space that leads to enjoyment and is able to execute an intervention to the mindset. This awareness triggers action to overcome the unpleasant state.

Action. In terms of action, people engage in two kinds of activities. There are activities that we do on purpose. These are goal-driven, conscious actions that serve an ultimate purpose. When engaging in these activities, the goal inspires us to take action. However, studies show that there is a misconception about motivation (Burns & Beck, 1999). Motivation actually comes after engaging with an activity. Motivation is often the result of action through recognition, not the cause of it. Getting started, even in very small ways, is a form of active inspiration that naturally produces momentum.

Due to not feeling motivated/able to initiate action, the engagement with these kinds of activities are reduced. In some cases they are non-existent within the current context. The other type of activities people engage in are organic behaviors, which exist within the current context. However, they are not being enjoyed anymore. These type of activities need very little attention and motivation since they are driven out of habit or a physiological need. These activities involve our routine behavior and habits on a daily basis.

Recognition. In terms of recognition there is a holistic perspective present in the current context. This is what I call the 'leave' focus. Focusing on overall life concerns, there is a lot of pressure on a given moment as one expects it to solve everything. An experience is seen as a whole and perceived as not necessarily joyful. The leave focus results in marking an experience as not necessar-

ily pleasant and decreases the motivation to engage in the near future.

There's also the type of recognition that can make the best out of an action. This is what I call the 'take' focus. This can be explained as a kind of a light reflection as the mind is in 'the moment'. An experience is dissected

into parts, and the ones that are pleasant and joyful are recognized. When focusing on aspects that give joy, the action is taken to the future providing an understanding of possible actions.

Gaining an understanding of how this cycle is affected by the context of the pandemic, the design questions were adjusted to be more relevant and specific. These questions were used as a point of departure for defining the solution space and conceptualization in the following phase.

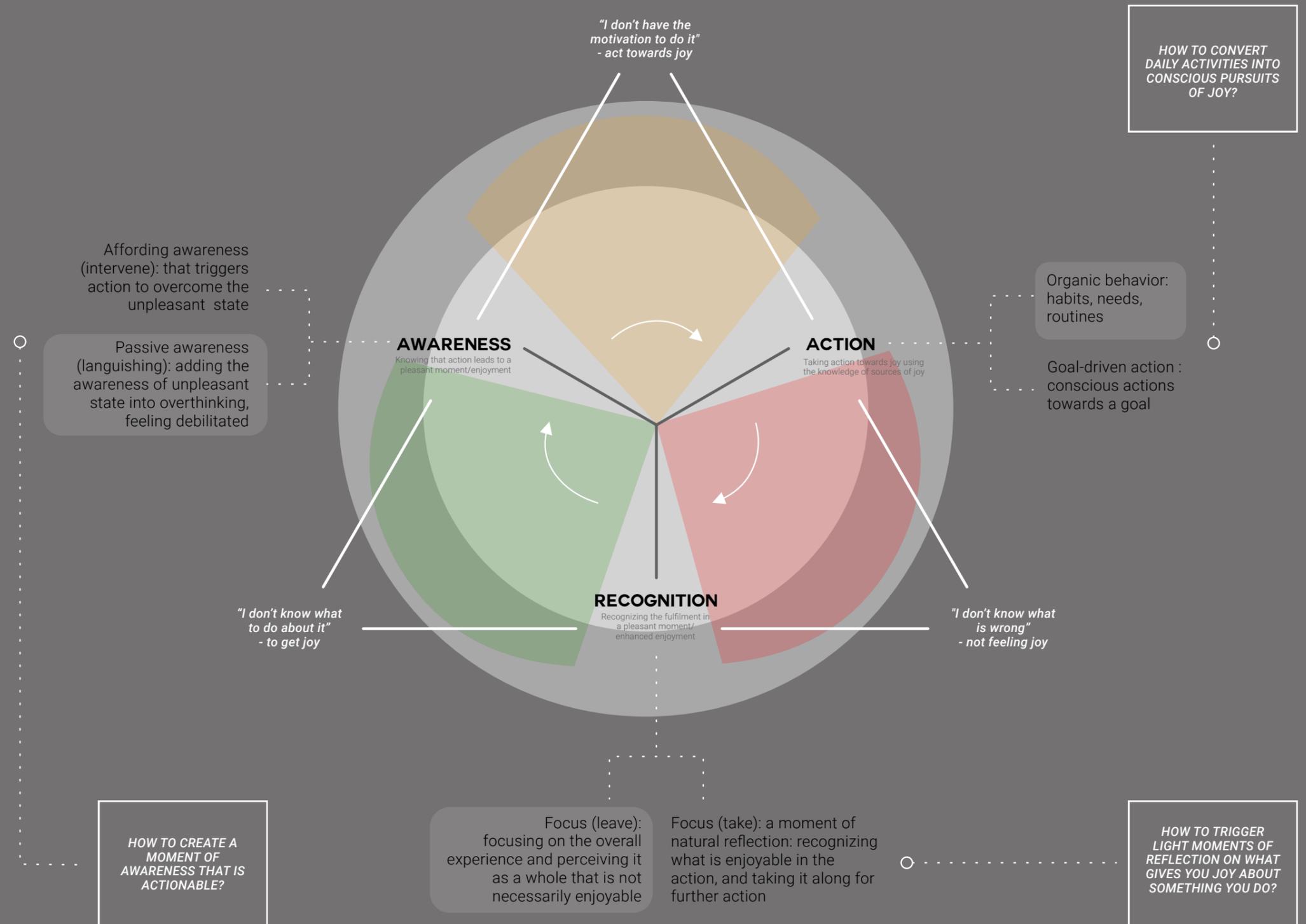


Figure F.2b: Implications of findings: new solution space for intervention

PHASE 3

Designing for Sustainable Joy: Design vision & conceptualization

*“Looking through **the perspective of fundamental needs** gave me different understanding of what gives me joy”*

Earlier phases showed the opportunities for intervention in the current context. In this phase, all the insights gathered in previous studies were converted into three design directions. Concepts were created through the opportunities found in phase 1 for operationalization. The concepts created based on the earlier findings were aimed at getting people to action towards exploring diverse sources of joy on an individual level. But what really works within the limited space of motivation at this stage of Covid-19 pandemic? By the time this project reached the conceptualization phase, life within a world of pandemic has been going on for over a year. However, earlier explorations showed that most of the people not only did not seem to build a new routine but further withdrew from daily engagements. So, how can we trigger the pursuit of joy in the context of Covid-19 pandemic?

Three personas were defined from the findings in phase 2. A creative session was conducted to explore how to design for a sustained pursuit of joy in daily life. The research activities and analysis of all insights defined the moment of intervention. The scope of future design activities were narrowed towards organic behavior. Design criteria was set and refined based on preliminary concept testing, and design vision was set accordingly. A concept that works within the findings and in line with the design goal was created. The following phase explains how this concept was refined through an iterative process.



3.1 Personas

The interviews in phase 2 showed differences in responding to the pandemic period. From these 3 personas have emerged. Mental Health Continuum Model provided a spectrum from ill-being to well-being to understand and compare the types of responses observed in phase 2 (Lamers et al., 2011) (See Figure 3.1) The group of people that are observed to be in a 'passive manner', showing severe symptoms of ill-being, were decided to be left out from the focus of this study as they were deemed beyond the scope of this study.

The three personas were built from the remaining two groups. The reachers, representing the well-being end of the spectrum, was kept for comparisons in future testing. This decision was also out of curiosity to see whether a design intervention through the 13 Fundamental Needs would still be beneficial in a state of 'flourishing'. The focus group of this project are the personas called 'Settlers' and 'Shellbies'. The personas were used to refine and evaluate the final concept.

3 different responses from phase 2 (2.1.4) placed on the Mental Health Continuum Model

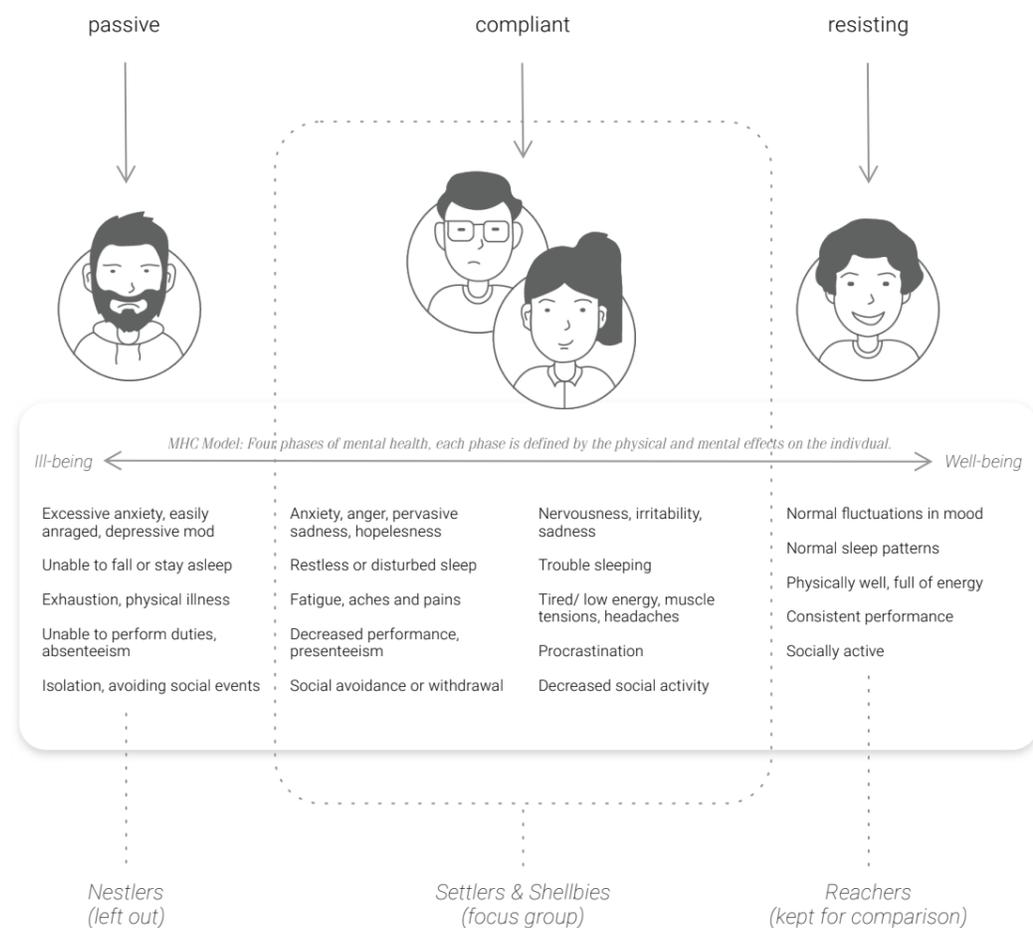


Figure 3.1: Personas shown on the MHC Model

Meet the Shellbies. These users are positioned in between well-being and ill-being on the mental health continuum. Originally having a more introverted nature, they have been enjoying themselves within the challenges of daily life outside. With the pandemic, the opportunities for these users disappeared as well as their communities they safely positioned themselves in. Environmental triggers removed, they started settling in their comfort zone, mostly spending time with individual activities. Since they are not much bothered by low levels of social stimulation, Shellbies slowly went into a passive and lonely state during the pandemic period. During the pandemic, prominent needs the Shellbies prioritized were Security and Morality, while they cherished the fulfillment of the need for Comfort. The needs got negatively affected were Competence and Stimulation. **Shellbies desire to feel hope for the future. They want to get inspired and find motivation to do more in life. They benefit from guidance and cherish skill development.**

Meet the Settlers. These users are also positioned in between well-being and ill-being on the MHC model like Shellbies. Settlers get their energy from the people around them as well as spending time on their own. With the pandemic, they initially tried to find their balance through individual efforts as they contacted people around them and tried to figure out pandemic friendly versions of what they enjoy. In time, lack of social engagements and spending too much time on individual projects started to become overwhelming. Although Settlers occasionally took steps towards building new habits, they struggled in holding onto them as their mood kept having fluctuations. Trying not to compensate for their professional responsibilities occasionally caused them to overlook their high levels of discomfort and caused them to fall back into depressive states. During the pandemic, prominent needs that guided Settlers were Relatedness and Competence, as the needs disrupted were mostly Stimulation and Autonomy. Settlers are bothered and **highly affected by the understimulation. They want to gain control over how they feel. They like being in charge of their schedules and benefit from having established habits.**

Meet the Reachers. These users are positioned close to the well-being mark of the mental health continuum. Being highly decisive and activity oriented, Reachers are the people who hardly miss opportunities and try to make the best out of any situation. With the pandemic, naturally reachers also fell into an unknown environment as not much was happening around them. Especially if going through hard times in their personal lives, they found themselves more in their head than they have ever been. Having enthusiastic and engaged characters, they tackled the situation they found themselves in during the first couple of months of the pandemic and quickly created new spaces for unwinding and socializing (mostly through exercise). Showing high levels of adaptability, these people initiated new social environments as well as activities as they eventually found their rhythm within the world of pandemic. However, Reachers mostly disregarded NPIs in their daily actions, hence the context factors were not as impactful on their well-being as in the cases of other groups. Thus, this persona is not officially included in the target group and represented by only one person in the final testing, mostly for comparison. During the pandemic, prominent needs the Reachers followed were Stimulation and Fitness, as the needs that were often challenged by the context were Community and Autonomy.

3.2 Creative Session: How can we recycle enjoyment?

A creative session was conducted to further tackle the notion of sustainable joy and see the design solutions that can provide a suitable intervention. The resource group was briefed on the framework and findings so far. As sustainability was taken as a metaphor describing the framework, the initial question given to the resource group was "How can we recycle joy?"

During the problem finding phase the notions of 'joy' and 'recycling' were explored (see Figure 3.2). Afterwards they were brought together as the sustainable approach towards joy. When thinking of joy as something to be sustained, different aspects emerged around the design problem at hand and clustered under 5 categories (Figure 3.3)

The resource group came to an agreement that **ignition** is the key problem they would like to tackle. Idea finding and solution finding phases of the creative session continued with the new Problem statement: **How can we have the courage to take the leap towards joy?**

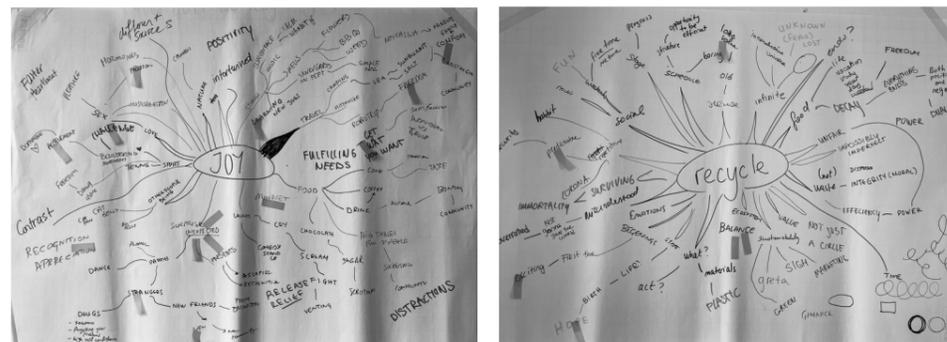


Figure 3.2: Beginning of the session, mindmaps for keywords of the problem as given

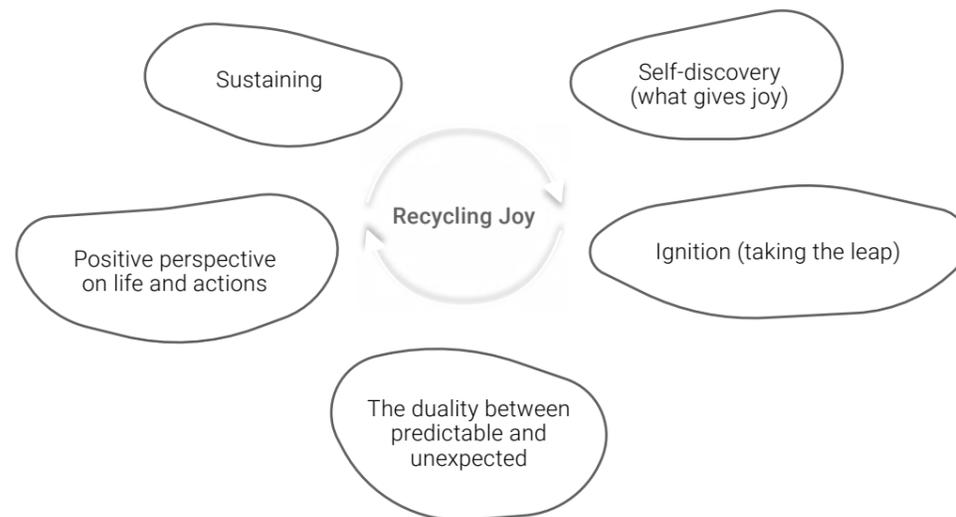


Figure 3.3: Clusters: aspects regarding joy as sustainable



Figure 3.4: The creative session

3.2.1 Takeaways from the session

The exploration during the session gave several insights regarding taking action in the pursuit of joy (ignition). The biggest learning from the session was the element of unknown in the pursuit of joy. This finding has been surprising since everything being unknown has been the biggest desire observed in phase 2. The negative perception of the unknown when one is to take action towards joy found to be coming from **fear of failure**. Especially during the times one is 'in need of joy', **the possibility of actions not leading to a pleasant experience is a reason not to act**. Combined with the minimum motivation and not feeling autonomous in the context of the pandemic, this fear of failure is magnified. This suggests that either the experience should secure joy, which is unrealistic, or make the failure joyful.

Taking **small steps** found to be helpful towards joy to create a safe space. Another insight was that when taking the leap it is important to **experiment with new perspectives**.

 The interaction with the design should be perceived as a 'safe space' for exploration where failing would also count as valuable.

F.3 Triggering the cycle in context: Refined design challenge

Where to trigger the cycle?

The framework is built on the understanding that recognition follows the actions one engages with in order to become an affording awareness that enables repetition (the cycle). Meaning that one gains the motivation for future actions towards enjoyment. However, when there is no action, or no pleasure gained from an action, this step can not be realized. With a small intervention recognition was tried to be emphasized. However, it was also found that there is limited room for existing recognition to be translated into future (enjoyable) action (see Appendix C.10). This suggests that an intervention triggering for recognition does not fit the context.

A very clear takeaway from earlier findings was that awareness is not enough as a motivator for action in the context of the pandemic. On the basis of earlier findings a literature review on motivation theories showed that **motivation that comes from recognition during pleasant moments (personal and relevant) are more likely to induce affording awareness** rather than passive awareness. Based on Kolb's experiential learning model, which also inspired this framework, Glasersfeld (1998) states that the motivation to sustain this cycle is strongly dependent on the **learner's confidence**. This feeling of competence is much stronger when derived from first-hand experiences in the past rather than external acknowledgment and motivation (Prawat & Floden, 1994). Lastly, it is argued in the literature of habit formation that motivation usually does not come before action as many would expect, but rather we feel motivated only after we take action.

Thus, it is anticipated that in order to increase motivation for this cycle to be actualized, the affording awareness (3) should be triggered through the recognition with focus on take (2), which comes from a personal and enjoyable experience of the user (action (1)). Based on this understanding, **the point of intervention was set as the action step. Further interventions were focused on ini-**

tiating this cycle through actions that already exist. The design question was set to "How to convert daily activities into [un]conscious pursuits of joy?"

What kind of actions?

The findings of the creative session showed fear of failure as another reason for not taking action towards enjoyment. This suggests that recognition and awareness required for this cycle to be actualized needs to be explored in **the comfort zone**. Regarding the kind of ac-

tions to be explored, this suggests approaching **organic behaviors that have lost their appeal**.

The comfort zone is defined as 'the behavior space that is not necessarily perceived as special, or associated

with remarkable pleasure. These activities being consistent and recurring allows for 'safe experimentation'. These are types of activities that are indicated as organic behaviors, which are perceived as effortless and do not necessarily require high levels of motivation.

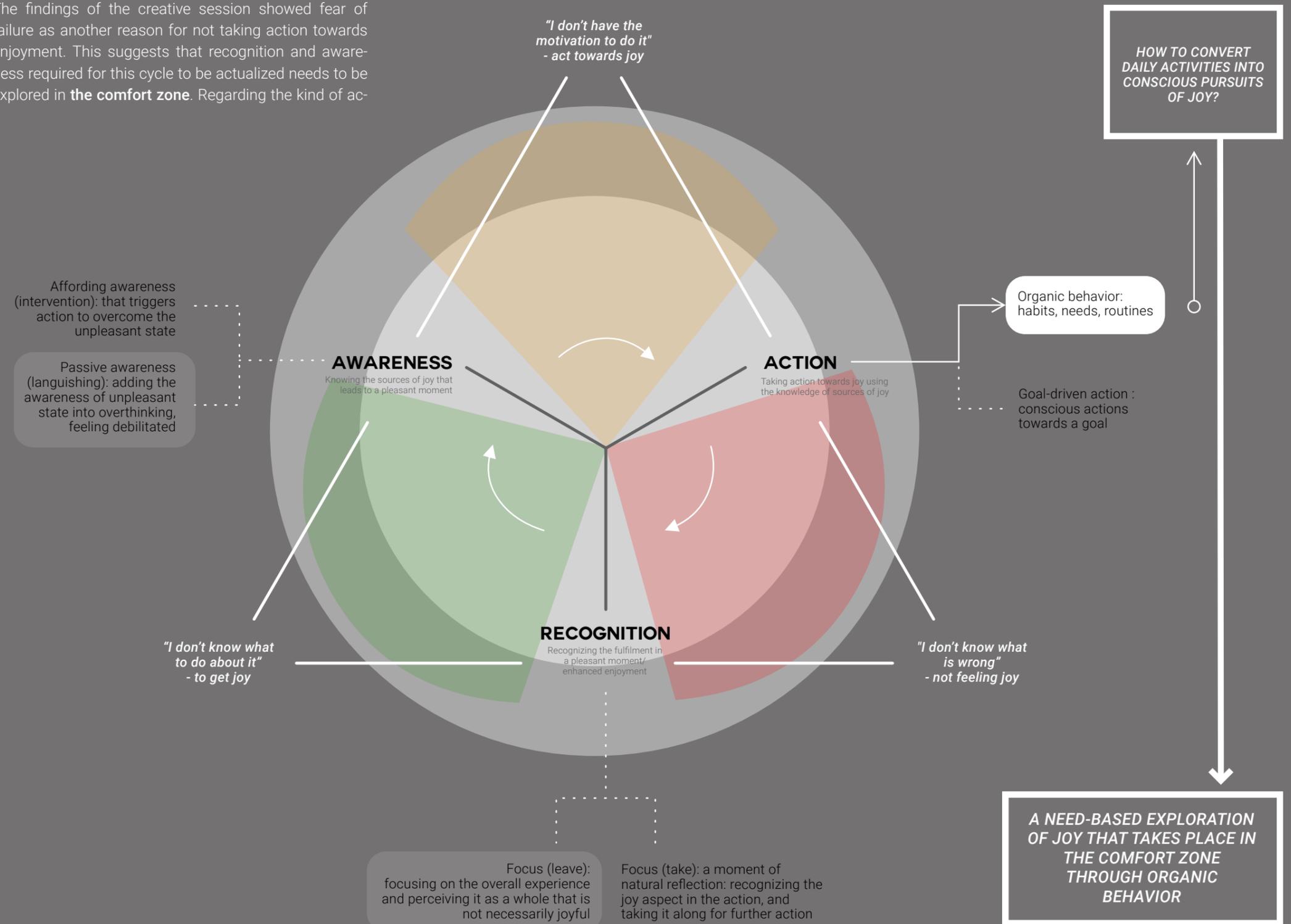


Figure F.3: The focused design question and solution space for design intervention

3.3. Understanding languishing further: feeling unwell

How languishing is experienced in various intensities and diverse manifestations is reviewed through desk research in order to understand the target group further. Learnings of this review were used to define intervention criteria.

Not everyone who is languishing will experience it in the same way or with the same intensity. Overall, languishing would affect some of the decisions, behaviors, and emotions toward self, others, and the world. A sign might be declining or reluctance to engage with activities that one would normally enjoy. It is not a strong feeling of not wanting, but mostly not seeing why it would be better than staying in, or doing nothing. Some other people might engage but simply leave it because the activity brings them no enjoyment.

Some other possible signs of languishing are:

- moods that are not too high or too low (**you're not happy but you wouldn't say you're sad either**)
- **feeling unmotivated more often than usual**
- feeling unsettled but not highly anxious
- difficulty focusing on certain tasks, especially some days more than others
- **feeling detached from life, tasks, or people but not experiencing negative emotions toward them**
- apathy toward life and difficulty getting excited about anything
- fatigue and burnout
- **loss of interest in passions and hobbies**
- feelings of stagnation
- feeling disconnected from your purpose in life

Languishing is not the same as depression or anxiety. It is also not sadness. While one may feel "down," they are not sad. Instead, many people refer to this as "feeling blah" – where one isn't happy or sad, just not quite themselves. With languishing, one may experience anxiety or worry as a natural response to everyday stress. These feelings don't linger and they're not a permanent state of mind as in the case of anxiety disorder or depression.

Similar to having an existential crisis, languishing may cause a person to question whether life or routines has a purpose, however strong emotions such as dread and fear won't likely be present or persistent. 2021 Ipsos poll found that 1 in 5 adults in the United States is languishing. Young adults are more likely to experience languishing when compared to older generations (Berg, 2021). Languishing is also associated with increased chances of experiencing depression and anxiety disorders (Keyes et al., 2010).

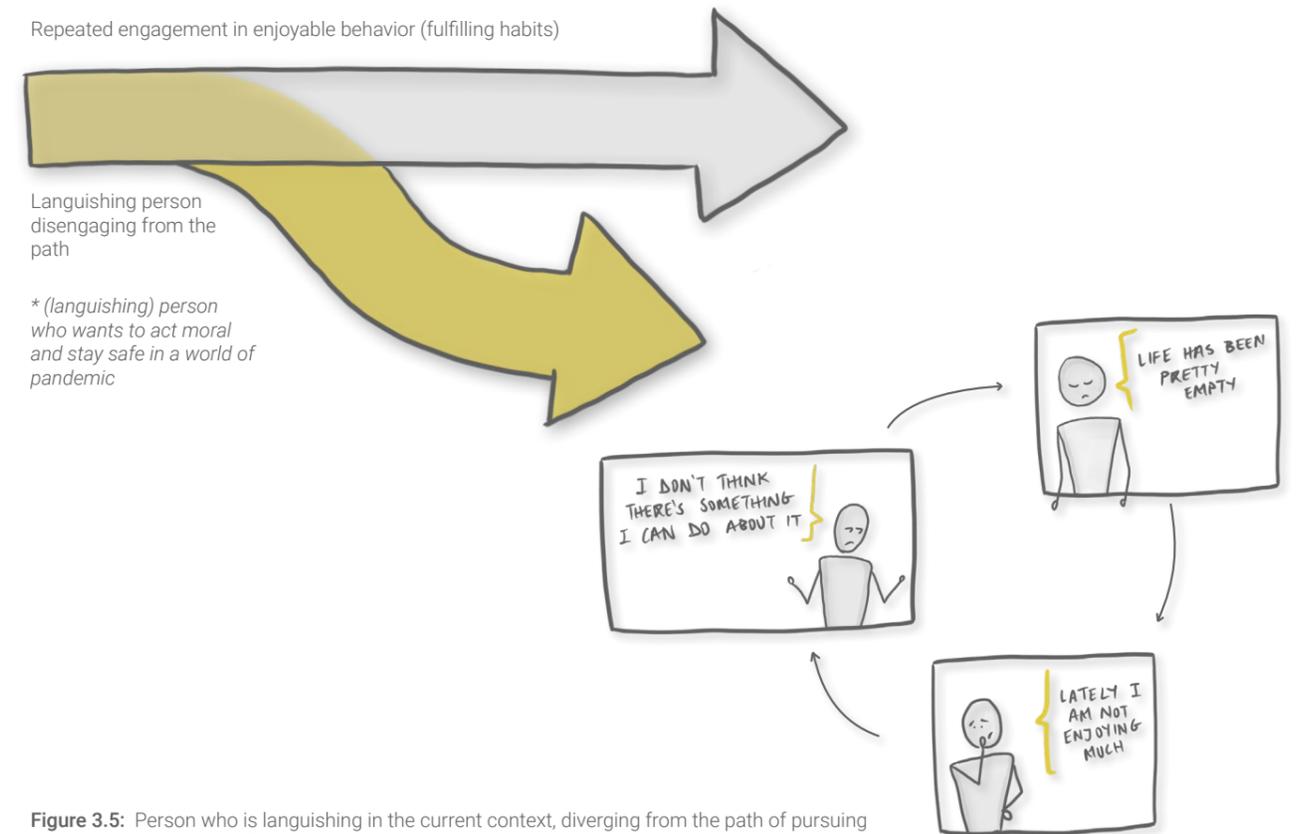
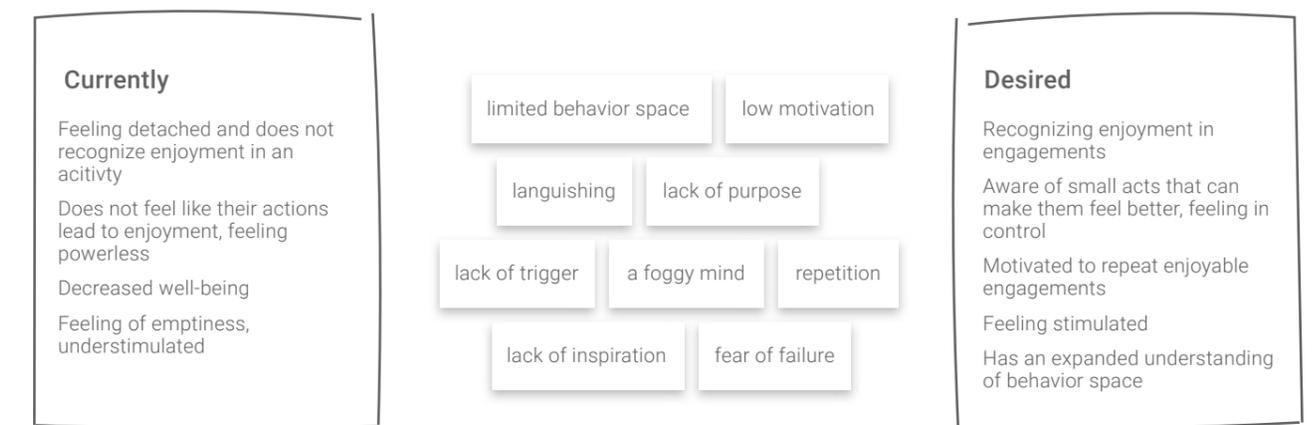


Figure 3.5: Person who is languishing in the current context, diverging from the path of pursuing enjoyable engagements. The illustrations represent thought processes observed on each step of the framework (that is currently not realized towards repeated enjoyment).

3.4.2 Intervention criteria



Triggering

Design should be a facilitator towards exploring diverse positive experiences. This should make the user feel stimulated and want to repeatedly engage.

Engaging

Design should be low in threshold and inspiring to keep user's engagement through small steps, within a safe space for exploration.

Encouraging

Design should lead to fulfilling experiences to make the user feel satisfied about their engagements to increase the user's confidence and motivation.

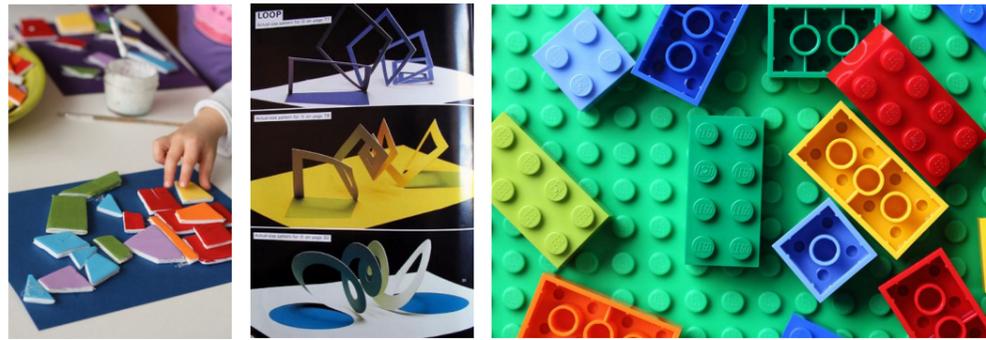
Need trackers for awareness and appreciation, & Need profiles



Contrasting needs within an activity. Experiential discovery of resources



Shifting the way of scheduling, Planning for needs instead of tasks



Personal toolkit of objects fulfilling each need



3.4 Choosing a Direction: 13 Sources of Joy as a perspective on daily life

How can the findings from the context be anticipated towards designing for enjoyable engagements? How to design for an interaction that will contribute to the user's well-being in the long run through repeated engagements in daily life. How to design something that would be desirable for the user, beyond the sake of contribution to well-being?

Throughout the research phase the solution space was explored using the insights gained as a mind map has been constructed with quotes, clusters and literature findings (See Appendix C.7). At the end of phase 2 three main design directions were created focusing on the diversity in life as it is the main goal of the intervention to trigger enjoyment and stimulation in engagements in the context of Covid-19 (See Appendix C.8). 13 sources of joy was positioned as the foundation of this diversity, and used as a way of showing the array of possible explorations in life towards enjoyment. Literature on motivation and behavior change has been reviewed for possible design interventions.

Looking into the insights gained in phase 2 and getting to know the target group further put feeling in control, need for Autonomy, as the second focus of the conceptualization phase. In this regard, direction 2 was chosen. This direction focuses on seeing experiences through a layer of 13 Fundamental Needs and gaining a new perspective towards already existing actions. Using the diversity the sources offer, the goal is to emphasize the uniqueness of the moment as well as the possibilities that come with it. Through dissecting experiences into needs to be fulfilled, mental transition among different activities could also be facilitated.

This direction aims to use the theory as not only a source of diversity but explicitly brings a layer of fundamental needs as a perspective over life. Enabling the user to adopt this perspective will lead to a more granulated view on positive engagements instead of a blurred state of feeling 'meh', aiming to enhance enjoyment in daily life.

More specifically, a group of concepts under this direction were built around making diverse fulfillments visible to the user in order to give a sense of control over this diverse set of fulfillments that they can utilize purposefully as they wish and need. Ideation board of this direction is shown in Figure 3.6.

Figure 3.6: Images from the ideation board of design direction 2

3.5 Vision

The design challenge was refined to 'converting daily activities into pursuits of joy'. The design vision expresses the chosen design direction on how to address the refined design challenge. Design guidelines and interaction qualities were defined from the insights compiled so far to achieve the vision stated below.

“I want to encourage young adults who are languishing to pursue joy in daily life by facilitating an experiential understanding and exploration of 13 sources of joy”

3.4.1 Interaction Qualities

From the findings, analysis and chosen direction a set of guidelines were formulated to focus the design intervention to be an enjoyable, desirable and engaging experience for the target group. These guidelines will be used to choose the concept that fit with the design goal and evaluate it throughout the iterative design process.

Exploring the diverse nature of need fulfillment: Stimulation

The interaction with the design should be stimulating in order to be desirable. As the need for Stimulation has been highly disrupted, the design intervention should offer novel, varied, and relevant stimuli. Next to facilitating pleasant engagements, the design should also offer something that is unknown to the user, that is to be explored.

Feeling in control of how one feels: Autonomy

In the current context the user is feeling as though external conditions determine how they act and feel. This creates a feeling of hopelessness, weakness and letting go. The interaction should give the user a sense of control, both through experiences that are facilitated as well as the manner of interaction. For this, first it should facilitate building confidence in self actions, as in, experiencing that their actions have a positive impact on how they feel. As joy is back into daily life through the sources explored, an increase in motivation to engage more should follow confidence. Experiencing diverse fulfillments, the user should feel capable of taking action depending on what they need.

Enriching daily encounters: expanded behavior space and diversified fulfillments

Interacting with the design should make the user get out of their 'perceived behavior space'. The concept should make the user get a feeling of liberation and relief as it facilitates a variety of engagements that are still possible within the NPIs however, long not acted on or realized. Using the tool should enable diversifying the needs fulfilled in daily life.

3.4.2 Design guidelines

Design guidelines were formed based on the experience gained in phase 1 in using a need-based approach for intervention, insights gained about the needs and wishes of the target group, the learnings from the literature research as well as the intervention criteria defined earlier, and regarding the pandemic context the design is to be interacted with.

The design should

- . be inviting
- . evoke curiosity
- . be aesthetically pleasing
- . clearly show 13 categories
- . be easy to understand
- . be not overwhelming
- . minimize the role of motivation
- . be low in threshold to engage
- . triggering for action
- . be realistic
- . be intriguing
- . encourage exploration of diverse sources
- . be guiding
- . provide a safe space for 'failure'

The experiences lead by the design should

- . be fulfilling
- . be authentic
- . be easy to implement in daily life
- . expand the perceived behavior space

Overall, the need-based intervention should

- . trigger recognition of enjoyment in action
- . trigger affording awareness
- . evoke a granulated sense of enjoyment
- . evoke reflection on self desires and behavior

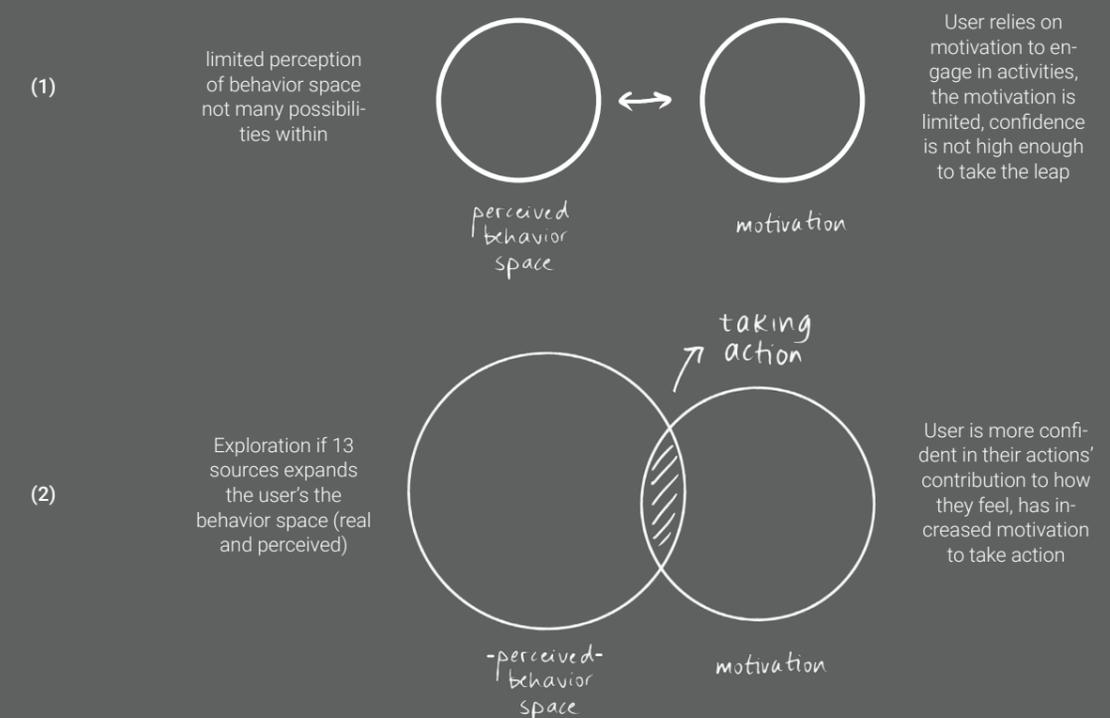


Figure F.4: How the design intervention towards encouraging the user to take action and pursue enjoyment would work, (1) before and (2) after exploration (see section F.2 on page 60 to read more on 'before')

3.6 Concept: Recipes for joy*

The insights gained and the interaction qualities set led to the concept 'recipes for joy'. A preliminary sketch of the concept is presented in Figure 3.7. An extended user journey that is intended with the concept is presented on the following page.

The recipes for joy is an intervention that presents the user with an array of different ways to approach an activity. Making the activity itself enjoyable again, it facilitates experiential learning of 13 sources of enjoyment in life. The user gets a more granulated sense of enjoyment and acknowledges diverse needs. Fulfilling engagements led by the tool increases the user's confidence and motivation to take action towards pursuing enjoyment. Over time, user adopts new ways to approach the activity which turn into habits that fulfill diverse needs. Hereby, introducing an explorative journey starting from the comfort zone that aims to contribute to well-being through a fulfilling routine by converting daily activities into [un]conscious pursuits of joy.

3.6.1 Extended user journey and long term implications

The intended (long-term) impact of interacting with this concept is almost like for the user to learn a new skill. That is converting daily activities into tools for diverse fulfillments. The reason for that is the use of a need-based approach. As hypothesized through the framework, this need based intervention is expected to lead

* The word recipe here is used in the meaning of 'something which is likely to lead to a particular outcome'.

towards establishing fulfilling habits through repeated enjoyable engagements. Over long term use, the user is expected to go through different stages as they interact with the tool. Concerning the steps involved in the framework the intended journey in the short and long term can be explained using a theory on learning. This theory and how it's applied to the user journey is explained in the following section. This journey is described further in detail on the next page, showing the underlying mechanisms that are expected to be in play in each stage.

At the bottom of the visual, the experience of learning to pursue joy is shown in terms of the stages of the framework. The user starts by gaining take focus within the activity as the first step, followed by developing an affording awareness, and lastly converting the organic behavior into a goal driven one.

The journey starts from being unconsciously unskilled, that is the starting point of all learning. This is the phase where you don't know what you don't know. There is a skill that you are missing but you don't even know what it is yet. Depending on time and circumstances, one might naturally move to the next stage which is knowing what we don't know. In the case of this concept, the user is unpleasant about their situation, however they don't think there can be something done about this. The tool introduces the user with the idea that a simple activity can become a tool towards enjoyment. The user starts their journey as they move to the next stage.

RECIPES FOR JOY

a tool that brings diverse enjoyable engagements back to daily life through facilitating an experiential understanding of the 13 Fundamental Needs using one single activity.



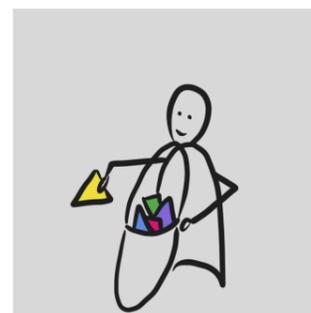
The user is presented 13 different ways to approach the same activity that is within their routine (not necessarily currently enjoyable). Each approach leads to fulfilling a fundamental need.



Motivated by the lack of stimulation, the user experiments with different approaches. Trying different approaches the user gains experiential knowledge of 13 sources of joy they can tap onto. User enjoys these engagements and the activity becomes appealing again.



The user becomes able to use diverse approaches depending on what they need.



In time the often used approaches settle into routine and remain with the user. The activity is now fulfilling diverse needs.

3.6.1.1 Learning to pursue joy: 4 stages of competence

According to this theory of change-induced learning, developed by Noel Burch from the work of Broadwell (1969), learning new skills has four phases: (1) Unconscious incompetence, (2) conscious incompetence, (3) conscious competence, and (4) unconscious competence. These four stages of competence, or the "conscious competence" learning model, relates to the psychological states involved in the process of progressing from incompetence to competence in a skill. These four stages propose that people are initially unaware of how little they know or simply what they don't know. They are unconscious of their incompetence. As they recognize this incompetence, they first start consciously acquiring a skill, followed by consciously using it. Eventually, the skill can be unconsciously utilized, without necessarily thought through. At this point, the fourth stage, the individual is said to have acquired unconscious competence (Flower, 1999).

Figure 3.7: The initial sketch of the concept

STAGE ①
 don't know what you don't know
 (unconsciously unskilled)

a single activity in routine
 i.e cooking



Languishing
 User does not associate the activity necessarily with enjoyment.

Intervention
 User gets the tool.

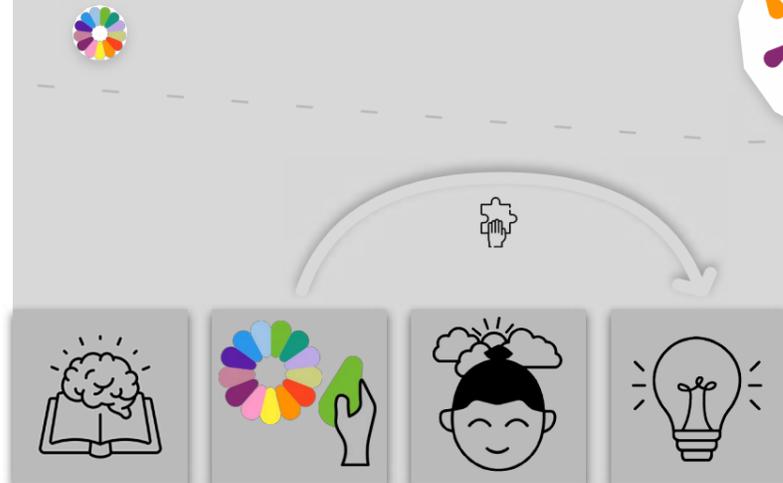
The user has a limited perception of behavior space. Within this space, the activity is not associated with enjoyment. User's overall motivation to engage in activities is low. User is skeptical about the difference their actions can make on how they feel.

- "I am not enjoying this activity"
Activity is a repeated chore
- user is not motivated to engage in the activity, especially when they do not feel good
- user feels powerless against how they feel, does not think their actions lead to enjoyment
- tool is unknown to the user



STAGE ②
 know what you don't know
 (consciously unskilled)

stimulation motivation



Knowledge
 Users learns* how they approach an activity fulfills different needs
 *knowledge is abstract at this point

Exploration
 User picks an approach and implements it

Enjoyment
 User recognizes a fulfillment and associates it with the approach

Takeaway 1
 User realizes that the activity is enjoyable and bears diversity

User starts picking the approaches that are convenient/low in effort. This allows the user to experience and recognize fulfillment of different needs. This enhances enjoyment and motivation. With increased confidence, user tries new approaches. User repeats this exploration process. User gains experiential knowledge on the approaches they try.

"This activity is enjoyable in multiple ways"

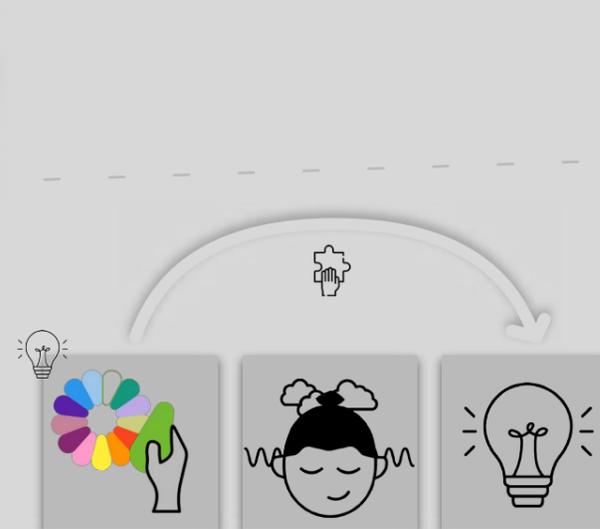
- behavior space is expanded
- is more motivated to engage in the activity
- gets familiar with different approaches through experiential knowledge
- activity is enjoyable again
- gains confidence to use unfamiliar approaches



User gains (T)ake (F)ocus

STAGE ③
 know what you know
 (consciously skilled)

in control mindful



Apply Takeaway 1
 User picks and implements an approach based on what they need

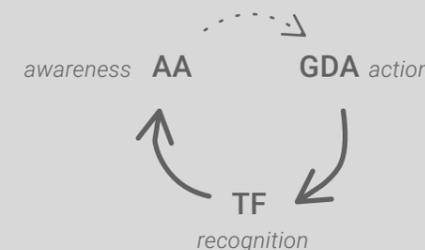
Enjoyment
 Approach fulfills user's need

Takeaway 2
 User realizes their actions contribute to their well-being

User is now more comfortable with the tool and use is more natural. This allows them to engage in the activity even when they are not 'in the mood'. User recognizes different approaches apply to their different needs. User develops a need-based approach towards the activity. User repeats this need-based process while occasionally still exploring. User feels more in control of how they feel.

"My actions contribute to my well-being"

- action's contribution to well-being is acknowledged
- feels motivated to act towards enjoyment
- tool use gradually decreases as the user starts acting on experiential knowledge. Need-based intervention facilitates repeated engagement
- activity is used as a tool towards fulfillment
- feels confident that needs can be addressed through self acts



User gains (A)ffording (A)wareness

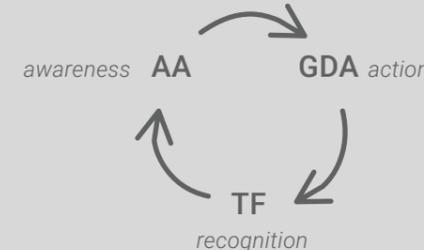
STAGE ④
 don't know what you know
 (unconsciously skilled)



Intuitive repetition
 User keeps implementing different approaches that fulfills different needs. In time these approaches become natural.

User has an understanding of the ways they can approach the activity to pursue enjoyment. Depending on how they feel, user implements different approaches. These engagements are repeated unconsciously. The user develops their own 'toolkit' within the activity. The user's engagement with the activity is increased and needs fulfilled through the activity are enriched.

- activity is enjoyable and engaged more extensively
- acts towards enjoyment
- fulfills diverse needs through different approaches
- tool is not used anymore, need based approach remains with the user.



User converts organic behavior into a (G)oal-(D)riven (A)ction towards enjoyment

3.6.2 What kind of activities? Opportunities in mundane

After a quick set of preliminary interventions, mundane activities proved to provide a good point of intervention due to their natural, recurring pace in daily routine and the minimal motivation required to engage. Additionally, as an existing action that is overlooked, engagements of mundane provide a good base for exploration, and recognizing diversity and enjoyment.

It has repeatedly found and stated that the joy in life has been lost, at least perceived as lost. However, it is always important to appreciate small things in life. People stated that they were not enjoying the simple things that would make them happy before. This is highly related to satiation as well as a general lack of enjoyment in life. This also includes the mundane activities that we do regularly such as home maintenance, commuting and cooking. Especially with these activities, when the enjoyment is gone, it really is a chore that one needs to keep up regularly. Hence, finding new ways to enjoy these activities that one needs to engage in anyways is desirable on another level when compared to the activities people engage in already for the sake of enjoyment.

The mundane activities represent the core of the 'comfort zone' in one's behavior space. Due to natural occurrences of these activities in daily life, they provide a good and widely applicable example of existing action for organic behavior. Thus, for putting the framework into action, these activities provide a good starting point for experimentation for exploring joy.

These activities are also generally overlooked as they are sometimes seen as chores we need to do. However, even such activities are potential moments of pleasure in life. Thus, the simplicity of mundane activities creates a great contrast for showing diversity and emphasizing the potential of any engagement to

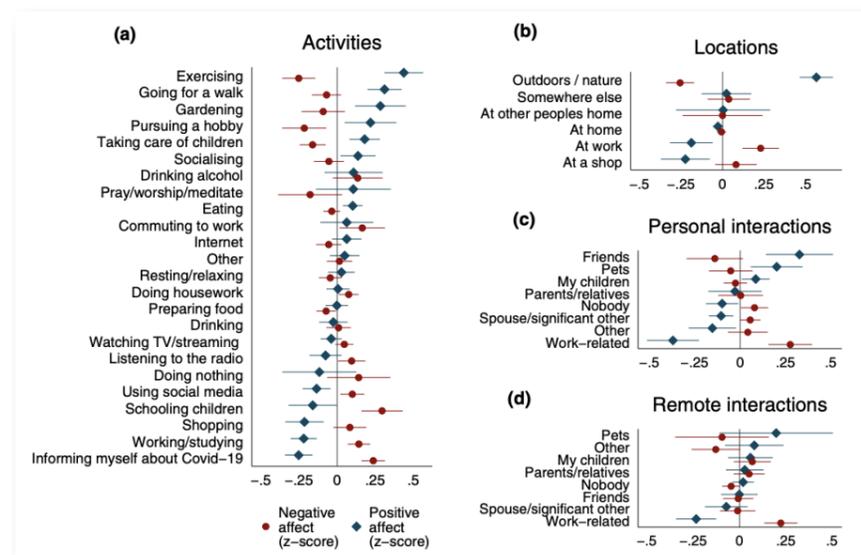


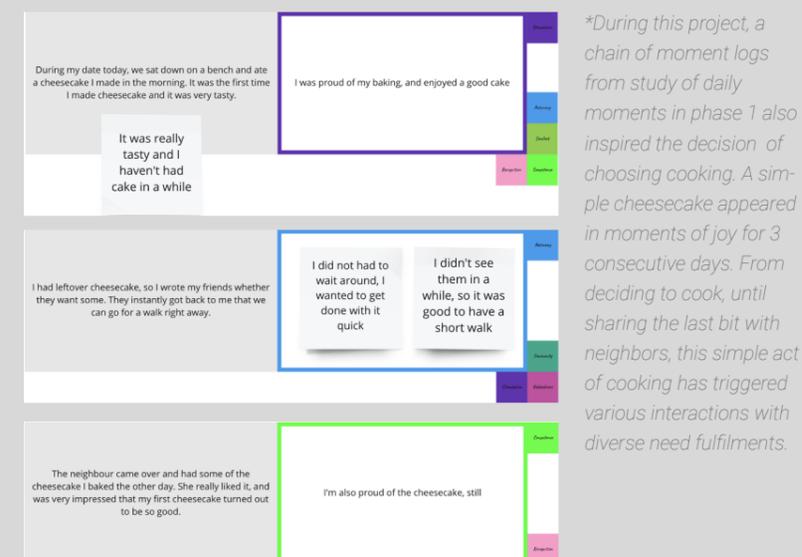
Figure 3.7: Study by Lades et al. (2020) showing ratings for enjoyment in activities during Covid-19 in regard to positive and negative affect for interactions. Activities that are reported to have a positive affect but are considered mundane were explored further within the minimal motivation space

3.6.2.1 Cooking as a case study

Cooking was chosen as the mundane activity to experiment since the initial intervention prior to concept selection. However, the design concept is aiming for and applicable to other kinds of mundane activities we engage in daily life.

First and foremost, it is a safe space to fail. It is considered as a motivational activity where one learns from failure. Secondly, it is a natural source of joy. Since the very first study I conducted on joy moments food and cooking has been one of the most recurring contexts that pleasant moments revolved around. Although cooking seems to be something to do when one wants to eat, it offers so much more in terms of activities taking place around it. Being so interactive in nature would expand the possibilities of triggering moments of enjoyment that are beyond the kitchen. Additionally, the social aspect of cooking provides a great opportunity for initiating social engagements. Lacking social stimulation has been a prevalent finding of the pandemic. Even though this design intervention is initially aiming for an individual experience, enhanced social interactions would be very welcome as a side outcome.

Finally, cooking has been one of the activities that people experimented with the most during the pandemic. When everybody is home and everybody needs to eat every single day, it seems reasonable that cooking has been one of the few things that still offers exploration. The emotion archive by Mckinsey & Company (2020) also shows a high number of entries related to experimenting with cooking under the section 'joy'. Turning this motivation into a well-being focused perspective that expands into other domains of life is an exciting opportunity for this project. When it came down to picking a mundane activity to go with, it simply seemed like the obvious choice.



*During this project, a chain of moment logs from study of daily moments in phase 1 also inspired the decision of choosing cooking. A simple cheesecake appeared in moments of joy for 3 consecutive days. From deciding to cook, until sharing the last bit with neighbors, this simple act of cooking has triggered various interactions with diverse need fulfilments.

Figure 3.9: Story of a cheesecake*: logs of pleasant moments from Study 1 in phase 1 including the needs depicted as fulfilled.

become enjoyable. Using one single mundane activity, the diverse experiences of fulfilling each need could be experimented with on a regular basis. This consistent interaction presents an opportunity to explore, implement and compare sources through authentic engagements that would emphasize the granularity of what is overlooked as enjoyment. The deeper the exploration goes the bigger the chances of expanding the behavior space and having encounters beyond the context the activity usually takes place.

The concept is not about a specific mundane activity, but rather enabling the user to experience and learn to pursue diverse fulfillments through them. So, the experience and approaches to different needs, the overall idea of enjoyment should be the emphasis. The design should position the mundane activity at hand as a means towards a granulated understanding of enjoyment and experiencing the fulfillment of diverse needs.

3.6.3 Cues for authentic diversity

In what way to trigger and facilitate authentic experiences of diverse fulfillments in the kitchen?

Cooking was chosen as the mundane activity, as a case study, to further develop the concept with. The elements involved in cooking as well as the context of the kitchen were explored. The diversity could be emphasized through various elements such as ingredients, recipes cooked or recipes collected as well as contexts of eating etc... The activity of cooking needed to be approached in a way that emphasizes the experience the most. The elements around cooking are explored through desk research, observations and non-structured conversations . Recipes(sik sik ortaya atildi). It was, however, also found that they provide a very limited space of exploration due to personal preferences, level of engagement, cultural differences, and schedule issues such as when or how much time to invest in cooking.

Several different foci were taken to make the user grasp this diversity through cooking. These included the findings from earlier such as resources, time, motivation, social dimension and so on. However the user needs to be actively creating their experience as they are to experience their subjective understanding of the fulfillment and recreate it accordingly.

The concept is based on experiencing and contrasting unique qualities of each source of joy and the goal is to make it as personal and authentic as to give a sense of control to the user over enjoyment. So the 'recipes' to these experiences should be inspirational and open to interpretation rather than rigid formulas. They should also enable the user to grasp the idea coming from each of the 13 sources, again, to enhance awareness, enable control, and emphasize diversity. Hence, some kind of a cue should be presented to the user that gives them an idea of how to 'approach' cooking in order to tap onto a specific source of enjoyment. These cues can then be designed to position any element around cooking including the user themselves in line with the desired experience, and trigger towards taking action.

3.6.4 What's next? An iterative design process

The concept chosen is seemingly simple, however it has a theoretical groundwork behind it. Desired impact and succeeding in the depicted design vision relies heavily on firstly, whether the mechanism hypothesized in the framework works. Secondly, whether the design rightfully executes the experiential exploration that constitutes the foundation of the concept, which would make it successfully respond to the design challenge as well as fulfill the goal of the project.

The concept being relatively vague and theoretical requires an iterative design process to take place as soon as possible. In the following phase, the concept will be tested on the criteria and the vision through iterations that focus on different aspects of the interaction.

PHASE 4

Exploring joy in Mundane:
Testing & evaluation

*“Through **addressing everyday activities from the perspective of happiness** rather than from the perspective of output opens up many possibilities to make life more meaningful.” - Hassenzahl et al., 2013 (p.29)*

The concept chosen has emerged from various research activities that pinpointed how to bring enjoyment back into daily life. So how can we design this concept that experientially gives people the understanding of Fundamental Needs that conveys this granularity as a perspective, that in the meantime motivates them to pursue enjoyment in a way that gives them control and is also stimulating? Through an iterative process different aspects of the concept were refined step by step towards the design vision and in line with the criteria defined in the previous phase. The concept took the form of a card set, and was presented as an explorative journey in the final user test, which evaluated the long term use of the concept in context with the target group. The framework was validated through a follow up study.



Exploring joy in mundane

The concept chosen has emerged from an explorative research phase that pinpointed how to bring enjoyment back into daily life as well as the theoretical groundwork on sustaining enjoyable engagements. So how can we design this concept 'recipes for joy' that experientially gives people the understanding of fulfilling their diverse Fundamental Needs which conveys this granularity as a perspective, that in the meantime motivates them to pursue enjoyment in a way that gives them control and is also stimulating?

A preliminary intervention was made to test the concept 'recipes for joy' in the process of choosing a concept. This intervention was positively experienced and led to enjoyable experiences. The rough execution of the concept proved to be motivating enough to provide a starting point. Throughout this chapter, the concept will be refined through an iterative process towards the design vision, criteri and the intended user journey described on page 86.

4.1 Initial testing: digital prototype

4.1.1 Iterations

A digital set of cue-cards were prepared for further testing. A round of iterations took place based on the preliminary insights on the initial concept and the design criteria.

In preliminary testing, the main goal was to get people to try something new. This was done in a casual manner using simple cues that correspond to Fundamental Needs. However, this did not allow for enough guidance in terms of the focused need. Cues were very open for interpretation and the experiences were too vague in terms of the need it refers to. Even though new actions were taken, the new experiences were too subtle to show a distinct quality.

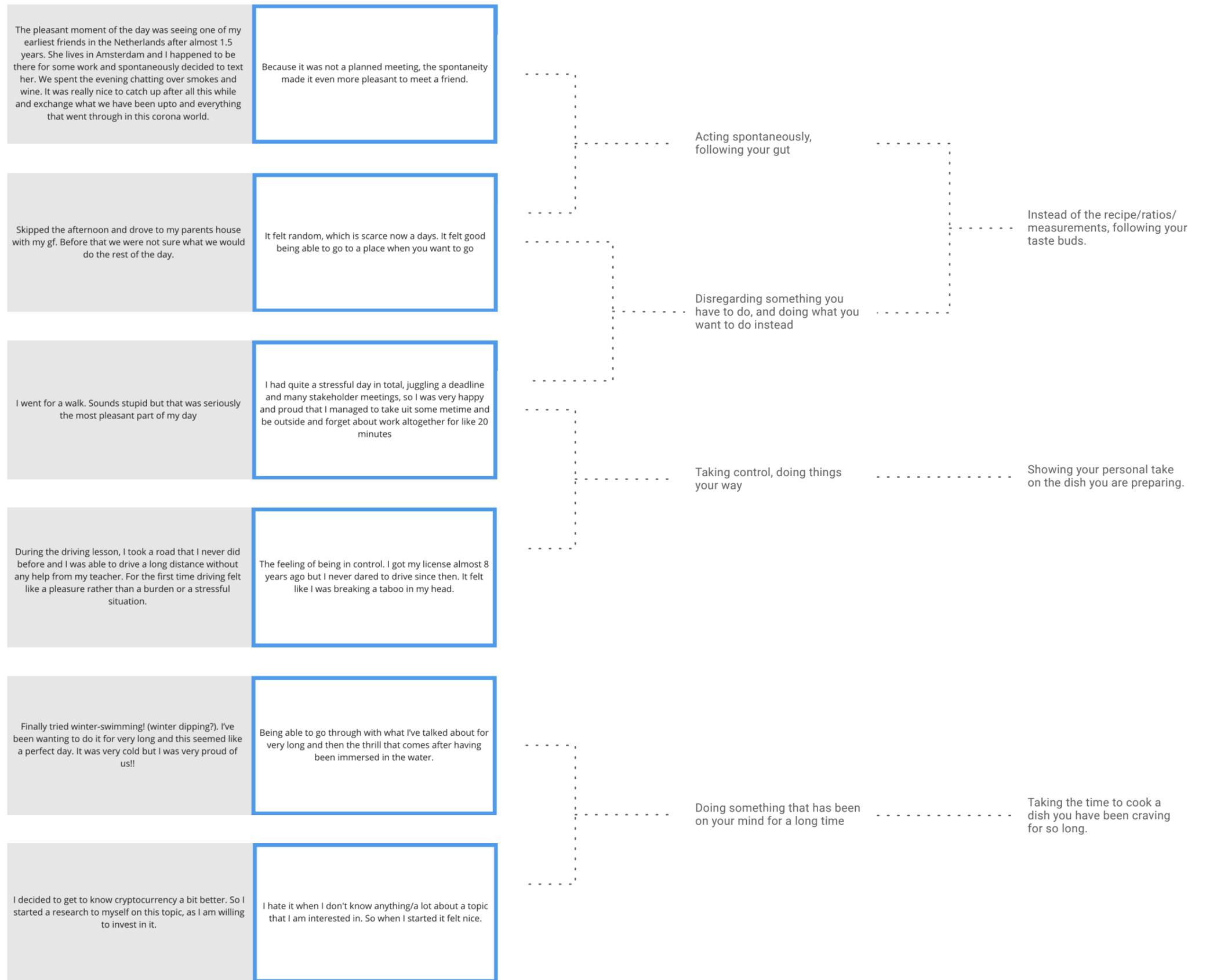
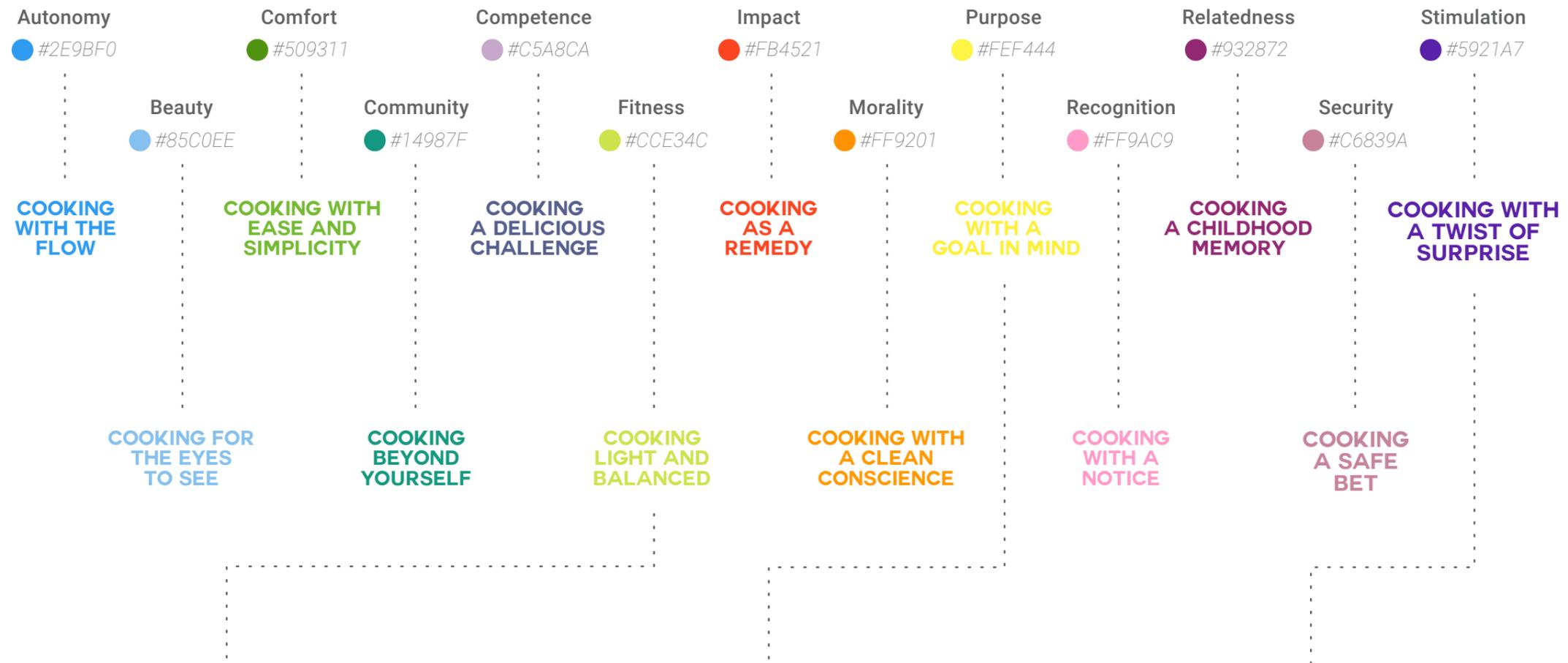


Figure 4.1: Showing the example of need for Autonomy. Pleasant moments collected in Phase 1 were clustered into sub themes for each Fundamental Need. The nuance leading to the specific need to be fulfilled in each cluster was derived, and afterwards used to create cues for actions that relate to cooking.

4.1.1.1 Cue content

As specified in the design criteria, the cues should be inviting for action to facilitate taking steps towards experimenting. These steps should be inspiring for easy implementation to mundane activity as well as relevant in order to provide a safe pursuit of joy with low threshold for motivation. Through these cues, unique aspects of each fulfilment are to be emphasized in a specific way. In order to create specific cues representing each one of the 13 sources of joy, the content of collected moments were analyzed. This was to understand the real life occurrences of joy moments underlied by each individual need. Recurring themes within each need were clustered to grasp the feeling that gives the need specific fulfilment. Afterwards, these clusters were converted into approaches that relate to cooking and corresponding to each need in particular. Online food blogs and social media pages were reviewed for the needs that did not have enough/relevant moments in the data that can be converted into context related cues. The cue content was created in terms of **small and relevant steps that can be safely applied** as an approach to cooking rather than a whole new experience. Figure 4.1 shows an example of this process for the need for Autonomy.



4.1.1.2 Categories

In order to trigger **awareness of self desires and decisions** the concept emphasizes the idea of approaching the same activity from 13 angles. This diversity in approach was not clear in preliminary testing. Based on this goal, the cues were categorized in terms of 13 Fundamental Needs. However, the idea behind the concept is not primarily focusing on a theory of well-being but rather showing it in action. Relying heavily on theory in the concept was not preferred due to abstract notions of Fundamental Needs. Instead, these needs were translated into categories that are directly linked to the activity of cooking (See Figure 4.2a). This way a more relevant and actionable categorization was aimed.

4.1.1.3 Visual style

A simple and colorful visual style was created for the cards from the moodboard of the concept. A range of colors used to emphasize each category as a way of unique approach. In order to take the focus out of the food being cooked the pictures were used in black and white. (See figure 4.2b)



Figure 4.2: a) the categories (v.2): 13 Fundamental Needs translated into cooking approaches, b) visual style of the digital cards

4.1.2 Testing and evaluation

Did the cues evoke action towards variety in mundane activity? Do the categories show an understanding of diversity within the mundane activity? Does the design intervention, overall, evoke a positive and stimulating experience?

The digital cue cards were tested mainly on the basis content. The focus was whether cues trigger new actions and experimentation. The element of categories was added to see whether it increases the understanding of diversity. The testing was through daily suggestions. Based on what the user is planning to cook, three suggestions were made from different categories.

Every experience was rated through the Premo tool for measuring emotions (Desmet, 2003). It is a cross-cultural validated method to evaluate the emotional impact of a product or experience, consisting of 7 positive and 7 negative emotions. This was initially used to see whether the experience is positive or negative. All of the participants expressed experiencing positive emotions, which contribute to enjoyment and well-being (See Figure 4.3 for ratings). Ratings of hope and desire found to be specifically important for the testing. Hope is associated with an optimistic feeling for the future while desire is the anticipation of something beneficial to be acquired. The desire to explore more in the future was also expressed next to the ratings. This suggests motivation for future engagements. These findings showed an understanding that is in line with the goal of and promising for the future of the concept.

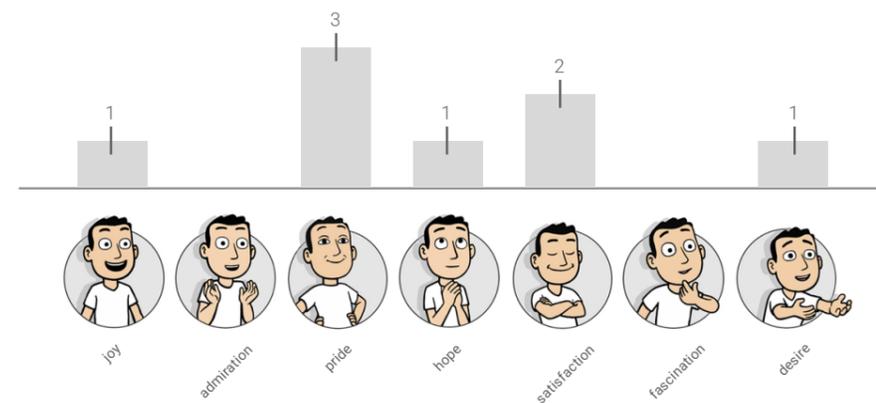


Figure 4.3: Ratings of the diverse cooking experience using Premo tool



Figure 4.4a: Using the cue card for Competence: trying a new technique. Feeling "hope" for reusing and improving the technique in the near future.



Figure 4.4b: Using the cue card for Stimulation: experimenting with a new ingredient

4.1.2.1 Insights

Contentwise, the cues were found relevant and applicable. Overall, the participants didn't have difficulty in taking action based on the cards. The experience of 'spicing things up' in the kitchen was found to be nice and fun, and especially during the pandemic, a way to keep things interesting. Figure 4.4 shows pictures from experiments with the cooking cues.

Choosing. The participants chose the cards primarily on the basis of convenience. Meaning that they chose the card that was applicable to what they wanted or planned to cook. This is thought to be partially due to timing of giving the cues. The cards were shared just before cooking, so the participants already had a meal in their minds.

13 distinct approaches. The link between the categories was not clear for the participants. Thus, the relation between the categories and the cues were overlooked. Due to receiving limited suggestions each day, the whole idea of diversity of the concept was not conveyed.

"I am so glad. I have been meaning to do this for a long while. It was like a smooth nudge." - SD

Triggering future action. The cards that were not used on a day influenced the actions on following days, as they were applied when the opportunity was found. Although most of the choices were based on convenience, the cards seemed to leave ideas to experiment on. Seeing various options, even three in this case, gave the space for exploration in future actions.

"What I liked was how smooth it was. They were very small cues but popped an immediate inspiration. ...I am either inspired or not, there is no in between" - SE

Cue content. Approaching cooking with how instead of what was liked and found inspirational as a trigger. As observed, people already have an idea of what to cook for a relatively long time before actually cooking. This made it easier to implement cues on existing plans.

Cues were sometimes not fully applicable within a short notice. This sometimes resulted in forced implementations without embracing the idea behind the cards.

On the other hand, the cues being direct helped with taking action even though they were small adjustments. However, these were not always as inspirational and experimental as intended.

4.1.3 Learnings

The experiences of the participants in the first test consisted of positive moments. This provides a good starting point and is promising for future engagements. The participants already expressed an interest to keep doing what they have tried so far based on the cues provided. However, there were moments that busy schedules did not allow much for experimentation. The fact that they were participating in a user test, and having me to give feedback to, might have had them push themselves more than they would normally do.

Feedback from this testing allows for the conclusion that the cues are actionable and realistic in real life context. Just the fact that the participants were focusing their attention to how they were cooking created a moment of awareness. This on its own can enhance recognition of positive emotions and enhance well-being. Seeing a simple activity from different perspectives and trying different approaches over a long period of time can take this awareness to a broader level.

Attending to how to implement a cue to the action of cooking on its own created a priming effect for new possibilities. Even when cooking a good old recipe as a quick solution (not using the cues), some participants recognized that the way they were cooking was matching an approach from the cues given. It is important to note that, however, they were not aware of the category they tapped onto, but simply a cue card that they were given. This suggests that an immediate connection has been made with the cues and the activity of cooking even when not trying to cook with the cards. This can mean that over a longer period of time, a layer of diverse sources could indeed be implemented as a perspective when taking action in daily life.

The main goal of the first prototype was to validate the content of the concept. The content was found to be working as intended while having room for improvement. The second iteration will be focused on how the content can be presented in the form of a tangible interaction which supports the idea of 13 distinct approaches.



Figure 4.4c: Using the cue card corresponding to the need for Beauty: focusing on the aesthetics of your meal. Since they already had food from yesterday, they wanted to focus on the plating. Having a quiet sloppy dish in nature, they enjoyed the outcome of this approach, also as a challenge.

4.2 Validating the form: card set prototype

First test showed there's room for improvement regarding the content towards triggering authentic and fulfilling experiences. Iterations were made based on the results. The concept was decided to take the form of a card set to emphasize the idea of diverse approaches as parts of a whole. Figure 4.5 shows the first card set-prototype.

4.2.1 Iterations

The design should show the whole story. The experiences triggered by the cues in the previous test were perceived as individual moments of stimulation. This was a fundamental validation for content. However the content was not understood as whole, which aims a diverse array for exploration towards joy in life through future actions. The participants did not perceive the concept as a whole which offers a categorized diversity of approaches. Comparing and recognizing the diversity in cues as well as experiences is the way to emphasize this idea. In order to allow for this, there's a need for seeing the whole story as a consistent whole. In order to do so, a card set was created to encourage interaction with the cards as a whole set. Interacting with the whole set in a tangible way, the interaction is also expected to be more organic and personal. Meaning that the users can go through the cards and eventually take action at their own pace. This will allow for more congruent experiences within categories.



Figure 4.5: card set prototype



Figure 4.6: Back side of the cards, colored style on pictures to emphasize categories

Content. The content needed to be more open for interpretation in order to provide space for personal exploration. A mismatch between a user's wants at a given moment and a strict cue would simply cause the user not to follow the card. The cues were transformed into more general statements that don't revolve around a specific recipe or dish. This way the cues are aimed to be more inspirational for implementation in diverse contexts, allowing the user to perceive and apply the suggestions in their own way.

Lowering the threshold for action. How much the user would need guidance in terms of cooking was not clear at this point. It is very easy not to engage in an activity when one doesn't have the knowledge and is already low in motivation. Recipes that would fit to each card were found as suggestions in case the user doesn't know what to cook or where to start or what could be. This is aimed to encourage experimentation despite differences in level of experience and motivation. However, this content should not get in the way of the cues and overcrowd the card with information. To keep these hints optional, this content was placed in QR codes on each card.

Visual style. Deciding the form to be a physical card set, the visual style was adjusted (see Figure 4.6). The pictures chosen for inspiration were put on the back of the cards. Colors of each category were also used on the pictures (back side) to emphasize the categorization from both sides of the cards.

The idea of mix & match. Designing a connected card set resembled the original nature of need fulfilment. In fact, pleasant moments are normally a combination of various fulfilments. Even though the moments were categorised based on the primary need that was stated in testing, there were mostly other needs. These secondary needs were either underlying the same moment or fulfilled as a consequence of the pleasant moment. For example, doing something you had in mind

after a long time is depicted as fulfilling the need for Autonomy, whereas when it is done, it is also fulfilling the need for Competence. This natural dynamic of Fundamental Needs gave the idea that cues could also allow for combinations. This way experimentation could be encouraged further while the cards would be used as more of a connected set. Implementing this in a gamified way could allow for more stimulating experiences as the user engages more and more with the cards, and support the feeling of accomplishment. To implement this idea, a system of suggestions was designed and applied to the cue-cards (see Figure 4.7). The suggestions were made among cards that refer to different steps of the cooking process and/or that can be applied with a single dish in mind. In terms of gamification, a mix and match manner was employed in style.

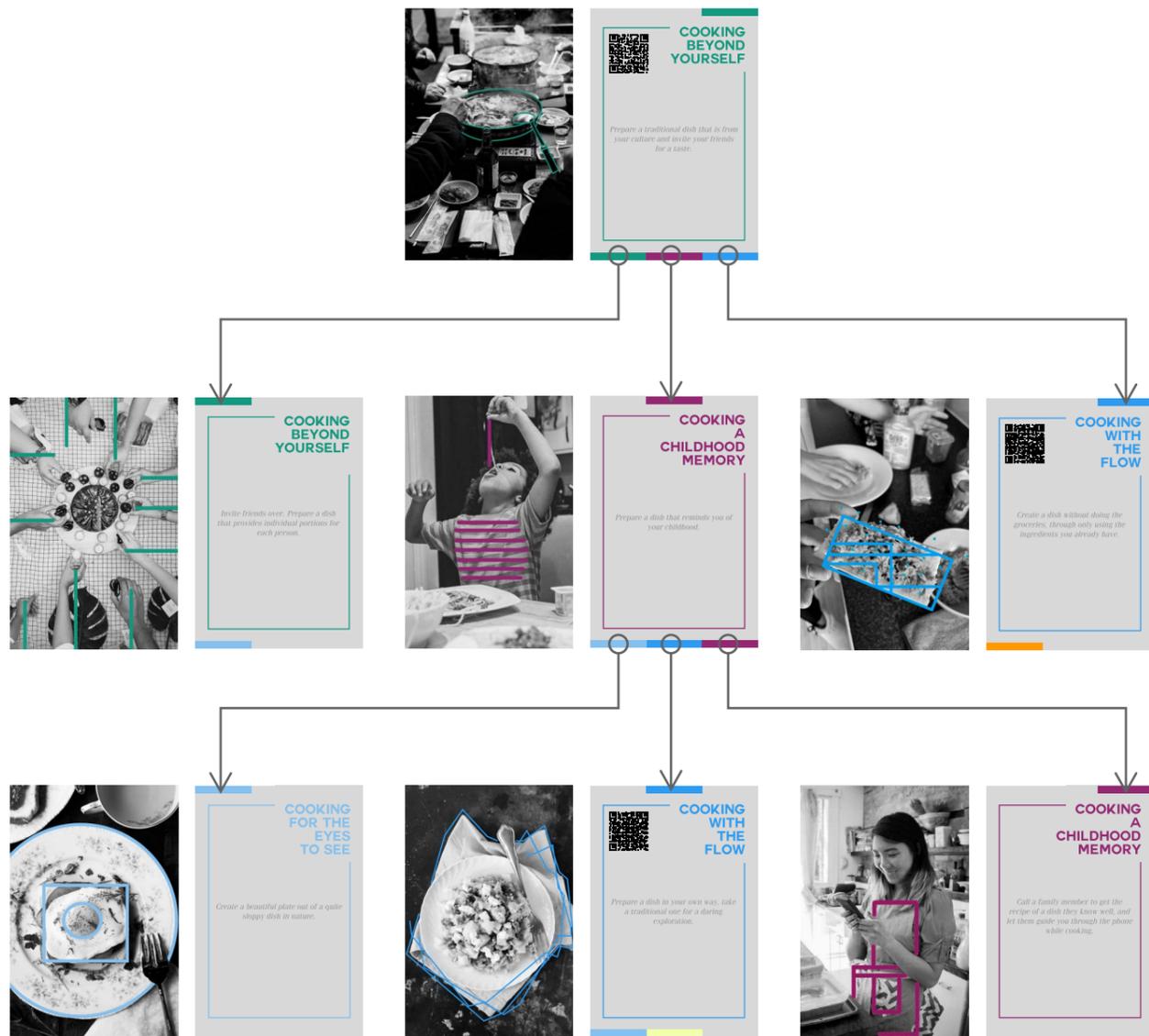


Figure 4.7: Mix & match application to the cards suggesting combinations

4.2.2 Validation and evaluation

Does the whole set of trigger cards emphasize different ways of approaching an activity and evoke curiosity towards experimentation? Does a gamified manner of connecting different approaches result in a deeper understanding of diversity in daily experiences? Is it clear that there are different sources of joy in life the user can pursue?

A validation study was conducted to answer these questions and understand what can be improved before the final testing. Following the implementation of iterations the concept was roughly prototyped. With this research activity the subjective perception of the categories and usability of the card set were focused. The prototype was used for validating the form with 5 people. The users were given the card set and observed while interacting with it, as they thought out loud. No prior explanation regarding the card set was given. In order to gain more insights an open conversation followed this interaction.

4.2.2.1 Insights

All users but one went through the cards until finished. As they encountered different categories they started to realize the differences among them. The card set was perceived as a coherent whole.

The categories and the difference among them is clear to the user, however the underlying reason is not. The categories were depicted through color coding and category names on the cards. In order to make the category information stand out among the cards, a consistent graphic style was employed with all the elements besides the category information. This decision was validated as none of the users skipped category information on the cards.

As aimed by having the whole set of cue cards in one set, it was clear to the user that there were categories presenting different focuses. The category names were clear and gave a clear idea regarding the content of cue-cards. However, for a naive user, it was not easy to make the connection that the categories are touching upon the sources that are the fundament of enjoyment. Without an introduction to the categories, it is not clear that these were approaches *applied* to cooking for further experimentation.

The category names trigger personal and relevant interpretation. Even when a card was suggesting a rather specific dish or meal type, the user was triggered to think of other things to do with the same focus. Although aforementioned, the category names were very open for interpretation with the current prototype. An important takeaway was that the categories were used as a guide as they provided keywords (future you, memory etc..) which allowed for more relevant interpretations. Yet, this interpretation was not connected to the approach the card aims to emphasize around cooking, but rather getting inspired about cooking something specific. It should be noted that the ideas of the participants were still very much in line with the approaches due to the guidance of the category names. The categories and cues were found relevant to each other. However, having the

categories as the only information regarding the 13 sources, personal interpretations of what it means varied among users. As a result, a need to make a more direct connection to the theory of Fundamental Needs is observed to clarify the overarching focus of each category to facilitate more distinct experiences among categories.

Each card's focus needs to be introduced for emphasizing the approach rather than suggested actions. The users chose primarily on the basis applicability of the cues. The set of cards doesn't necessarily differ from each other in form. As a result of this, the information primarily focused on were the suggested actions in the cues. This emphasized a practical approach, which is not aimed for.

The cues are written in a direct manner to allow for immediate action, derived from the researcher's understanding of how to implement qualities of each Fundamental Need into cooking. However, each **user's interpretation is subjective and the cue might not align with how they would implement the focus towards the intended experience.** The cues were perceived as 'tasks' as they were directly asking the user to do something. However the idea behind was not always clear for the users. The idea behind each cue should be introduced to connect the action cue to the approach. This would clarify the focus of the experience and give the user a wider space for implementations. The **action cues should be positioned as suggestions** so that they would remain open for interpretation.

The cards were found interesting and inviting as well as creative in terms of approach. Although not being the focus of this research activity, it is again observed that the cue content is found to be suggestive in terms of application. This helped the users to understand how the broad categories can be implemented. Even when the cue didn't interest them personally, it immediately inspired them towards another idea that fits them personally. These ideas were more or less within the same approach with the original cue.

The visual style. All users positively commented on the visual style and the layout of the cards. The visuals were found inspiring as well as complementary to the content of the cards.

Mix & Match interaction and experiences are not working in line with the concept. Interacting with the prototype, gamification became too prominent. Finding the matching cards was the users' priority. This did not allow the content to be recognized as a priority. The users started to disregard the content on the cards after a while as they started matching the cards.

The implementation ideas that the combinations triggered can be defined as 'special', meaning that the understanding of cooking got further away from a daily and casual manner. The more cards used for cues, the more effort it required. This in turn heightened the threshold for taking action. When asked whether they would cook this way, the users indicated that they would rather do it when there's a special occasion and only if they have time.

Two users agreed to cook with these matches. At this point, it could be argued that they normally may not have done this if it wasn't for the testing. Implementing the cues into how they cook, it created confusion as the attention was barely on what the categories and cues suggested as a focus. The connections made the interactions more into a mixed experience. The experience at the end did not show any quality that is specific to the categories. When asked, the users could not directly relate the experience with the cues on the cards. This in turn took away the understanding of approaching the same activity from different perspectives. Having an overcrowded experience also did not allow for recognizing unique needs fulfilled in the experience. It was rather close to taking time to cook for something special. Not being able to experience what is suggested on the cards in a distinct way would also not allow for understanding and benefiting from diversity in the sources of joy. This idea was not pursued further since it dominantly fulfilled the need for Stimulation while not allowing the user to be in control of the experience, which is one of the desired interaction qualities.

The card set needs to be introduced. The cues and the ideas they triggered were found enjoyable and evoked excitement, however, without any introduction to the scientific basis, the categories were not perceived as distinct sources. Especially in the beginning of the interaction, the users overlooked the differences among categories.

The recipes are not the only gap in knowledge. Only the cards that can be represented with specific recipes included QR codes. The users' feedback indicated that while it is very nice to have recipes in the QR codes, it would also be beneficial to include tips and techniques as well as information that may be required in some of the cards. i.e. a link to what is in season for the seasonal harmony card. Inspirational media that would accompany the experience was also discussed to be a possible QR content as a way to enhance the experience.

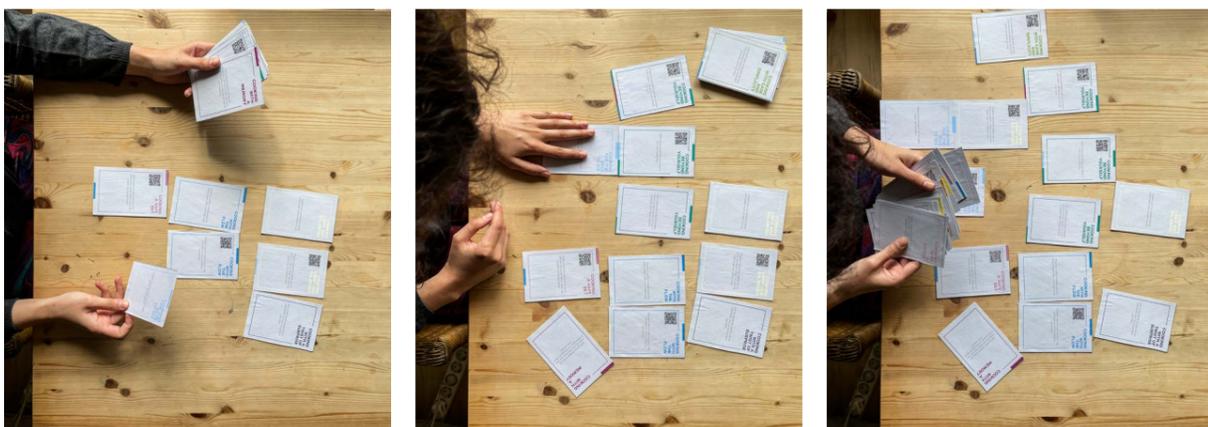


Figure 4.8: The gamified interaction was too prominent. It took the users attention from the content.

4.2.3 Learnings

The interactions with the card set showed that the user can benefit from an introduction which refers to the need fulfillment being the source of enjoyment, and the fact that it can be pursued. As found in phase 1, explaining the origin of these 13 approaches as a universal and fundamental set of needs helps people to identify with and embrace them. This could emphasize the feeling of a bigger purpose when using the card set. Highlighting the categories of approaches as opportunities for exploring new and diverse fulfillments would enhance exploration and lead to novel and stimulating experiences.

Feedback from the open conversations showed a need to emphasize that the implementation of the card set is aimed for daily life rather than special occasions. It is beneficial if the manner of interacting with the cues supports the 'mundaneness' of the application. Especially in the exploration phase, interacting with the tool should be 'as mundane as the activity itself' as the cards merge into daily life. For this, daily and repeated use can be encouraged. When using the cues daily, it is aimed to show that using sources of joy is a perspective that can be applied to the simplest things, rather than making a special occasion out of it.

The categories being perceived clearly and acting as a guide facilitates **the experiences to be relevant to the corresponding need. This was important to validate as a given approach should lead to corresponding need to be fulfilled.** This is a significant step as **people follow the feeling the fulfilment evoked, not necessarily an abstract notion of need for X.** Being aware of what kind of an approach would create such a feeling, the user simply takes that specific approach and pursues enjoyment through fulfilling what they need. For this matter, **this validation study was an important step to make sure the categories act as a reliable guide towards relevant and authentic experiences.** The next round of iterations are aimed to strengthen this connection further. The final testing will explore first, whether the experiences guided by categories are in line with the expectations and satisfy the user. And secondly, whether the user gains an affording awareness as they take action on their own and pursue these enjoyments.

4.3 Final user test: Cooking card set

4.3.1 Iterations on the card set prototype

A final set of iterations took place before testing the card set in daily use.

4.3.1.1 Introduction to the card set: an explorative journey

A descriptive introduction was added in the form of a booklet. In this introduction, the cards were introduced as 'an explorative journey' towards joy that starts from the kitchen. In the introduction the relation between enjoyment and need fulfillment is briefly explained. The journey is described as discovering diverse fulfillments within an activity through touching upon each need separately. The aim of the tool was explained as finding joy even in the most mundane activity through this method. See Figure 4.12(b) for the introduction page.

4.3.1.2 Source of the category and the focus

13 category cards explaining the focus and how to approach each category were added. An example of a category card can be seen in Figure 4.9. This allows the user to have an overarching idea about the specific source of joy that is aimed for with each category. A full color background was applied to these cards to ease the connection, and stand out among the cue cards within the set.

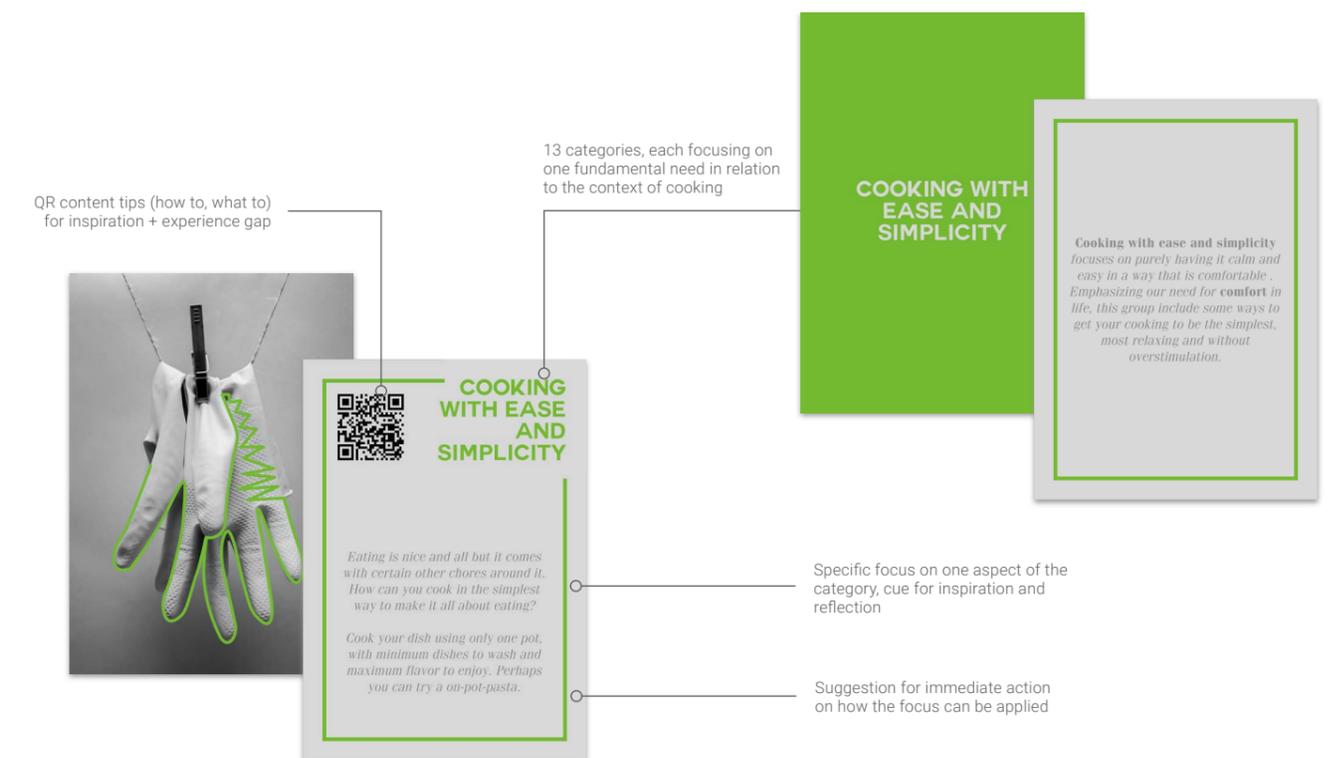


Figure 4.9: Category card corresponding to the need for Comfort and one of the cue-cards within this category

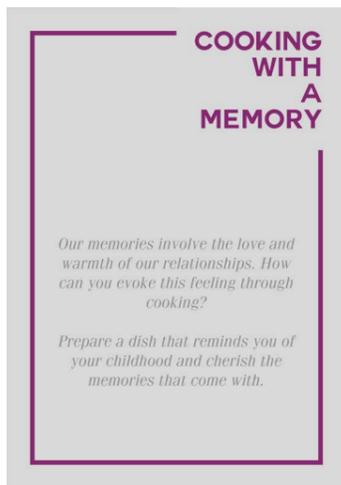


Figure 4.10: Introduction and questions to trigger reflection were added to ease the connection and evoke inspiration. An example of a cue-card corresponding to the need for Relatedness.

4.3.1.2 Cue content: introduction and questions

An introductory paragraph was added to the cue-cards to connect the category and the suggested action. The aim is to first, reposition some (very specific) implementations **as a suggestion rather than a task** at the bottom of the card. This way the flexibility in implementation is emphasized. Secondly, the user is aimed to be inspired, and triggered toward a moment of reflection regarding what kind of an implementation fits them and would provide enjoyment. In order to do so, some questions were added to get the user to think about the focus of the card. An example can be seen on the cue-card in Figure 4.10.

4.3.1.5 Four levels of information

Implementing the aforementioned iterations, each cue-card involves four levels of information that provides the user with guidance and inspiration (See Figure 4.9). 1- The category name to which the cue card belongs to give an indication of the overarching theme 2- The introduction specifies the focus of the cue card, triggering a moment of reflection for inspiration and personal take on implementation 3- Action cue suggests how the approach can be implemented and 4- The QR code: leading to more specific information on implementation to provide further inspiration and overcome the gap in experience in cooking. QR content was diversified, and now varies per cue-card including tips, tools or recipes that would facilitate taking the next step.

4.3.2 Testing in context: An explorative journey

The main objective of the final testing was to evaluate the concept in the context it was intended to be used: daily and recurring use over a (relatively) long period of time. The cooking card set was tested with six users over the course of 10 days where the participants interacted with at least one card a day, and logged their experiences into their booklets. Meetings were held before and after this period. Figure 4.11 shows an overview of the steps of the user test. The findings and insights from this user test were used to evaluate the concept on interaction qualities and the design guidelines, as well as the design vision defined in section 3.5. The final concept will be evaluated based on the original assignment at the end of phase 5.

4.3.2.2 Testing materials

The testing kit consisted of a booklet and the card set (See Figure 4.12). After the iterations, the set used for testing consisted of two types of cards: 13 category cards explaining the focus of each and making the connection to the source of joy, and 29 cue cards with action triggers, touching upon distinct approaches that fall under the 13 categories. The booklet is prepared for the user to log their experiences following the cards (See Figure 4.12b). This was deemed necessary to be able to remember their experience with the card set on each day for the interviews at the end of testing. Premo tool was again used to provide the users with a starting point for expressing their feelings beyond 'nice' and 'good'. A QR code leading to WhatsApp chat with the researcher, me, was provided in case of fur-



Figure 4.11: Overview of the final user test

ther questions or they want to share pictures from their experiences (See Figure 4.12b(3)). The introduction to the cards and the testing procedure was placed in the beginning of the booklet (See Figure 4.12b(2)). Testing materials were printed and divided into kits for each participant.

4.3.2.3 Method

Testing material was delivered to the users in person. The users were not given a prior explanation of the cards besides the initial information regarding the requirements of the study during recruitment. During this drop by, their initial interaction with the cards were observed. The aim of the booklet was explained as it is for taking notes for the meeting at the end of testing. The users were instructed (as stated in the booklet) to pick one card each day for the next 10 days. It was specifically noted that deciding on what to do with the cards is completely up to them including doing nothing. Further explanation provided when they had doubts or questions.

At the end of ten days a meeting was held with each user to have an open conversation about their experience. The users were initially asked to tell about their experience as a whole followed by going through each day. They walked me through their days using their logs in the booklet. This was followed with a conversation in a semi-structured manner as questions referring to evaluation criteria were used to guide the conversation (See Appendix D.1 for the interview questions). The interviews lasted around 45 minutes. The booklets were collected for further analysis. The card sets were gifted to the users after testing, but it is also noteworthy that all of them asked if they could keep it.

Three weeks after the interviews the users were contacted for a brief check-in. They were first asked about whether they used the cards after testing, and secondly whether they kept anything from their 10 day journey.



Figure 4.12a: The Cooking Card Set used in testing

"Oh I get it now, it's not recipes but more like recipes... for joy." - #4

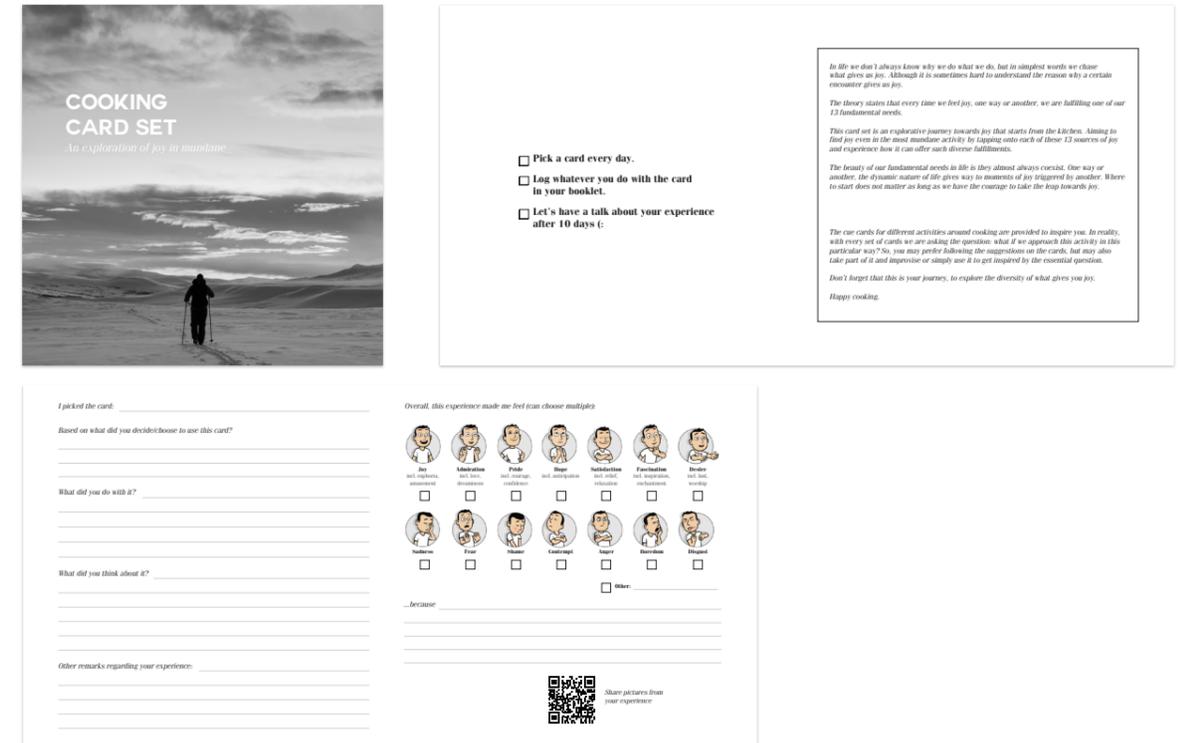


Figure 4.12b: The booklet 1) closed 2) introduction and instructions 3) logging pages

4.3.2.4 Participants

Final testing was conducted with the participation of six users. Five of which fall under the personas in the target group and one closer to the flourishing end on the well-being spectrum (See section 3.1 for personas). The participants differed in terms of experience with cooking whereas all were substantially interested in cooking (See Figure 4.13 for further information on participants).

Three of the users were somewhat familiar with the theory of 13 Fundamental Needs. The remaining three users were completely naive to the theory. One of the six users was familiar with the cards as she participated in the validation study. However she did not use the cards before.

All meetings of the testing were in person except for one participant who lives abroad, with whom the meetings were held through video calling.

	Persona-fit	cooking skills	cooking per week
#1	Shellby	●●○○○ medium	3-5
#2	Shellby	●●●○○ medium	6-7
#3	Settler	●●●●● skilled	6-7
#4	Settler	●●●○○ medium	5-7
#5	Reacher	●●●○○ medium	2-4
#6	Settler	●○○○○ beginner	2-4

Figure 4.13: Participant information relevant to testing

4.3.3 Findings

The concept was evaluated based on observations during first interaction, experience logs in the booklets, and statements in the interviews. This chapter first gives an overview of the findings and then evaluates the experiences of the users under the 4 stages of intended interaction. The Premo ratings are shown separately for each stage derived from the corresponding experience logs.

"I already had categories in my mind from the first day. The categories really spoke to me in the sense that yeah we do approach food from a need perspective, like fulfilling a physiological need, but approaching it as also fulfilling an emotional need. Not like I'm depressed so I ate 3 boxes of ice-cream, but the notion of being able to respond to your needs on a daily basis. Something I wouldn't normally think about but really enjoyed thinking about." - #3

At the end of 10 days all users found to have had diverse positive experiences through cooking. As the follow up with the users showed them establishing new habits after testing, **all stages that are intended for the user to go through were observed in the user test.** The user fitting the reacher persona engaged less with concept as expected. Although she also benefited from the concept, the findings and evaluation are mainly based on the journey of five users that fit the focus group.

Before participating in this testing, it was known that cooking and eating has been overlooked by the users, especially during the pandemic. Breakfasts would be skipped during busy days, dinners would be slurred over at the end of a tiring day, the same recipes would be cooked over and over and the idea of doing something for yourself would be ordering in, which mostly ends up with feeling guilty about the unhealthy food. All users had busy schedules in terms of working. It was expected that cooking with the cards everyday for 10 days everyday would be challenging and would not be realized. Naturally, the users always have the freedom not to engage. However, despite this freedom being emphasized within testing, all users within the focus group started using the cards immediately and cooked with the card set every day of testing with a couple of exceptions.

Starting mostly with small and explorative actions, over the course of 10 days the motivation and engagement was increased. An exciting finding from the user test was the amount of sources explored. Overall, cue-cards from all the categories were used at least once among all users (See Figure 4.15 for an overview). Each user engaged with cards from **8 or more different approaches (categories), some being completely new to the user.** All users expressed that they tried a new way of approaching cooking that they wouldn't do on their own. This is stated as somewhat challenging oneself towards new ways. The card set encouraged the users to get out of their habitual and 'comfortable' ways. This suggests that the

"To be honest, cues being not extraordinary allowed me to experiment." - #3



Figure 4.14: Meeting held in person with users before and after the 10 days they used the cards. Observations and statements during these meetings were used to evaluate the concept

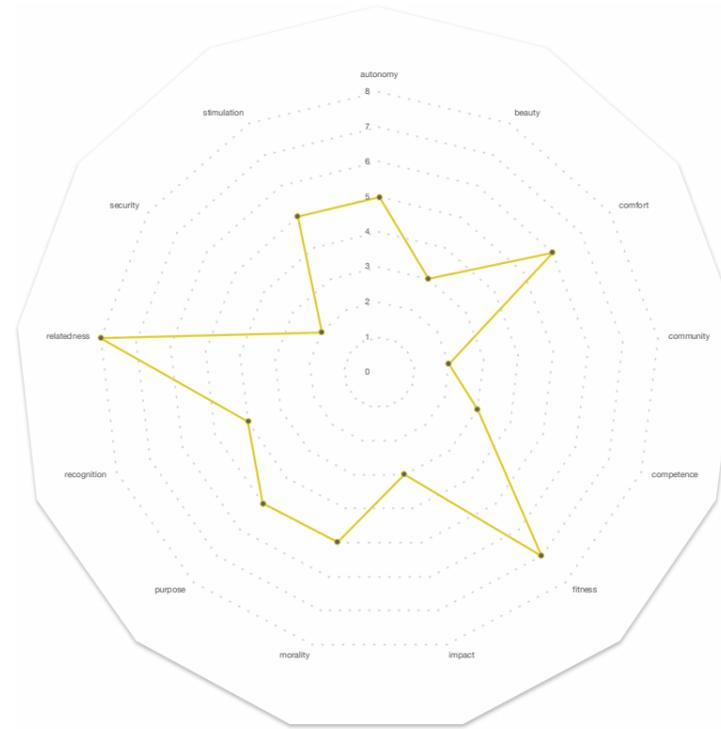


Figure 4.15: Number of times cue cards used (per category) among all users. Labels indicate the Fundamental Need to which the category corresponds.

perceived behavior space towards enjoyment is expanded through the activity of cooking. Figure 4.17 shows the categories explored by each user. Emphasis on categories through the application of category cards improved the experience of diversity since the users gained a better understanding of each and explored tried approaches beyond the familiar. These small challenges were highly enjoyed in most cases and the ones corresponding to user's needs and fit their lifestyle were kept as a habit. The overarching idea of cooking for what you want/need was **associated with taking care of self and the users expressed feeling mindful.** As experimentations around cooking led to diverse and **stimulating engagements**, the experience revolving around cooking was found **eye-opening.**

4.3.3.1. An Explorative Journey

Exploration and feeling stimulated (stage 2) Apart from the busyness of working schedules, especially in the beginning it was hard for some users to cook when they felt really down, or not feeling like doing anything. During these days they mostly chose the cards based on 'convenience', meaning that they used the cards that fit their level of motivation and the resources (ingredients, knowledge, etc.) they already had. One user, persona fit Shellby, indicated that she found the threshold too high to try some of the cards she was interested in. However, after picking cards that required small effort for a couple of days ended up with 'a creepy enjoyment effect'. This period of exploration consisted of successes as well as some failures regarding the food. Some experiences were rated with both positive and negative emotions. Naturally, within the specific scope of cooking, it is hard to distinguish which emotions are rooting from the food and which are the overall experience facilitated by the concept. During the walk-through over the booklets with the users these ratings were explicitly discussed and clearly distinguished. Experience-wise none of the users experienced negative emotions,

"What really interested me is the long-term, creepy effect — slight and small joy instead of a drastic and significant change at once. Having those micro-moments consciously" - #1

"How I enjoy eating for example, ordering excessive amount of sushi. You know very obvious, expected sensory enjoyment. But like the joy I felt from very small things like a simple cold soup form yoghurt or "am I gonna be able to cook everything in one pot" is not something I think or feel often in daily life. That's what I liked, otherwise food is always nice." - #3

"The diversity in the cards was amazing! I assumed the cards would be demanding so I would be able to choose only a few." - #6

"I had a lot of fun, and pleasant surprises. I don't have a schedule normally, so it also made me have a schedule. Some of these made me really look forward to my dinner" - #4

"The cards brought me an extensive way of thinking regarding what I cook and why I cook. I know myself better now. The experience gave me knowledge about myself and the world around me" - #2

however there were fluctuations in the intensity of positive emotions. Each user resonated more with some of the approaches (depending on their hot needs: see section 1.1.2.4). Moreover, the level of enjoyment also depended on the overall 'vibe' of the day. However, the new engagements, overall, were **experienced as stimulating** and led to positive experiences regardless of the failures in cooking. This confirmed the mundane activities being 'a safe space for exploration'. This phase of exploration was described as pleasant surprises by all the users within the focus group. Users expressed **feeling more motivated to use the cards and take bigger actions towards things they would enjoy**. During this initiation phase the users also got familiar with the cards and categories available. They expressed having mental stacks of 'want to use cards' for the following days. The small enjoyments and increased stimulation was experienced as a **subtle but continuous boost in well-being**. The exploration phase led the users to reflect on their settled behaviors. Taking their experiences as a reference, four of the users recognized what they find valuable in these engagements and felt motivated to act on them further in the long run. Three of the users explicitly stated becoming aware of their 'boundaries' as well as feeling motivated to challenge them.

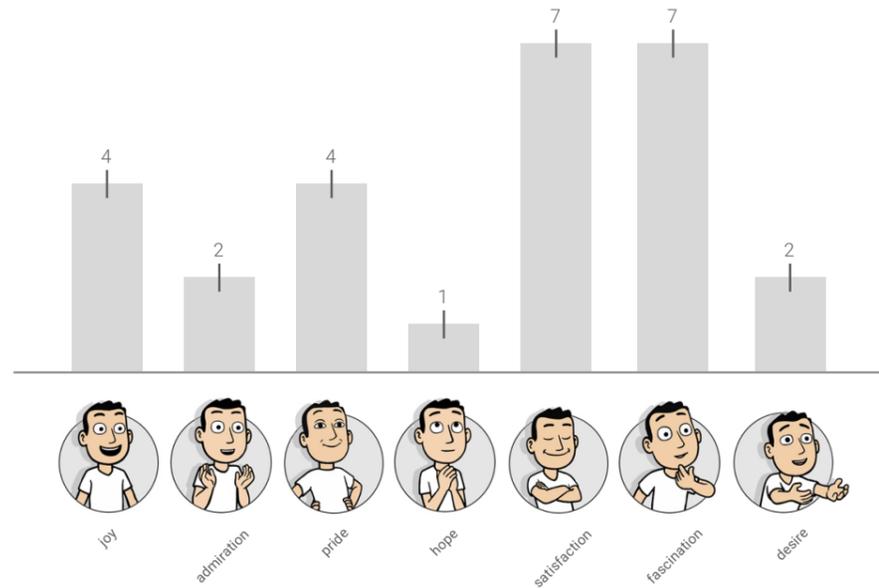


Figure 4.16: Premo ratings of experiences that were explorative in nature



Figure 4.17: Explored behavior space through cooking per user. Highlighted approaches were repeated, which formed into new habits after testing. Radial lines indicate how many times the user benefited from the approach. Labels indicate the Fundamental Need to which the approach corresponds

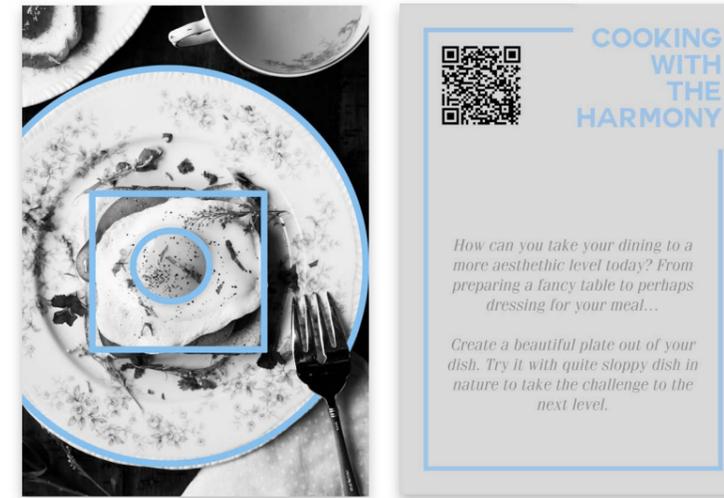


Figure 4.18: Card from the testing set. Category source: need for Beauty

"I generally don't think about how my food looks. But it was so cool and sweet. I loved the idea that the card evoked. After trying this, I realized it's actually not that hard. After this experience I started thinking about the appearance of my food."

The card gave me the idea of using edible flowers. They are expensive in the shops. Then I remembered the Jasmine flowers in my moms garden. I went there and picked Jasmine flowers. The cake looked amazing and it was a big hit in the family." #6



Figure 4.19: Card from the testing set. Category source: need for Stimulation

"I am a person that needs to know if it's going to turn out good. Never take risks. I never dared to do it. Now got out of my comfort zone and gave it a try. It was so exciting! I would like to do it again for sure, but I guess I needed a trigger from someone"

"I want to keep going. There are still ones that I want to try. Especially extreme ones for me showed me my boundaries. So some day! I will also find the opportunity to overcome the most challenging ones." - #2

"It's technically a product, but in fact it's something that gives me a little bit of information. Like small guide of ideas. I really liked the cards are not making me do specific things. They can be interpreted in a lot of ways. That's also why I can keep revisiting them." - #5

Experimentation. Following days, especially during the weekend when the users had less to do, they started experimenting with cards that were **challenging their existing habits**. Meaning that they picked from the approaches that they were interested in but had a hard time acting on previously. Specifically for shellbies this was found to be due to the need for Security. Their experiences so far made them feel competent and stimulated. Previously being hesitant to take risks, they got out of their 'comfort zone' and decided to challenge themselves towards 'bigger' enjoyments. The experiences triggered by the cue-cards were found 'exciting', 'joyful', and 'stimulating'. Majority of engagements were associated with positive emotions and dominantly with **pride**. (See Figure 4.20)

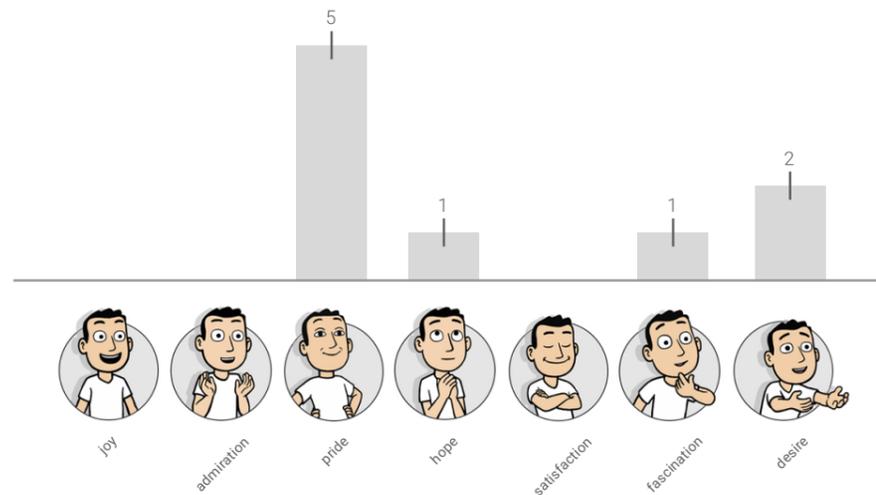


Figure 4.20: Premo ratings of experiences that the users further experimented with approaches they are interested but seemingly challenging to them.

The users expressed quickly getting familiar with the cards in a couple of days. After this, the users explicitly stated **feeling more competent in terms of using the cards and feeling more confident towards taking action towards enjoyment. Users also expressed being surprised by how doing very small things can contribute to their experience and enjoyment.** Although how long it took varied per user, all users expressed feeling this way. All users stated that they knew the categories and had a high number of cards in mind in a couple of days. This created an unconscious trigger to think in terms of categories and ideas started coming to mind naturally in the upcoming days. Most users indicated not even feeling the need to check the cards on days they already knew the one that applies to their wishes at a given moment. This also applied to the cards they wanted to use to keep exploring. Just like any other mundane activity, cooking also depends on several variables such as having time, energy, motivation, or the ingredients present for that matter. What is observed is that due to these 'mental stacks' even though a cue-card is not acted on on one the day, when there is an opportunity, it's implemented from memory on another day.

These findings suggest that **the user embraces the idea behind the concept and associates cooking in terms of creating an enjoyable moment for themselves. Additionally, in a short period of time the concept finds its place in daily routine.**

"Yeah, I made a drink". I mean didn't really do much. But yeah, it's just, just the feeling.... Yeah, I also noted, usually I don't dare to mix things because I fear that I'd make it worse... but this, it is different if you just like put some ingredients together and like something came up. And I did it!" - #1

Recognition (stage 3). Not all engagements were new or challenging. Some of the suggestions in the cards were behaviors the users already exhibit. In some cases these were suggestions that the user already had in mind but did not act on. These cards **enabled the users to recognize how these behaviors do relate to their overall well-being.** As expected, this recognition increased the value and purpose the users found in the behavior. This resulted in more enjoyable experiences in all cases as well as motivation to repeat the behavior especially in the latter case. These moments of recognition were mostly associated with 'joy' similar to the findings of study 1 (See Figure 4.23). Depending on the specific need found to be underlying the action, the positive emotions associated varied. For example, the user recognizing going to the farmer's market corresponds to the need for Morality as it reduces their produce's carbon footprint really appreciated this information that she didn't think about before. Not going to the market for some time, due to this she chose the card and went to the market after a long while and shopped from there. The user rated the experience with 'pride'.



"Calling mom for recipes has been something I did a lot in the past. But the cards reminded me that I haven't been doing this for a while. This experience made me recognize how experienced and patient my mom was with me and I admired her for this..."
"Thanks for the a-ha moment" - #6

"... So that's not just about being satisfied with the end result. But, you know, chilling with your mom. You can see you know, then we talked about other stuff, but not really in a rush way. Like catching up, chill, whatever. That's actually what I meant by feeling 'content' - #1

Figure 4.21: Card from the testing set. Category source: need for Relatedness



"I often cook my moms recipes. When I picked this card I cooked one of her recipes, but you know I always change it in a way. And I realized I like mine even better. Being able to cook what my mom cooked, using my own way to change it and even making it better felt independent and evolved." - #1

Figure 4.22: Card from the testing set. Category source: need for Autonomy

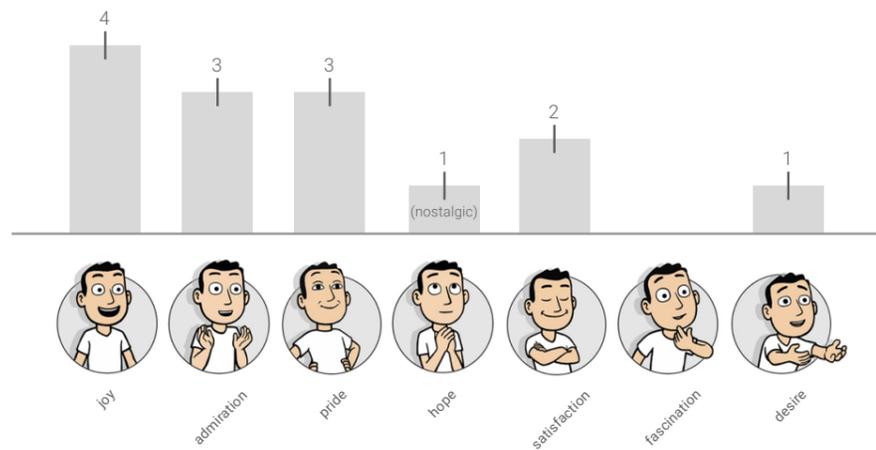


Figure 4.23: Premo ratings of experiences that are underlined by recognition.

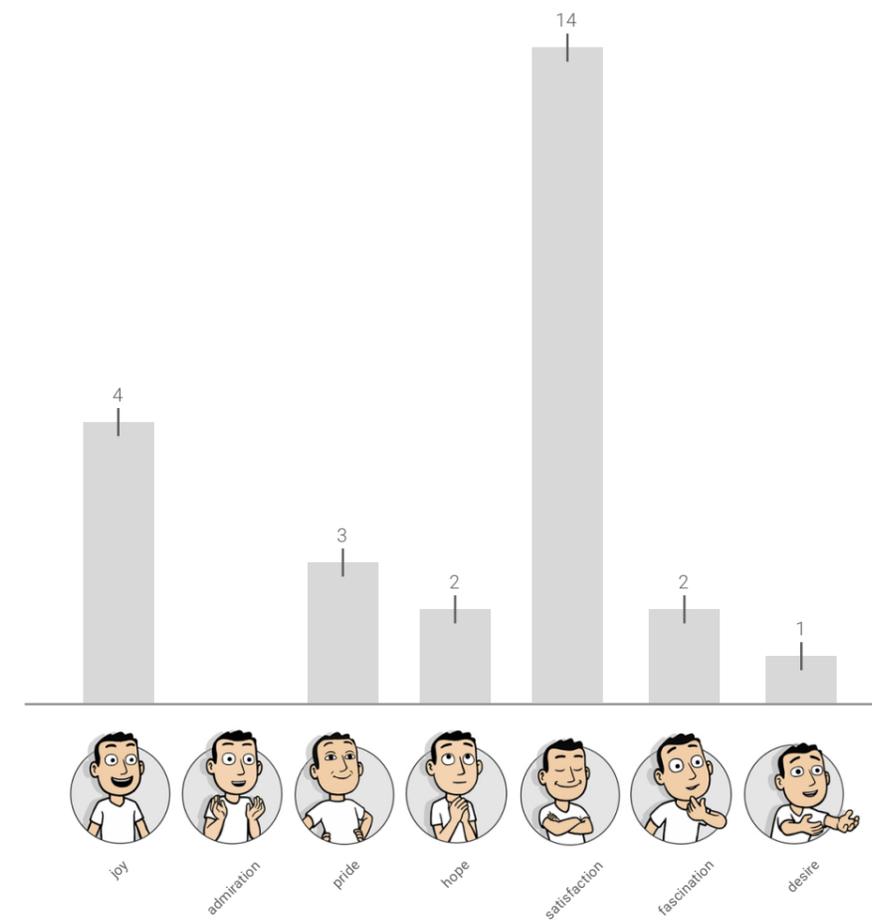


Figure 4.25: Premo ratings of experiences that the user chose the card based on what they need at that moment

"I associated this a bit with being mindful. You know cause you think about what you need and how to approach and how you treat yourself.. instead of totally overlooking what you eat normally... (which would be) just eating something while you watch tv etc." - #3

"Also, since the cards are need based, it makes you think like what do i need now? And afterwards fulfilling that need, it just gives this satisfaction. I enjoyed this very much." - #3

Mindfulness and feeling more in control. Using the cards on a daily basis, four users stated that the interaction evoked a mindful approach towards the daily activity of cooking/eating. The categories facilitated the user to think in terms of 13 approaches when thinking of food. For shellbies this was a state of being aware of what they like and would like to act on more/, and a critical approach towards themselves. For settlers, eventually this kind of thinking influenced and eventually facilitated the decision making process of cooking to be based on how they feel like and what they need at a given moment. Understanding and taking different kinds of actions to address one's needs provided a feeling of taking care of self. This suggests a feeling of control over one's well being. Approaching cooking more consciously, addressing needs and wants through such a mundane activity was associated with a feeling of being mindful. When using the cards based on needs at a given time, almost all experiences were satisfactory in terms of answering the need and found in terms of experience (See Figure 4.25).

"One day I woke up feeling really homesick, and a bit lonely. That day I decided to use the one with the memory. I cooked this thing my mom used to give me as a kid. I haven't had it for years maybe. It really made me feel better afterwards." - #6



Figure 4.24: Card from the testing set. Category source: need for Relatedness

"... The fact is, with the memory cards, I would have never done this without the cards. Now I want to keep trying." - #5



Figure 4.26: Card from the testing set. Category source: need for Comfort

"Usually when I'm very busy or tired, I tend to skip meals or just order in an eat unhealthy. This week I was also very busy so I chose the ease and simplicity a couple of times. I never thought of cooking in this way. Before it was like maybe 3 categories in my mind and not much conscious towards eating... What was nice is that it's not even about what I am eating. Using the cards gave me a more extended perspective towards eating, also like I'm feeling more mindful" - #3

4.3.3.2 The Follow up

Establishing diversely fulfilling habits (Stage 4). The users were contacted three weeks after the end of testing. They were asked whether they kept using the cards, and whether they held onto any experiences from the testing. None of the users kept on regularly using the cards, although some users kept trying new approaches with the cards from their 'mental stacks'. Deciding that they wanted to cook with some cards in the beginning, they kept on exploring new approaches without the need to use the tool. Additionally, all users mentioned ways of cooking they kept repeating in daily life that 'come somewhat naturally' (step 4) (See Figure 4.17). This suggests that **the tool helped the users to establish fulfilling habits**. They also stated that sometimes they do something and remember a cue in a card. As positioned in the intended interaction (step 4), after using the tool for a while it is expected the user to be 'unconscious competent', meaning that they would keep engaging in enjoyable actions but would not be consciously engaging with the information. So, it was not a surprising learning when they stated not remembering the exact category for each of those cues. However, it made them think that it would correspond to **a need**, which is enough to result in enhanced enjoyment of the engagement and motivation to pursue further. Lastly, one user said that she couldn't cook for a while due to her busy schedule. After this period, when she cooked again she instantly remembered the cards as she thought **"I haven't been feeding my soul for some time now. I have neglected myself"**. This realization made her attend to herself more and she engaged more with cooking in ways she enjoyed. She says what remained with her from using the cards is the overall mindset of being 'mindful' and taking care of herself through cooking.

4.3.4 Insights and evaluation

*The takeaway of most users from their experience can be summarized as "food is a way I take care of myself". Using the tool was found stimulating and engaging. **The activity of cooking became a means of creating enjoyable experiences.***

New experiences ease Settlers in and give the guidance to Shellbies. As explained in the findings, all users benefited from the tool in terms of expanding their behavior space. Motivated by curiosity, the users tried new things even some commented as 'they would never do on their own'. The cues gave them the trigger they needed for a lot of things they have been wanting to do but not act on.

The cues were widely defined as **'just the nudge'**. Thinking of ways to implement an approach, users found themselves remembering things they have been wanting to do for a long while, as well as being reminded of things they used to enjoy a lot, but for some reason stopped doing. In both cases experiencing these with the focus of categories, users experienced an enhanced enjoyment. This was regardless of whether they remembered just a recipe or something more due to the guidance and emphasis of the card. They stated it made them realize **'what is it that is nice about something'**. As intended with the concept, these moments gave them an (affording) awareness. Indeed, most of the experiences where users recognized a specific aspect underlying the enjoyment (recognition) were re-

peated during and after testing. This finding was interpreted as a validation of the framework in use, specifically the 'take focus' hypothesized under recognition step (See Figure F.2b on page 62).

Interacting with the concept provided a very clear understanding of **how small steps can contribute to well-being**. Due to the concept revolving around cooking, it was expected that it would be harder to connect the approach with the enjoyment rather than the food. However, the experiential knowledge the users gained through using the tool gave them an overall understanding that a small change in their actions can enhance how they feel, **increased confidence and motivation to take action** towards enjoyment when deemed fit.

Mentioned in the follow-up, a user stated that during the times she finds herself in a state of emptiness (*languishing*); not feeling like working or doing not much in general, she would go through the card set. If something inspires her she would start cooking with the cards, other times she said she also cooks a lot with stimulation cards. A notable detail is that this user was cooking not very often, with an average of 2-3 times per week. This information makes this finding more significant as it indicates that the activity is now used as a tool to consciously pursue enjoyment. This suggests the tool does fit the target group and accomplishes the goal of **motivating the user to pursue the enjoyment they need**.

The users also gained insights about themselves. In a broader sense, deciding on how to cook made the users reflect on why they cook. The majority of the users discovered what is the drive that motivates them based on what kind of cards grasp their attention. This finding was associated with each user's 'hot needs' that was discussed in phase 1. Based on these motivations, the users engaged in experiences beyond the kitchen, mostly through 'combining the cards'. For example, one user realized she likes using food to take care of people and enjoys the social aspect of cooking. She was surprised as she reflected on how she doesn't have this aspect in her life with cooking because her culture taught her almost the contrary. Inspired by a card suggesting using cooking as a way of support, she baked a cake and brought it to the coworkers she never met before (*a card corresponding to the need for Recognition was combined with the category representing the need for Community*). She said this was a subtle way to make a connection with and take care of people. This suggests that **the design intervention triggered reflection and evoked an understanding of self desires and behavior**.

Deciding on how much the theory should be visible in the design was a recurring complication. The final user test showed that **knowledge on the theory itself was not as crucial of an element compared to the experiential aspect**. Converting 13 Fundamental Needs into experiential cues was an attempt to convert the passive awareness into an affording awareness. Coming from the framework, this distinction was the core of the design vision of facilitating an experiential learning opportunity. The concept succeeded through designing suggestive triggers that enable users to experience the enjoyment through authentic engagements rather than simply being aware of the sources they can touch upon, or explaining what and why of enjoyment in depth. Clearly found in the user test that the connection to the theory is not important after the initial introduction, once the experiences take over. The theory and the need-based nature of enjoyment was explained in

*"You can change your whole experience with the smallest things, and you don't even need to take huge steps... **It's really small steps but it can really take the experience to a whole different level**" - #6*

*"What was nice is that **it's not even about what I am eating**. Using the cards gave me **a more extended perspective** towards eating, also like I'm feeling more mindful." - #P3*

*"Before, if I'm in a bad mood I would directly skip dinner, that's what cooking was. **Now if I feel like doing nothing, or feeling down I consider cooking**. I think it turned into a distracting and fun activity... It became somewhat of a focus now." - #6"*

*"I wouldn't normally go to the other offices. This card gave me the idea actually. Because **you're more conscious about what you do with your food and how you take care of yourself, but also how you treat other people as well.**" - #4*

*"I know the (fundamental) needs from earlier, but the cards don't immediately take you to the needs. **This is really nice, I wouldn't want to think of the theory, it would limit the organic interaction**. I like that it's more organic. **I actually like they're just ideas and I get the feeling only when I apply**" - #5*

*"When I look at it, it's these small things that would give me joy. As a **tool you'd use, it's actually enough to get the idea**" #1*

"If I didn't see the cue, I would have never done it. Probably would occasionally come to my mind for five more years." - #5

"I felt more close to and guided by the categories. **Because "13 fundamental needs" is not a jargon I'm familiar with or something I have in my life. But these categories are here and now, in front of me and I can relate to it. So I took the version where it is already related to food as a reference. Otherwise it is too abstract.**" - #3

one sentence in the introduction. During the interviews, the users were asked how much they connected their experience to the theory of Fundamental Needs. It's found that explaining where the categories come from clarified the concept as well as helped the user to feel included in the story. Knowing a little bit of the theoretical background was interesting and motivating for the naive users. However, **users did not refer back to the theory at no point during the testing.** Three users that were completely naive to the theory were also the ones that experienced the tool closest to the intended interaction. This suggests that the categories and experiences are clear and relevant enough as a guide following a brief mention of the theory.

A big question was whether the concept was a successful application of the framework. The tool is observed to have **facilitated the user to go through each step represented in the framework**, both within and among the steps of the interaction in the long term. The Settlers showed a more clear gain of (affording) awareness. Understanding that their actions contribute to their well-being, they showed a more mindful and well-being oriented approach and **consciously pursued enjoyment.** As expected, the Shellbies benefited more from external guidance and inspiration and took their time in exploring different approaches. They enjoyed being reasonably challenged. Unlike Settlers, their overall journey didn't revolve around feeling mindful and consciously taking action to care for well-being. However, **both personas ended up with having positive experiences that gave them the confidence that their actions contribute to their well-being.** The positive experiences were repeated and eventually settled into daily life.

Users found success in failure. As it was first discovered in the creative session, the feeling of failure was also observed in the testing. Mundane activities (cooking in this case), chosen for the recurring nature that provides learning from failure, proved that it is indeed a good space for exploration. Almost all of the participants failed in some of the recipes they tried, however since the experiment was on the way they approached cooking, the main idea behind the approach still stayed as a joyful exploration, and even sometimes gave something to look forward to as a challenge to tackle for the next time.

It is also notable that some experiences indeed triggered negative emotions such as shame and disgust. However, these experiences were also accompanied by positive emotions such as hope, fascination, and desire. Figure 4.27 shows the log of an example of this kind of an experience triggered by the concept. Taking a closer look at these experiences, these experiences can be described as rich experiences. The term (Fokkinga & Desmet, 2012) refers to experiences that evoke both a positive and a negative emotion, which benefit one's positive functioning

"At the end it didn't taste delicious at all but **I actually didn't care about it that much.** It reminded me and my sister of the days of our childhood. Next week we are making grandma's cookies" - #6

Other remarks regarding your experience: *It's a rich experience. I feel mixed emotions: curious, scared, exciting, worried, fascinated, uncertain. Without this card, I bet I would never want to try to make a twist because it's risky. But it's fun to get out of my comfort zone and I know I'll be proud if it turns out good.*

Figure 4.27: log by one of the users regarding their 'rich' experience when cooking with a novel ingredient, a card from the category corresponding to the need for Stimulation

4.3.4.1 Personas

Different personas were interested in, and motivated to engage, by different aspects of the interaction (See Figure 4.28). This in turn affected on which step they benefited from the tool the most towards enjoyment.

"Great to have diversity in daily life and to get out of my comfort zone"

Recognizing the enjoyment in action. Shellbies indeed benefited from the tool in terms of inspiration and guidance. As mentioned before, one user couldn't find much motivation to put in a lot of effort at first but she slowly got into the process. These users' dominant need for Security - not taking risks- was positively challenged by the tool. The part they enjoyed the most was the diversity they found in their routines. The two users representing this persona were the ones that often preferred picking a random card from the card set. One of these users, however, also stated feeling the need to commit to the cards - as much as she can. How much she can commit affected which card she acted on. This feeling got looser throughout the testing.

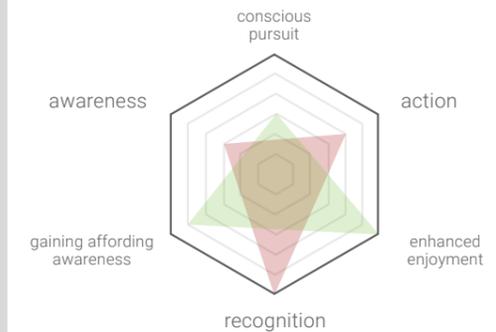


Figure 4.28a: PersonaXconcept interaction: Shellbies

"A great perspective on how you take care of yourself"

Gaining control over how one feels and expanding the behavior space. Settlers had a more active approach and they took charge as expected. Users representing this persona chose the cards literally on what they needed at a given moment. Implementing the cards on what they already had in mind for cooking they really enjoyed how it complemented their experience and satisfied their needs. This complemented their dominant need for Autonomy as the tool enabled them to engage without compromising when or what they wanted to eat. Enjoying this aspect was clearly expressed by all the users that fit this persona.

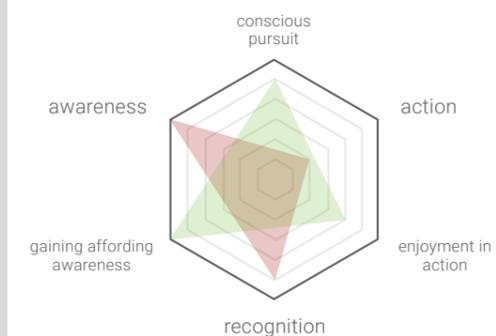


Figure 4.28b: PersonaXconcept interaction: Settlers

"I can use this method overall in my life to have it as I desire"

Diversifying the needs fulfilled through daily actions. The user representing the persona Reacher already had a busy routine as well as active engagements. She did not spend much time exploring but rather acted on a few cards she found relevant and interesting. However, even within her limited engagement she recognized enhanced enjoyment. 2 out of 3 approaches she tried were quickly adopted as habits.

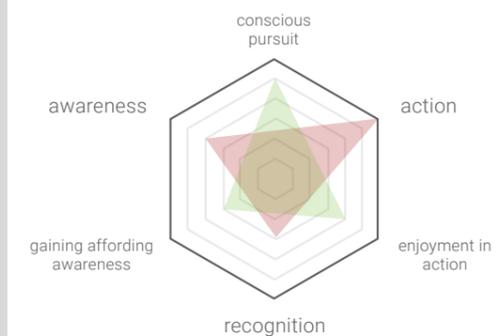


Figure 4.28c: PersonaXconcept interaction: Reachers

■ source of motivation to engage with the tool
■ gain from engaging with the tool

and are highly relevant to design for well-being. In regard to the experiences, it was associated with stimulating engagements by the users that are experienced as highly personal and motivating.

The QR content was helpful to diminish the effect of differences in skill and experience in cooking. Looking at the similar takes of users from their unique experiences, it's concluded that **the tool can be used and is engaging regardless of cooking skills or prior experience**. The content was found helpful and inspiring. One user checked each and every card's QR while one was not interested at all, and the rest occasionally benefited from them. As expected, especially users with less experience in cooking benefited from the content. The users were mostly interested in the approach and already inspired enough to implement their own ideas. Some users said the QRs were another reason they wanted to keep the cards around. The richness of the content made the users to make use of the cards as a source of inspiration in the long term. The QR codes were sometimes overlooked while choosing the card and only recognized afterwards. Users expressed that if they knew the content was so helpful they would have used it in the first place. This suggests that a subtle indication can be placed on the cards reminding there's more content if they need further assistance.

"I think of this experience as something I can spread into my life in general. It seemed like it could easily become a part of my daily life." - #6

The tool should be used longer and in a less dense way. Most users expressed that the period of ten days was very limited and did not allow them to try some of the approaches that really interested them. The users had only one weekend during testing, so this also limited the time they had for themselves and can try the extensive cards. Moreover, picking one card everyday was found to be a 'dense experience'. This was a bit confusing since they were not required to cook with the cards every single day, but also promising that even in this case the users wanted to use the cards every day. When asked, most users suggested a longer period for using the concept, as they said they would be able to enjoy and explore more. Considering the users' experience and suggestion, it would be wise to use a longer period of time as a suggestion for the final implementation.

Logging the experiences was not a part of the concept, however it might have had influences. All of the users pointed out that the logging was a prominent pain point over the course of testing. It felt like a chore to the users and the majority clearly expressed not liking it. What is observed is that the users mostly took notes for the sake of leaving notes for the researcher. In fact, the logs mostly consisted of explanations of what they cooked rather than their experiences. The findings and insights presented in this chapter were derived from the interviews to a large extent. Nevertheless, this does not eliminate the concern that this step might have influenced the level of commitment to the tool as well as having a moment to acknowledge the experience. The logbook was given for the purpose of testing and not a part of the concept. However, curiosity arose whether going through their experiences (as they log in their booklets) led the users to have a more insightful journey. Unfortunately, due to time constraints another user test couldn't be executed to understand the extent of this influence. Nevertheless, it would not be surprising that spending a moment to look back and think about the experience would enhance the enjoyment and allow the experienced approach to be acknowledged. So a way to facilitate a brief moment to 'give feedback' on experiences led by the cards without the undesirable manner of logging would be beneficial towards the desired journey of the concept.

One of the ambitions of the design was enabling the user to expand the way of thinking evoked by the cards into their life in general. However, this was left out of the initial scope and not pursued further due to the concept already having a lot in the focus. This was also something hard to test within the limited time of this project. However the statements from users hinted that this is partly achieved. Especially the user that fit the Reacher persona expressed that she wants to use the cards to build a routine that makes her happy and helps her achieve her goals. Moreover, she was curious if she can use this with other types of mundane activities she engages at home. This was a striking moment for me since this user pretty much grasped the idea behind the whole project through the testing prototype.

Users highly appreciated the efforts put into the card set both in terms of aesthetics and the richness of content. While the former induced a desire to engage with the design, the latter evoked stimulation. Both made the users want to keep the cards around in the kitchen, and make long term use of them. One user stated that the effort put into style and content motivated her to put more effort while using them. Most users also wanted to keep the cards around as a reminder (See Figure 4.29). They found the style pleasing and fitting the kitchen.

"I want to hang some of them on my kitchen wall as a reminder, since after a while you learn what the colors represent so not much you need. Also because I really like the visuals, i think it goes really well with the kitchen" - #6

4.4 Learnings

The conclusion of the final test is that the design succeeded in triggering a pursuit of joy in daily life by getting the user to explore new and diverse fulfillments through authentic experiences. The short term interaction led to new and enjoyable engagements through the mundane activity, while the long term journey gave indications of diversifying the needs fulfilled through the mundane activity and establishing fulfilling habits. However, the journey of the user can be facilitated better towards the design vision and the intended journey in the long term.

Contrasting the categories and showing off with diversity. The categories were clear for the users regardless of prior knowledge of the theory and sufficiently guiding. The category explanations were found not to be visited over and over, but rather having an initial understanding at the beginning is enough to make the connection with the theory behind. The needs underlying the categories were sufficiently associated with the experiences. About this information, the crucial



Figure 4.29: An image shared by one of the participants, showing the cards, from the testing set, they have out the wall in their new kitchen (4 months after testing).

point was found to be showing the distinct aspects of the categories. In the final implementation this could be emphasized by having the categories out of the deck, and presenting them together, allowing the user to compare and contrast as they take the information in during initial interaction with the tool.

Providing a whole journey. To make the experience of the user a whole journey, firstly the card set needs an introduction that addresses the target group and sets the mood for exploration. This is important since the users enjoy and get motivated to use the cards once they start, however the final concept should better communicate this in the beginning to trigger the experiences in the first place. Secondly, it was observed that the desired interaction requires a journey that takes time coupled with recurring use. The users themselves also expressed a desire to explore in a more extended period which allows for deeper investment and better management (which card to apply when). As observed in the user test, the interaction of the user with the cards goes through changes as they engage more with the concept. In the long term, facilitating a more dynamic way of using the card set will better fit these changes in interaction, abilities, and mindset of the user, as well as encourage use for a longer period of time. Moreover, the journey of the user can be prolonged through reminding the user of the cards. With the testing set, the use was heavily dependent on the user's motivation, and perhaps commitment to the testing. Although the users willingly engaged with the prototype on a daily basis, they all had their cards in places where they would be reminded of them.

The concept could remind itself. The final concept should position the product in the context where the cooking takes place. This could be done by offering a place for the cards or benefiting from reminders. This is to make it easier for the user to adopt the daily use as the the concept is aimed for longer use than of the testing (10 days). Thus changing levels of egagement, availability, motivation and various kinds of distractions that take place in daily life should be taken into account.

Two things that created a cycle for the tool to work on were the gentle nudge and the mental stacks. Going through the deck, cards reminded people of the things they have been wanting to do for a long while but never actually did. The latter, mental stacks, were a big part of internalizing the concept and integrating into daily life. The card set facilitated all users to have at least one separate stack which involves the cards they are willing to try. Choosing cards for this stack enabled the users to have a 'mental commitment'. These cards were more easily implemented when the opportunity occurred as the users had them in mind. In the long run, these cards were also remembered among others. The users who made specific stacks of 'want to try' still explored the cards they couldn't cook with before, even after the end of interacting with the physical cards. This effect observed of making stacks can be pursued further to get the user more involved with the card set. **Facilitating making stacks** could lower the threshold even more to take action, and grab the user's attention with a more inviting selection of cards.

Allowing a moment to reflect. Overall, the reflection on experiences is a part of experiential learning models that can not be ignored/left out. This does not necessarily have to be an intense reflection session. Rather a moment of acknowledging the engagement is enough to the extent of what this concept is trying to

achieve. During the testing the act of logging seems to be that nudge for the users towards thinking about their experience, and possibly also the fact that it is a user test and there will be an interview about their overall experience. Nevertheless, neither of those were a part of the concept at hand that was being tested. So the interaction with the final concept should facilitate this brief moment for the user to have some feedback on and acknowledge their experience that is triggered by a certain card.

Duration of the journey. The overarching habit this concept is trying to establish is simply approaching an activity from an enjoyment-focused perspective. Habit building is a long term process where it is hard to pinpoint the exact amount of time it takes. Contrary to the very common myth that states a habit is formed in 21 days, current literature reports that new behavior becomes automatic around 10 weeks, 66 days to be exact (Lally et al.,2010). It is unrealistic to expect such a long term commitment from the beginning, especially while aiming to keep a low threshold and not to overwhelm the user. However the final concept should communicate a duration that is longer than a week and definitely shorter than 66 days. Communicating a set duration is important to make two things clear: 1) This is a journey that extends over weeks, so take your time, enjoy, and experience accordingly. 2) It's to be explored for a while, so it has an end and is not intended to be a part of your cooking process. Keeping the interaction dynamic and allowing the user to extend could be facilitated better in the final concept.

Communicating a set duration. The tool was perceived as if it was aimed to be a part of cooking forever instead of a journey of exploration. This idea that was misconceived was naturally found hard to maintain among the participants. The users perceived the journey as they should have kept using the cards. The final concept should give an idea of the intended use of the tool and length of the journey. This is also simply for the sake of keeping the interaction as close to the intended effect and give the user a realistic view of the concept.

Lastly, during testing, keeping what they experienced and enjoyed with them was completely up to the user. Within the short period of time this could be tested, the users kept the approaches they had in mind but also a lot of them were forgotten unless the user was presented with an explicit cue. As it is desired for users to build fulfilling habits in the long term, the final implementation could make the user's enjoyable experiences more visible.

The concept will be refined with a last set of iterations from the learnings of the final user test. The next phase will elaborate on the final concept and the design implementation. The final concept will be evaluated on the design goal and original assignment in the conclusion.

PHASE 5

Unravel: The Final Concept, Implementation & Conclusion

The concept was refined through an iterative process in the previous chapter, and improving points were found in the evaluation in context. In this phase the user journey around the concept was designed and the concept was finalized with one last set of iterations before the design implementation. Unravel was created as a series of kits for variety of mundane activities. Unravel cooking is introduced and the intended usage is explained via a storyboard. A final evaluation of the concept is given in regard to the original brief. Future recommendations are presented for the purpose of further experimenting with and developing the concept in the future. Lastly, a personal reflection on the process is presented.



5.1 Final Concept: Unravel_cooking

5.1.1 Unravel

Unravel is a kit that is designed to facilitate a month-long explorative journey for young adults to experience, experiment with and diversify enjoyment through mundane activities that are overlooked in daily life during Covid-19 pandemic. It aims to establish a granulated understanding of enjoyment, that is need-based, through experiential learning using a deck of cue cards. The cues are designed to be stimulating and engaging as well as lead the user towards diverse fulfilling experiences. The cues encourage personal interpretation which enables the user to have a unique journey with rich and authentic experiences. These distinct experiences lead to fulfillment of diverse needs, which gives a sense of control over positive experiences, as well as maintaining motivation towards further engaging, exploring and experimenting with the concept.

5.1.1.1 The box: a metaphor and an introduction

The feeling of revelation was the dominant inspiration for designing the box due to how users described their experience as "never would have thought of it this way". This comment as a starting point shaped the final implementation as a mystery box that leading to revelation and discovery.

The box is designed to create the feeling of revealing something hidden, which is not apparent to the eye from the outside. The box is made out of one undivided piece of sheet of paper that takes the form of a box when folded with the help of magnets among the layers. It opens up to reveal a colorful gallery of 13 categories. These 13 categories are positioned as parts within this whole, and visible only when the box is unraveled/attended to. The unraveling of the box can be seen in a sequence in Figure 5.4. A contrast between the outside and the inside of the box is designed to evoke a feeling of pleasant surprise and stimulation. The exterior represents the nature of the mundane, that can be easily overlooked and over time become a burden, not considered as an enjoyable activity. The colorful interior is an overview of diverse enjoyments that the overlooked activity of cooking, just like any other activity, bears for the one that decides to pursue joy.

The user is aimed to feel like discovering something, which is aimed to provoke the desire to explore. The introduction, instructions and information on the categories are directly printed inside the box, all of which are presented on a grid. Overall,

this presents an orderly chaos, just like tackling the fulfillments within a moment of enjoyment. The unraveled box is a big sheet of paper where the user finds their way among the information. Interaction with this sheet (unraveled), embodiment of the interaction mostly, is designed to resemble 'figuring out a route using a map', and evoke a similar feeling: attention and anticipation followed by action.

5.1.1.2 Guiding the user through stages of competence: a more dynamic interaction

The journey is designed to be month-long, where the user is encouraged to choose new cards after about every five cards they explore. This system benefits from the mental commitment the user makes as they are asked to choose a number of cards from the deck that interest them the most. This circulation of having five cards at a time is facilitated through having this selection in the context of cooking (on the fridge) and having the cards that were used flipped backwards.

The moment where the user is done with the experience led by a cue card is aimed to be **the moment where they acknowledge their experience**. At this moment, the user is simply asked to flip the cards once their engagement is over, and decide whether they enjoyed their experience and would like to repeat it. If so, they are asked to move the card to their 'favorites corner'. By nudging the user to think whether they liked their experience and decide whether they would like to repeat it nudges the user towards a moment of reflection.

The user is asked to keep their favorite cards (approaches) on a separate corner on the fridge. The reason for this is twofold: first, to facilitate the user to build their personal toolkit in the long run, consisting of the approaches to cooking they enjoyed the most, which are to turn into fulfilling habits in time. Secondly, as they build this toolkit, the color system of the cards visualize the trends in their favorite engagements. The Fundamental Needs corresponding to the most enjoyed categories by the user are representing the user's hot needs.

5.1.1.3 Hot needs: A personal takeaway and initiative to pursue further

This simple visualization of user data provides the user with an insight into better understanding what gives them joy at that given moment in their life. This information is then used to invite the user to think about how to fulfill these needs through other activities. This conclusion coming out of the exploration the user made leaves them with a personal and insightful takeaway. This part of the journey takes the focus out of the activity used for exploration, and encourages the user to connect and implement the need-based understanding of enjoyment they gained to other engagements they have in life. The user is motivated to explore more as learning something about themselves and reflecting on it stimulates them and evokes curiosity.



Figure 5.1: The deck in Unravel_cooking kit: Card set, reminder, and mini magnets.



Figure 5.2: Unravel_cooking, box enclosed.



Figure 5.3: Unravel_cooking kit, open layout and the deck



Figure 5.4: The sequence showing opening and the content of the Unravel_cooking kit.

5.1.2 Concept Details

5.1.2.1 Unravel Kit

Unravel is designed as a kit to compliment the user in their long term journey. It is a black square box, with a brief explanation of Unravel and a QR code leading to the webpage of the product. In this box there is a built in informative layout and a deck: set of 34 cue-cards and 2 sheets of magnets. The interior layout and the content can be seen in Figure 5.3. Layout of the Unravel box as well as the complete set of cards in the final deck can be shown in Appendix D.2 & 3.

The enclosed box (See Figure 5.2). The Unravel kit comes in the form of a black square box with the dimensions of 10,5x10,5x10,5cm. It holds the entire kit compact as well as easy to transport and store. It communicates the what and why of the product in a sentence that nudges the user to open the box to find out more.

Interior layout (See Figure 5.5a). The information that would commonly be given in a booklet is printed onto the inside of the box. The information about the concept, theory, categories and suggested use are provided to the user. The middle row of squares in the box are used to inform the user. These boxes are designed to be simpler and different from the colorful boxes of the categories. Therefore they grab the initial focus of the user and lead them through the information.

The first box welcomes the user and presents Unravel_cooking and explains what is the idea behind the concept. Second box briefly introduces the theory behind the concept and guides the users to official website of the theory of Fundamental Needs (needtypology.com) in case they are interested in learning more. Following this box the user is encouraged to take a look at the different categories, and take the deck out of its place. The third and fourth boxes give information on the suggested use of the product, and the materials included for it.

In line with the learning from the final user test, the category explanations were positioned to be emphasized in the initial interaction with the concept. They were placed on the interior of the box, in a grid, creating a full scale of colors showing diversity and enabling the user to compare and contrast them with each other. The category explanations were not changed in terms of content after the final testing. A series of illustrations were used to represent each category in a way that compliments the playful tone of the box interior (see section 5.1.3.3.).

The Deck (See Figure 5.1, 5.5b&c). The deck is placed in the middle of the open box layout. It includes a set of 34 cue-cards and 2 magnetic sheets with Unravel branding on them. **The card set** from the final testing was used with additions made to the categories that had only one card. This is to represent each category more or less equally and to work better with giving feedback for 'hot needs'. Some visuals were replaced to better fit the deck, with new images focusing on the interactions revolve around cooking rather than simply of the food. The cards were redesigned as a square (10x10cm) in order to fit the box, and create a grid on the fridge when put next to each other. The QR codes were made more approachable to the user by adding a small remark next to them that emphasize its function. See Appendix D.3 for the complete set.

b)



c)



a)

<h3>COOKING WITH THE FLOW</h3> <p>Cooking with the flow focuses on your individual decisions and ways of expressing yourself. Emphasizing our need for autonomy in life, this group of cards include some ways to get you to take charge and make your own decisions as you cook in your own personal way.</p> 	<h3>COOKING WITH HARMONY</h3> <p>Cooking with harmony focuses on coherence, elegance, and harmony you find in life. Emphasizing our need for beauty in life, this group of cards include ways to approach cooking in a way that is aesthetic and calmly pleasing.</p> 	<h3>COOKING WITH EASE AND SIMPLICITY</h3> <p>Cooking with ease and simplicity focuses on purely having it calm and easy in a way that is comfortable. Emphasizing our need for comfort in life, this group include some ways to get your cooking to be the simplest, most relaxing and without overstimulation.</p> 	<h3>COOKING BEYOND YOURSELF</h3> <p>Cooking beyond yourself focuses on your ties with social communities or entitles you associate yourself with. Emphasizing our need for community in life, this group of cards include some ways to get you cooking towards building new and enhancing existing social associations as well as the unique qualities that come with it.</p> 	<h3>COOKING A DELICIOUS CHALLENGE</h3> <p>Cooking a delicious challenge focuses on knowledge and skill progression. Emphasizing our need for competence in life, this group of cards include some ways to get you cooking in new and challenging ways as you master your environment in the kitchen.</p> 	<h3>COOKING FOR VITALITY</h3> <p>Cooking for vitality focuses on feeling strong, healthy, and full of energy. Emphasizing our need for fitness in life, this group of cards include ways to get you cooking with healthy and balanced nutrition in mind as it supports your performance regarding both body and mind.</p> 	
<h3>HI!</h3> <p>Welcome to your journey. We are glad to see that you decided to unravel cooking.</p> <p>This is a tool designed to show you how the single activity of cooking can be fulfilling and enjoyable in such diverse ways. Unravel is all about showing that enjoyment is about the way we approach what we do rather than what we actually do.</p> <p>Using a deck of cards we aim to guide you towards experiencing these enjoyments through activities related to cooking. The deck consists of cue cards for action that each belong to one of 13 categories. These categories are diverse ways of approaching the activity of cooking.</p>		<h3>WHY 13?</h3> <p>When we say enjoyment, we have a theory working here for us. Unravel benefits from a need-based theory on well-being. This theory states that universally we share a set of fundamental needs. Every time we find meaning and pleasure in our encounters, one way or another, we are fulfilling one of our 13 Fundamental Needs.</p> <p>The 13 different categories Unravel presents focus on and aim to fulfill each one of these needs individually. You can find out what each category is about and how it translates to the context of cooking in the colored boxes. The best part is that Unravel is an experiential journey, so the more you experiment the more it will make sense, we promise.</p> 		<h3>WHAT & HOW?</h3> <p>Unravel aims to facilitate an explorative journey for you to experience how these Fundamental Needs can be touched upon through cooking and expand the enjoyment you get from it. For this, this box contains some initial information, 2 sheets of magnets, and a deck of cards.</p> <p>The cards will give you cues to approach cooking in diverse ways as well as suggestions that aim to immediately get you into action. We believe differences in knowledge, skills or experience around cooking should not get in the way of enjoyment. For this, we hid tips and inspiration in the QRs on the cards.</p> <p>We would like you to ask yourself the question "How do I feel like cooking today?" and find the answer among the cards. To make this easier for you we put it on a big magnet as we thought you might like a daily reminder in your kitchen throughout your journey.</p>		<h3>COOKING AS A REMEDY</h3> <p>Cooking as a remedy focuses on your actions and seeing the effect of them. Emphasizing our need for impact in life, this group of cards include ways to approach cooking as to make an intervention towards an intended outcome as you witness a positive change and contribution through your cooking.</p> 
<h3>COOKING WITH A TWIST OF SURPRISE</h3> <p>Cooking with a twist of surprise focuses on encounters with novel, varied, and relevant stimuli. Emphasizing our need for stimulation in life, this group of cards include ways to introduce your cooking with new ingredients and methods as you are encouraged to take on the unknown.</p> 	<h3>COOKING A SAFE BET</h3> <p>Cooking a safe bet focuses on an environment that is without harm or threats. Emphasizing our need for security in life, this group of cards include ways to provide a safe space for you through the food you cook as it doesn't involve risks or uncertainty.</p> 	<h3>COOKING WITH A MEMORY</h3> <p>Cooking with a memory focuses on the warm, mutual, and trusting relationships you have with people. Emphasizing our need for relatedness in life, this group of cards include ways to get your meaningful memories and relations with others involved in the way you cook.</p> 	<h3>COOKING WITH NOTICE</h3> <p>Cooking with notice focuses on the appreciation you get for what you do and who you are. Emphasizing our need for recognition in life, this group of cards include ways to channel cooking towards evoking a mutual feeling of appreciation and respect with people you care.</p> 	<h3>COOKING FOR THE FUTURE YOU</h3> <p>Cooking for the future you focuses on engaging in activities that serves what you find meaningful in your life and having a direction. Emphasizing our need for purpose in life, this group of cards include ways to get you cooking with a goal in mind in a way that what you do will serve you well later in life.</p> 	<h3>COOKING WITH A CLEAN CONSCIENCE</h3> <p>Cooking with a clean conscience focuses on acting in line with your personal values and contributing to a world that is moral. Emphasizing our need for morality in life, this group of cards include ways to turn cooking into a virtuous cycle as you acknowledge before and after life of the food you cook.</p> 	

Figure 5.5: a) The interior layout of the box. Introduction, information on concept and theory, and instructions for (suggested) use are given in the boxes in the middle row of the grid. The deck is placed on the box with diagonal lines. The categories corresponding

to each of the 13 Fundamental Needs are described in their dedicated boxes on the peripheral grid. b) Two examples for of cue-card from the final deck, corresponding to the need for Autonomy and Beauty, respectively. c) The two sheets of magnets.

The first sheet of magnet in the deck, the same size with the cards, is designed to be a reminder in the context as well as a trigger for the user to take a need-based perspective by asking the question “How do you feel like cooking today?”. As found in earlier studies with the theory, one being aware of their pursuit towards joy acts as an enhancer of enjoyments. For this the reminder was designed to be a reflective question that prioritizes how the user feels. This question was printed on a magnet to trigger, and even long after their journey, gently asking the user to prioritize what kind of a feeling they would like to pursue in their act of cooking. The second sheet of magnet holds **16 mini magnets** to be used to keep the cards around, envisioned to be on the fridge, to facilitate the cycles of picking five cards explained in section 5.1.1.2. These mini magnets have illustrations of 13 Fundamental Needs printed on each one of them.



Figure 5.7: The 13 Fundamental Needs were illustrated for Unravel in collaboration with Asude Çelik.

5.1.2.2 The website

Extra information is provided on the website of Unravel in order to compliment the journey of the users. Although there is not an actual website created for Unravel, how it is a part of the user's journey is visualized through prototyped screens (See Figure 5.6). The website initially functions as an introduction and shop for the Unravel kit. The main page is aimed to introduce Unravel to the users (See Figure 5.6a), after making a connection with them through showing an understanding of how they might be feeling. This section is followed by a **showcase of different kinds of mundane activities** among the collection of Unravel (See Figure 5.6e). The user is asked to choose an activity they have not been enjoying much recently and/or would like to enjoy more.

Another section introduces three ways to use the product under “Who and How?” (See Figure 5.6d) for this section of Unravel_cooking). Three ‘characters’ are introduced with different uses of the product being presented under each. These paths are to enable the user to identify with and feel motivated to take one. These three characters are originally derived from the personas, and represent 3 stages of the user journey (see pages 66 & 119). Hence, this section aims for different users to recognize themselves. As mentioned in the findings, different users enjoyed and benefited more from different aspects of the interaction. The Unravel journey is unique for each user, however, it was observed that the richness of content gives a feeling of ‘missing out’. This section aims to make all users embrace their journey, and use the product to make the most out of it.

Lastly, a page is dedicated to ‘Hot Needs’. It briefly explains the findings that some of the Fundamental Needs are more salient than others at a given time in our lives (See Figure 5.6b). The user is encouraged to read about the theory behind, better understand what gives them joy in life and pursue it further. This section is also a bridge to other Unravel kits as the user is offered to find out how these Fundamental Needs would be fulfilled through other mundane activities.

5.1.2.3 Illustrations of Fundamental Needs

The 13 categories corresponding to Fundamental Needs were illustrated by Asude Çelik, a professional graphic designer and a dear friend, for this project on a voluntary basis. She also participated in the Study of Daily Moments in the be-

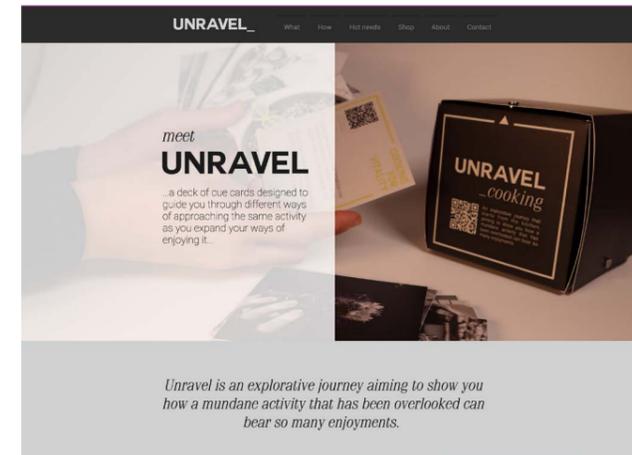


Figure 5.6a: Main page of the website introducing Unravel

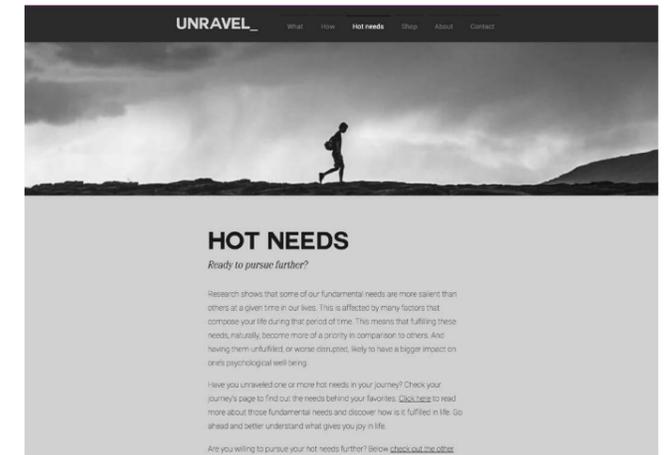


Figure 5.6b: Page on Hot Needs

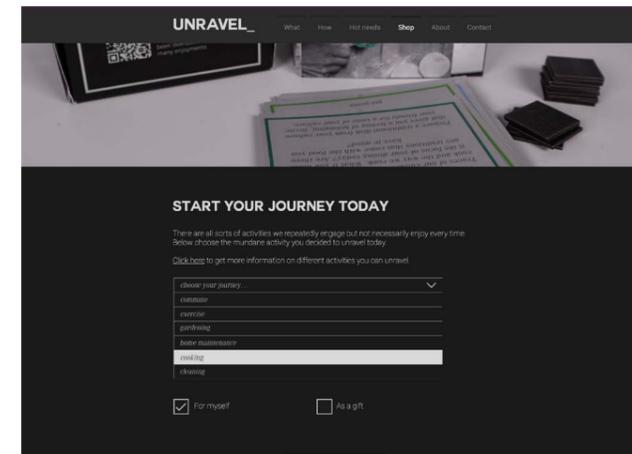


Figure 5.6c: Online shop. An option for gifting is presented to facilitate Unravel to reach people within its target group, through friends.

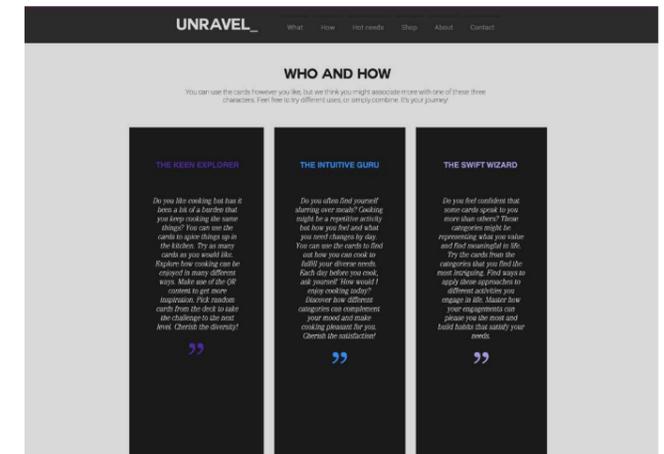


Figure 5.6d: Who and How, Unravel_cooking personas and uses

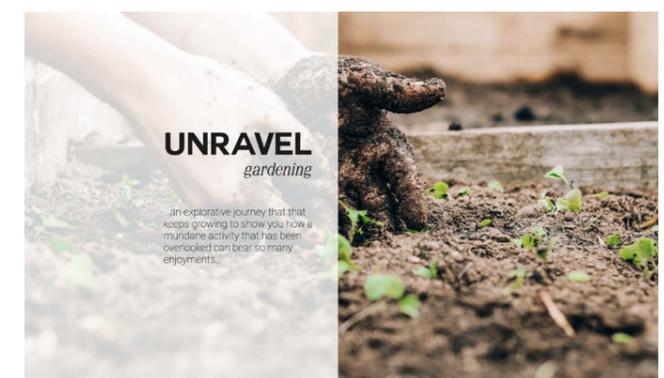
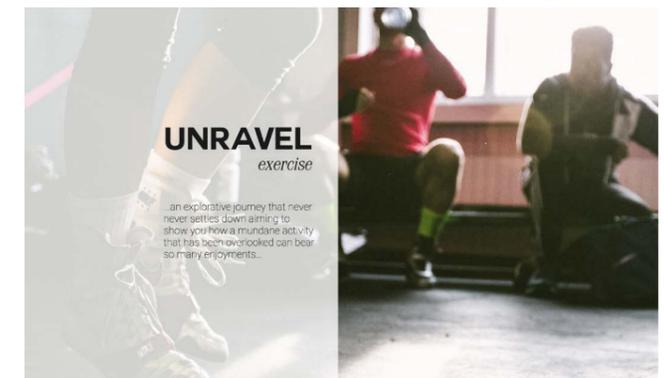


Figure 5.6e: Different mundane activities from the (hypothetical) collection of Unravel are presented to the user on the website.

gining of this project, which she found very insightful. The illustrations were used to compliment the playful style and to visualize the 13 categories in a consistent manner as part of a series. A coherent style of illustrations representing the 13 categories regardless of the activity at hand was also deemed useful for the purpose of being used in the Unravel kits for different activities. The illustrations of the Fundamental Needs can be seen on the corresponding category boxes in Figure 5.5.

5.1.3 Positioning the concept

5.1.3.1 The tone of the design: playful yet real

Since the beginning of this project, many conversations revolved around well-being both related and unrelated to the ongoing research. There has often been a sense of skepticism present with an undriven tone when it came to doing something about feeling down. For this, the tone of the concept created in this project had to have the delicate balance of realism and enthusiasm to get the user going.

When it comes to talking about mental health and well-being from a preventive perspective, there appears to be some preferences in how people would like to be approached. Desk research and conversations with young adults in an attempt to understand these preferences showed that using a language that is too self-righteous is found to be unlikeable and insincere, which doesn't make people feel good about themselves and leads to dissociation from the service that is being offered. In the meantime, having a scientific basis gives some sense of assurance, regardless of the depth of initial information. Talking about serious issues, a sense of humour appears to make it easier to get to the topic. However, 'the real talk' is needed to make a real connection and appreciated especially when an intervention is being made. From this understanding, Unravel is designed to have a witty and playful tone when addressing the user while offering realistic and relatable content. Figure 5.8 shows the Instagram ad using such a tone.

5.1.3.2 The manner of acquisition

During Covid, all shops with the exception of supermarkets and pharmacies were closed for months at times. This caused most of the shopping activities being done online, as well as increased trust and personalization of online shopping. Unravel requires too high of commitment to be an impulse purchase, hence is not suitable to be sold in the supermarket. Therefore, the Unravel kits are being sold online in the context of the pandemic. During the pandemic the social media usage significantly increased among young adults in comparison to earlier years, and became the way to stay connected with the rest of the world (Gaëlle Sy, 2021). Thus, Unravel will be marketed through sponsored ads across social media platforms by taking metrics such as screen time, social media usage and media consumption into account to address the target group. An example of this is shown in Figure 5.8.

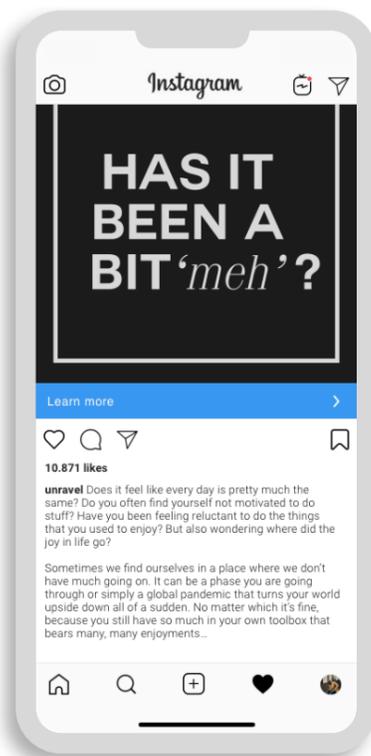


Figure 5.8: The Instagram ad for Unravel

5.1.4 Storyboard*

*The intended interaction with the final concept is explained through a user scenario. It encapsulates Sam's interacting with the concept, a young adult who is languishing in the context of Covid-19, over a period of three weeks. The scenario consists of experiences common to both personas, hence not showing any persona-specific use-cases that might differ among or only apply to one of the personas.

Sources of information:

instagram /other social media ads

the website

box, interior layout

5.1.4 Storyboard 2/4



A black box arrives. It doesn't say much on the box. She is pleasantly surprised, and intrigued to open immediately.

The box unfolds and a colorful interior unravels. The orderly chaos inside the box makes creates an intriguing atmosphere and makes her curious about the content.

She reads the introduction and discovers the need-based theory behind the product.

Checks out the 13 categories and how each corresponds to a fundamental human need manifesting as a cooking related activity.



Takes the deck out of the box. Realizes the magnets and the journey designed for her. Goes to the kitchen to place her magnets and first round of cards on the fridge.

She goes through the deck to pick 5 cards she would like to try. Doing this, she gets a feel of the deck and different categories. Already has some ideas in mind for the upcoming days.

A visual of a cocktail gets her attention. She recognizes a card that is something she has been wanting to do and convenient for the moment.



She fixes herself a drink without using a recipe but simply finding her way through tasting. She experiments until she finds something she likes.

She enjoys the activity and likes the output. This small achievement makes her feel confident and proud of herself. She gets surprised by doing something this small leading to a moment of joy.

5.1.4 Storyboard 3/4

Place the 5 cards you chose on the fridge, text-side facing you. When you use a card, simply flip it. When you are out of cards to try, go back to your deck and pick 5 new ones.



She flips the card she tried. She now somewhat knows how it makes her feel to 'cook with the flow'.

PFFF I FEEL SO TIRED AND EMPTY
MAYBE I'LL ORDER SOMETHING TO EAT, I REALLY DON'T WANT ALL THE HASSLE OF COOKING



After a long day of working she feels tired and frustrated. She just wants to get on the couch and do nothing.

HOW DO I FEEL LIKE COOKING INDEED?



As she walks by the fridge the reminder catches her eye. The question makes her reflect on how she feels and what she needs.

We would like you to ask yourself the question "How do I feel like cooking today?" and find the answer among the cards. ...There might be times that you don't feel like cooking with any of the cards you picked. Then get back to your deck and find the one, because we believe one of them will sure be what you are looking for.

WELL I FEEL TIRED, IS THERE SOMETHING EASY? NOPE, NOT THESE...



She checks the cards she has on the fridge that she picked earlier. None of them appeals to her in that moment.

IS THERE SOMETHING EASY I CAN DO?



She gets the rest of the deck to check whether there is a card she would resonate with.

COOKING WITH EASE AND SIMPLICITY? THIS I CAN DO!

THIS ONE-POT PASTA SOUNDS GOOD, BUT I HAVE NEVER TRIED IT BEFORE



She spots a card that unexpectedly applies to her situation: low in effort with the priority of ease and simplicity. She takes the suggestion and wants to cook one-pot pasta.

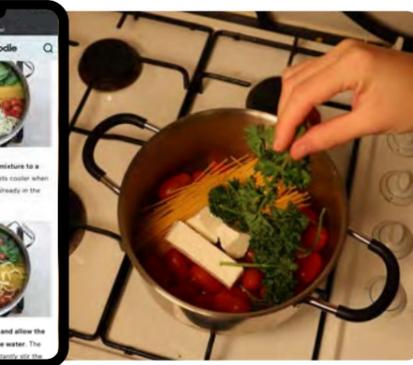


WHAT ARE THE CHANCES THIS QR LEADS TO A RECIPE..?

BINGO!



She scans the QR. It leads to a website with a recipe and some tips.



Puts everything in a pan. And leaves until it comes to a boil.



The way she chose to cook takes very little time and effort. In the meantime she's left with a lot of time to wind down. She has her dish ready so timely that she gets comfortable and treats herself to a movie.

A NICE DINNER AND A CLEAN KITCHEN? I THINK THIS WENT PRETTY SMOOTHLY

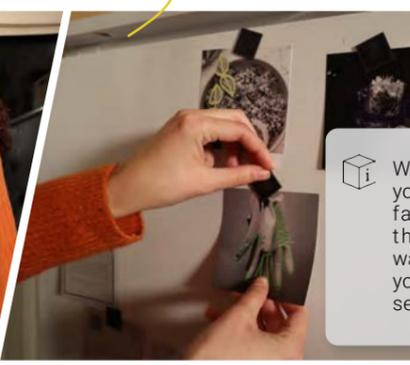
I WOULD THINK OF COMFORT FOOD AFTER A LONG DAY BUT THIS MIGHT BE EVEN BETTER!



When she is done eating she comes into an almost spotless kitchen. She is impressed by how little cleaning she has to do.

I REALLY LIKED THIS ONE, GOOD FOR BUSY DAYS.

I'LL REMEMBER THIS



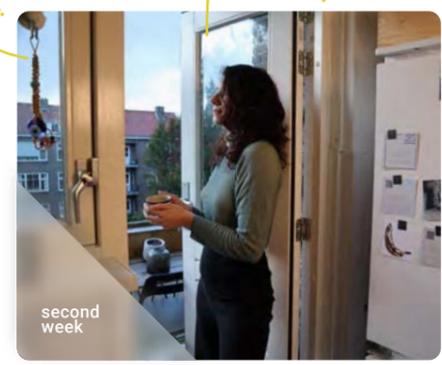
She likes how not only the food but her overall experience complimented her need for comfort. She realizes she can cook in different ways for different needs she has. She feels satisfied. Decides to keep the card among her favorites.

We expect that you'll have some favorites. Keep the cards you want to repeat on your fridge in a separate corner.

OH! MAYBE I CAN DO ONE OF MY CARDS.

I'M BORED. I WANT TO DO SOMETHING, IT'S THE WEEKEND.

ACTUALLY, THERE WAS THIS ONE CARD I REMEMBER, IT WAS FUN!



On her day off, she finds herself in search of something to do. She thinks of this card she tried earlier that would be great for today. Cooking is now something she thinks of when she wants to enjoy herself.

COOKING WITH A TWIST OF SURPRISE

Food markets are full of potential as you are surrounded with all sorts of ingredients. How about the ones you keep seeing but never actually cooked with?

Buy an ingredient you have never used before and use it to prepare a dish.



She decides to repeat a card she tried before, which fulfills the need for Stimulation. Using the cards, she engages in activities beyond the kitchen.



Aiming to buy a new ingredient to cook with, she spends hours at the open market. She enjoys being outside and having a goal, on her way she encounters a lot of things she did not plan on. She returns home late in the afternoon feeling energized and stimulated.



She cooks with an ingredient she has never used before. A rich experience takes place as she is nervous about the result but excited about trying something new. She feels stimulated by her experience.



She is happy with what she cooked, but even more about the new things she tried today. The food she cooked reminds her of a friend, which has not been around lately. This situation instantly reminds Sam of a specific card from the deck, which mentions cooking for someone as a manner of support. She decides bring the food to her friend. She finds it really easy to implement the cards as she is now familiar with almost all of them.

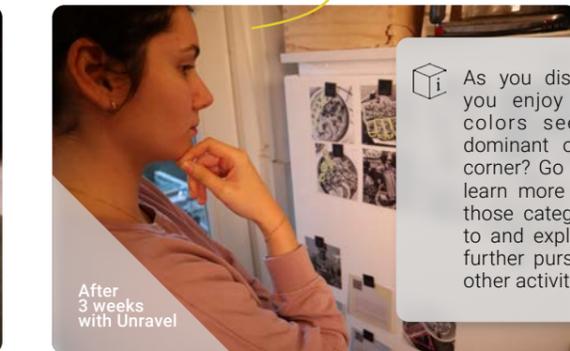
COOKING WITH NOTICE

How can you cook as a manner of support?

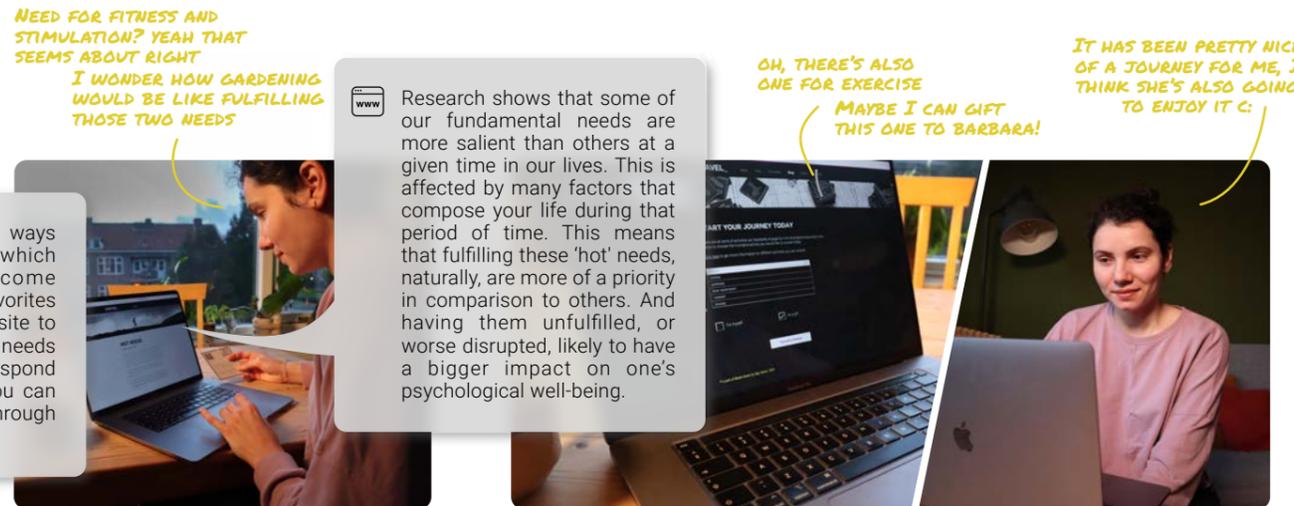
Today, cook an extra portion and share it with a friend that is going through a busy/hard time.



Sam gets recognized as a good friend while she already feels good to be supporting her friend. She realizes that she feels good is related to more than simply about cooking or the food she eats.



She realizes that her favorites corner has become crowded and there are several cards from 2 categories in specific. She remembers the theory and the fundamental needs underlying each category.



She reads about the 'hot needs' on the web site, gets insights about what she enjoys in life and which needs has more influence on her actions. She then checks what other activities she can unravel.

5.2 Conclusion

5.2.1 Conclusion

This project started with the aim of understanding the impact of Covid-19 pandemic in regard to need-fulfillment and use this knowledge to design a tool operationalizing 13 Fundamental Needs to contribute to subjective well-being. The initial vision, as introduced in the beginning, that was aiming to respond to this brief was set as:

leading people towards new and fulfilling engagements in daily life within the limits of the current NPIs.

Then, as a response to the refined design challenge and guided by the application of the context findings to the framework, the design vision was further specified and set to:

I want to encourage young adults who are languishing to pursue joy in daily life by facilitating an experiential understanding and exploration of 13 sources of joy,

The concept has been evaluated on the design guidelines and interaction qualities throughout the iterations. The final user test evaluated the concept extensively in regard to the aforementioned criteria as well as the design vision and found it to be successful in facilitating an experiential exploration of 13 sources of joy that encourages the user to pursue joy. In this section, the final concept will be evaluated in response to the original project brief.

The final concept contributes to the subjective well-being of the user as a tool operationalizing 13 Fundamental Needs...

1. Design and interaction

...through providing an interaction that fulfills users' (young adults who are languishing) deprived needs for Stimulation and Autonomy. The final evaluation showed that interacting with the card set is stimulating, allowing the user to decide the way of use as well as the user to be in control of their experiences. Moreover, exploration with the cards evoked stimulation while experimentation put the user in charge. The new experiences and fulfillments led by the cue cards were found to be stimulating as they are novel, varied and moving. Increased confidence of the user in their actions leading to enjoyment and motivation towards

taking more action increased engagement. Employing a need-based approach the users felt in charge of how they feel through their engagements. In repeated interaction with the concept, user's confidence in their actions, and led to pursuing further enjoyment .

2. Exploration and experimentation - stage 2 & 3

...by bringing enjoyable experiences into daily engagements as well as diversifying the needs fulfilled through them in the short-term. The concept successfully led users towards enjoyable experiences by using small, inspiring, relevant cues. These cues were used to create authentic experiences by the users, resulting in relevant fulfillments. Moreover, the concept succeeded in encouraging the user to engage in novel experiences that fulfill diverse Fundamental Needs and explore beyond their comfort zone. In turn, users fulfill needs that were not addressed by existing actions. These experiences were found to be repeated, diversifying the Fundamental Needs fulfilled through habits.

3. Habitual implementation - stage 4

...by sustaining these enjoyments in daily life as it facilitates establishing fulfilling habits in the long-term. The concept was designed as a sustainable response to the project goal. From the beginning of the project, routines and habitual behavior was focused and the source of need fulfillment on a regular basis. The framework theorizing the nature of repeated enjoyable behavior set the foundation of the final concept. The need-based intervention was designed in line with the context findings as well as the needs and desires of the target group. The final evaluation shows the concept was easily implemented into daily use, adopted genuinely by the users and enabled them to establish new ways* to pursue enjoyment within the behavior space. The final concept is iterated on to better accompany the four stages the user goes through until they [un]consciously pursue enjoyment through the mundane activity.

Final implementation needs to be tested before saying whether it truly succeeded in the long term ambition of establishing fulfilling habits. Nevertheless, from the existing findings of the final evaluation, it can be said with confidence that Unravel is a tool operationalizing 13 Fundamental Needs that contributes to subjective well-being in the context of Covid-19.

5.2.2 Discussion

Designing for the context of Covid-19 pandemic was a challenging task as the context changed very dynamically and these changes were not foreseeable. Firstly, this was due to constantly changing conditions and NPIs. The context was changing too fast to design meaningful interventions. Some of the insights became obsolete during the course of the project. Another challenge this caused was testing the design in the intended context. For example, during the final user test, the NPIs were already loosened and mass vaccination was around the corner. We were able to find external sources of joy easier compared to the studied context of the pandemic in the project. This had an impact on both the user's mindset and how they feel, and the context the concept was designed to be used. People were not stuck at home anymore, spending weekends with 'avondklok'

with no hope of normalcy in the horizon for the near future. The weather got better since it was the beginning of summer, hence people were already spending a lot less time at home. Due to this, I was also not able to test the concept through long term use. While it was a pleasant outcome that the concept was desirable and effective within these new circumstances, it would have given a lot of insights if I were to be able to test the concept in the intended context and with people at the peak of languishing.

The project started with a highly explorative nature. By the time the concept was decided on, there were already so many guiding insights and very little time left for further research activities. Due to these time limitations some of the important aspects of the concept could not be well studied. There was a gap in knowledge about the nature of mundane activities as well as their contexts. A better understanding of this could have led to more effective intervention. Starting to work on cooking as the mundane activity later in the project, the kitchen context and behavior could not be observed and deeply understood. Due to lack of this context analysis I wasn't able to pinpoint the point of interaction precisely. In this case a deeper exploration could have led to designing a more intuitive intervention. Additionally, it was hard to differentiate habits from repeated behaviors. Within the project scope these were considered the same as the focus was on daily activities. However, a better understanding of the literature on habits could be insightful in the case that the concept is not applied to mundane activities.

Some postulates come into picture when working with a humanistic approach. One accepts the fulfillment of needs as the fundament all positive experiences as well as guiding behavior. As, sometimes too rigid of, a researcher, this was hard to accept without testing. Throughout this project, alongside with design research, also the theory and a theory of the theory was tried to be validated. At the end, deep insights were generated and this process still led to a satisfying design output. However, taking the theory as it is, and focusing on using it to design an intervention could have led to directions that are more striking.

5.2.2 Recommendations

For further developing the concept. For further developing the concept. First and foremost, due to time constraints of this project the final concept, Unravel kit, could not be tested for its intended, long-term, use. Even though the parts have been tested individually, and practically the long term effects were also observed, testing the whole journey would be very insightful for anyone to develop this concept further. As was already stated in the learnings of the final user test, for the intended user journey to be tested (framework in action) the long term use should be observed. Considering the last set of iterations made on the final concept, the biggest recommendations would be to perform extensive tests that cover actual long term use in the intended context of use. Moreover, the concept could be developed further if the concept is tested for three uses suggested in the final concept. It would be an interesting design challenge to completely focus on fulfilling the needs for Stimulation, Autonomy, and Competence by designing three completely different interactions for this concept.

As mentioned in the discussion, future research aiming to develop this concept further should look into the literature of habit forming as well as the nature and context of mundane activities. By doing so, more meaningful and accurate points of interventions could be found for the concept to be implemented.

Explore new contexts and activities and trigger unexpected approaches. Cooking was nice and all, but I am very curious to see how this would go with other types of activities. I believe this project gave enough reasons to believe how we approach an activity can be the source of fulfillment on its own. So from this point of view, it would be exciting to look into not so common and expected ways of engaging in daily activities.

For future research on operationalizing 13 Fundamental Needs: go deeper into need disruptions. During the first phase of this project, the unpleasant moments and the need disruptions deemed related to them were also being explored. However, due to time constraints, a meaningful connection could not be made that is valid enough to use in the project. For future research on Fundamental Needs, I would recommend diving deep into manifestations of need disruptions and the relation between fulfillments and disruptions.

For future design to contribute to subjective well-being: personal need profiles. Another exciting finding of the research with the 13 Fundamental Needs was the 'hot needs' also, that is partially included in the final concept. As also discussed in section 5.2, how we position ourselves, and what we would like to, or in fact have to, pursue at a given period in our life is not constant and dependent on a lot of variables. Being able to understand one's position in life through their hot needs could lead to design concepts that are high in personal value and insightful. Moreover, hot needs also represent the fulfillments we prioritize and would like to pursue in life at a given moment. Combining this with the idea behind Unravel, fulfillments can be pursued across activities instead of pursuing diverse fulfillments within an activity. This could lead to a playful tool for self-development as one chases these -familiar- fulfillments in novel activities.

Data visualization can be quite insightful and interesting to design for, especially in terms of behavior change, from a need-based perspective. In phase 1, hot needs were discussed as well as how people were interested in seeing the overall graph of their moments and needs after a week of logging was mentioned. A discussion that took place with one of the users in the final test was about implementing the favorite approach to other activities. She said she loved thinking in terms of needs however she wouldn't be able to apply to other activities 'as this requires a way deeper understanding'. So future research could perhaps pursue my dream of mapping the needs that activities fulfill, and enable the user to pursue their 'hot needs'.

Lastly an interesting topic discussed with the users was the social aspect of this pursuit of joy they experienced. Due to time limitations and for the sake of keeping the focus of the project, this was not explored further. Additionally, it was already a challenge to get people to act, so sharing their experiences did not make the cut. However, it is interesting how people are curious about others' pursuits while not motivated to share their own. Looking into the social aspect and designing for a social component could be interesting as a provocative trigger for people's pursuit of joy.

5.3 Personal reflection

Not uploaded to the repository.

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DESIGNING FOR WELL-BEING DURING COVID-19

Converting daily activities into
[un]conscious pursuits of joy

