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D E S I G N

F O R

B L I S S

MasterThesis
Design For Interaction
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Preface

As a professionally trained former chef, I am very familiar with the world of gastronomy, eating and food. Even though I left this career in order to become a designer my interest in food and especially the eating experience has not faded but gained a new perspective.

Combining this personal passion with my education and profession as an interaction designer within this graduation project was a great opportunity for me. I always wanted to do my own research on the topic and I am happy this project allowed me to go even further and directly translate my findings into designs.

Furthermore, I am also glad to connect this food related topic with my interest in design for happiness and well-being. I chose to focus on the peak emotion of bliss in this thesis because it is the part of the eating experience that fascinates me the most: How a vital, ordinary and everyday action such as eating can be transformed into a whole experience causing rich emotions like bliss.

The Food & Eating Design Lab

The Food & Eating Design Lab brings together designers and researchers with stakeholders in agriculture, the food industry, the hospitality sector, health professionals and any others who try to improve people's interactions with their daily foods. Their aim is to provide design solutions that promote people's health and subjective well-being, while keeping an eye on profitability and impact.

Examining the topic of blissful eating experiences and designing for them, this master thesis is connected to the Food & Eating Design Lab which seeks to provide design solutions in the field of food and eating. Furthermore, the thesis as well as the Food and Eating Design Lab focus on how food can contribute to people's subjective well-being which links it to the Delft Institute of Positive Design.

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<https://delftdesignlabs.org/food-design/>

Delft Institute of Positive Design

Delft Institute of Positive Design is a design research group within the faculty of Industrial Design Engineering at the Delft University of Technology. They initiate and stimulate the development of knowledge that supports designers in their attempts to design for human flourishing in order to enable them to formulate effective strategies in contributing to the happiness of people.

Positive design thereby also offers helpful strategies to design for the emotion of bliss. In combination, the Food and Eating Design Lab and the Delft Institute of Positive Design offer an ideal foundation for the thesis project on food design for bliss.

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Executive Summary

Starting point

The eating context in high-class restaurants is already thoroughly designed to enable blissful eating experiences. However, these experiences are only available to a few people while the majority cannot afford them. Contrary, the home eating context is still neglected in design but offers many touch points to design for. At home, savouring of food is often diminished by executing tasks in parallel or watching TV. From the described context, the design goal of assisting people in savouring their home eating experience to enable blissful experiences is derived.

Positive Design Approach

To create designs that contribute to savouring the home eating experience, the positive design approach is applied during this project. Building on the sustainable happiness model, the approach offers different happiness enhancing strategies whereof one is replaying and savouring life's joys. Savouring which is very important for the eating experience, in turn, can be reached through different strategies, whereof sharing with others, sharpening sensory-perception and memory building were identified as the most relevant ones for the eating context.

Analysis

In order to find a relevant focus to design for, the project started off with an analysis of the senses involved in the eating experience and factors contributing to a pleasurable eating experience. In literature, the five senses (taste, smell, sight, sound and touch) as well as the following 11 factors were identified as contributing to pleasurable eating: atmosphere, social aspects, personalization, storytelling, healthiness, surprise, mood, hunger, preparatory activities, behaviour during and after the experience and remembrance.

Qualitative study

In the following qualitative study including an internet survey, a focus group, interviews and a diary study blissful eating experiences, as well as food products, objects and customs related to blissful eating, were collected. In total, the study confirmed that the same mentioned factors relevant for pleasurable eating are also relevant for the culminating experience of bliss. It also showed that the majority of reported experiences took place in the home context contrary to literature which focuses on high-class restaurants. According to the findings, the factors and senses were regrouped into the following stimuli, organism and response variables:

- Way of eating, Explanation, Taste, Healthiness, Smell, Preparation, Sound, Feel, Atmosphere, Look, Social aspects, Newness, Surprise
- Mood and Hunger
- Anticipation, Being in the moment, Reminiscing

Card set

The results of the analysis were translated into a card set that visualizes blissful eating experiences, food products, objects and customs and can be used for ideation. The card set contains 13 cards explaining the different stimuli variables as well as 60 cards with food products, objects, customs and eating experiences explaining the context-specific factors leading to bliss in eating. The card set was used for ideation in the following design phase.

Design goal

From the results of the literature research and the qualitative study, the following design goal was derived: I would like people to have a blissful experience by assisting them in savouring their home eating experience.

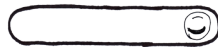
Important savouring strategies:

- sharing with others
- sharpening sensory perception
- memory building

Ideation and conceptualization

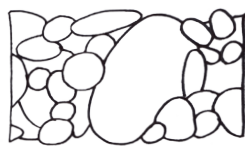
In total 4 ideation and prototyping workshops were held which resulted in 18 design interventions. After initial user tests, the interventions that yielded good results were combined into three concepts assisting people in savouring their home eating experience: the mindful spoon, the sharing plate and the travelling tin.

The mindful spoon



The concept targets people eating alone. It is a spoon-shaped and held in a special way to draw attention to the usually automated process of eating. The integrated lens magnifies food. Seeing details that are otherwise only known from macro photography brings magic into eating. This can help to rediscover a positive relationship with food and draws a closer look at what exactly is on the plate and its quality.

Sharing plate



The second concept focuses on couples eating together. It is a uniquely shaped plate that inspires people to serve their food in a creative way that promotes sharing and eating from the same plate. Additionally, it connects the couple in a physical way and requires collaboration. This encourages teamwork and conversations that support the relationship in day to day life.

Travelling tin



The travelling tin is for sharing with others. It is a box that can be filled with homemade food and passed on to a person with a different cultural background. The origin of the food can be shown

on a map. The marks make the journey of the box visible over time and encourage passing it on to someone new. Additionally, information about the food can be added online through a QR code. This connects people with different cultural backgrounds and encourages random acts of kindness.

Evaluation

After several iterations and prototypes, the three concepts were tested by seven participants or couples in order to evaluate if the design goal of assisting people in savouring their home experience was met. Each test was followed by an interview.

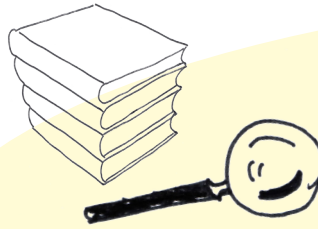
In general, the participants responded positively to all three concepts but also mentioned some weak points that led to recommendations for further improvement. The mindful spoon assisted people in savouring by sharpening the sensory perception, even when eating alone. For the sharing plate, savouring was achieved by sharing the experience which helped couples to communicate and work as a team. The travelling tin made people feel appreciated and helped to build lasting memories by connecting people from different cultural backgrounds through food. Furthermore, all concepts achieved high scores in the developed bliss indicators (positive change through product, memorability, peak experience, connectedness with food and connectedness with others) which suggests that the concepts can assist people in experiencing blissful eating experiences. In summary, all concepts managed to keep a good balance between focusing on eating and providing additional impact on participants' lives. While the emphasis of each concept was on hedonic pleasure, the participants additionally reported many positive emotions that go beyond simply enjoying the food. This shows that food also has the potential to contribute to eudaimonic happiness.

1. INTRODUCTION

- 1.1 Project context
- 1.2 Design challenge



2. LITERATURE REVIEW



3. EMPIRICAL STUDY

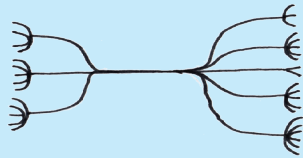
- 3.1 Online survey and focus group (Study 1)



- 3.2 Interviews and diary study (Study 2)



- 3.3 Results - eating experiences



- 3.3 Results - food products, objects and customs



- 3.4 Card set



4. DESIGN

- 4.1. Design challenge
- 4.2 Ideation and prototyping



2.1 Positive psychology and design for happiness

2.2 The senses & their role in the eating experience

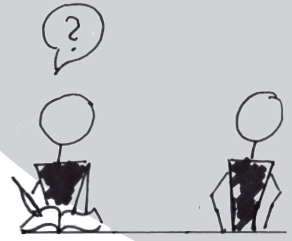
2.3 Factors contributing to a positive eating experience



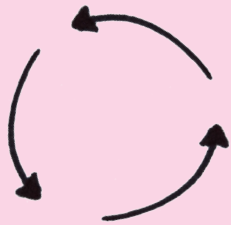
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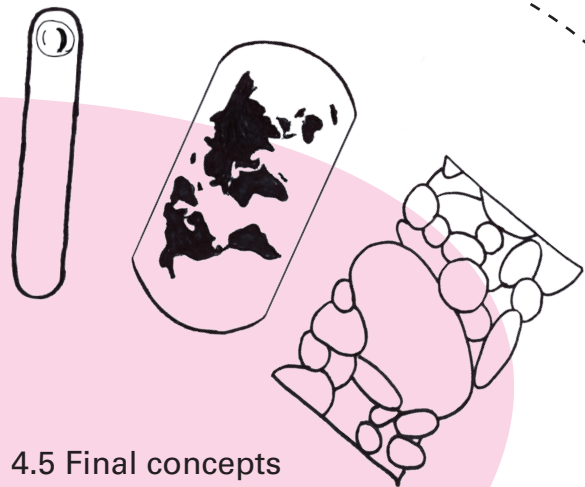
5.2 Personal reflection



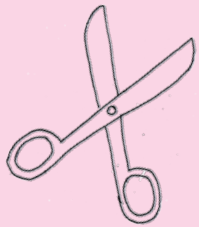
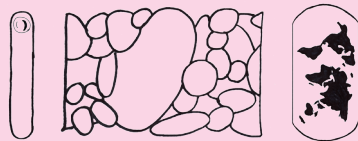
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1 INTRODUCTION



What is bliss and how does it relate to happiness and the eating experience? How can design contribute to blissful eating?

The introduction elaborates on these questions and serves as a basis for further research on bliss in the eating experience.

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1.1 Project context

1.1.1 Happiness and positive design

1.1.2 The eating context

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1.2 Design challenge

1.2.1 Opportunity area

1.2.2 Aim

1.1 Project context



1.1.1 Happiness & positive design

The goal of this research and design project is to identify the factors contributing to pleasurable eating experience culminating in bliss and translating them into designs.

According to the Oxford Dictionary (2018) bliss is defined as perfect happiness. Besides this definition, many others can be found in literature. The majority refers to the expression of a blissful moment and has the focus on the momentary character of bliss in common. Bringing these different definitions together, bliss will be defined as a positive peak experience that does not happen every day within this project. Bliss is a specific experience, an emotion within a moment, that is likely to be remembered and can help shake up everyday routine.

Happiness, in turn, is an overarching concept including purpose in life. In daily conversation or scientific research, several definitions of happiness exist. Within this project, happiness can be best described by the definition given by Lyubomirsky (2007): *“The experience of joy, contentment, or positive well-being, combined with a sense that one’s life is good, meaningful and worthwhile.”*

In this context, the approach of positive design which states that design can stimulate happiness among its users is applied (Desmet & Pohlmeier, 2013; Pohlmeier, 2012; Desmet, 2011). Within the positive design approach, the strategy of savouring which can be best described as an active process of enjoyment (Bryant and Veroff, 2007) plays an important role. The strategy of savouring is chosen as the main strategy to create blissful eating experiences in this project. Both, the approach of positive design and the strategy of savouring will be explained in detail in later chapters.

1.1.2 The eating context

Eating is one of the few things that can be experienced with all five senses. An example is eating a piece of chocolate: It tastes sweet, smells of cocoa, we see its nice glossy surface, hear the sound it makes when we take a bite and feel the creaminess in our mouth.

As evident from this example, taste might not be as prominent in the eating experience as commonly believed. Paul Pairet (Spence 2017), the chef of a multisensory experiential restaurant, even describes this as: *“Everything about the taste but the taste. It is the expectation and the memory, the before and the after, the mind over the plate. It is all the factors that influence our perception of taste.”*

With all these factors influencing our perception of the eating experience a wide scope to design for a blissful eating experience is offered. Most existing examples of design for pleasurable eating experiences can be found in the high-class restaurant environment. While this context has already been thoroughly designed to support pleasurable eating, the home eating context is still underrepresented and presents an opportunity for positive design.

Within this scope, the disciplines of multisensory integration and gastrophysics are important to consider. Multisensory integration is the study of how information from the different senses may be integrated by the nervous system (Stein et al., 2009). Gastrophysics can be defined as the scientific study of those factors that influence our multisensory experience while tasting food and drink (Mouritsen, 2012). Both disciplines will be analysed in later chapters.

1.2 Design challenge

1.2.1 Opportunity area

Eating has evolved into an activity that many people perform without much awareness because they are spending less time with their food than any generation before them (Spence 2017). Food production has been outsourced and is no longer integrated into most people's daily life as it used to be for thousands of years. Additionally, many people avoid food preparation and cooking and rely on pre-made meals (Spence 2017). This estrangement may cause a decay of knowledge as well as appreciation. Even the most crucial part, the eating experience itself, sometimes takes place simultaneously to other activities, which take away the attention from the food. Examples are watching TV, working, walking or driving. This is noteworthy because eating has the potential to give positive experiences, but not being conscious and aware can limit the satisfaction let alone happiness that can be gained in the eating experience.

1.2.2 Aim

In order to apply the theory of positive design to the aim of increasing bliss in home eating experiences, the contributing factors and the eating context have to be examined closely. All five senses and many other factors are involved in the eating experience which makes the interaction very complex but also offers many touchpoints for design.

Design goal:

"I would like people to have a blissful experience by assisting them in savouring their home eating experience."

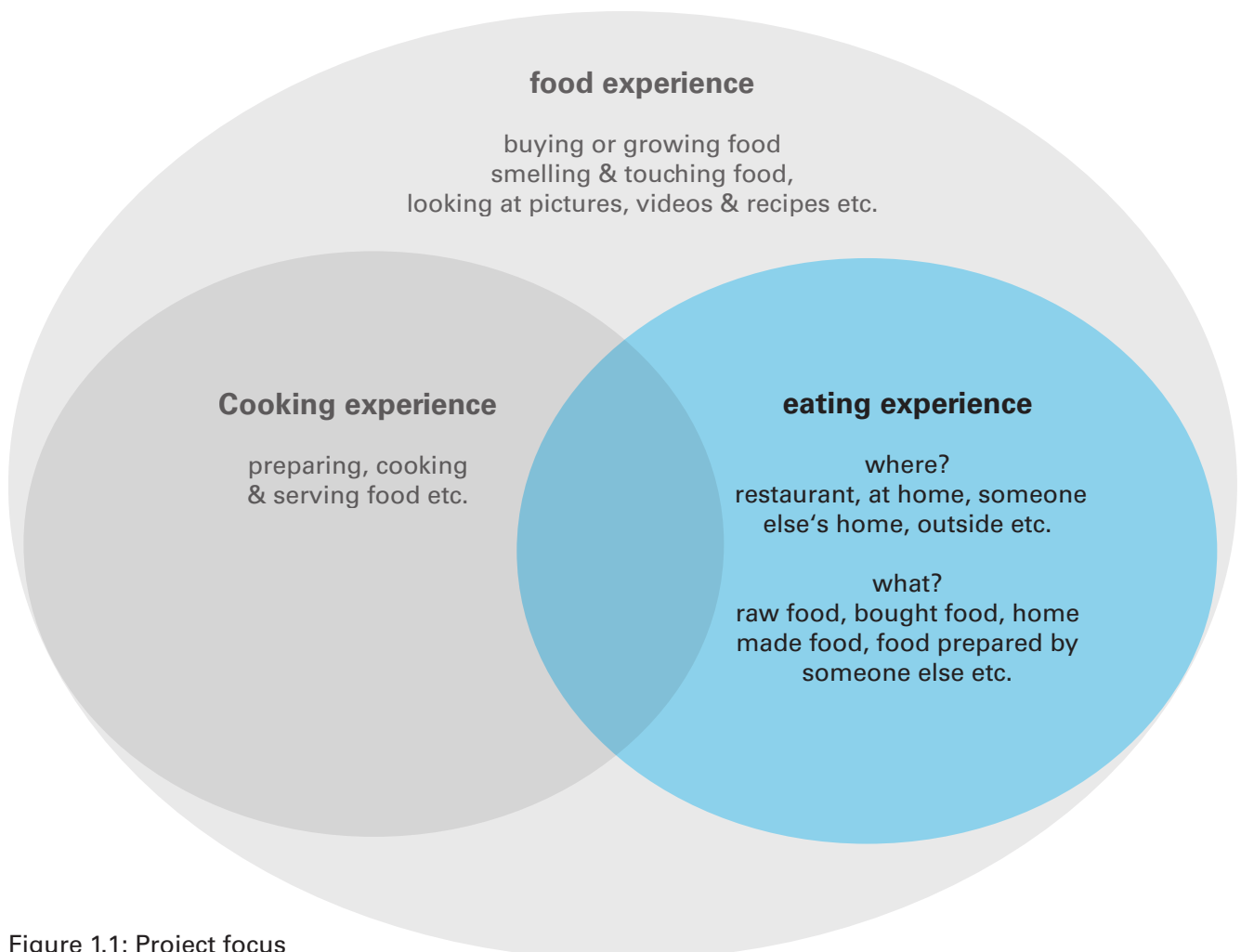
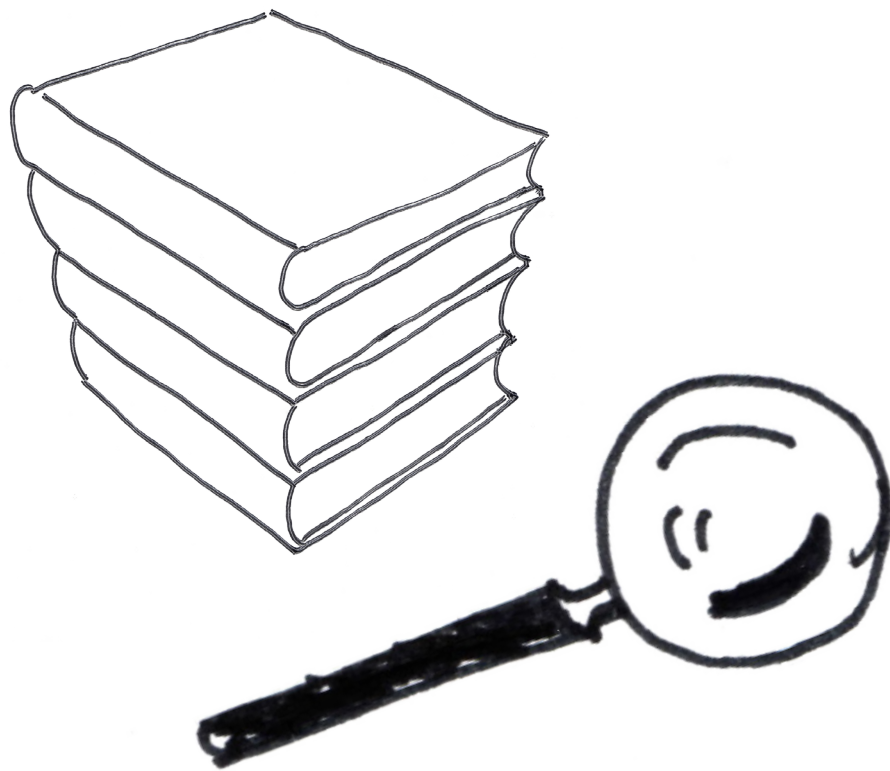


Figure 1.1: Project focus

2 LITERATURE REVIEW

The next chapters will examine the approach of positive design and the eating context in more detail. Therefore, a literature study on relevant strategies in positive design and factors contributing to the pleasurable eating experience will be conducted.



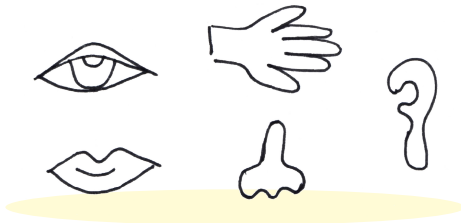
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2.1 Positive psychology and design for happiness

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- 2.1.2 Happiness in the eating experience
- 2.1.3 Hedonic adaptation
- 2.1.4 Positive psychology
- 2.1.5 Well-being and positive design
- 2.1.6 Sustainable happiness model
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- 2.1.8 Conclusion

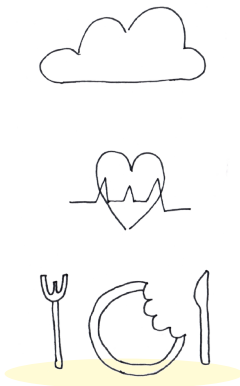
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2.2 The senses & their role in the eating experience

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- 2.3.12 Conclusion

2.1 Positive psychology and design for happiness



In the following chapter, the different perspectives of happiness and the connection to the eating experience will be examined. Additionally, happiness enhancing strategies based on the sustainable happiness model (Lyubomirski, 2007) and savouring strategies relevant to the eating experience will be discussed.

2.1.1 Definition of happiness

While several definitions of happiness exist in the scientific context as well as in the context of daily life, Lyubomirski's definition of happiness (2007) will be used within this project. This definition states that besides the experience of joy and contentment, it is also important to pursue meaning in life in order to reach happiness. The terms happiness and wellbeing will be used interchangeably.

In accordance with this definition, Ryan and Deci (2001) differentiate between two perspectives of well-being: hedonic and eudaimonic. Whereas positive emotions gained from specific moments like eating a piece of chocolate count as hedonic well-being, the state of eudaimonic well-being comprises experiences related to life satisfaction in the long run. This means that eudaimonic happiness, related to 'the meaningful life' (Waterman, 1993), is more focused on virtues and psychological growth and involves personal effort over a longer time period. While the positive effect derived from joyful experiences will bring pleasure in the short term, pursuing personal goals and virtues will increase happiness in the long run (Sheldon & Elliot, 1999). Both, the hedonic and the eudaimonic well-being are considered to be important when pursuing happiness.

2.1.2 Happiness in the eating experience

Research, as well as daily life experience, show that food and eating experiences have a great potential to contribute to a person's happiness. In his research Berenbaum (2002) states that basic

need activities like eating can be stimuli, able to inspire happiness. Another example is given by a representative survey of the German population conducted by Westenhofer and Pudiel (1993). About two-thirds of the respondents reported that they regularly enjoy eating and that they consider "a fine meal" as a major source of happiness (Westenhofer and Pudiel, 1993).

Furthermore, Otake and Kato (2017) investigated the relationship between subjective happiness and responsiveness to eating and to foods in three studies. The results indicate that people with higher happiness levels show a stronger emotional response (happy and glad) to food stimuli than those with lower happiness levels. Even images of food were effective. No such group differences were observed for appetitive responses. It was also shown that emotional responses to the pictures of nonfood items in the two groups did not differ. This provides empirical evidence that subjective happiness has relevance for daily eating behaviour and attitudes. In his paper about satisfaction, satiation and food behaviour Møller (2015) even suggests that quality can replace quantity and eating foods, which provide higher sensory satisfaction, could lead to a lower energy intake than similar foods which provide less sensory satisfaction. Furthermore, Landry et al. (2018) showed that the concepts of eating pleasure and healthy eating were perceived differently, but appeared to be mostly compatible, which makes the integration of eating pleasure a promising avenue for interventions promoting healthy eating.

The discussed studies show that food and happiness are closely interwoven. Of course, the question of how much the eating experience can contribute to the two types of well-being described above, hedonic and eudaimonic happiness, should be considered. While hedonic aspects such as the fulfilment of desires and pleasures are obviously present in the eating experience, eudaimonic aspects such as virtues and psychological growth might not always be as evident. Nevertheless, eating behaviour, e.g. eating consciously or having a positive food relationship, might hold the potential to contribute to the eudaimonic well-being of individuals. Examples of positive food relationship include eating behaviour that is beneficial for the own health and a positive body image as well as for the environment.

2.1.3 Hedonic adaptation

In the OECD 28 states, a person spends an average of 554 hours per year with eating (OECD, 2015). In 70 years this makes approximately 40.000 hours. On the one hand, this huge number offers a huge potential for pleasurable eating experiences but on the other hand, adaptation plays a big role. The eating experience is subject to two kinds of adaptation, one physical which will be discussed in the chapter 2.2.2 „smell“ and one psychological.

The psychological phenomenon is referred to as hedonic adaptation or hedonic treadmill (Frederick & Loewenstein, 1999). Positive experiences pass by without being truly noticed leading people to constantly desire something new without reaching lasting satisfaction (Sheldon & Lyubomirsky, 2012). This can happen at different levels ranging from single or recurring events such as a visit to a special restaurant or to the cafeteria you eat at to circumstantial changes such as getting a pay raise. The new reality will set a new baseline of happiness with raised expectations once we got used to it. In this context blissful experiences can play an important role. Since they do not happen every day and are truly noticed as peak experiences which will be remembered as special, they can have the potential to loosen up adaptation.

2.1.4 Positive psychology

The aim of this project is to increase and enhance the positive effects food can have and not to address one of the many problems associated with the eating experience. This strategy is in line with positive psychology which seeks to make daily life more fulfilling, instead of focussing on mental problems. Seligman and Csikszentmihalyi (2000) identify that the field of positive psychology at the subjective level is about valued subjective experiences: well-being, contentment, and satisfaction (in the past); hope and optimism (for the future); and flow and happiness (for the present).

Different theories and visions about how to increase the subjective well-being can be found. Thereof, the well-being theory of Martin Seligman and the sustainable happiness model of Sonja Lyubomirsky are broadly agreed on.

2.1.5 Well-being theory & positive design

Seligman, a renowned psychologist in the field of positive psychology claims that well-being can be measured by flourishing and that the goal is to enhance flourishing. The term flourishing is defined as optimal human functioning and living to one's potential by Ryan and Deci (2001). Seligman introduces five elements that support human flourishing: positive emotion, engagement (being in the flow), relationships, meaning (purpose in life), and accomplishment (PERMA). Although achieving a balance between these five components of well-being is desirable, they can also be used independently.

While positive emotion is probably the first thing that comes to mind when thinking about the eating experience, engagement (being in the flow), relationships, meaning (purpose in life), and accomplishment are also related to the eating experience. Especially, the importance of social components (relationships), as well as health and having a positive relationship with eating (meaning), should not be forgotten. Food can be more than just nutrition, it can bring people together and even cause engagement and accomplishment in the cooking experience.

Building on the PERMA framework Pohlmeier (2012) combines the five PERMA components supporting human flourishing with four different roles design can play. First, the products themselves can directly be the source of pleasure, or second, have an indirect effect by enabling experiences or activities. Third, this can also happen through symbolic representation or fourth, the support of happiness enhancing behaviour and thinking. As a result, Pohlmeier (2012) offers 20 opportunity areas to design for happiness (see Figure 2.1) which will be explored in the design phase of this project. This design for well-being framework is embedded in the approach of positive design. The term 'Positive design' is used as a collective term of design (research) methods with special attention to the effect of a product on the subjective well-being of its users (Desmet & Pohlmeier, 2013).

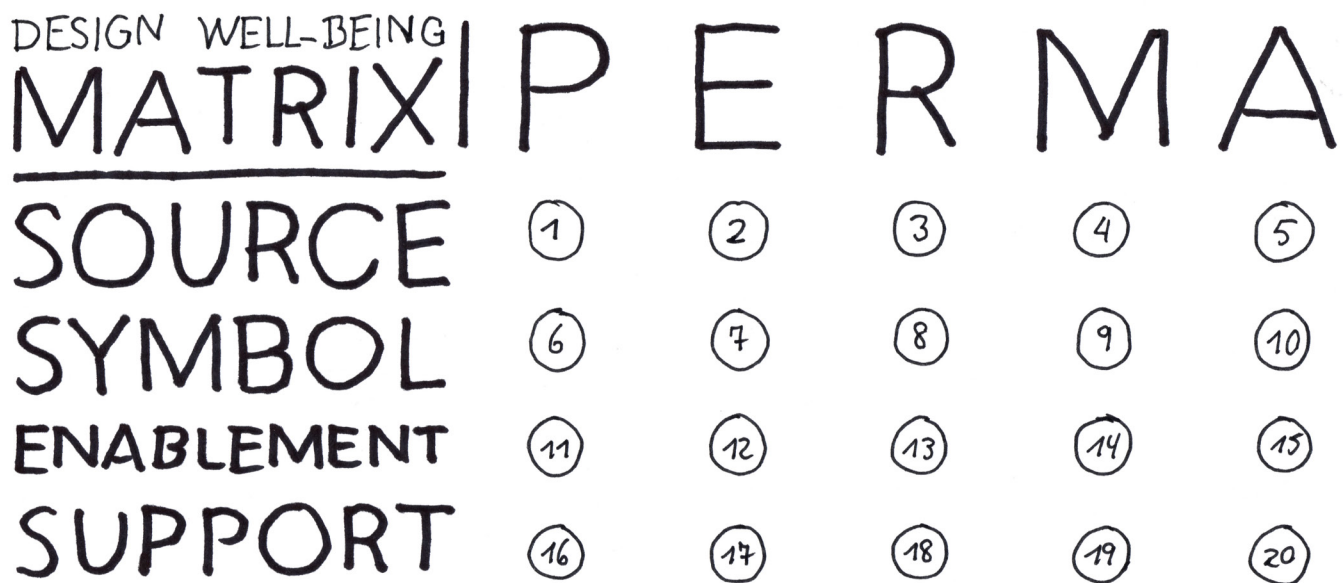


Figure 2.1: Design for well-being matrix (adapted from Pohlmeier, 2012)

2.1.6 Sustainable happiness model

Another theory introduced by Lyubomirsky et al. (2005) is the sustainable happiness model which shows the influencing elements for subjective well-being. Her research asserts that 50 % of a person's happiness is genetically determined and 10% is influenced by live's circumstances. 40% can be influenced by intentional activities and shall be investigated in this project regarding the eating experience.

In this context Lyubomirsky (2007) also lists 12 happiness enhancing strategies that can be used to influence the 40% share of intentional activities. Thereof, the strategy of "replaying and savouring life's joy" is particularly connected to the eating experience:

Replaying and savouring

Paying attention, enjoying and taking in life's momentary pleasures and wonders – through thinking, writing, drawing or sharing with others. The strategy is interesting for the eating experience as eating often takes place unconsciously while doing other things which prevents savouring but offers a lot of potential for positive emotions. For this reason this strategy will be in the focus of the project.

Three other strategies are also connected to the eating experience and the project:

• Practicing acts of kindness:

Doing good things for others, friends as well as strangers - spontaneously or planned, directly or anonymously.

This strategy holds potential for the eating context as food and cooking can be a medium of showing love and appreciation for others as well as a personal gift.

• Nurturing Relationships:

Investing time and energy in healing, cultivating, affirming, and enjoying a relationship.

As eating with others can act as a facilitator for one-time meetings as well as traditions, this strategy is important in the examined context.

• Taking care of your body:

Engaging in physical activity, eating healthy, meditating, smiling and laughing.

The strategy is important in the eating context since the kind of food people eat has great influence on their health and bodies.

2.1.7 Savouring and Positive design

Savouring, which was identified as a particularly interesting strategy for the eating experience in the last chapter, is described as an active process of enjoyment by the psychologists Bryant and Veroff. It resembles the processes of being aware of, attending to, and appreciating pleasure (2007). Four broad categories of savouring strategies which favourably affect the intensity and duration of positive feelings are: a) behavioural display of positive emotions, b) focusing attention on the present moment, c) capitalizing, i.e. sharing with others, and d) positive mental time travel, i.e. vividly anticipating or remembering positive events (Nélis et al., 2011).

The strategy of savouring is also embedded in the approach of positive design. Positive design offers strategies to increase and prolong happiness in order to optimize an existing experience. To enlarge the positive emotional experience of an event, it can be altered in three directions: increasing anticipation (before), being conscious and in the moment (during) and reliving memories (after) (Pohlmeyer, 2014). All three dimensions can be summarized under the term of savouring. Design can play different roles in savouring and act as a trigger, facilitator or amplifier according to Pohlmeier (2014).

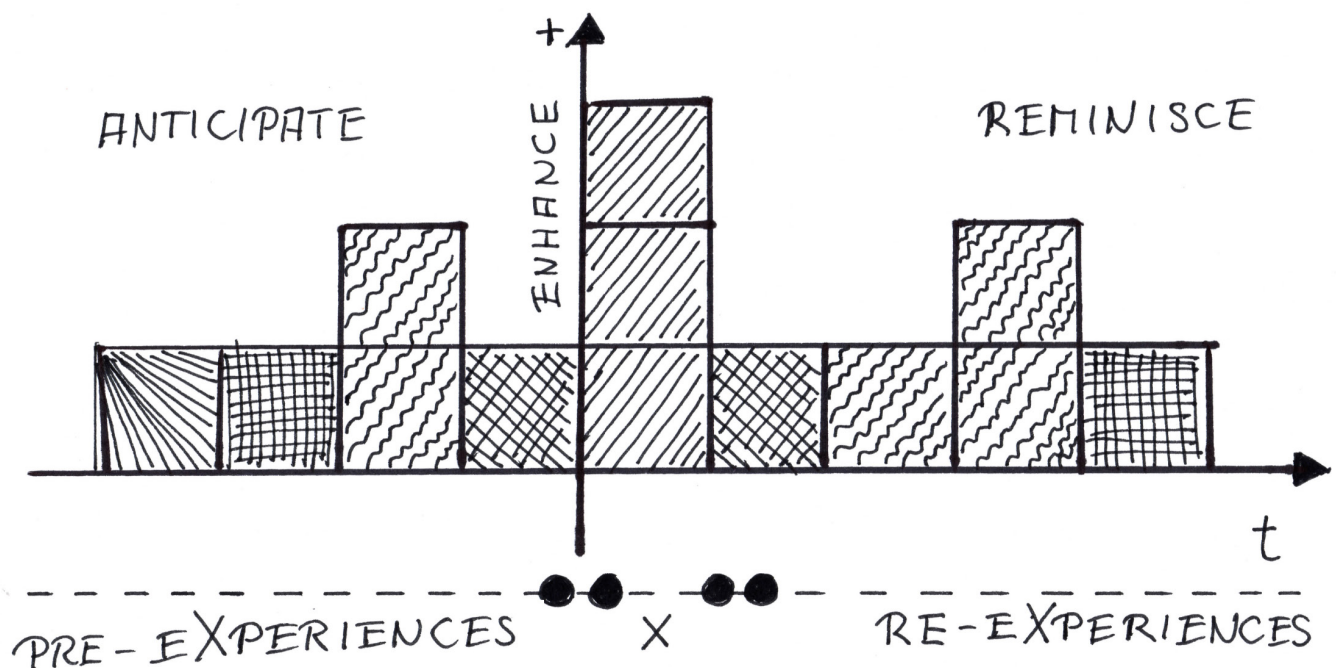
2.1.8 Conclusion

Research showed two perspectives of well-being (hedonic and eudaimonic) and the importance to address both when pursuing happiness (Ryan & Deci, 2001). This raises the goal of considering both perspectives in the design phase.

Furthermore, the strategy of replaying and savouring (Lyubomirsky, 2007) seems to be very promising for the eating context and will be in the focus of the qualitative research and the design phase. Additionally, research revealed other strategies which can be relevant for the eating context like practicing acts of kindness or nurturing relationships. In the progress of the project it will be examined how these strategies can be implemented next to savouring to increase the positive effect of the designs.

Moreover, Pohlmeier's research showed four roles design can play: a direct source of pleasure, an enabler for experiences or activities, a symbolic representative and the enhancement of behaviour and thinking. These roles that design can take will be kept in mind for the design phase.

Figure 2.2: Design for prolonged pleasure (adapted from Pohlmeier, 2014)



2.2 The senses & their role in the eating experience



In the following chapter, the role of the five senses in the eating experience will be examined to get insights about possible touchpoints when designing for the eating experience. Therefore, literature from the fields of multisensory integration and gastrophysics will be analysed.

2.2.1 Taste and multisensory integration

As already mentioned, the sense of taste mistakenly seems the most important, when discussing the eating experience. In reality, humans are only able to distinguish around five different tastes: sweet, sour, salty, bitter and umami. Therefore, also the other senses (smell, sight, sound and touch) and other factors play a very important role in the eating experience and can also influence each other. As Schifferstein (2011) puts it: „*The colour, taste, and texture of ice-cream, the look and feel of its package, and the crispiness of the biscuit may all contribute to being completely immersed in savoring it.*“ As all senses are connected, changing what we see can radically alter what we hear. At the same time changing what we hear may influence what we feel, and altering what we feel can modify what we taste (Spence, 2017). This interconnectedness between all senses also leads to Spence’s insight that the same dish will taste very different served in a modernist restaurant or at a friend’s house.

Furthermore, Northcraft and Neale (1987) attribute great importance to the expectations prior to the eating experience and state: „Tell me what a person expects to eat, and I’ll tell you what they taste. I’ll also estimate how much they’ll enjoy the experience.“ Additionally, many studies prove that food and drink taste better if more money is paid for them. An example is given by Lee et al. (2013) who investigated what happened when participants were given different, and sometimes misleading, information about the price of a red wine. Ultimately it is the interaction between what is in the mouth and what is in the mind that determines what the final tasting experience is like, and how much we enjoy it (Spence, 2017).

These findings show that in order to design for an enjoyable, stimulating or even blissful eating experience, the role of all the senses and everything around the food has to be considered. This offers many opportunities for design since more than just the tangible food product has to be taken into account.

In the following, the role of the other senses besides taste will be analysed. A very thorough and detailed description can be found in Charles Spence’s book „Gastrophysics“ (Spence, 2017), which functions as the basis for the following review and will be compared to other literature.

Multisensory dishes and experiences are often first created in high class restaurants and through proof-of-principle innovated for the mainstream (Spence, 2017). Therefore, many of the examples given in the following chapters will be from some of the top dining venues internationally.



Photo by Robert Nunn

Figure 2.3: People often rate food served in rounder shapes as tasting sweeter than when exactly the same food is presented in a more angular form instead.

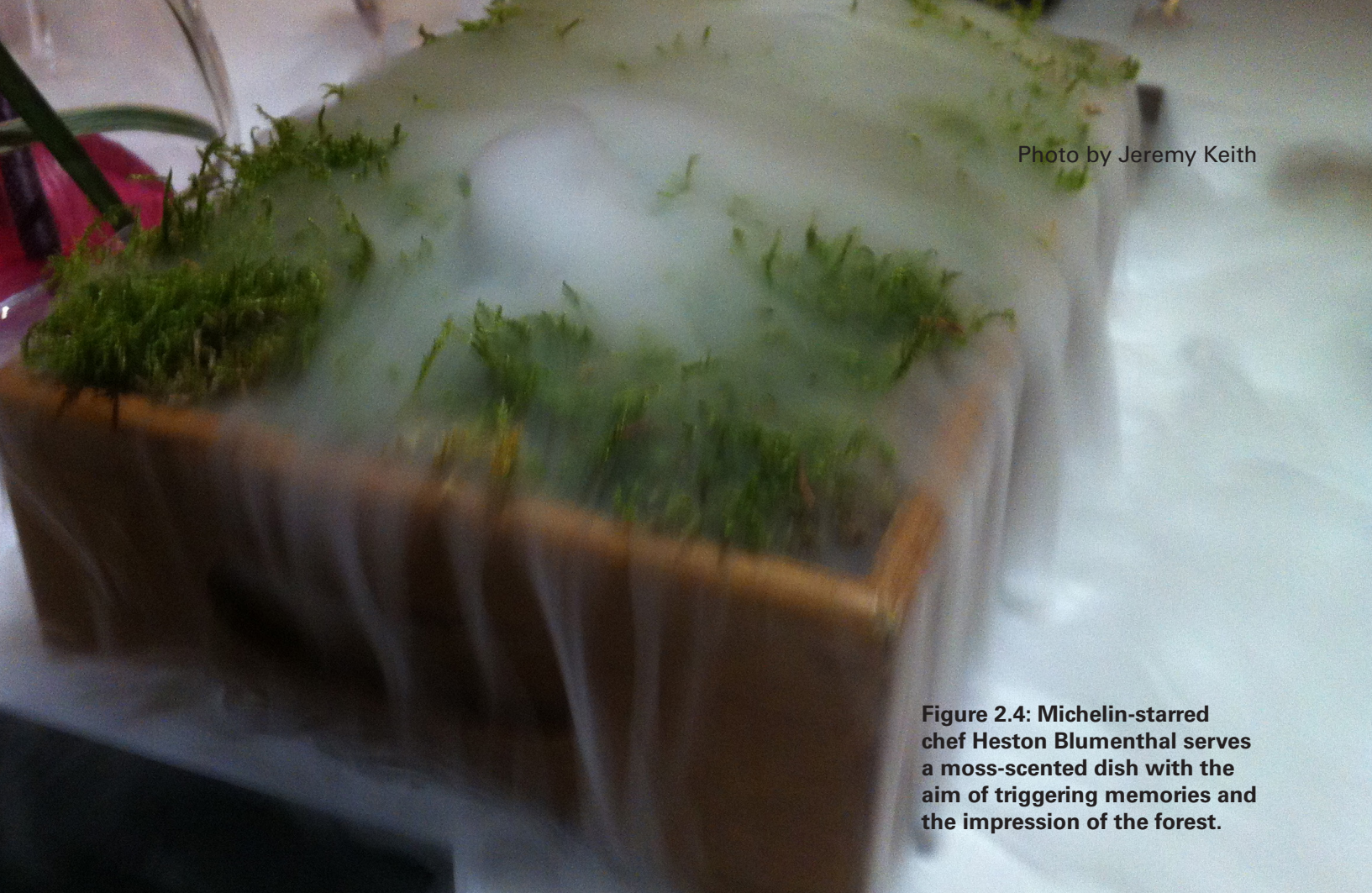


Figure 2.4: Michelin-starred chef Heston Blumenthal serves a moss-scented dish with the aim of triggering memories and the impression of the forest.

2.2.2 Smell

There are two different ways in which we smell. The 'orthonasal' route registers external aromas from the environment. The "retronasal" smell registers odour molecules at the back of the nose when something is swallowed. The preview the orthonasal smell allows to make a pre-judgment what the taste will be like and how much we expect to enjoy it (Rozin, 1982). The retronasal perception of aroma, when swallowing, really provides the tasting experiences with their rich variety and interest, though. Most of the time these processes happen unconsciously, because of "oral referral": food aromas are experienced as if coming from the mouth and being sensed by the tongue itself (Spence, 2015). Thus it is difficult for most people to differentiate between taste and smell.

Smell also has a much closer, more direct connection with the emotional and memory circuits in the brain than any other sense because the olfactory receptors in the nose are actually an extension of the brain. Only a couple of synapses separate the cells in the olfactory epithelium lining the inside of the nose from the limbic system, the part of the brain that controls emotions (Chu & Downes, 2000). Therefore, smell is more important to the tasting experiences than many people realize.

However, we also get used to certain smells very quickly. The physical phenomenon is referred to as olfactory adaptation and leads to the last spoon of tomato soup tasting less intense than the first (Spence 2014) which is why dishes consisting of different elements are so popular. Since what is perceived as „taste“ is largely dependent on smell, we are mostly dependent on our nose for all the fine tastes such as „tomato“

Examples from practice focusing on the smell in the eating experience:

Already in the 1930s, the Italian futurists suggested making supplementary dishes solely to be smelled and not to be eaten in order to spike curiosity and contrast.

Figure 2.5: For additional smell, Michelin-starred chef Homaro Cantu uses fresh herbs stuffed into the curly handles of cutlery.

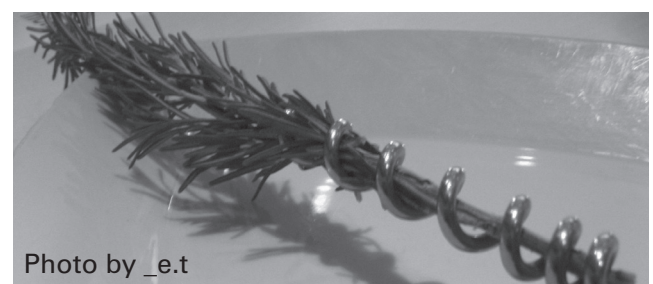


Photo by _e.t

2.2.3 Sight

The saying „*you eat with your eyes as well*“ does not only apply to the attractive presentation of food but goes further than one might expect. Only around 1% of the brain is directly involved in taste perception while more than half of it is involved in processing what we see (Gallace et al., 2012). Because the brain notices statistical regularities of the environment, it learns to predict the likely taste and nutritional properties of potential food on the basis of other sensory cues, such as colour and smell (Maga, 1974). The brain has evolved to find food, and quickly judge how much we like the foods we see and how nutritious they are (Wang et al., 2004). Therefore, seeing images of or reading about palatable or highly desirable foods can lead to some of the largest increases in cerebral blood flow (Razran, 1936).

Research shows activation of a whole network of brain areas, including the taste and reward areas. The foods that the brain tends to be most attracted to are unfortunately usually not the healthiest, but instead rich in fat and protein. This might also explain why food for many years has been the second most popular category on the internet (after pornography) (Spence, 2017). The ‘digital foraging’ is done by a growing number of people actively seeking out images of food (Spence, 2017). Particularly popular, especially on social media, are „protein in motion“ shots such as cheese pulling threads. The brain has evolved to detect and concentrate on these energy-dense foods, which attract even more attention through movement (Toepel et al., 2009).

The plate ware used for serving the food can also have an influence on the eating experience through colour, shape or size. According to (Mar-teau et al. (2015), reducing the size of the plate or bowl reduces average calorie intake by roughly 10%.

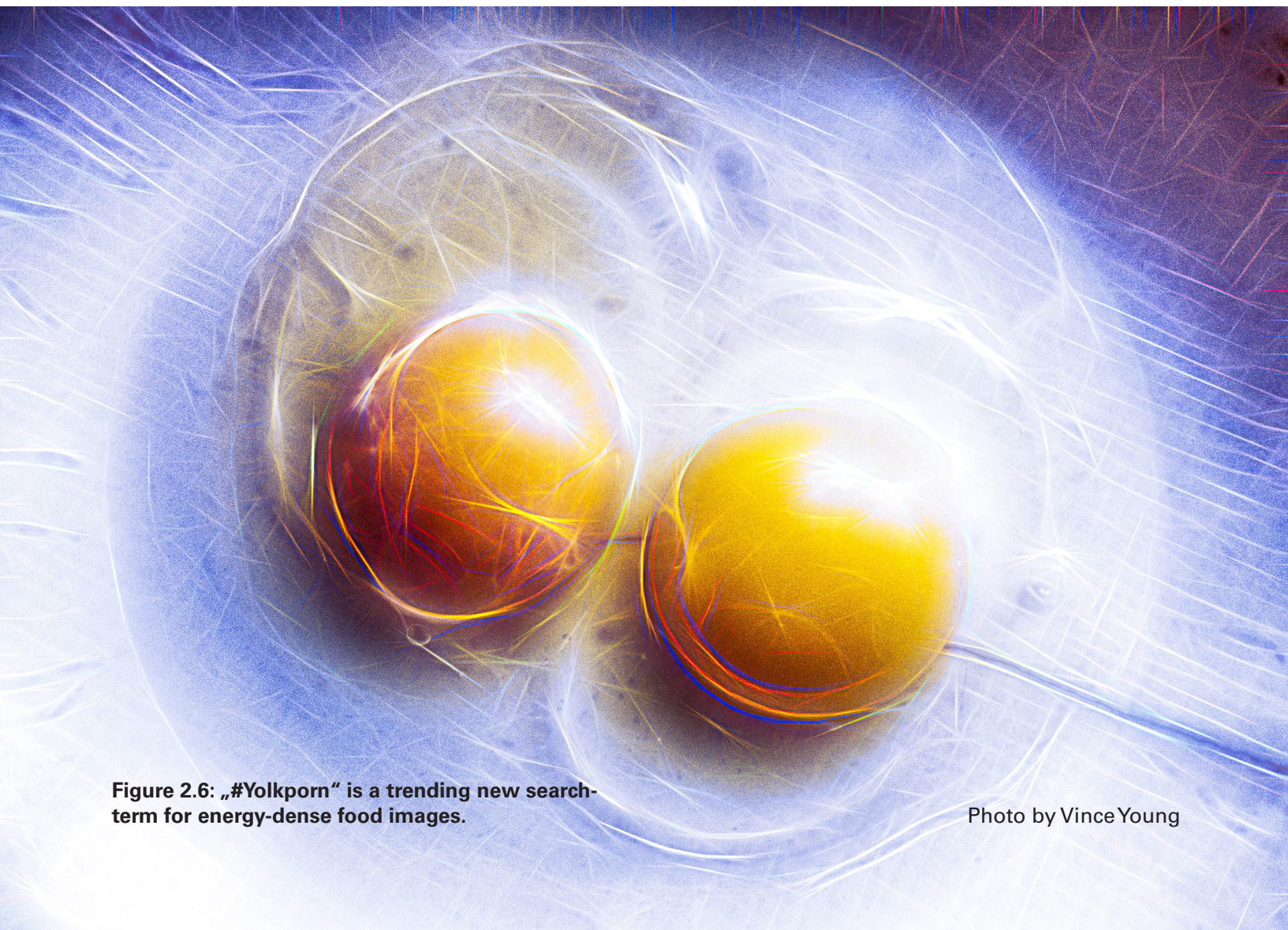


Figure 2.6: „#Yolkporn“ is a trending new search-term for energy-dense food images.

Photo by Vince Young



Photo by Jeremy Keith

2.2.4 Sound

When looking at the involvement of sound in the eating experience, it becomes evident that sound usually plays a more important role in the case of crackly, crunchy and crispy foods than in the case of carbonation and creaminess perception (Spence, 2017). Latest research has further explained the appeal of crunchy food by showing that an increase in crunchiness also increases the perceived flavour of the food (Lockett et al., 2016). The louder the crunch, crackle etc., the higher the fat content of the food is likely to be. Chips are a prime example of this. Since a third of all foods is eaten directly from the package, it is also very relatable that the chips bag is designed to give extra sound.

Examples from practice:

Sound can also influence the taste perception, so British Airways offered a menu called "Sound Bites" in 2014 that complimented each dish with a fitting song in order to enrich the eating experience.

Figure 2.7: The "Sound of the Sea" dish by Michelin-starred chef Heston Blumenthal is a seafood dish accompanied by the sound of waves crashing from an mp3player inside a shell.

2.2.5 Touch

When looking at the sense of touch there are two parts to consider: What we feel in the mouth as well as in the hands. Research shows that the feel of the food in the hand influences what people say about their in-mouth experience (Barnett-Cowan, 2010). Therefore, it is no mystery that some of the most popular foods are eaten with the hands, namely hamburgers, fries, pizza and finger food. In some cultures like India, it is common to eat with the hands. The role of cutlery in the eating experience, therefore, has been a much-investigated topic (see figure 2.10). After all, there is no other object in contact with so many people's mouths.

Another part of the sense of touch is the so-called "mouth feel" – what can be sensed by the tongue and mouth. Therefore, it also makes sense to think about how best to stimulate the lips, and even the tongue, more effectively. More generally, the texture of food in the mouth seems to be a particularly strong driver of food likes and dislikes. Some researchers have also argued that this is a key part of the appeal of chocolate, one of the few foods to melt at mouth temperature (Spence, 2017).

Figure 2.8: Imitating how an orange would feel in the hand by giving the bottle structure can increase flavour perception.



Photo by Sheep“R”Us

2.2.6 Conclusion

The literature review on the role of the senses showed that the eating experience is multi-sensory and that the perception of one sense can have great influence on the perception of the others. For the design of blissful eating experiences, this means a rich potential as there are many opportunity areas and interactions to design. Therefore not only the food product itself should be considered but that also the surroundings are very important and can be designed to create a better eating experience. This is particularly interesting as the food product itself is not directly in the scope of this project.

As most current designs were found in restaurant settings this offers potential especially for the in-home eating experience as not much seems to be adapted for this context yet. Involving all five senses in the design of eating-related products or concepts can enrich these daily eating experiences.



Photo by City Foodsters

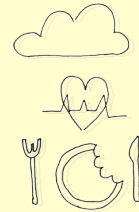
Figure 2.9: Serving finger food has become popular even at a number of the world's top Michelin-starred restaurants.



Photo by Tom Radnock

Figure 2.10: Different types of cutlery including textured spoons and this example of a stick can influence the perception of the food.

2.3 Factors contributing to a positive eating experience



Having learned from the previous chapters that the different senses represent important factors influencing the eating experience, further factors which cannot be directly attributed to a single sense will be analysed in this chapter. Therefore, the following literature and tools from different fields will be examined: the books „The perfect meal“ (2014) and „Gastrophysics“ from the field of gastrophysics (Spence 2017), the food design card set „Thoughts for food“ from the field of food design (Zampollo 2016) and the paper „The pleasure of eating: a qualitative analysis“ from the medical-psychological field (Macht et al. 2005).

Even though the pleasurable eating experience is a fairly recent topic in scientific research, first studies have been conducted in different scientific fields in the past years.

„The perfect meal“ (2014) and „Gastrophysics“ (2017) are two books by Spence, that focuss mainly on commercial eating experiences in restaurants and the food industry. They also summarize many papers contributing to the eating experience in single aspects. In order to make the book readable for its audience, Spence, who is a crossmodal researcher and experimental psychologist uses two different structures in his books, both divided per chapter.

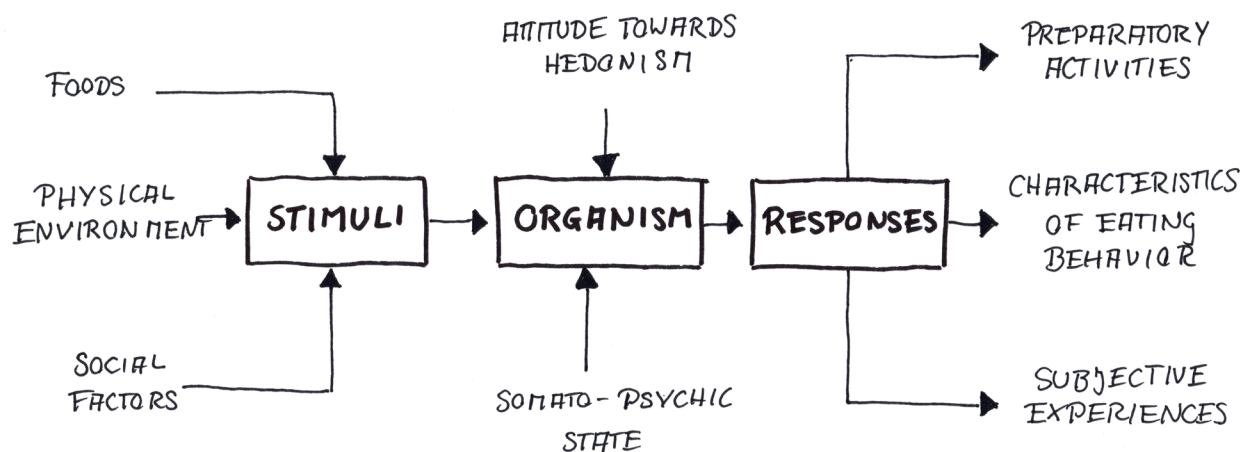
The card set „Thoughts for food“ by Zampollo, a food design researcher (2016) shows themes to design for an ideal eating situation. It has a very human-centred structure divided into the categories of food, companions, environment, general and others. These categories each contain

between two and seven possible factors contributing to a pleasurable eating experience. The card set serves as an inspirational tool for designers in the field of food design.

Macht who is a researcher in the medical-psychological field has conducted many studies about eating behaviour, the most relevant for this topic being „The pleasure of eating: a qualitative analysis“ (Macht et al., 2005). In their paper Macht et al. (2005) summarise the insights from a qualitative study in which participants are interviewed about their idea of a pleasurable eating experience and translate them into a framework (see Figure 2.11). This framework is divided into stimulus conditions, organism variables and response elements. Stimuli can be either the food itself, the physical environment or social factors. The organism is described through its attitude towards hedonism and somatopsychic state, namely being hungry and relaxed. The responses are preparatory activities such as preparing for an extensive dinner, characteristics of eating behaviour such as eating slow and subjective experiences for example joy.

The comparison of the different sources shows that the structures used are very different. While Macht divides the factors very clearly into stimulus conditions, organism variables and response elements, such a framework is not visible in the other two sources. In summary, there is a lot of overlap in the factors the three authors mention as contributing to a pleasurable eating experience but even within the categories the authors draw up, the factors are sometimes hard to assign.

Figure 2.11: Framework contributing to a pleasurable eating experience (adapted from Macht et al., 2005)



When looking at the framework developed by Macht et al. more closely and comparing it to Spence's and Zampollo's work, it appears that there are a lot more details than the framework of Macht et al. (2005) alone would suggest. Due to the limited number of participants in a qualitative study, not all aspects contributing to a pleasurable eating experience, which are mentioned in the books "The perfect meal" and "Gastrophysics" and the card set "Thoughts for food", were found. Also, the question arises whether some of the response elements and organism variables mentioned by Macht et al. (2005) could also be seen as stimuli themselves.

In the following chapters, the factors contributing to a pleasurable eating experience from all three sources will be summarized.

In fine dining environmental attributes can include music, lighting, ambient scent, interior and furniture. According to Edwards et al. (2003) the factor atmosphere has many effects on the eating behaviour: it can influence a diner's choice of a venue, how long they stay and what they think of the overall experience.

What people think about a meal can be influenced by changing the visual attributes of the eating environment. A study conducted by Charles Spence showed that the perceived ethnicity of a meal can increase from 37% up to 76% when adding some Italian flair. But even a "white cube" environment can influence the perception of the dishes served (Spence, 2017).

Examples from practice:

The Singleton whiskey brand created a whole sensorium around the taste of their whiskey. They created rooms, each emphasizing a different aspect of the whiskey's taste. Grassy, woody and sweet notes can be experienced differently in the specially decorated and painted rooms.

Some restaurants incorporate extensive scenery to transport the visitor to another place. Even artificial thunderstorms with lightning or mist can be part of creating an atmosphere.

2.3.1 Atmosphere

The atmosphere around the food has great influence on the eating experience. Macht et al. (2015) state that for a pleasurable eating experience the environment should be comfortable and non-disturbing and ideally in tune with the occasion.

Photo by Daniel Gillaspia



Figure 2.12: The underwater Ithaa restaurant is located five metres below sea level at the Conrad Maldives Rangali Island



Photo by Kirk K . . .

Figure 2.13: More and more restaurants offer informal dishes designed for sharing.

2.3.2 Social aspects

Social aspects play a big role in the eating experience. Nonetheless, not everyone always has the chance to eat in company. According to a British survey, 78% of the respondents hardly ever invite friends over at mealtimes. The most prominent reason given was that it seemed too much effort to make food from scratch because of people’s increasingly hectic lifestyles. The average meal preparation time has accordingly also decreased from around an hour (1960) down to just 34 minutes (2017) (Spence, 2017). Other than that there are some people who prefer and choose to eat alone at home and as well as when going out. It allows them to focus more on the food, flavour combinations and texture contrasts (Spence, 2017).

But most people seem to enjoy and rate the eating experience higher and are even likely to experience a better mood when having company. The better the meal or wine, the more people want to share it (Burton & Flewellen, 2014). This might also be one of the explanations for the urge to share pictures of particularly appealing meals on social media. People talk about the foods and their pleasant sensations during eating as well as

about topics not related to eating (Macht et al., 2015).

Some studies even suggest that dining solo might have a negative impact on people’s physical health and mental well-being (Tani et al., 2015). Even though evidence from both the laboratory and from more naturalistic dining studies show that the amount of food consumed typically goes up when eating with others (Spence 2017).

Figure 2.14: Big, long tables at which diners are seated, sharing the table with strangers are a trend.



Photo by Anja Leide

Examples from practice:

Some restaurants like Eenmaal, a pop-up restaurant in Amsterdam target solo diners and offer special tables for one or seating at the bar or open kitchen to provide some company.

Marije Vogelzang made strangers meet in her “sharing dinner” event. Melon and ham were each served separately on a halved plate that encouraged people to seek completion.

Social dining apps are becoming increasingly popular. Examples already exist for dining with a local when travelling or connecting people who are alone in their home or connecting neighbours.

2.3.3 Personalisation

Personalisation and involvement in the eating experience can happen in many different ways. An example is sitting at the “chefs table” at which a small number of diners get to sit around a central space behind which the chef prepares the dishes. Other examples from the restaurant context include triggering nostalgia or finding out about the diner’s preferences beforehand to personalise the experience.

Of course, anything that involves people cooking themselves or adding something to a dish is the strongest version. Icing premade cakes or even just adding an egg to a cake mix, are ways how personalisation has commercially been used. This individualisation seems to add increased value to things (and food) and even makes it taste better. It is also referred to as the ‘Ikea effect’ (Norton et al., 2012). The more involved a person is in the act of creation, the better the end result tastes to them. This also explains why personalising food to your own taste e.g. when making burritos is so popular.

Photo by Lou Stejskal

Figure 2.15: Sometimes even in restaurants guests are encouraged to take (a little) part in the preparation of the meal.



2.3.4 Storytelling

Another factor that can contribute to a pleasurable eating experience is to provide background information or tell stories about or with the food. This is sometimes done in so-called “tasting menus” (see figure 2.18) in which the diner has little to no choice about the food being served. This saves the diner from the whole difficult decision making process and gives the chef the freedom to create a story with the food. Storytelling can help the diner make sense of a multi-course menu, that might otherwise seem like a random sequence of dishes. Oftentimes, storytelling also encompasses making the preparation process visible, for example by means of the waiter finishing the dish at the table, e.g. by flambéing, filleting or some other theatrical stunt such as serving directly on to the table itself (see figure 2.17).

Another, very early, example from the mid-sixteenth century is Tafelmusik, (literally ‘table-music’) which was composed solely as background music for feasts and other special dining occasions where it was played.

Lastly, some meals are used themselves to tell the story of an event or festival. An example are so-called ‘memory meals’, like Thanksgiving in the US (Mojet & Köster 2016).

Figure 2.16: At Michelin-starred Heston Blumenthal’s Restaurant the Fat Duck diners are given a map that will navigate them through the courses which are woven into a story.

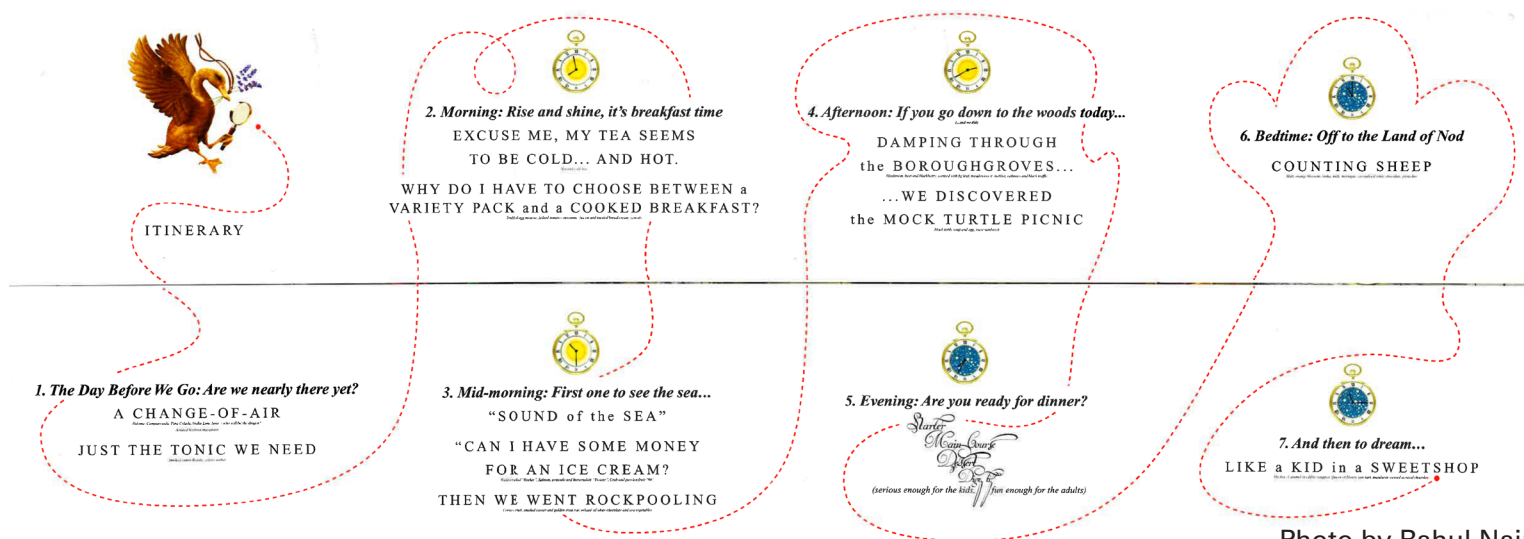


Photo by Rahul Nair



Photo by Johnn

Figure 2.17: Serving directly onto the table

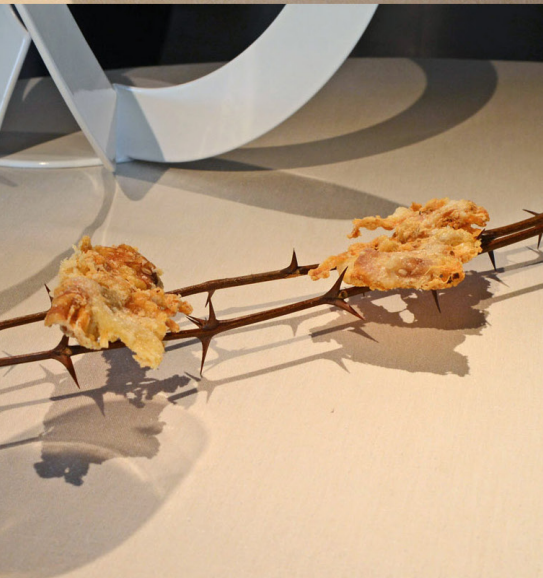


Figure 2.18: Tasting menu

2.3.5 Healthiness and good consciousness

The perceived healthiness of food is considered very important and therefore has influence on choices made in the eating experience. Macht et al. (2005) name healthiness as part of the food characteristics in their framework. It is also mentioned that imagining a possible increase in body weight as a consequence of eating reduced the pleasure of eating. In a German survey on nutrition, approximately 75% of respondents reported selecting foods for their healthiness, low energy density, or low cost (Pudel & Westenhofer 1991). This gives some idea about the importance of considerations related to health and well-being.

2.3.6 Surprise

The fact that people get used to products can be overcome by surprise (Ludden, Schifferstein & Hekkert 2008). This can increase people's attention span, dampen hedonic adaptation and therefore make the experience more interesting and pleasurable. Ludden et al. (2008) differentiate between visible and hidden novelty which are based on sensory incongruity during the initial sensory expectations. They argue that hidden novelty often fades away quickly after being discovered for the first time, which makes further attention to discover the product unnecessary. Visual novelty, therefore, seems more interesting as people tend to be more explorative in discovering these products.

Nonetheless, surprise in products can also be disliked and should be balanced well, as suggested by designer Raymond Loewy in the "MAYA" principle (Most Advanced Yet Acceptable). The principle suggests to also use familiar elements when implementing new elements to balance them in order not to overstrain the user.

Figure 2.19: "Oops, I dropped the lemon tart" is famous dish by Massimo Bottura playing with the element of surprise.



Photo by Andrea

2.3.7 Mood

Mood can both function as a factor influencing a pleasurable eating experience as well as being a consequence. A feeling of calmness, relaxation and physical well-being is described as necessary for enjoying food. Especially since some bodily states such as tension, pain, stress and nervousness diminish or even eliminate pleasure (Macht et al., 2005).

Dramatic mood swings are even associated with changes in taste and smell sensitivity (Chen & Dalton, 2005). This phenomenon referred to as 'Provençal Rose Paradox' states that people perceive food as better tasting when they are in a good mood in comparison to a bad mood. This theory has been validated in different studies comparing the participants' perception of food and drink after artificially inducing a positive or negative mood, e.g. through a movie clip (Macht and Mueller 2007; Platte et al. 2013). The phenomenon can be explained by the feelings-as-information theory that is commonly known as the phenomenon of mood misattribution (Greifeneder et al. 2011; Schwarz 2012).

Schwarz and Clore (1983) showed in different studies that mood serves as an information source when judging, even if the item for discussion is not connected to the participants' source of mood. For example, the behaviour of the serving staff or background music can foster positive mood and therefore influence the perception of the food and drink. In summary, the literature review shows that a diner's mood has a great influence on his/her perception of an aroma and that mood is, therefore, one of the most important factors influencing the eating experience (Spence & Piqueras-Fiszman, 2014).

A pleasurable eating experience can also result in full-blown positive emotions such as satisfaction, contentment, well-being and joy. Bodily sensations include relaxation, warmth, fullness, and satiation (Macht et al., 2005). These emotional associations seem to be most influenced by contextual characteristics (Piqueras-Fiszman & Jaeger, 2015).

2.3.8 Hunger

Together with mood hunger can be found in the subgroup somato-psychical state of the organism variable in the Paper of Macht et al. (2005). That shows that on the one hand hunger can be seen as a condition of the organism but also influences the perception of an eating experience. This becomes evident as Macht et al. state that a feeling of hunger is necessary for most people to enjoy

eating. Therefore, some of them prepare for an extensive meal by not eating too much beforehand. Extreme hunger on the other side can diminish or even eliminate pleasure (Macht et al., 2005).

2.3.9 Preparatory activities

Preparatory activities are part of three mentioned factors that can similarly also be found as savouring in positive design. Preparatory activities, behaviour during and after the experience and remembrance are similarly listed by Pohlmeier (2014) as increasing anticipation (before), being conscious and in the moment (during) and reliving memories (after). In positive design, these are strategies to alter the positive emotional experience of an event in the three dimensions. The presence of these three factors both in the positive design approach as well as among the factors contributing to a pleasurable eating experience shows that savouring holds great potential for creating a blissful eating experience.

Macht et al. (2005) list preparatory activities and characteristics of eating behaviour as response elements within their framework. Pleasurable eating experiences are often preceded by anticipation and preparatory behaviours that are associated with the joy of anticipation. Before the meal, sometimes even weeks before, people begin to plan and prepare by e.g. putting on nice clothes, drinking a glass of wine beforehand or preparing the food. (Macht et al., 2005).

The chef of the two-star Restaurant Mugaritz, which is very remote, said: "*Mugaritz is not only the restaurant but also the road leading up to it, the countryside that you can see from the car and that, bend after bend, stokes the anticipation of everyone who visits us. Mugaritz is also its' setting.*" (Spence, 2017).

2.3.10 Behaviour during and after the experience

Macht et al. (2005) also mention behaviour during or after the eating experience as contributing to pleasure. An example is slowing down and consciously focusing on selected sensory characteristics of the food, which is listed as a response element. Also habits or rituals such as drinking espresso, smoking a cigarette or taking a walk after the meal are mentioned.

2.3.11 Remembrance

When figuring out which aspects of a meal will be remembered, there are many variables. Not only are certain things that were very vividly experienced forgotten quickly, but others will be misremembered and confabulated (Fredrickson, 2000). Not every detail of an experience can be stored in the memory so that the brain uses cognitive shortcuts to help. Mainly extremely good or bad meals (peaks and troughs) tend to stick in the memory. Also, how they start and end (“primacy and recency effects”) (Murdock, 1962) might be remembered, but usually not their duration (duration neglect”) (Fredrickson & Kahneman, 1993). Meals that need to be processed thoroughly in order to be understood (“depth of processing”) on the other hand, might be remembered better. This can, for example, happen with a food that is tried for the first time. Overall though, which element of a meal exactly will stick in the memory appears to depend on the specifics of the situation (Garbinsky et al., 2014).

Generally, it is easier for people to remember the circumstances of a meal such as theatrical elements, surprising and/or unusual aspects (Wansink, 2006) and the hedonic response to it, than the taste. The specific ingredients and flavour combinations are hard to remember because the brain mainly checks the quality of the food to ensure that there is nothing wrong and that it tastes as predicted from previous experiences. (Piqueras-Fiszman & Spence, 2015). After this safety check, cognitive resources are devoted to other matters, such as the company while eating or the running television.

Unless particular attention is paid to what is eaten, there is little chance of remembering (Dalton & C. Spence 2008). One of the elements that can help is mindful or attentive eating in order to increase awareness and enjoyment, enhance delivery of multisensory stimulation, and possibly also increase satiety (Robinson et al., 2013). For special meals, giving the diner a copy of the menu with a detailed description of the food to take away with them can also trigger pleasant memories and increase the attention during the meal. This also counts for many diners who are creating an external memory through taking pictures and posting them on social media (Higgs & McVittie, 2012).

Figure 2.20: Restaurants often serve a sweet to take home at the end of a menu. This functions as a reminder of the experience some later time.



Photo by ulterior epicure

Figure 2.21: A printed menu card for the visitor to take home.

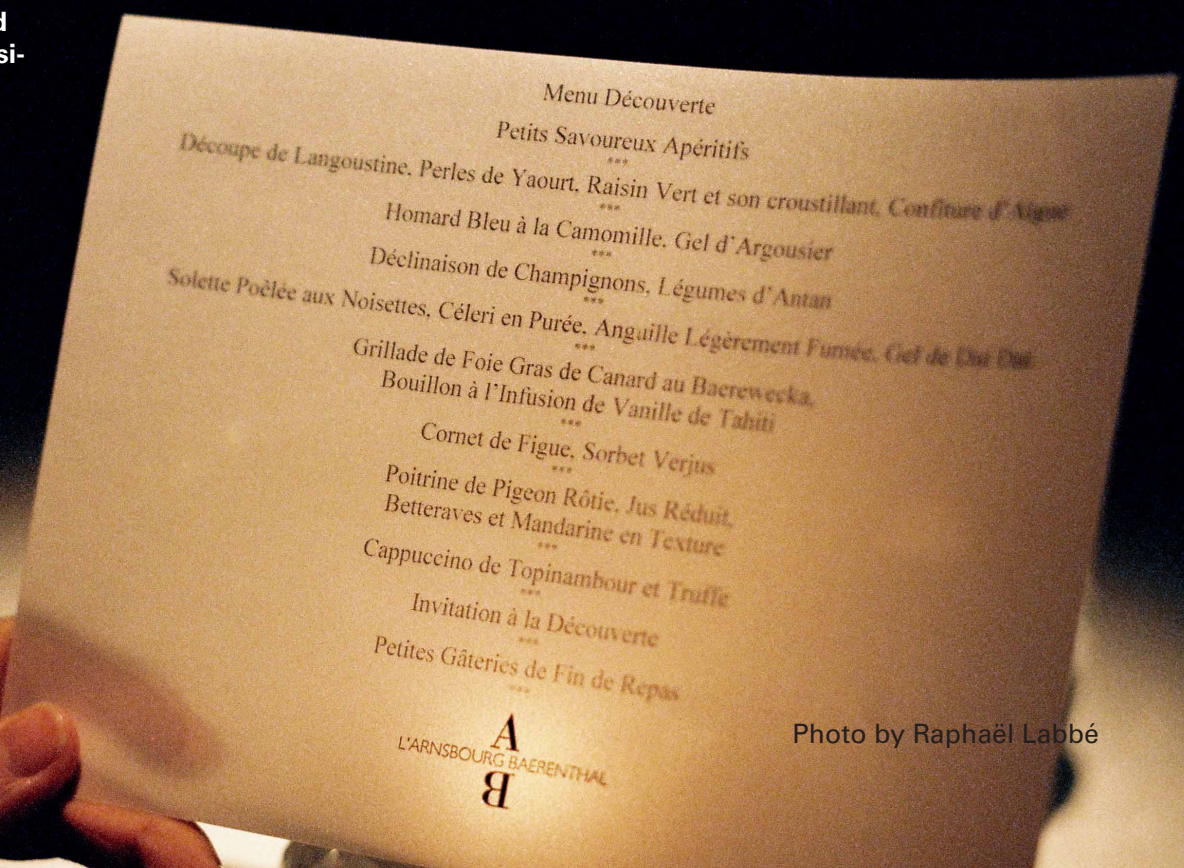


Photo by Raphaël Labbé

2.3.12 Conclusion

From literature research, it becomes evident that many factors and details for a pleasurable eating experience have already been studied. Research from different scientific fields, such as gastrophysics, food design and experimental psychology add to this topic from various angles and focus points. Some factors such as the human perception have already been researched in great detail, while others such as the storytelling around the eating experience remain to be investigated more thoroughly. Especially, since the aim of this thesis is to investigate the blissful instead of pleasurable eating experience, it is necessary to examine if the same factors are relevant to this peak experience.

Furthermore, the majority of the research on pleasurable eating experiences which has been carried out so far is quantitative and has been done in a lab setting. The few examples of qualitative research add valuable insights that could not be found elsewhere in the theory. Also, for a topic that is so dependant on its surroundings more research in context should be done. Since these studies are a minority, it seems beneficial to do more qualitative research in context in order to gather rich insights. Especially for design, these insights are pivotal to create novel and effective concepts.

Another point of attention is the availability of eating experiences that are designed for bliss. At the moment, mostly international top class restaurants design for blissful eating experiences. However, they can only make them available to the few who can afford them. To make blissful eating available to a broader audience, positive design offers strategies from a different field that can be adapted to the eating experience. Especially savouring is a strategy that was already found in the eating literature research and has great potential to improve also the home eating experience.

3 EMPIRICAL STUDY

The literature review revealed important insights into the factors contributing to a pleasurable eating experience. However, the following challenges and questions, which are important in the context of designing for a blissful eating experience, remained open:

- Literature mainly deals with the phenomenon of pleasurable eating. Therefore the question arises if the same factors are relevant to the culminating experience of bliss.

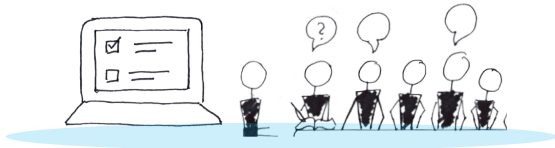
- Only a few qualitative studies on pleasurable eating have been conducted. The description of specific eating experiences or objects related to pleasurable eating has not been investigated so far. As those examples can be a great support for designing food-related objects, this topic should be examined further.

- Literature mainly shows examples from the fine dining context. As this project aims at making blissful eating available for a bigger audience, the question arises whether eating experiences from ordinary eating venues and from the home context can also be blissful.

- The literature analysis did not reveal the answers to general questions related to the overall satisfaction of people with eating. This should be investigated to get an overview of the existing potential to design for blissful eating.

The mentioned challenges and questions will be analysed in the following chapter with the help of two qualitative studies: Study 1 containing an online survey and a focus group and study 2 comprising interviews and a diary study.

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3.1 Online survey and focus group (Study 1)

- 3.1.1 Survey
- 3.1.2 Focus group
- 3.1.3 Conclusion

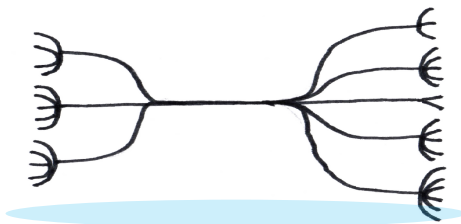
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3.2 Interviews and diary study (Study 2)

- 3.2.1 Research goals and objectives
- 3.2.2 Research questions
- 3.2.3 Method 1, Interview
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- 3.3.1 Analysis
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3.4 Results - food products, objects and customs

- 3.4.1 List of food products
- 3.4.2 List of objects
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3.5 Card set

- 3.5.1 Structure of the card set
- 3.5.2 Exemplary cards
- 3.5.3 Conclusion

3.1 Online survey and focus group (Study 1)



In study 1 the general topics of people's relationship to food and people's overall satisfaction with their daily eating were analysed by means of an online survey, a focus group and short interviews. Thereby the goal was examining the potential held by design for blissful eating. Study 1 also helped to specify the research questions, find a suitable methodology for study 2 and get access to suitable participants.

• How much does health play a role in their eating behaviour?

Health seems to play a big role for most participants. They try to eat healthy most of the time.

• How often do people treat themselves with special food?

Most participants treat themselves once or twice a week with special food, the average is 6,6 times per month.

3.1.1 Survey

The online survey (see appendix 2) focusing on the general relationship of people with food and satisfaction gained from daily eating experiences was conducted with 47 participants. The survey also helped to establish the contact with 12 participants who were willing to take part in the second, more extensive study. In the following section the main objectives, as well as the insights, are listed:

• What relationship do people have with food?

Food plays an important role in most participants' lives. It is seen as a necessity as well as a highlight they look forward to or an incentive. Social, cultural and health aspects of food were also mentioned often. The average rating for pleasure gained from food was 7.9 out of 10. This high number might be caused by mostly food interested people taking the survey due to convenience sampling.

• How satisfied are people with the food they eat in their daily life?

On average participants are satisfied with their food around 70% of the time.

• Do people compensate for an unsatisfying meal by eating even more?

From 47 participants 18 compensate for an unsatisfying meal by eating more (mostly of another food) than they usually would. From these 18 participants, 7 compensate by eating sweets. For many participants, an unsatisfying meal also leads to a bad mood.

• How much do hunger and appetite play a role in their eating behaviour?

For most participants, appetite seems to play a bigger role than hunger.

3.1.2 Focus group

In preparation for study 2, a 30-minute focus group session with 8 participants was held. Additionally, some short interviews with individuals were conducted. The aim was to find a suitable setting for study 2 and to see if people could recall blissful food memories easily. Therefore, they were asked to talk about blissful eating experiences. This led to a summary of 15 stories (see appendix 3). The results showed that it is easily possible to remember pleasurable or blissful eating experiences ad hoc without prior sensitizing. However, it became evident that understanding the meaning of bliss is difficult and participants usually do not have a clear understanding (often even after the first explanation). Because of this insight and the fact that the distinction between pleasurable and blissful is very subjective, it is difficult to determine if all reported experiences were blissful. Also, study 1 showed that a group setting is not beneficial to the number of details people remember since the individual interviews generated more insights than the focus group.

3.1.3 Conclusion

After the insights gathered through the survey, the focus group and the mini-interviews, decisions for study 2 were concluded. Based on study 1 it was decided to conduct the study with 12 participants in a semi-structured interview setting without prior sensitizing in order to explain the meaning of bliss in person to make sure the participants understood it correctly (see appendix 4). After the interviews, a two-week diary study was planned in order to compare the direct effects of blissful eating experiences to their long-term effect.

3.2 Interviews and diary study (Study 2)



In study 2 the factors contributing to pleasurable eating found in literature were compared with the factors reported by the participants of the study. This helped to examine the previously identified factors for completeness and to clarify if the same factors that contribute to a pleasurable eating experience also support the culminating experience of bliss.

3.2.1 Research goals and objectives

Since the literature review mainly presented experiences from fine dining venues, study 2 examined whether eating experiences from ordinary eating venues and from the home context can also be blissful. Furthermore, the objective of the study was to make the findings tangible for the design context. Therefore, it was investigated which products (including food products, objects specific to different cultures and connected customs) contribute to a blissful eating experience and how they contribute. An analysis like this is so far missing in literature review. Macht et al. (2005) who conducted a detailed qualitative study analysed the context more generally and did not focus on specific experiences or products contributing to a blissful eating experience.

3.2.2 Research questions

From these research goals and objectives the following research questions can be derived:

Which are the factors contributing to a blissful eating experience?

- Do these factors differ in hindsight versus during or shortly after the experience?
- Do the factors found in literature as contributing to a pleasurable eating experience also support the culminating experience of bliss?

Is it possible to experience blissful eating in ordinary eating venues and in the home context?

Which strategies are already employed currently to savour the eating experience and achieve bliss (in different cultures)?

Which are examples of food products, objects and customs leading to bliss in the eating experience?

3.2.3 Method 1, Interview

Semi-structured interviews of around 60 minutes were held with 12 participants (6 Germans and 6 internationals from different countries) (see appendix 4). Audiorecordings were created for later analysis. At the beginning of the interview, the meaning of the word bliss was defined and explained to the participants. Subsequently, the participants were asked to recall blissful food memories. The international participants were asked to talk about three memories. Since the international participants were, as expected, more reflected on their culture and eating habits, the last three questions focussing on blissful food products, objects and customs were given more priority. The German participants were asked for a fourth memory instead if they struggled to answer these questions in detail and if the time allowed to do so.

3.2.4 Interview materials

It was important to help participants recall their memories in detail. Since it became clear during the focus group that it was difficult for participants to talk about blissful eating experiences in detail, a list of possible factors contributing to a blissful eating experience was compiled. The list contained 13 factors derived from literature research and study 1. To avoid bias, participants were first asked to talk about their memory freely. Once participants could not think of any more details, they were asked to select the factors that were relevant from a list. While doing so, they were asked to think aloud and explain details that had not been mentioned so far. They were also encouraged to think about other factors that may have contributed and add them to the list. The list contained the following factors:

- **Hunger before eating**
- **Taste and smell of the food**
- **Sound and feel of the food (in the mouth while eating, in the hands before eating etc.)**
- **Look of the food and plate**
- **Healthiness of the food**
- **Personalisation (cooking or adding something to the dish yourself, personal cooking or service etc.)**
- **Storytelling (background information, show, theatrical orchestration etc.)**
- **Atmosphere (music, lighting, interior, furniture etc.)**
- **Social aspects (talking to someone, talking about the food, sharing the food etc.)**
- **Positive mood during eating (happy/relaxed/stress-free/excited etc.)**
- **Anticipation (looking forward to the experience or preparing for the experience etc.)**
- **Savouring (trying to increase the enjoyment during the experience, eating slowly, being mindful etc.)**
- **Reminiscing (prolonging or reliving the experience)**

3.2.5 Method 2, Diary study

To compare the short- and long-term effects of blissful eating experiences, the interview was followed by a diary study. Literature suggests that some aspects of a pleasurable eating experience such as social factors could be remembered better than others such as details about the food and its taste. The 12 participants, who already took part in the interviews were also asked to participate in a two weeks diary study. Literature shows that it is important to study hedonic eating in natural settings in order not to disturb the multisensory experience (Booth, 2014). As Macht and Meinerger (2005) suggest, the experience-sampling method was used in order to overcome this problem. It allows for an immediate assessment of experiences in natural environments (Csikszentmihalyi & Larson, 1992) and it is feasible for the study of emotions and eating which has been demonstrated previously (Macht, Haupt & Salewsky, 2004). Therefore, participants were asked to record as many blissful eating moments online as they experienced (see appendix 5) during the 3 weeks following the interview. The sensitizing for this was done in form of the interview.

3.2.6 Diary study materials

Similar to the interviews, the list of 13 possible factors contributing to a blissful eating experience, which was gathered from literature research and study 1, was also used in the diary study. Participants selected in an online questionnaire which factors were relevant to their recorded eating experiences. For the diary study, there were some additional questions to be filled in by the participants that described the blissful eating experience in more detail (what, where, who, why, when, how) (see appendix 5). The participants were asked to fill in the questionnaire no longer than 24 hours after their eating experience. Additionally, they were encouraged to take a picture of their food (see figure 3.1, 3.9, 3.10 & 3.11).



Figure 3.1: Food picture from the diary study

3.2.7 Participants

12 participants were interviewed and took part in the two-week diary study. The participants were chosen in two groups:

6 German participants (age 31-63) were chosen to represent the target group and include people from different age groups. This group had diverse eating experiences such as dining in Michelin starred restaurants.

6 international participants (age 23-34) from China, Mexico, Turkey, India, Iran and Italy were chosen. All six have been living in the Netherlands for at least one year, most of them for study reasons. Through being abroad they have reflected on their culture especially in terms of food and eating experiences.

The average age of all participants was 38,8 years, 5 were male, 7 female. Throughout the groups the participants varied in the following aspects:



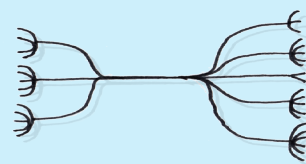
- Level of cooking skills and enjoyment of cooking
- Relationship with food
- Reasons for and level of food enjoyment
- Appetite versus hunger as a driver to eat
- Food satisfaction level
- Monthly number of self-indulging food moments
- Living situation

This information was gathered in the initial survey.

Additionally, further 8 participants were asked to join the diary study. This was done because participants might forget to fill in the form or might not experience any blissful eating experience within 2 to 3 weeks.

Figure 3.2: Two international participants

3.3 Results - eating experience



The results of the interviews and the diary study referring to the reported eating experiences will be summarized in the following chapter. Therefore, the reported factors contributing to blissful eating were listed separately and then compared. The evaluation showed that the participants talked about their experiences in great detail and gave many subelements that could not be directly located within the 13 established factors. Therefore, the categorization was revised following the framework suggested by Macht et al. (2005).

3.3.1 Analysis

In total 92 blissful eating experiences were collected. Thereof, 38 eating experiences were described very detailed in the interviews and 54 were recorded online in the diary study. The interviews and diary study were analysed and summarised in different stages. First, the factors selected by the participants from the given list were evaluated. Second, further details mentioned by the participants within the different factors were noted down.

3.3.2 Interviews versus literature

In the interviews, 38 blissful food memories were collected by 12 participants. The 13 factors found in the literature review and study 1 were confirmed through the interviews. Each factor was selected multiple times (see figure 3.3). The number of selections per factor varied. Taste and smell of the food and positive mood were selected 37 times throughout the 38 experiences, followed by social aspects and anticipation. Storytelling and healthiness of the food were only selected 13 and 10 times.

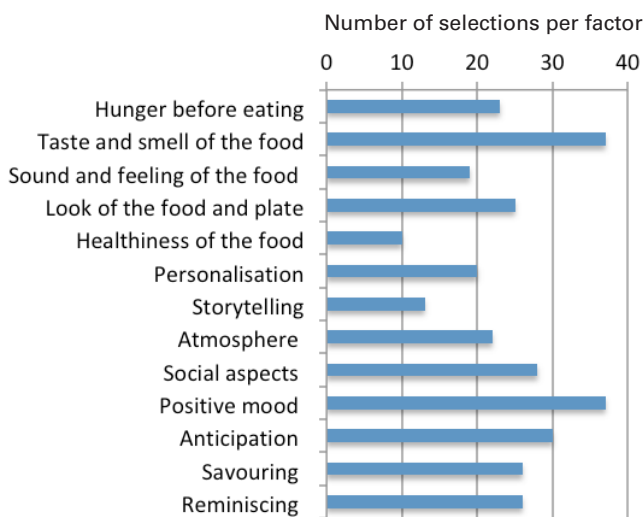


Figure 3.3: Factors selected in the interviews as contributing to the 38 recorded eating experiences.

3.3.3 Diary study versus literature

In the diary study, 54 blissful food memories were collected by 20 participants. (12 regular participants + 8 additional participants). Three participants did not record any experiences. Reasons may have been time constraints, forgetting or not having any blissful eating experiences at that time. The other 17 participants recorded between one and nine experiences (3,2 on average) within a time period of 2 to 3 weeks. The big difference in the number of recorded experiences per participants cannot fully be explained but reasons might include differences in motivation for recording, pleasure gained from eating, attitude towards hedonism and intensities of blissful experiences (even though the definition of a blissful experience was talked about extensively prior to the study).

Similarly to the interviews, the 13 factors derived from the literature review and study 1 were also confirmed in the diary study. Each factor was selected multiple times (see figure 3.4). The number of selections per factor varied. Taste and smell of the food was selected 42 times out of 54 experiences and positive mood 39 times, followed by hunger 31 times. Reminiscing was only selected 10 times.

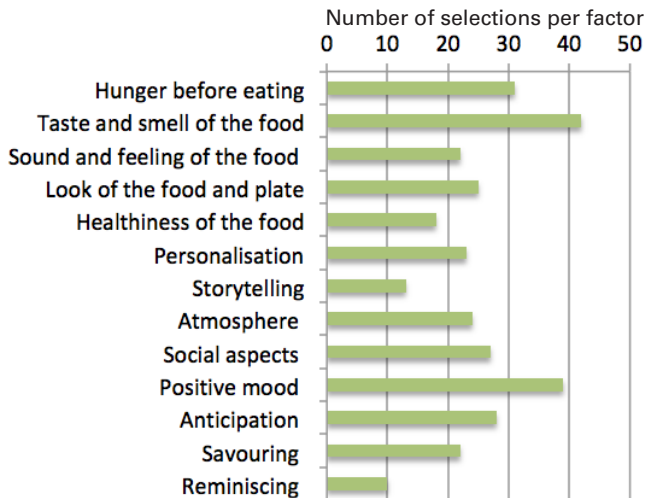


Figure 3.4: Factors selected in the diary study as contributing to the 54 recorded eating experiences.

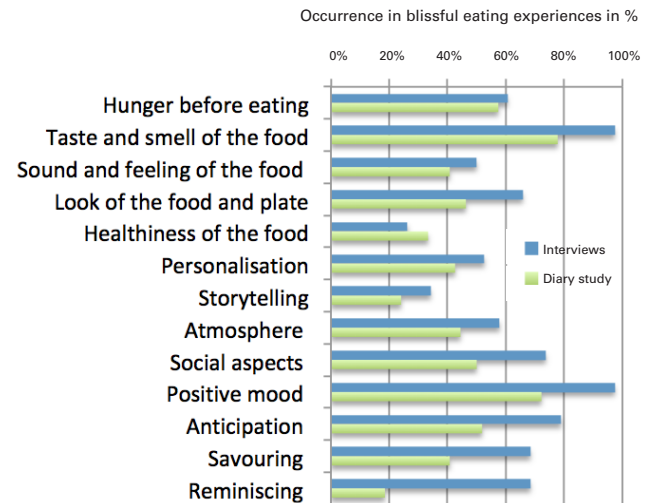


Figure 3.5: Comparison of factors selected in the interviews vs. diary study

3.3.4 Interviews versus diary study

The comparison of the factors selected in the interviews and the diary study shows a big overlap. Even though the distribution between the factors is similar (see figure 3.5), fewer factors per experience were selected in the diary study compared to the interviews.

This seems reasonable considering that during the interviews participants usually talked about the most blissful experiences they could remember. Not every blissful eating experience has the same intensity and makes it into the long-term memory. Therefore, the ones that are remembered for a long time and come to mind first might be the most extreme. In the diary study participants recorded experiences directly after they happened. These experiences, even though they might still count as blissful may otherwise soon be forgotten. This makes it likely that these experiences are weaker and might have less contributing factors.

Differences can also be found in the number of mentions of the factors hunger before eating, healthiness of the food and reminiscing. Hunger before eating and healthiness of the food play a bigger role in the diary study. This might be due to the fact that these factors are not the most spectacular ones and therefore are sometimes forgotten over time. Reminiscing plays a much smaller role in the diary study than in the interviews. A possible reason might be that experiences described in the interviews were up to 55 years old and experiences in the diary study had to be recorded within 24 hours.

3.3.5 Adaptation of factor categorization

The evaluation of the factors mentioned in the interviews and the diary study showed that all factors from literature were present in the recorded eating experiences. Additionally, the study participants talked about their experiences in more detail. Instead of just mentioning the 13 factors, they gave many subelements and explanations that had not been found in literature before and could not be directly located within the 13 factors. Therefore, the categorization was revised following the framework suggested by Macht et al. (2005) which was described in detail in chapter 2.3. Thus, the collected factors and information were assigned to the groups of stimuli, organism and responses (savouring) and are illustrated in figures 3.6, 3.7 and 3.8.

Stimuli: The 13 stimuli contributing to a blissful eating experience are grouped into the 5 senses and 8 other factors which cannot be directly assigned to one of the senses (e.g. atmosphere). Each of the stimuli contains between 2 and 7 sub-elements as shown in figure 3.6.

Organism: The organism variables are divided into hunger and mood. Similarly to the stimuli, also the organism variables each contain 3 sub-elements illustrated in figure 3.7.

Responses (Savouring): The responses are grouped into the three themes of anticipation, being in the moment and reminiscing. Each of them contains between 4 and 10 sub-elements which are depicted in figure 3.8.

3.3.6 Stimuli variables

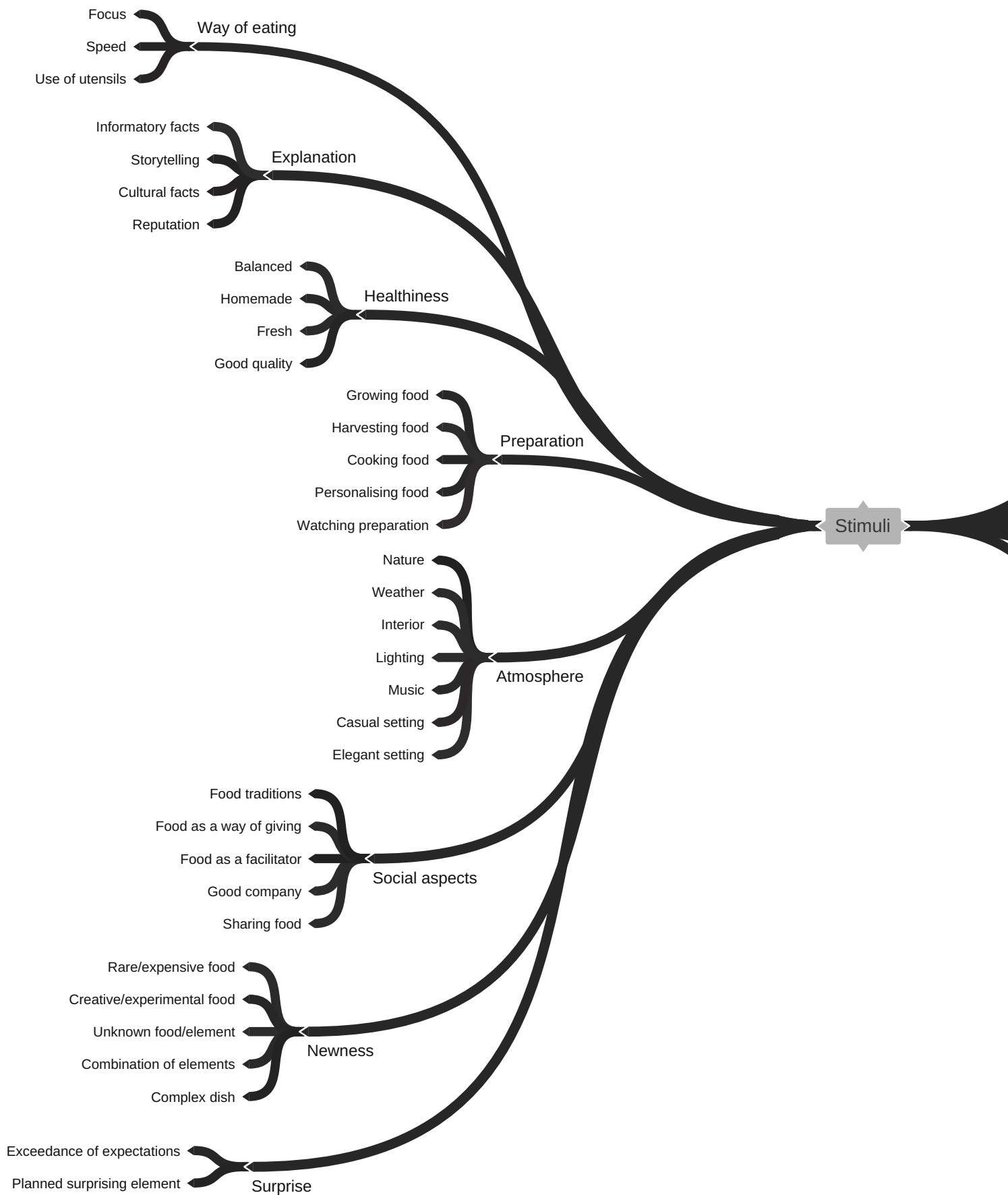
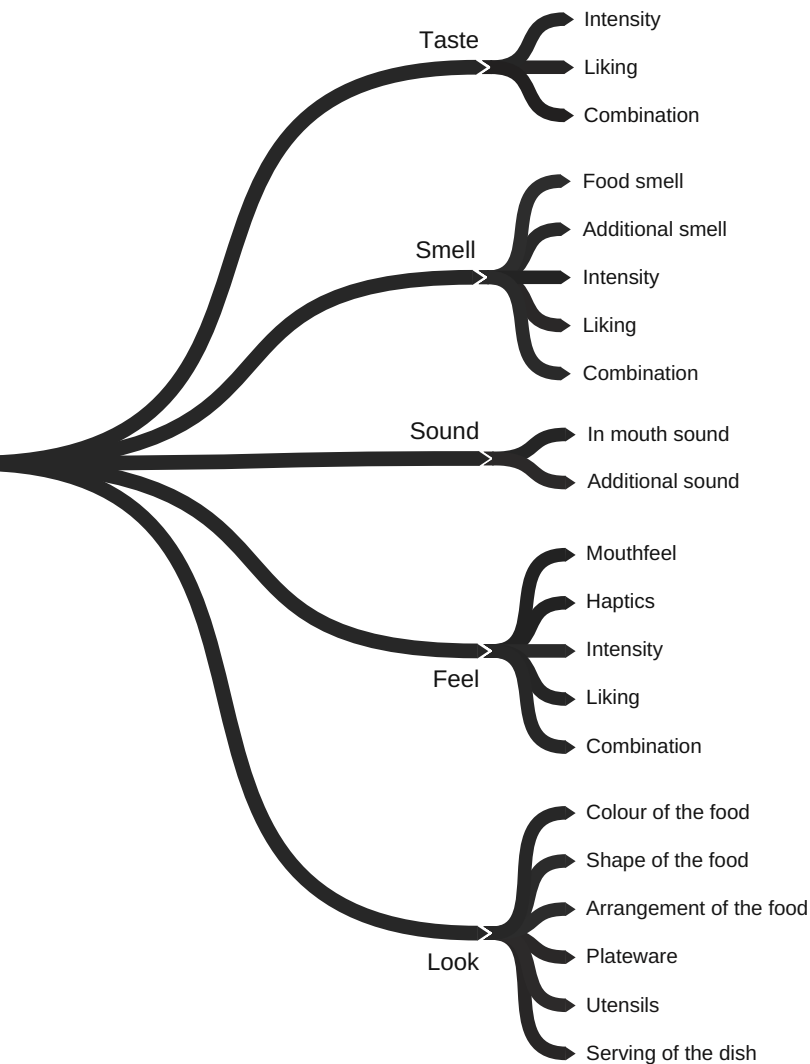


Figure 3.6: Stimuli in a blissful eating experience

Way of eating

A special way of eating was mentioned in some of the experiences. These ways of eating the food were also described as enablers for savouring as well as social factors, mood and even taste.



Explanation

This factor was renamed from storytelling because there were also other contributing elements (see Figure 3.6). Explanation was mentioned in restaurant as well as home settings. Particularly in representing the food of a culture it was mentioned as an important element.

Healthiness

The perceived healthiness or positive impact of the food made participants feel good about what they had eaten.

Preparation

This factor was renamed from personalisation because there were also other contributing elements (see figure 3.6). It describes being part of the food preparation in any stage or way.

Atmosphere

The atmosphere was mentioned mostly regarding restaurant experiences, though also nature was often a contributor.

Social aspects

Social aspects were mentioned in much detail. Most of the mentioned social aspects were either food centred or closely connected to the food.

Newness

Seeking newness and avoiding olfactory as well as hedonic adaptation seem to play an important role in blissful eating experiences. Eating an unknown food for the first time is often part of the experience but also many other ways were mentioned (see figure 3.6).

Surprise

Surprise was not mentioned a lot and also with the connotation of sometimes taking away the anticipation. Sensual incongruities in the food that would have led to surprise were not mentioned.

Taste

Participants sometimes had problems recording the details of the taste and the eaten food, as described by the literature review. As expected, participants made no differentiation between retro-nasal smell and taste.

Smell

For most food memories, the smell of the food was described in more detail than the taste. Also, additional smell seemed an important contributor.

Sound

The sound of the food was not mentioned often, but mostly in regards to crunchiness.

Feeling

Haptics and consistency of the food were mentioned to contribute to savouring and make the food interesting.

Look

The look of the food and how it was served was mentioned often but not many concrete details were given.

3.3.7 Organism variables

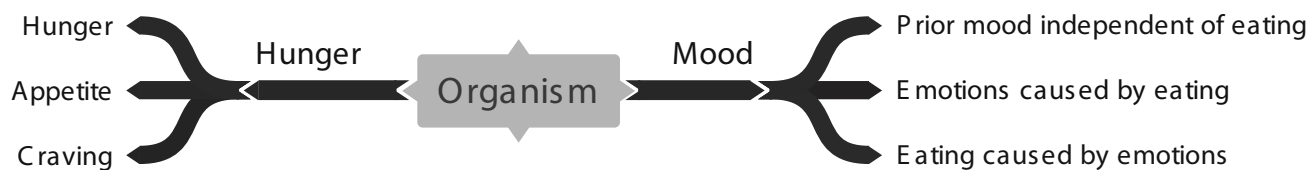


Figure 3.7: Organism variables in a blissful eating experience

Positive mood

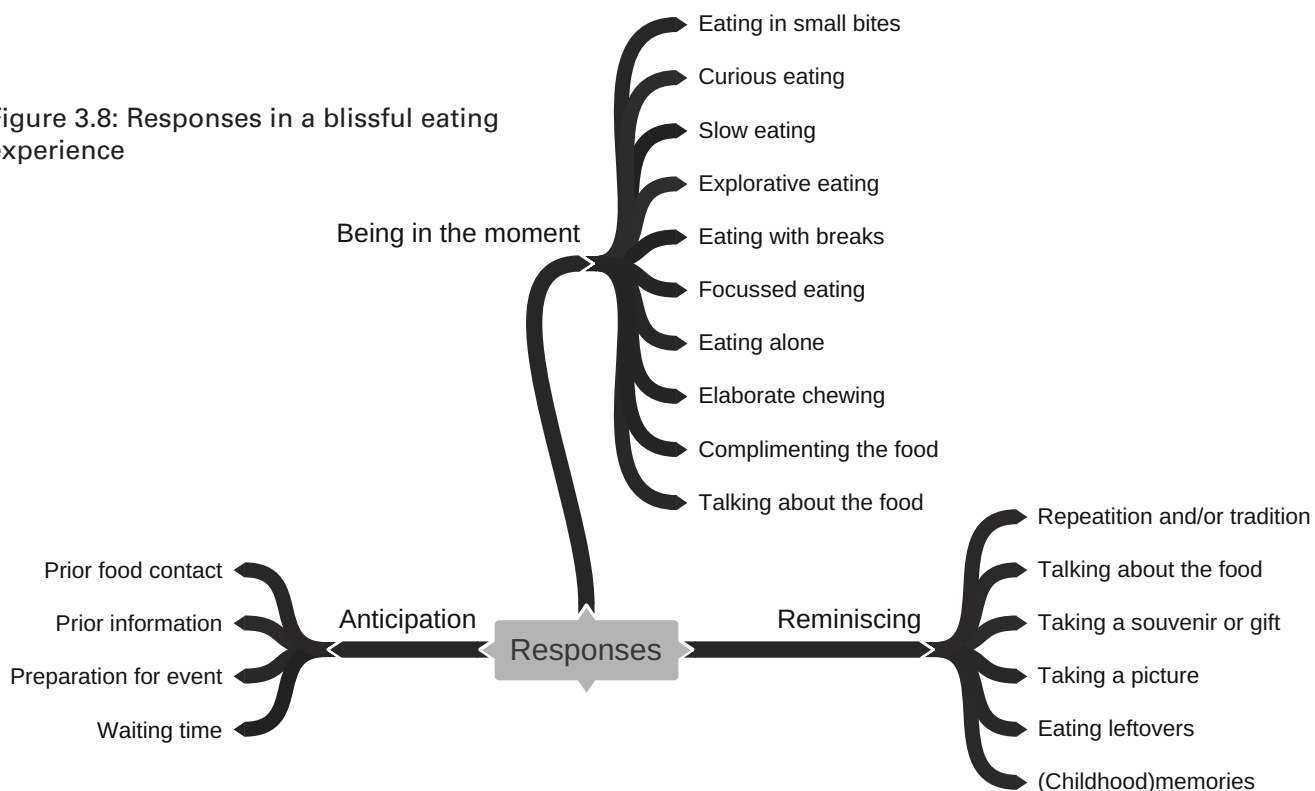
Positive or relaxed mood was often caused by circumstances other than the eating experience and seemed to provide a good starting point to a blissful eating experience. The experience itself caused diverse positive emotions as well and sometimes improved the existing mood. Eating as the cause of emotions such as food as a reward were also mentioned.

Hunger before eating

Hunger before eating was one of the less mentioned factors. Some participants stated that it can make them enjoy the food less and make them less mindful if they get too hungry. Some hunger is necessary though for most people to enjoy the experience.

3.3.8 Response Variables

Figure 3.8: Responses in a blissful eating experience



Anticipation

Anticipation was easy for participants to pinpoint. Often an extensive waiting time was part of the experience.

Being in the moment

Participants mentioned that their attention often goes back and forth when eating. It seemed hard for them to keep their focus on the food which was also validated by literature. Being in the moment was difficult to detect for participants nonetheless, many examples were given. The main reason for participants was not wanting the food to end.

Reminiscing

Reminiscing was not mentioned very often in specific though people obviously remembered the experiences they were talking about (sometimes happening as far back as 55 years).

Even though the categorisation into stimuli, organism and response variables shows some flaws, it gives a good indication of all influencing factors. For more differentiation, the factors could also be grouped into behavioural, physical, emotional, sensorial and contextual factors. Furthermore, a more flexible framework might be able to show how different factors influence each other. This is especially important for the response variables which can also be influencing factors themselves (e.g. anticipation). These relations should be investigated in more detail but exceed the scope of this project.

3.3.9 Location

Besides the reported factors contributing to a blissful eating experience, the interviews and diary study also gave insight into the location where the experiences took place. In total, 15 of the 39 experiences reported in the interviews took place in restaurants. Only a few stories described in the diary study took place in a restaurant but instead most of them were in the home context (either at the reporting participant's home or at a friend's home). This difference can be explained by the fact that the diary study was only conducted over three weeks and the participants may not have visited a restaurant at all or often during this short span. This indicates that also the home eating context holds great potential to design for blissful eating.

Figure 3.9: Photos from the diary study - eating in



Figure 3.10: Photo diary study - eating out



Figure 3.11: Photo diary study - eating out



3.3.10 Amount eaten

Participants were also asked to reflect on the amount they ate during the blissful eating experiences. This was investigated in order to avoid overeating in future blissful eating experiences. Overeating was mentioned in 14 of 39 memories from the interviews. Not wanting the blissful experience to end, and therefore not wanting or not being able to stop eating seems to be the biggest reason for this.

Participants indicated to prepare for a special meal by eating less in advance and also skipping or reducing next meals because they were content for a long time. In a restaurant, it seems less likely to overeat because of ordering rationally and having to pay for every dish. Being conscious of the amount eaten (e.g. through counting food items) was seen as taking away from the experience and conflicting with savouring.

Reasons for overeating:

- taste of food and try to prolong experience
- high availability of food/all you can eat element
- continuous serving of small portions
- conscious overeating
- pressure to finish the food (freshness, worth etc.)

Preventive measures:

- skipping (reducing) the next meal
- having very extensive meals for lunch instead of dinner (to digest)
- low food availability (no chance to overeat)
- no possibility to get more

3.3.11 Negative factors

Besides positive factors that contribute to blissful eating, the participants also talked about negative elements. Even though the described eating experiences were blissful they contained some negative aspects that bothered the participants. These aspects were either not perceived as bad enough to diminish the experience or participants managed to turn something negative into a positive experience by focussing on the positive. Examples include:

- limited space to sit
- limited time to eat
- feeling bad for/being disgusted by eating meat
- feeling bad after eating (unhealthiness)
- imperfect/horrible look of the food
- bad environment
- very high price (bought accidentally)
- can't remember the food precisely

Some other aspects that were described negatively in literature were mentioned by the participants either neutrally or even positively.

- plastic cutlery
- TV as conversation helper/not feeling alone/feeling like more people are present

3.3.12 Conclusion

All factors identified in the literature research were also found in the reported blissful eating experiences. This shows that the same factors that contribute to a pleasurable eating experience also support the culminating experience of bliss. Furthermore, most reported blissful eating experiences contained many different influencing factors simultaneously. This leads to the goal of integrating multiple factors into the concepts which will be developed.

Contrary to examples found in literature which mainly came from fine dining venues, most of the reported experiences took place in the home environment (at the participant's place or at a friend's place). This shows that the home context holds rich potential to design for blissful eating and will be chosen as context for the design phase.

The study also revealed that the importance of the factors contributing to a blissful eating experience varies greatly among the participants. While some of them mainly saw food as a facilitator for social interactions, others were very focused on the flavour and quality of the food. The same holds for the described constellations of the reported eating experiences. While some participants ate alone, others experiences took place in couple or group settings. For the design phase, this shows the possibility to consider different constellations and to offer specific solutions for people eating alone, for couples or friends.

The previous literature research showed that savouring strategies seem very promising in creating pleasurable eating experiences. Savouring was, therefore, one focus of the qualitative study in which participants mentioned many savouring strategies (divided in anticipation, being in the moment and reminiscing). An example is eating slowly or in small bites. This indicates that savouring strategies are useful to make the eating experience more blissful. For this reason, the further aim is to develop designs that assist people in savouring their eating experience.

3.4 Results - food products, objects and customs



The evaluation of the reported food products, objects and customs in the interviews of study 2 is summarized in this chapter. In total 52 food products, objects and customs were collected in the interviews.

The detail in which the 52 food products, objects and customs were described varied among the participants. An overview will be presented in the following with the list of the mentioned food products, objects and customs and one example per category. From the interviews quotes from the participants were collected to explain the appeal of each example. Furthermore, the factors making the specific object, food product or custom blissful were derived from these quotes (see example below).

3.4.1 List of food products

Pralines/ chocolate, smoked salmon, chocolate marshmallow, samosas, spring rolls, chips, pickled mustard fruits, scallops, tortilla chips, baklava, pistachio rolls, künefe, petit fours, bread, cake, cookies, paneer, maggi noodles, extraordinary pasta, gruyere

Baklava (example)

„There is a special way of eating Baklava, a Turkish speciality: You are supposed to place it into your mouth with the bottom up and wait. That way all the sugar syrup that has gathered at the bottom will slowly immerse the whole Baklava until it reaches your tongue.“

Relevant factors:

Way of eating (Focus, Speed)
Taste (Intensity)
Explanation (Storytelling)

3.4.2 List of objects

Glasses, BBQ, set table, fondue/ hot pot, raclette, new tools, knives, molcajete, chopsticks, yoghurt maker, Chinese roundtable, caviar box, silverware, plates, running sushi, clay cups, bierstein, spätzlesieb

Set table (example)

„I love setting the table to fit with the theme or nationality I am cooking.“

„Sitting down to eat is a must for me. I especially enjoy a nicely set table with nice cutlery, candles and plates. The absolute highlight is napkins from fabric. It is instilled in me that otherwise, something is missing.“

Relevant factors:

Atmosphere (Elegant setting)
Look (Serving of the dish, Utensils, Plateware)
Social aspects (Food as a facilitator)

3.4.3 List of customs

Biergarten, festival food, day of the dead, village cooking, street food, eating with hands, way of eating, mooncake, tea ceremony, kitchen gathering, christmas cookies, organic food culture, guests, brotzeit

Día de Muertos (example)

„In Mexico, we celebrate the “day of the dead” by cooking something the deceased liked to eat. We leave it for a day, which people say changes the taste of the food, afterwards, we eat it. It is like a **bond between you and your loved ones** who have passed.“

Relevant factors:

Social aspects
(Food traditions, Food as a way of giving)
Explanation (Storytelling, Cultural facts)

The full list of products, objects and customs with explanation can be found in appendix 8. In chapter 3.5 these insights will be processed further and translated into a card set for ideation.

3.4.4 Object analysis

To gain further design relevant knowledge on how objects can contribute to a blissful eating experience, the most mentioned objects were investigated deeper. Therefore, these objects were analysed beyond the study materials to find out which underlying values that were not previously mentioned might additionally be relevant to enable a blissful eating experience. Similar objects which show at least partly the same characteristics or contributing stimuli were grouped together. Since objects not present in European culture were not mentioned as often due to the large number of European participants and can only be analysed from literature and not from their interactions in practice and experiences with the objects, they were not considered in this part. The following section gives an overview of the analysed products:

Chopsticks

- Not inherent to European culture, therefore a new way of eating and difficult for many people
- Slows down the eating process
- Requires more attention
- Makes Asian food feel more authentic

Figure 3.13: Chopsticks by Sara Tae Yamazaki



Silverware

- Memories (passed on within the family, material value of silver)
- Sometimes engraved with a family initial
- Difficult to clean (not dishwasher safe)

Figure 3.12: Silverware by Daniel Carlbom



Drink specific glasses

- Used for cheering with other people and wishing them well (sound when cheering)
- Individual glasses per drink (red wine, white wine, champagne, whiskey etc., e.g. to let the wine breathe and encourage drinking it a certain way)
- Different types and designs: e.g. blown, hand sanded

Figure 3.14: Glasses by Tom Wachtel



Shared characteristics

- Used as a representative prestige object and symbol for social status
- Special etiquette rules for holding the object correctly and way of eating/drinking
- Used for special festive occasions
- Clean, reflective surface (often especially polished)

Barbecue

- Enables outdoor cooking in nature
- Primal (use of fire, smoke)
- Hobby (countless different varieties of barbecues are available)
- Meat focussed

Figure 3.15: Barbecue by eric robinson



Raclette

- Multifunctional: melting cheese and heat from the top plus frying meat and pancakes on top

Figure 3.16: Raclette by Alex Toulemonde



Fondue/ hot pot

- Present in different cultures and different interpretations: Chinese hot pot, Vietnamese hot pot, Swiss cheese fondue with bread, European fondue with meat and oil or soup

Figure 3.17: Fondue/ hot pot by Rick Chung



Shared characteristics

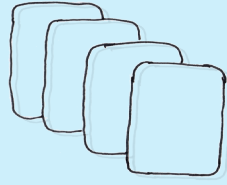
- Gamification of everyday chore (cooking is often not done by the person who is usually responsible)
- Extraordinary (food is only prepared in this way a few times a year)
- Everyone can personalise their own food by cooking it
- Many different dishes are available at once
- Group activity (usually, people are invited to join)
- Eating in rounds while the food cooks
- Watching the food cook
- Special equipment like little pans to prepare food
- Preparing food together at the table
- Often connected with a long wait until all food is cooked

3.4.5 Conclusion

The analysis showed that many characteristics are shared between the objects, especially the bringing together a group of people, the possibility for creativity and personalisation and the avoidance of routines and making things special which helps refocusing attention to the everyday activity of eating. It is also interesting and should be noted that the objects are sometimes not ideal in their

interactions and require a substantial amount of adjustment from the user (e.g. holding a wine glass by its stem to keep the wine cool seems counterintuitive but any other behaviour is often seen as bad manners). These results, especially the characteristics that are shared among the examined objects, should be kept in mind for the design phase.

3.5 Card set



Having examined and compared the results from literature study and the qualitative analysis, the reported eating experiences, objects, food products and customs will be translated into a card set to make them tangible for design in the eating context in this chapter.

3.5.1 Structure of the cards

In total, the card set comprises 13 cards illustrating the previously identified stimuli for a blissful eating experience as well as 60 cards describing blissful food memories, food products, objects and customs collected from the qualitative study. The 60 cards are divided into groups of 15 cards, each representing one of the mentioned categories.

On the front side, each card encompasses a picture, a title and one or more quotes from the interview stating what made the experience, food product, object or custom blissful. On the back side, the 3 strongest stimuli mentioned by the respective participant are listed. The stimuli factors can directly be designed (for) and are therefore interesting for designers to understand.

The card set can be used as a toolkit for designing the eating experience. Thereby, the front sides can be used as inspirational examples whereas the backsides can be used for ideation. The detailed description and instructions of the card set can be found in figure 3.18.

3.5.2 Exemplary cards

The following section shows exemplary cards from the card set. Next, to the cover card, one exemplary card for stimuli, food products, objects, customs and eating experience is present. The full card set can be found in appendix 9.

3.5.3 Conclusion

The card set shows a great variety of food products, objects and customs contributing to blissful eating as well as many examples of blissful eating experiences from different cultural backgrounds. Listing the factors contributing to the blissful character of the food products, objects, customs or experiences on the back of the card provides indications on how to design for blissful eating and can be used for context-specific ideation. The card set will be used for the following ideation phase, especially within ideation or prototyping workshops where people are not familiar with the concept of blissful eating yet.

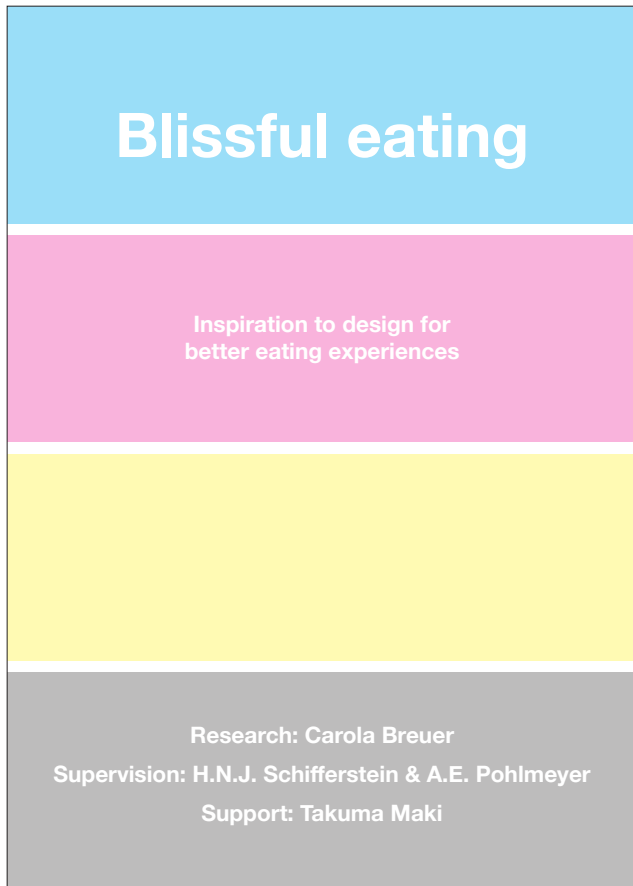


Figure 3.18: Card set, cover card (front and back)

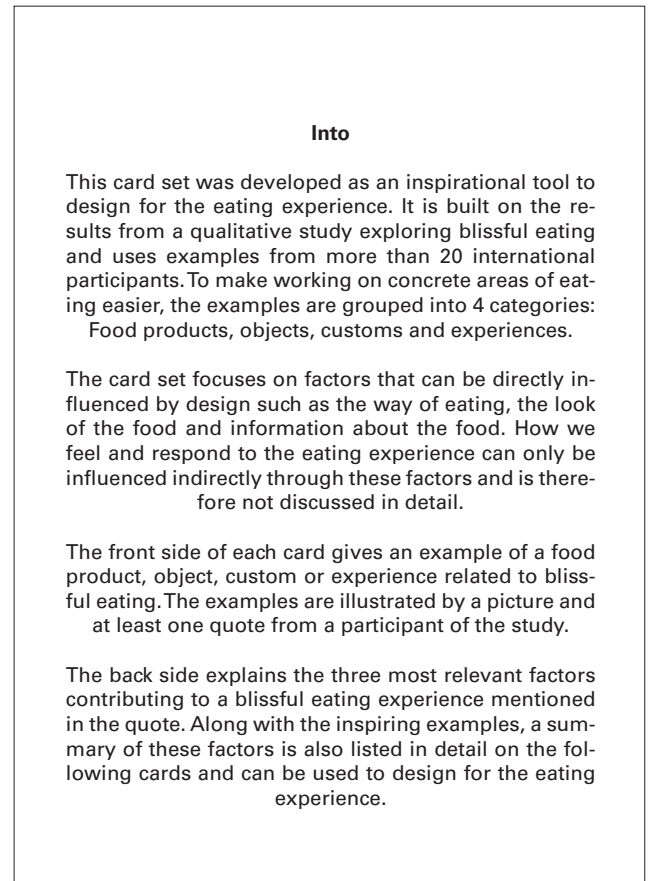
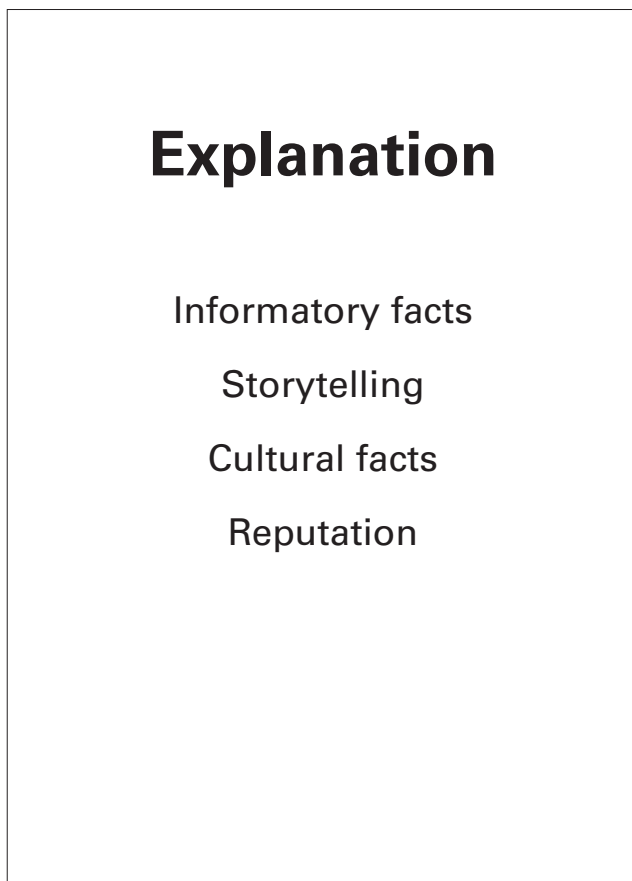


Figure 3.19: Card set, factor card (front and back)



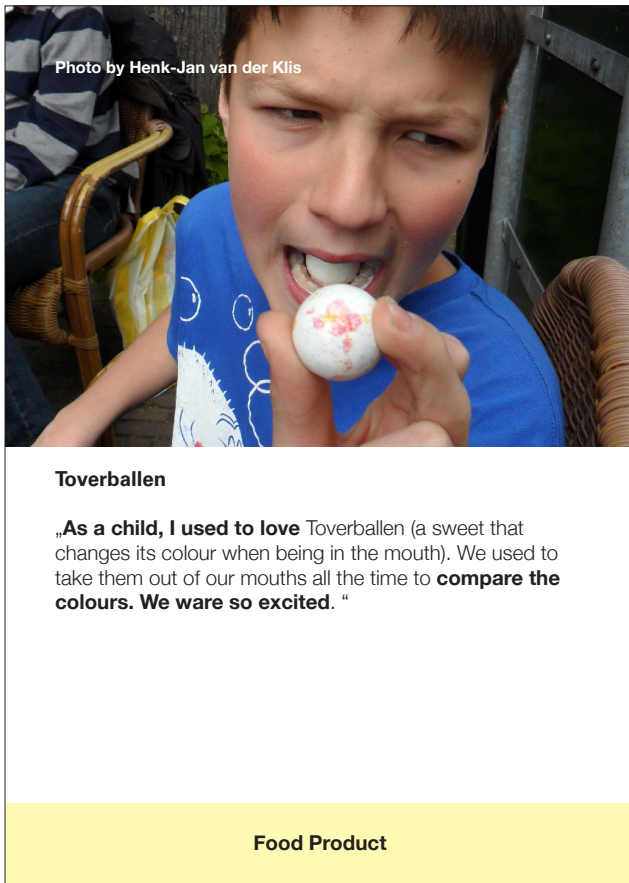


Figure 3.20: Card set, food product card (front and back)

Figure 3.21: Card set, object card (front and back)

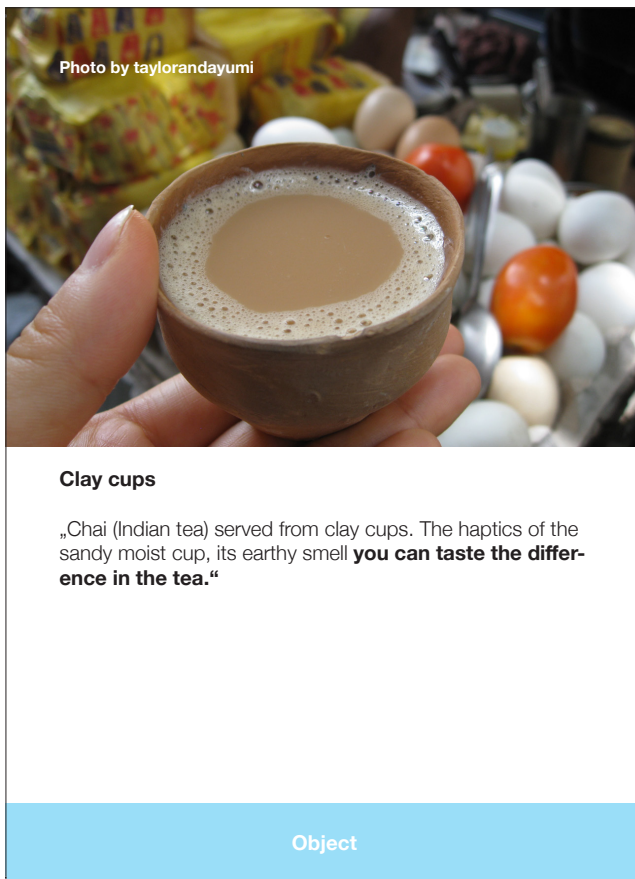
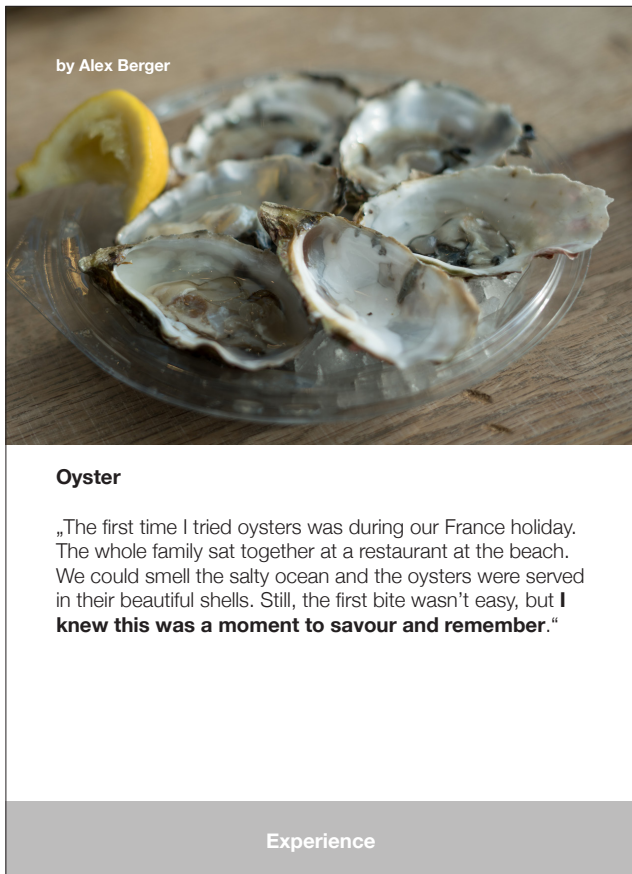




Figure 3.22: Card set, custom card (front and back)

Figure 3.23: Card set, experience card (front and back)

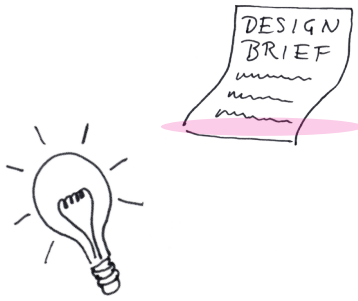


4 DESIGN

The literature review showed that the eating experience in high-class restaurants has already been thoroughly designed contrary to the home eating experience. However, most of the reported eating experiences took place in the home setting which shows that designing for bliss in the home eating context holds rich potential. Furthermore, it became evident that savouring is an important and effective strategy to support blissful eating. Thereof, the design goal of assisting people in savouring their home eating experience to enable bliss in eating was derived.

Ideation and prototyping workshops led to 18 possible concepts. From these, the concepts that seemed the most promising were combined and resulted in 3 savouring interventions. They were subsequently prototyped and tested in an iterative process. The selection comprises the mindful spoon, the sharing plate and the travelling tin. The design goal as well as the developed concepts will be explained in depth in the following chapter.

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4.1. Design challenge

4.1.1 Context

4.1.2 Design goal

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4.2 Ideation and prototyping

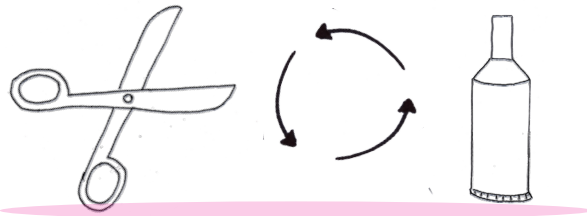
4.2.1 Participants ideation

4.2.2 Methods ideation

4.2.3 Participants prototyping

4.2.4 Methods prototyping

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4.3 Design concepts

4.3.1 Eating with guests

4.3.2 Exploring and sharing food culture

4.3.3 Mindful eating

4.3.4 Ways of presenting food

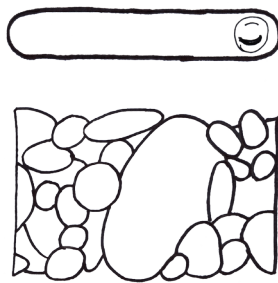
4.3.5 Growing food

4.3.6 Sensory enhancement

4.3.7 Market research

4.3.8 Learnings from rapid prototyping

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4.4 Collection of savouring interventions

4.4.1 Savouring strategies

4.4.2 Description of concepts

4.4.3 Bliss factors in the concepts

4.4.4 Iterations mindful spoon

4.4.5 Iterations sharing plate

4.4.6 Iterations travelling tin

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4.5. Final concepts

4.5.1 Mindful spoon

4.5.2 Sharing plate

4.5.3 Traveling tin

4.1 Design challenge



For the design phase, I want to optimally use the insights and tools from multiple contexts I have gathered during the research phase to assist people in savouring their home eating experiences.

4.1.1 Context

The research showed that pleasurable eating out experiences, especially in fine dining venues, have already been thoroughly designed by the many involved stakeholders. Most examples of optimised eating experiences can, therefore, be found in restaurants. The in-home eating experience is seldom discussed and even fewer times positive examples are mentioned.

However, the qualitative study showed that most of the reported experiences took place in a home setting and that this context holds rich potential to design blissful eating experiences. At the same time, it also offers potential for a positive behaviour change as eating at home constitutes the majority of eating experiences for most people. Therefore, in the design phase of this project, I want to design for the “eating in” or eating at home experience.

The qualitative analysis revealed that many people reported strategies to savour food (anticipation, being in the moment and reminiscing) as contributing to blissful eating. As savouring is interconnected with all stimuli, it can increase their perception and lead to a more blissful eating experience. Thus, the design project will focus on savouring strategies to create blissful eating.

4.1.2 Design goal

From the previous exploration, the following design goal is derived:

I would like people to have a blissful experience by assisting them in savouring their home eating experience.

Requirements

Food focus and novelty

The product or service which will be designed has to have a food focus and be a novelty.

Wish

Sustainability (social, environmental, economic)

The product or service should be sustainable. This includes eating behaviour that is good for the own health and a positive body image, environmentally and ethically positive and sustainable.

Subtlety

Furthermore, it is desirable that the product or service is a very subtle intervention in the form of an everyday object rather than an instructor or explanation to ensure a broader user group.

MIM

Maximum effort should be reached by minimal means.

4.2 Ideation and prototyping



In order to design for the previously developed goal, two ideation workshops were held with the aim of including the different perspectives and creativity of other people as an inspiration. After the ideation phase, two prototyping workshops were held to elaborate 10 of the concepts from the ideation phase further and to include different perspectives as inspiration.

Additionally, insights gained from research were used as stimuli for the participants during the ideation workshops. The set of stimuli comprised the following elements:

- a map of objects in the eating experience (s. figure 4.1) to show the variety of design opportunities

4.2.1 Participants ideation

The workshops were conducted with design students as well as professionals and researchers from different fields. Additionally, the participants came from different cultural backgrounds. The first workshop was joined by four participants from Turkey, Mexico, Iran and the Netherlands. In the second workshop six people from Germany, China, Iran, Japan, USA and India participated.

4.2.2 Methods ideation

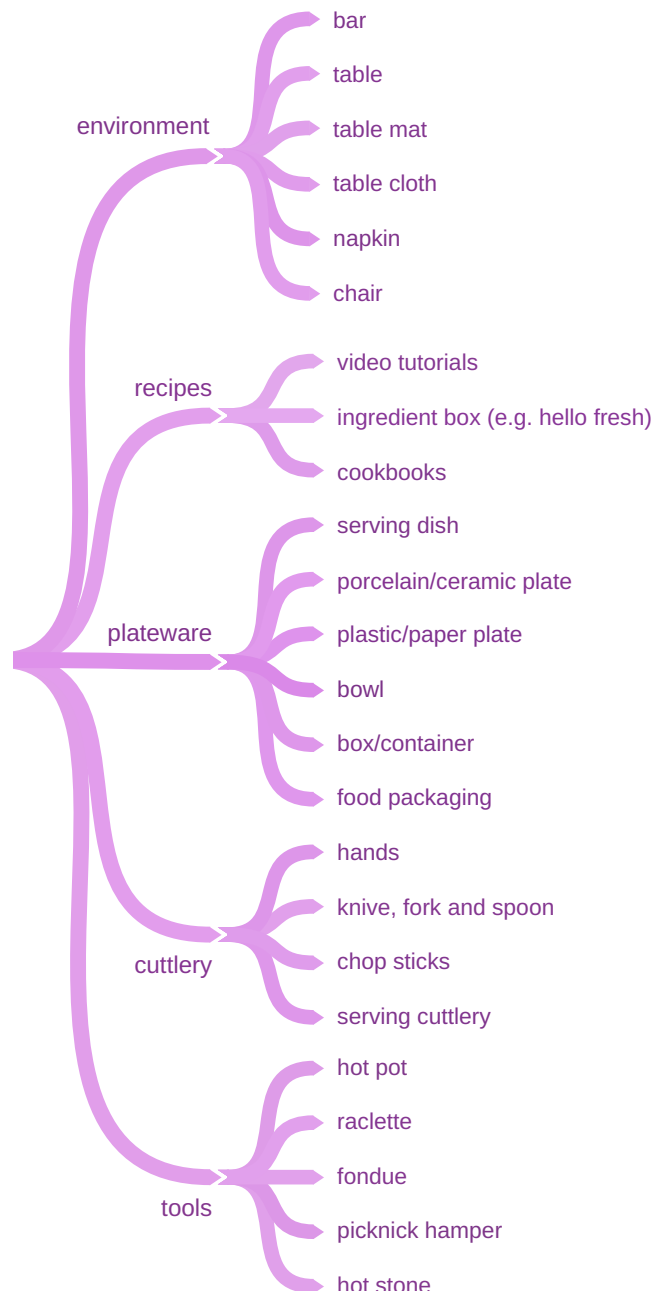
The workshop began with a short introduction into the brief and the research results. Later two ideation methods (brain writing and negative ideas) were used along with the previously developed card set (see figure 3.18 and following). The methods and the card set will be explained in detail in the following:

Negative ideas: Participants are asked to come up with the worst possible solutions to the brief. These ideas are then reversed into positive ideas in order to find innovative solutions.

Brainwriting: Sheets of paper containing sticky notes are passed from participant to participant clockwise. Each participant writes an idea on one sticky note to start out with. Once the sheet is passed, participants can iterate on the idea that is already on the sheet and write it down on the next sticky note or come up with a new one.

Blissful eating card set: The card set functioned as an inspirational tool to generate ideas by looking through the customs, objects and experiences (the group of food product cards was not used since it was not the aim to create a food product). Later the stimuli factors on the back of the cards were used to come up with ideas.

Figure 4.1: Objects in the eating experience



- a collection of different eating scenarios to encourage participants to develop diverse ideas for different contexts:

Eating alone, eating with a partner, eating with a friend, eating with multiple friends, eating with family

- a list of happiness enhancing strategies related to the eating experience:

Replaying and savouring life's joys
 Practicing acts of kindness
 Nurturing Relationships
 Taking care of your body

- a collection of savouring strategies to give an inspiration:

Sharing with others
 Memory building
 Sensory-perceptual sharpening
 Counting blessings

In the end, participants were asked to cluster the ideas and choose a cluster which in their opinion had the highest potential to enable bliss in the eating experience. In groups of two, the participants turned these clusters into more concrete concepts.



Figure 4.2 & 4.3: Impressions from the first and second ideation workshop (image with permission of all participants)



The ideation workshops were followed by a thorough investigation of all produced materials. The ideas were sorted according to their fit with the brief and the requirements, clustered and made into concepts. This was completed by an additional individual ideation based on the factors found in the previous research phase. In total, the ideation phase delivered 18 suitable concepts which will be shown in the next chapter.

4.2.3 Participants prototyping

Similarly to the ideation workshop, the workshops were held with design students, professionals and researchers from different fields and cultural backgrounds in order to enrich the prototyping process. In total 7 people from Turkey, Germany, USA, Mexico, China, Japan and Taiwan participated.



4.2.4 Methods prototyping

After the ideation phase, 18 concepts were found that fit the design goal. From these 18 concepts, the 10 most promising ones were chosen to be elaborated further in two prototyping workshops. Criteria for the selection comprised the implementation of savouring and happiness enhancing strategies as well as the number of stimuli addressed by the concepts.

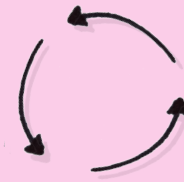
A short description of each concept along with some inspiring materials, such as pictures of similar products or interactions were provided. The participants were encouraged to pick concepts they believed in and wanted to work on and concretise and prototype them.

After elaborating a concept and finishing a prototype the person working on it presented it to the group which gave feedback and suggestions for improvement. Some of the concepts were reworked by other group members. The concepts will be shown in the next chapter.

Figure 4.4: Impressions from the prototyping workshops (image with permission of all participants)



4.3 Design concepts



The following section presents the 18 concepts which were developed during the ideation and prototyping workshops as well as individual ideation and fitted the design goal. The concepts were grouped by the topics eating with guests, exploring and sharing food culture, mindful eating, ways of presenting food, growing food and sensory enhancement. Underneath the concepts the factors that can contribute to a blissful eating experience, possible happiness enhancing strategies and savouring strategies (underlined pink) are listed.

4.3.1 Eating with guests

Perfect host

People hosting often do not know how much to cook because guests tend to eat more than usual if they like the food (probably because they see this as the only chance to eat that food). Within the concept of the perfect host, the inviting person cooks the double amount of the regular portion and lets the guests know that the rest of the food will be packed for every guest. At the same time, this will make dinner memorable as the guests will reminisce with leftovers.

- Social aspects (food as a way of giving)
- Newness (rare/expensive food)
- Surprise (planned surprise)
- Look (arrangement of the food, plateware)
- Replaying and savouring (memory building)

Figure 4.5: Perfect host



Origami food gift box

When guests are invited, often times too much food is prepared. In order to give guests leftovers in a nice way (like taking home a piece of wedding cake), an origami packaging that can be personalised with a message is provided. The packaging could also function as a table decoration before its usage.

- Social aspects (food as a way of giving, sharing food)
- Newness (rare/expensive food)
- Surprise (planned surprise)
- Look (arrangement of the food, plateware)
- Replaying and savouring (memory building)

Figure 4.6: Origami food gift box



4.3.2 Exploring and sharing food culture

Culture Pack

The concept consists of a package filled with objects that contribute to savouring the eating experience in different countries. Each object contains an explanation of how it is used and how it helps savouring food. Alternatively, one object could be added to a HELLO FRESH box with fitting ingredients.

Newness (unknown food/element)
Preparation (cooking food)
Explanation (cultural facts, storytelling)
Way of eating (utensils)

MAYA cookbook

Exploring new food often leads to blissful eating experiences. At the same time, it is difficult and takes some courage to get to know a new cuisine. Therefore, this cookbook makes use of the MAYA (Most advanced yet acceptable) principle to introduce dishes that use the same basis but interpret it differently depending on the country. E.g. pasta variations of 10 different countries, pizza variations of 10 different countries, bread variations of 10 different countries.

Newness (unknown food/element)
Preparation (cooking food)
Explanation (cultural facts, storytelling)

Food show + take away

The concept combines a food show (e.g. Netflix cooking series) with special dinners that are delivered to the customer at the time of the show. The food show explains/talks about the specific dish. This is a combination of people's urge to watch TV when eating alone and bringing focus onto the food.

Explanation (storytelling, cultural facts)
Preparation (watching preparation)
Newness (unknown food/elements)

World map

Option 1: Rub free the countries of which you have tried the food, each country smells different once rubbed free (Iran -> saffron etc.).
Option 2: Vacuum-sealed herb cookie in the shape of each country (Iran -> saffron etc.).
Option 3: Each country contains a country-related herb or vegetable seed.
Option 4: Each country contains facts/recipes typical for the area.

Smell (additional smell)
Explanation (cultural element, storytelling)
Newness (unknown food/element)
Replaying and savouring (memory building)

Cultural food box

A box is filled with food and given to a person who has to pass it on to a different person. The box contains a ribbon that explains the dish and background story as well as the process of passing it on.

Explanation (cultural element, storytelling)
Social aspects (food as a way of giving, food as a facilitator, sharing food)
Newness (unknown food/element)
Surprise (planned surprise)
Replaying and savouring (memory building)
Practicing acts of kindness
Nurturing relationships

Figure 4.7: Cultural food box



4.3.3 Mindful eating

Spotlight dinner

When eating, the attention rarely stays on the food. In an otherwise dark room, the food will be illuminated through a reading light clipped to the plate or a desk light focussed on the plate. This might help to focus on the food more than the surroundings.

Way of eating (focus)
Replaying and savouring
(Sensory-perceptual sharpening)

Figure 4.8: Spotlight dinner



Magnifying plate or cutlery

A small magnifying glass is integrated into the plate or clipped on the side of the plate. It encourages an “eye for the detail” and “focus” on the food in a fun way.

Way of eating (focus)
Newness (unknown food/element)
Explanation (informatory facts)
Look (shape of the food)
Replaying and savouring
(Sensory-perceptual sharpening)
Taking care of your body

Figure 4.9: Magnifying plate



Fortune cookies

The concept of fortune cookies can be used to give recipes from different countries in differently coloured/packages or give eating “tasks” or “instructions” on how to enjoy food more.

Explanation (storytelling)
Surprise (planned surprising element)
Newness (creative/experimental food)
Replaying and savouring

Orange meditation

Instructions on how to eat an orange mindfully: Peeling is a lot of effort and often feels like a chore. It takes time, creates a lot of smell and has the potential to create anticipation. Inside the orange, there is a lot to be explored visually.

Way of eating (focus, speed)
Healthiness (good quality, fresh)
Smell (food smell)
Sound (in mouth)
Feel (haptics, mouth feel, intensity)
Look (colour of the food)
Replaying and savouring
(Sensory-perceptual sharpening)
Taking care of your body

Mindful napkin

A napkin, table mat or plate that contains questions and encourages the eater to notice the details in their food, talk about them and make compliments. This could be combined with a nicely folded/origami napkin.

Way of eating (focus)
Social aspects (food as a facilitator)
Newness (unknown food/element)
Practicing acts of kindness
Replaying and savouring (counting blessings)

Figure 4.10: Mindful napkin



4.3.4 Ways of presenting food

Art Plate

A plate that helps people make their food look like art when serving it. This could also be combined with making leftovers look nice.

Look (arrangement, serving of the dish)

Serving tablecloth

The product consists of a tablecloth to directly serve the food on. It includes an edible pen and a book with inspiring ideas on how to serve (cultural ideas, storytelling). It can be used to entertain guests or share food with your partner.

Feel (haptics)

Newness (unknown food/element, creative food)

Social aspects (food as a facilitator, sharing food)

Atmosphere (casual setting)

Preparation (personalising food)

Explanation (storytelling)

Way of eating (use of utensils)

Look (arrangement, serving of the dish)

Replaying and savouring (sharing with others)

Figure 4.11: Serving tablecloth



Gratitude Plate

The plate contains a small elevated area for the food we should be particularly grateful for and (maybe) not eat too much of. The area only provides space for a little portion of e.g. meat, cream, chocolate etc. and raises attention on their value.

Way of eating (focus)

Healthiness (balanced)

Newness (rare/expensive food)

Replaying and savouring (counting blessings)

Figure 4.12: Gratitude plate



Couple plate

A plate that encourages eating from the same plate with a partner. It supports the eaters to learn from the experience of sharing food for their relationship. (Could be combined with the serving tablecloth.)

Social aspects (sharing food)

Nurturing relationships

Replaying and savouring (sharing with others)

Figure 4.13: Couple plate



4.3.5 Growing food

Food pet

A kit that enables growing, maintaining and eating a food or drink (like a kombucha or water kefir). This can be done together with a partner as a couple's activity. The food/drink can be remixed into different variations several times. Also, the final product can be given to friends, recommendations can be exchanged or parts of the kombucha/kefir itself can be passed on.

Social aspects (food as a way of giving)
Newness (creative/experimental food, unknown food, combination of elements)
Preparation (growing, harvesting, cooking, personalising food, watching preparation)
Healthiness (homemade, fresh)
Explanation (storytelling)
Practicing acts of kindness
Nurturing relationships

Figure 4.14: Food pet



4.3.6 Sensory enhancement

Aroma lamp

Different aromas that can accompany food: Sea breeze (for any seafood), barbecue or smoke (to enhance meat as well as fried vegetables), lemon, truffle or saffron (for vegetables or pasta), caramel, cotton candy or vanilla (for desserts). This can help to simulate expensive ingredients as well as add a special smell.

Smell (additional smell)
Atmosphere
Replaying and savouring
(Sensory-perceptual sharpening)

Figure 4.15: Aroma Lamp



4.3.7 Market research

In order to gather further inspiration and avoid elaborating concepts that already exist, a short market research was conducted. For the following concepts, similar ideas or inspirations or were found:

Gratitude Plate

(www.bernardaud150.com/pruneetjr)

The plate with the title “Je the mangerais dans la main” by Prune Nourry et Jr shows folded hands forming a coup to hold food or drink (see figure 4.16). This can be seen as a gesture of gratitude which can inspire the eater to think twice about what is being served. As there is already a good solution for the gratitude plate on the market, the concept will not be followed up.

World map

(www.luckies.co.uk/product/gourmet-scratch-map)

This poster presents a map of Europe with typographic representations of each country’s most famous dishes. The idea is to explore as many of them as possible and scratch free the dishes that have been tried in order to create a colourful map. This concept can lead to the creation of strong memories through eating unknown dishes which can be extended by reminiscing with the sight of the map and the names of all the dishes. As this idea is very similar to the concept “world map” from ideation and prototyping, it will no longer be pursued.

Magnifying spoon

(www.objectsolutions.net/objects/contaminants-outside-home/magnifying-spoon)

The concept of a magnifying spoon has previously been exhibited by the designer Ernesto D Morales. However, the spoon does not serve the aim of savouring but is designed as a tool to find contaminations in food. This critical design project was part of a series of absurd products by Ernesto D Morales for his fictional company Object Solutions. The spoon is made from a round glass taken from optical glasses with a handle attached to it. Thereby it closely resembles the shape of a spoon and does not offer a high magnification. As the developed concept of the magnifying spoon and the object developed by Ernesto D Morales have completely different goals, it is still pursued.



Figure 4.16: Gratitude plate

A further inspiring concept using storytelling was found at a German milk company. Since it mainly focusses on buying organic products it was not within the scope of the project but still can give positive inspiration.

Cow godparenthood

(www.kuhpatenschaft.de)

On this website provided by Andechser Natur, an organic milk producer, people can buy a godparenthood for an organically held cow. The cow can be handpicked from a series of pictures and descriptions and status updates as well as milk products will be sent depending on the extent of the paid sum. This concept supports both, a closer connection and awareness of food as well as organic farming.

4.3.8 Learnings from rapid prototyping

This chapter presents the learnings from the first rapid prototypes which were evaluated in user tests. Prototypes were built and tested as early as possible in order to learn and gather insights for an iterative design process. Most user tests were videotaped by the participants themselves in order to keep the set up as natural as possible and to not influence their interactions. The evaluation was done with the help of the videos and a later interview with the participants. Not all prototyped concepts were pursued during the further design process but the knowledge gathered from testing served as a valuable source of information for the development of the final concepts.

Serving Tablecloth

The serving tablecloth was tried out with the help of a plastic tablecloth on which food can directly be served. It seemed that some participants had a hard time sharing food as it seems counterintuitive for them. The test also revealed that people from different cultures have different eating habits: e.g. people with European background tend to take a big piece from the food, place it in front of them and eat it; people from Chinese background tend to take small individual bites from the common food. Also, people have difficulties arranging the food in a completely free space. Generally, eating without plates and serving the food on the entire table worked well though. Participants were impressed and even posted pictures on Instagram.

Figure 4.17: Serving tablecloth



Couple plate

Two barbecue mats were combined to form a couple plate and placed across the table. The test revealed that the concept is difficult to implement when people do not have a table or eating situation which allows that people can sit facing each other. Furthermore, people tend to make individual portions if given the chance. Lastly, a practical problem was that liquid ingredients of the food run between the mats at the seams.

Figure 4.18: Sharing plate



Mindful napkin

The mindful napkin was tested with help of little napkins made from paper containing questions. However, the evaluations showed that cues are only interesting once. Ideally, the design should be able to stay interesting (renew itself) but a question written on a napkin only triggers attention for the first time it is read. Furthermore, gratefulness can and should not be forced.

Spotlight dinner

The spotlight was evaluated with the help of a desk lamp. The test showed that promoting mono-tasking by darkening the environment helps to savour the food. Focusing attention on the food with the spotlight made people reconsider what they were eating (health, quality, sustainability). Also, this trial showed that most of the participants do not invest much effort when preparing food for themselves and eating alone. Often they eat in front of the TV and are not very conscious of what they are eating.

Different spoon interactions

A weighted spoon was tested with a bundle of knives held together by an elastic band (s. figure 4.19) and later also added weights taped to the spoon. It became evident that people were taking more breaks and putting the cutlery down in between bites. This also made them chew their food more thoroughly. As a result, people stated to focus more on their food. However, they also said that it was uncomfortable to eat with the heavy cutlery.

Figure 4.19: Weighted spoon



Figures 4.21: Magnification



Magnification

The interaction of magnification was tested with both, a round magnifying glass held by hand and a magnifying glass attached to a glass (s. figure 4.20 and 4.21). The evaluation showed that the magnification is mainly interesting when eating fresh food or food with an interesting structure. Furthermore, it is difficult to combine the right focal point with the right curvature of the magnifying glass and not all lens shapes are possible to use.

Figure 4.20: Magnification



Orange meditation

For trying out the orange meditation, the participants were given an orange and a written instruction for the meditation. The first insight was that most participants were very hesitant to read and or follow the instructions. The insights from the participants who did try out the prototype revealed that some people find it hard to find familiar food exciting or rediscover it. However, focussing on the food makes people eat slower and more mindfully, notice more details and care more about the quality of the food. As a result, they are willing to invest more time, effort and money into quality.

Furthermore, people are more aware of flavour and smell of the orange and focusing on the food makes people more content (and full) with what they have eaten. Additionally, taking time to eat food can also generate positive "me time" and cause general relaxation. Also, the test showed that spending time with the food and waiting a while before eating it, creates anticipation. The conscious and mindful eating has the potential to spark memories of past food experience which are very powerful in creating positive responses. Sharing a piece of orange at the end is a nice gesture.

Negative points which were mentioned by the test candidates were that written instructions do not work well (they feel like a chore) and that a single, one-time exercise does not have much effect on eating behaviour.

Memorable food gifts

Research on the exchange of food from different cultures was conducted in the form of self-tests. For this, German food in a box was given to friends from different nationalities (India, Turkey, China, Iran, Mexico) as an act of kindness. When handing over the box, a personal story about the relation to the food was told. Although not requested, two of the five friends gave back the box filled with food from their home country during the following week. The Turkish person even said that it was seen as impolite in her culture to give back an empty box.

4.4 Collection of savouring interventions



Considering the learnings from the user tests, the concepts that seemed most promising were combined and resulted in three savouring interventions. The selection comprises three concepts that each use a different positive psychology savouring strategy.

The three concepts are the mindful spoon, the sharing plate and the travelling tin. All concepts will be explained in detail in this chapter.

In order to illustrate the variety of findings, it was decided to make a collection of three objects. Since there are so many different factors contributing to blissful eating experiences, it is difficult to combine them all in one object. Also, such an object would not be able to achieve maximum effect with minimal means and therefore could not be available for a broad audience. However, the aim was to add to eating experiences with minimal means and make my designs available to a broad audience. Therefore a collection of objects for different scenarios such as eating alone, eating with a partner and sharing food with others was developed. All three concepts focus on a different savouring strategy.

4.4.1 Savouring strategies

Bryant and Veroff (2007) name the following savouring strategies in their book „Savouring: A new model of positive experience“:

- Memory building (“e.g. actively storing images for future recall by taking ‘mental photographs’, thinking of or reminiscing about the event later with others”)
- Sensory perceptual sharpening (“e.g. intensifying pleasure by focusing on certain stimuli in the situation and blocking out others, trying to sharpen one’s senses through effortful concentration”)
- Capitalizing (e.g. sharing with others)

While the concept of the mindful spoon uses the strategy of sensory perceptual sharpening, the travelling tin aims at memory building and the sharing plate encourages sharing with others.

4.4.2 Description of concepts

Mindful spoon

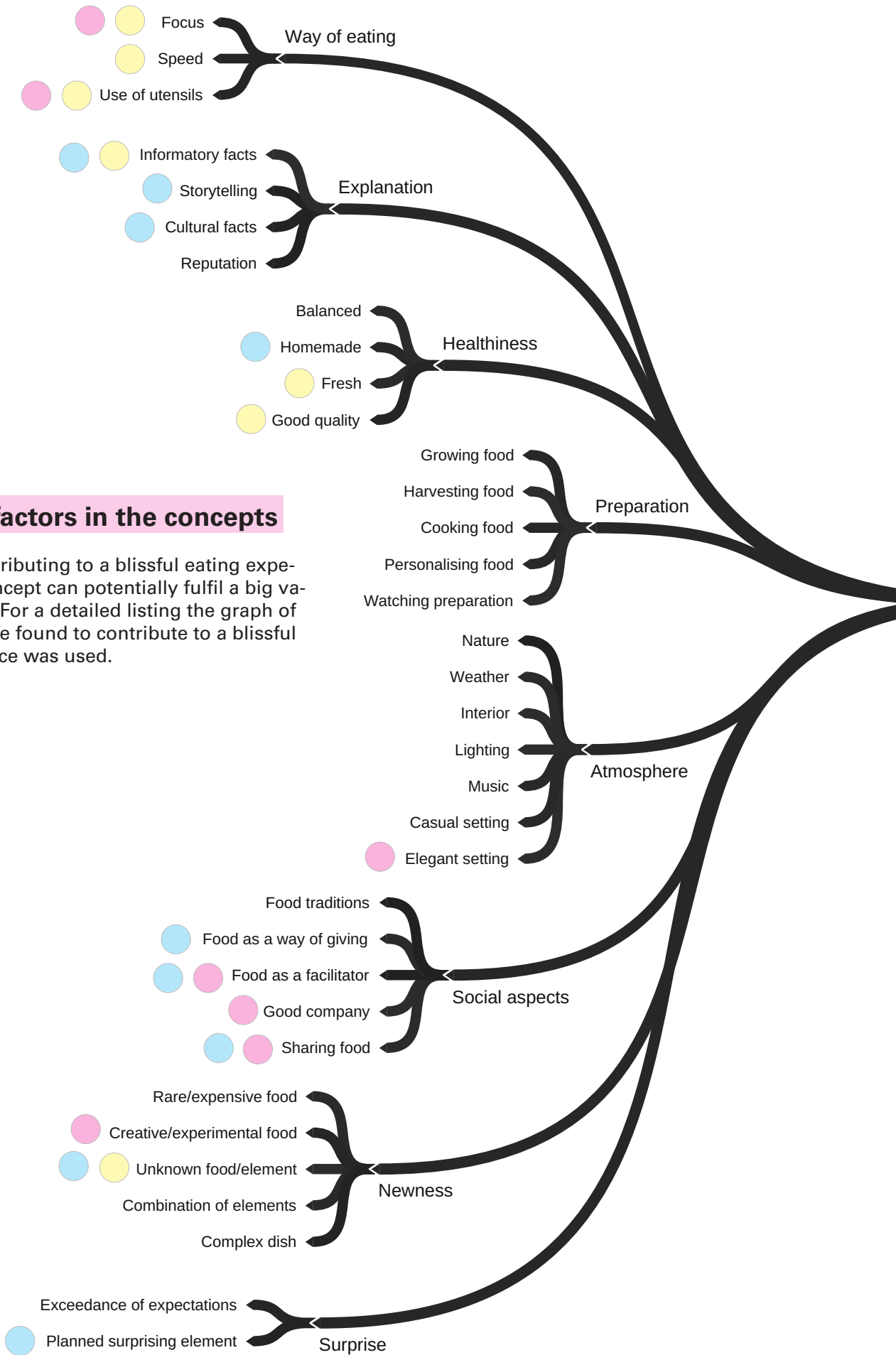
The first concept targets people eating alone. It is a spoon, shaped and held in a special way to draw attention to the usually automated process of eating. The integrated lens magnifies food. Seeing details that are otherwise only known from macro photography brings magic into eating. This can help to rediscover a positive relationship with food and draws a closer look at what exactly is on the plate and its quality.

Sharing plate

The second concept focuses on couples eating together. It is a uniquely shaped plate that inspires people to serve their food in a creative way that promotes sharing and eating from the same plate. Additionally, it connects the couple in a physical way and requires collaboration. This encourages teamwork and conversations that support the relationship in day-to-day life.

Travelling tin

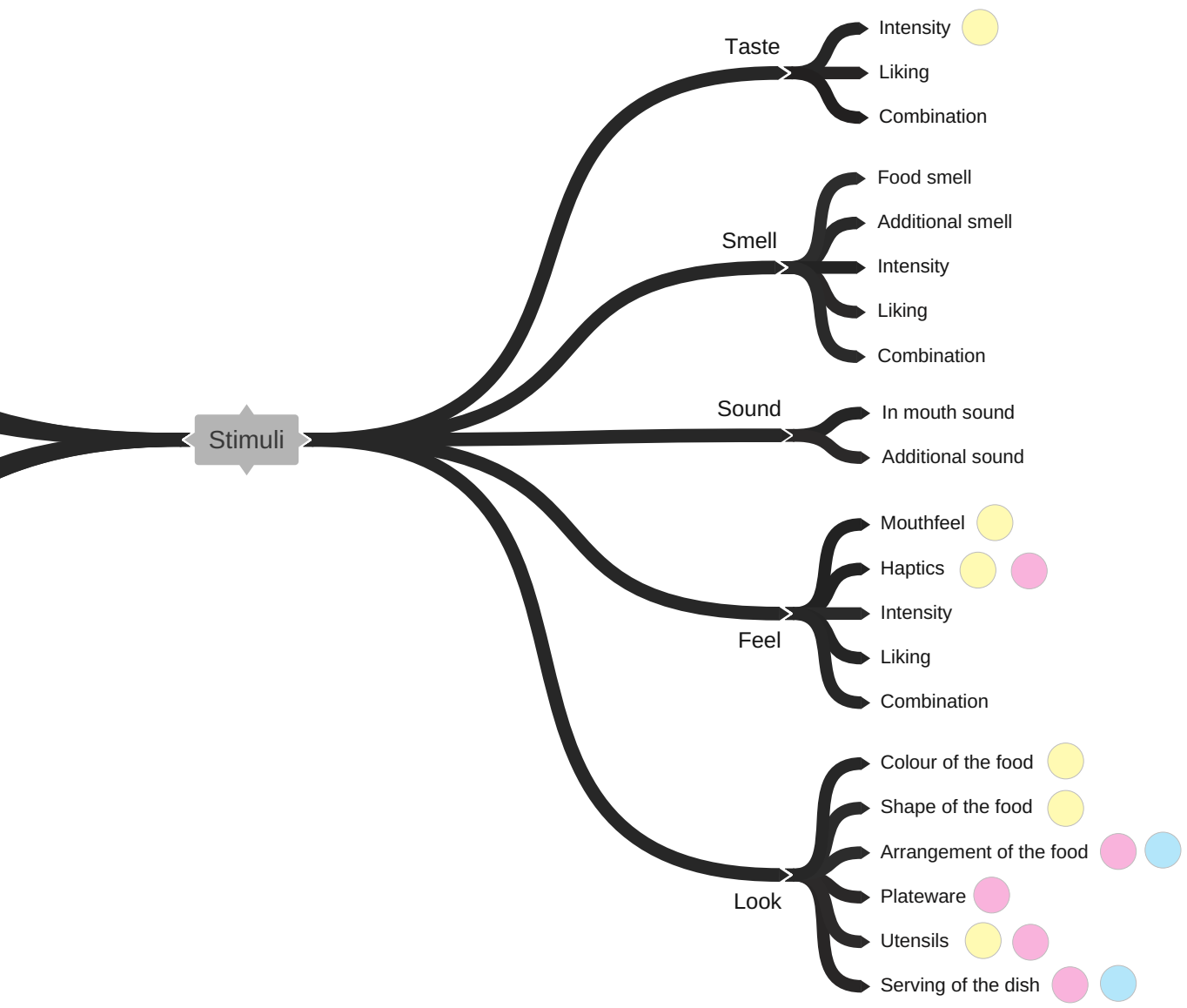
The travelling tin is for sharing with others. It is a box that can be filled with homemade food and passed on to a person with a different cultural background. The origin of the food can be shown on a map. The marks make the journey of the box visible over time and encourage passing it on to someone new. Additionally, information about the food can be added online through a QR code. This connects people with different cultural backgrounds and encourages random acts of kindness.



4.4.3 Bliss factors in the concepts

In terms of contributing to a blissful eating experience, each concept can potentially fulfil a big variety of factors. For a detailed listing the graph of factors that were found to contribute to a blissful eating experience was used.

- **Box**
- **Plate**
- **Spoon**



4.4.4 Iterations mindful spoon

The mindful spoon originated from the concept of the magnifying plate or cutlery (see 4.3.3). Additionally, it connects elements from the following other concepts that hold potential for positive user interactions, helping people savour or causing blissful eating experiences:

Concept "Orange meditation"

The meditation encourages to eat an orange in a mindful way.

Concept "Mindful napkin"

The napkin encourages the eater to notice details of the food.

Concept "Spotlight diner"

The concept helps people keeping the focus on the food.

The first prototype of the magnifying spoon was a lens that was integrated into an existing plastic spoon (figure 4.22) and served to have a closer look at food and explore different food structures.

Figure 4.22: First spoon prototype



In the next step, different spoon shapes were analysed to find out more about existing interactions with the bowl (piece of the spoon that goes into the mouth) as well as the handle (see figure 4.23). The ideal spoon should be balanced to enable an ergonomic way of eating. Therefore, the spoon handle should fit the hand perfectly enabling a nice grip and the spoon bowl should be the right size to feel comfortable in the mouth. This led to the decision to incorporate a small to medium size bowl since the big ones felt uncomfortable in the mouth and discourage mindful eating by putting too much food into the mouth.

Figure 4.23: Different spoon shapes



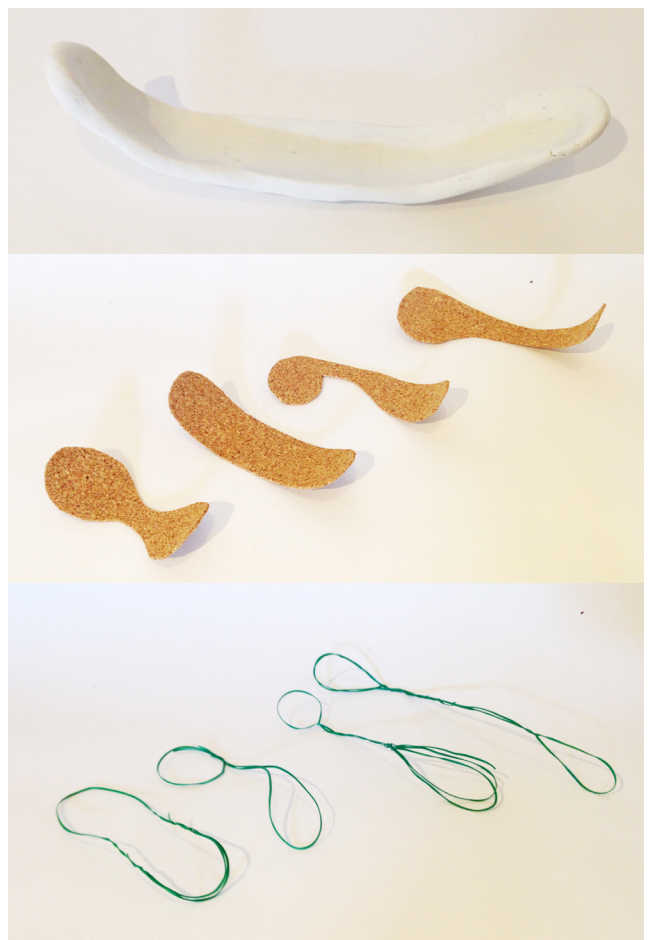
Subsequently, different spoon shapes were tried out (figure 4.25). In the beginning, more classical spoon shapes were taken as a basis (figure 4.24).

Figure 4.24: Spoon prototype classical shape



Shapes different from an existing spoon were hard to prototype as food safety is a major concern and also the mouthfeel of the bowl is a criterium for a positive interaction. Therefore after a few initial prototypes exploring shapes, digital prototypes were made and 3D printed.

Figure 4.25: Prototypes free shapes



The 3D printing material PLA is generally food-safe and could therefore be used for tests with cold food since it melts when the food is too hot.

Figure 4.26: 3D printed spoons, gourmet (flat) and normal bowl



After the first tests with food, it seemed that the spoons were too close to the original shape which bothered participants because the handling was a little different than a normal spoon yet it looked like a normal spoon. Most participants did not want to adapt to this different way of eating. Therefore, it was decided to focus on a freer shape.

Figure 4.27: Interactive prototypes free shapes



Additionally, the focal point of the lens was optimized with the help of prototypes containing lenses. Therefore, different distances between food and eye were tried out. In a distance of 4 to 8cm participants felt comfortable at looking at their food without touching it with the spoon or holding the spoon too close to their food or face.

Figure 4.28: Interaction with lens



Figure 4.29 shows a selection of spoons which were tried out and evaluated in user tests. The spoon shape in the top half of the picture worked best for eating, both in the mouth and hand and also to magnify. It was chosen for further elaboration.

Figure 4.29: Selection of spoon prototypes



To make the experience more multisensory, the mouthfeel was further improved by changing the curvature as well as rounding and thickening the edges. This also allows higher air supply in the mouth while eating which enriches the taste.

Figure 4.30: Modified 3D print with different details

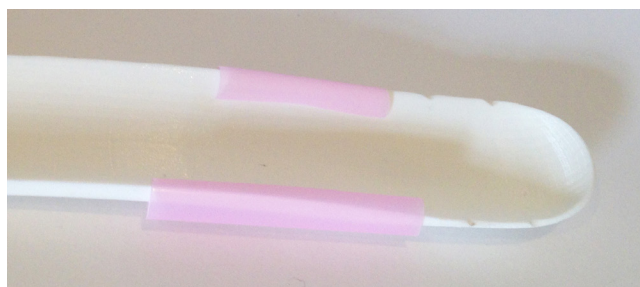
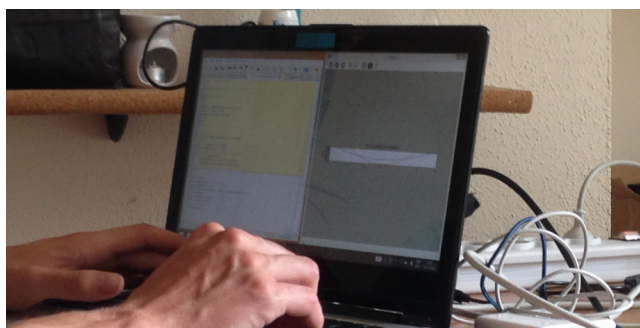


Figure 4.31: Interactive prototypes



In order to optimally incorporate a lens into the spoon, a physician calculated different shapes for the focal point of 6cm. User tests showed that the users felt most comfortable with this focal point (distance between food and spoon).

Figure 4.32: Software written to calculate the ideal lens



It also became evident that it is difficult to combine the right focal point with the right curvature of the magnifying glass and not all lens shapes are possible to use. Therefore, it was decided that the lens should be as big as possible to make the image as clear and magnified as possible. This also meant that the lens would have a thickness of at least 5mm which will influence the thickness of the spoon. Therefore, some prototypes were made from an apple to measure the approximate thickness of the spoon and see if it was still comfortable. Even though the lips are a very sensitive part of the skin, the test showed that lips were not precise at measuring distances since the difference between different apple pieces could not be estimated well. Therefore, it was assumed that the thickness of the spoon did not matter too much if it stayed in a range of 0,5 to 0,8 cm.

Figure 4.33: Apple prototype showing the thickness of the lens



Acrylic glass was chosen as material for the prototype as it will be CNC cut to ensure a functional lens. It was decided to only polish the lens part and leave the rest of the spoon matt to quickly familiarise the user with its function. The final product can easily be made from glass poured into a cast.

Figure 4.34: Rough CNC milled spoon



Lastly, the prototype was sandpapered to create an even shape

Figure 4.35: Final spoon



To create a clear lens the prototype was wetsanded with different grids up to 3000 and polished with acrylic polish.

Figure 4.36: Final spoon with clear lens



4.4.5 Iterations sharing plate

The sharing plate was derived from the concept of the couple plate (see 4.3.4). Additionally, it connects elements from the following other concepts that hold potential for positive user interactions, helping people savour or causing blissful eating experiences:

Concept “Art Plate”

The plate helps people to make their food look appetizing and pretty.

Concept “Gratitude Plate”

An elevated part of the plate shows the value of the positioned ingredients (e.g. meat).

Concept “Serving tablecloth”

The tablecloth offers enough space to serve food in a beautiful and creative way and encourage sharing.

The idea of the couple plate originated from the concept of the serving tablecloth which was described in chapter 4.3.4. The self-test of the concept turned out to be a very memorable and fun event that even made guests share pictures on Instagram (see figure 4.37). However, participants who joined the experience mentioned that they would have no idea how to decorate food nicely. Also preparing the tablecloth for a whole group of four people seemed to be a difficult task for them and would probably prevent them from using it. Summarizing the opinions of participants, the concept seemed to fit better for the restaurant context which it was inspired by than the home context.

Figure 4.37: Serving tablecloth



This brought up the idea of combining the concept with a plate for couples to share food. A prototype in the test setting can be seen in figure 4.38. However, the user tests showed that this concept faced similar problems as the test participants struggled with arranging the food. This made the need for a predefined shape that simplifies arranging food but still encourages sharing evident.

Figure 4.38: Couple plate



Therefore, the concept was further developed and shapes were added to the plate (see figure 4.39). A big defined area in the middle of the plate invites the user to place the main part of the food to be shared. Additionally, smaller defined areas are integrated which are meant to be filled with ingredients like sauces or side dishes. Other decorative elements make the experience haptically more pleasing, especially when eating with the hands.

Figure 4.39: Interactive prototype made out of paper mache



The prototype was tested on a table in a group setting twice. One time for Indian finger food and snacks (see figure 4.40) and one time for Indian curry (see figure 4.41). Due to the early stage of the prototype, it had to be covered with plastic to ensure food safety and not destroy the prototype which was made out of paper mache. The tests showed that the plate did not provide enough space for sauces and other small ingredients. Also, it became evident that the decorative parts without function become irritating when they are too large and the users wondered about the function. One participant was still hesitant at first how to serve but during the process had fun and was happy with the result. Moreover, potential users mentioned that they did not have a suitable and big enough table to place the plate on.

Figure 4.40: Indian finger food served for a group



Figure 4.41: Indian curry served for 3 people



This led to the idea of integrating the table function into the plate. Therefore, the plate can be placed on two people's laps sitting opposite to each other (see figure 4.42). The plate is balanced on the legs which connects the couple. To balance the table, they have to sit down together and get up together which prevents multitasking and starting to eat or finishing at different times. Sharing the food in the middle lets the couple talk about who likes to eat what and how much. This can encourage conversations that can also be useful for the relationship in day-to-day life.

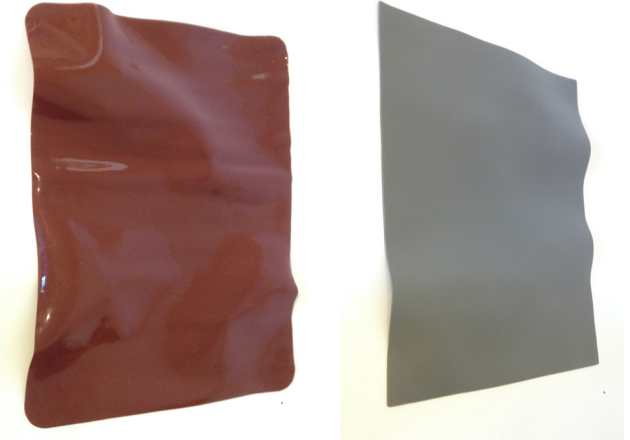
Two further tests were conducted with couples. The test confirmed that the plate had a connecting effect and the couples enjoyed eating on it. They also stated that they had spent more time focusing on the food and talking to each other and less on multitasking than usual.

Figure 4.42: Eating with plate on the laps



For the plate, different materials were considered. As the plate is relatively big (80cm x 50cm), the material had to be lightweight. Therefore, the first option of porcelain was rejected. The second idea was to make the plate from a thin layer of silicone which can be contracted for washing and storing. Due to constraints in stability, look and feel this idea was also aborted.

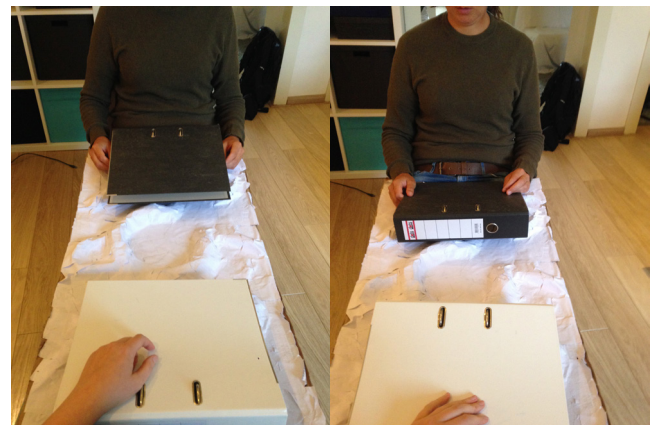
Figure 4.43: Silicone prototypes



Concluding these findings, Corian or Melamine were chosen as final materials. These materials additionally allow to construct the plate of several parts which can be disassembled and allow easier cleaning.

To further determine the shape and height of the plate and how it could be divided into 3 parts of 20-30 cm x 50 cm, which fit into the dishwasher, different slopes were tried out (see figure 4.44). This test showed that the edges facing the user should be as low as possible whereas an elevation might add positively to the middle area.

Figure 4.44: Experiments on the shape of the plate



In order to elaborate the form of the plate further, small models made out of clay and 3D-printed PLA were built (see figure 4.4.5 and 4.4.6).

Figure 4.45 Shape exploration part 1



Because of the plate's size storage turned out to be a problem even during the tests. Even though the final product would be dividable into 3 parts, it was decided to make the plate look like an decorative art work to hang on the wall. At the same time, this also functions as a reminder to use the sharing plate again. Different shapes were tested to find an attractive shape that people would also like to have hanging on their wall. For this purpose, different 3D printed prototypes were evaluated by participants.

Figure 4.46: Shape exploration part 2



With normal plateware, there are two ways of serving food: Serving a decorated portion onto individual plates or serving the elements of the dish separately in bowls from which people take and combine the elements on their own plate. The sharing plate offers a central big space to combine different elements in an appetizing way. This functions as the area where people eat food from. However, instead of transporting the food to individual plates (which the sharing plate does not provide), it is directly eaten from the central big space to encourage sharing. Additionally, the plate offers small bowls around the central area that are meant for side dishes that should not mix with the food such as salad, bread or soja sauce which would normally be served on separate plates or bowls.

Figure 4.47: Final prototypes, CNC milled from two pieces



4.4.6 Iterations travelling tin

The travelling tin originated from the concept of the cultural foodbox (see 4.3.2). Additionally, it combines elements from the following other concepts that showed potential for positive user interactions, helping people savour or causing blissful eating experiences:

Concept “World map”

A world map is used to keep track of the food eaten from different cuisines and encourages memory building.

Concept “Culture Pack”

A cultural explanation accompanies the dish.

Concept “MAYA cookbook”

Recipes from other cultures are shared in a sensitive and unthreatening way.

The first prototype of the cultural food box was built out of an existing food box and a band to wrap around the box. The box is passed from one person to another filled with food. Notes explaining the dish and its origin can be pinned to the band (s. figure 4.48). Additionally, the origin of the dish and a recipe are written in a book which is passed on together with the box.

Figure 4.48: First box prototype



In the next step, it was decided to design a whole box instead of only a band. As the band is relatively small, the concern that the band might get lost and not be passed on to the next person was raised by participants in tests. Therefore, a whole box was designed as a physical reminder to continue the food giving (see figure 4.49). A paper note can be pinned on top of the metallic box with a magnet. Additionally, the origin of the dish and recipes are left in an accompanying book.

Figure 4.49: Metallic box



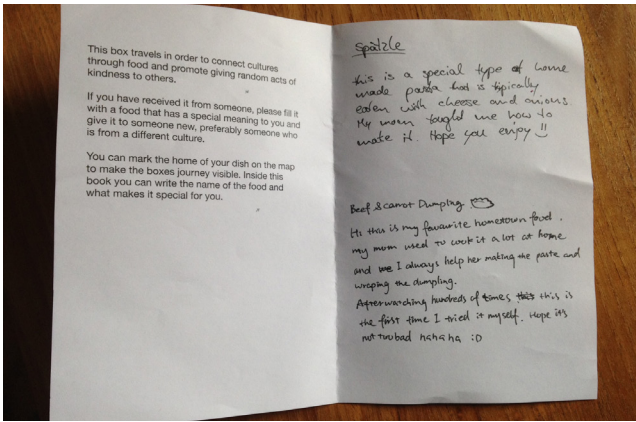
It was pivotal for the box to encourage the user to hand it on to someone from another country. Therefore, different options for leaving a mark on the box or taking a piece of it as a souvenir were prototyped. The ideas reached from fridge magnets as souvenirs to scratching metal to leave rust marks. Since countries and even continents have very different sizes, many ideas were tried out but turned out to be difficult to realize. Magnetic continents (see figure 4.50), very detailed world maps with country borders or a map that eventually disappears through taking metal pieces from it were all unsuccessful.

Figure 4.50: Magnetic continents



Subsequently, the concept of the accompanying book was reworked as it turned out to be uncomfortable for participants. The amount of information people were interested in giving varied greatly. The people who were not motivated to give much information were overwhelmed by the book and did not enjoy the concept anymore.

Figure 4.51: First book prototype

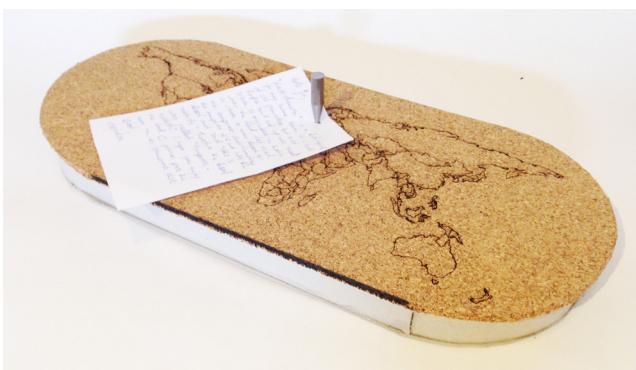


To make the interaction more playful a map was integrated into the lid of the box in exchange. This allows people to mark where their dish comes from. In order to “leave a mark” in the box, cork was chosen as the material for the map in the lid of the box. The outlines of the world map are engraved with the help of a laser cutter.

Figure 4.52: First cork prototype with detailed map



Figure 4.53: Pinning a note to the box



The mark as well as the material itself had to be waterproof. Therefore, earlier tries with pen markers were aborted.

Figure 4.54: A world map which uses both sides of the box to display the map bigger



Finally, a simplified world map was chosen. In a short test, it was made sure that most people would approximately find their home region in a more simplified version of the world map that was better suited to the size of the lunchbox and the technique of laser cutting.

Figure 4.55: Simplified world map



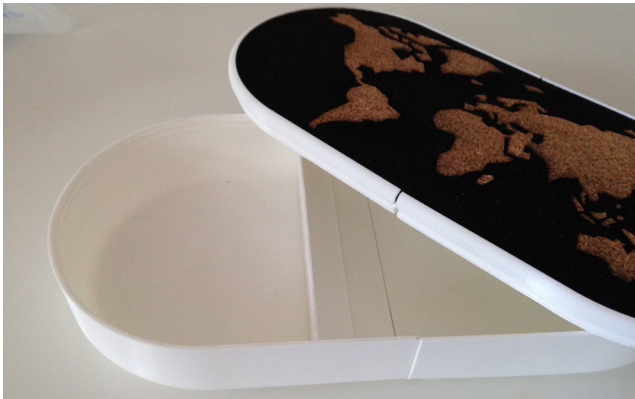
The possible size of the box was examined by altering the size of the world map and testing it with users. The tests showed that a size of 30 x 15 cm was most practical to still be carried easily. Leading to a relatively big lid offering space for the map, the box was designed flat in height (4 cm) to reach a filling volume of around 1,5 litres. The shallow shape allows to spread food out in a nice way and maybe even decorate it without the need for stacking. In total, the shape is longer and shallower than normal lunchboxes which differentiates the box from them.

Figure 4.56: Real size prototype printed in two parts



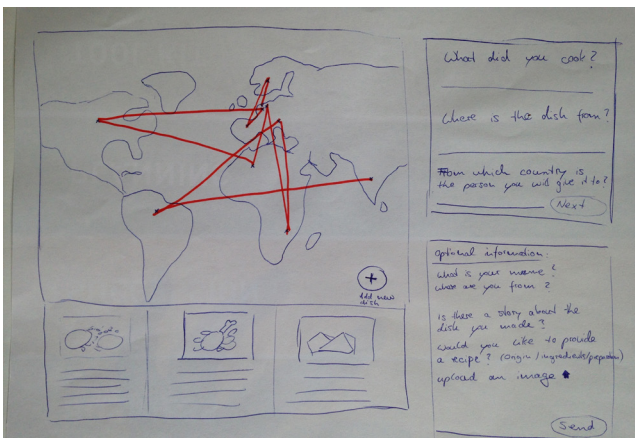
For the bottom of the box brushed stainless steel was chosen as material. Derived from the context of camping tableware, this shows the travelling character of the box. A divider was added to make it easier to serve food nicely and encourage filling the box with more than just one element.

Figure 4.57: Box with food divider



Additionally, a QR-code is added inside the lid which allows leaving a description of the dish and a recipe online (see figure 4.58). The combination of leaving a physical mark and detailing information online on a voluntary basis helps to achieve the boxes travelling goal. It allows people to easily incorporate information such as pictures and recipes online as well as leaving a permanent reminder of the box. On the website, people can follow the journey of the box and get new culinary inspiration as well as remember their own encounter with the box and the dish that was prepared for them.

Figure 4.58: First sketch of the website



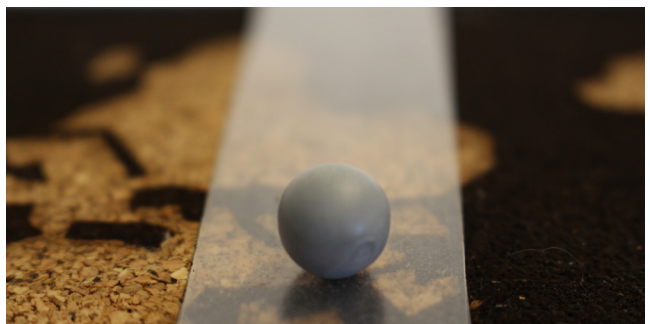
In order to leave a visible mark, it was the goal to create a bigger hole than with a normal pin.

Figure 4.59: Pin inspiration



Different pin options were tried out and eventually, the pin was added into the rubber band that is used to close the box. This will prevent it from getting lost. Since the force required to stick a thick pin into cork is quite high, a round top was added to prevent this action from being uncomfortable.

Figure 4.60: Pin development



4.5 Final concepts

4.5.1 The mindful spoon

Inspiration

The concept of the mindful spoon was inspired by macro food photography. This type of photography depicts details of the food which are not visible to the eye. Seeing the beautiful and interesting forms, structures and details nature has to offer can be very appetizing and draws the focus to the food.

Description of the mindful spoon

Inspired by macro food photography, the mindful spoon was developed from the learnings of the previous design process. The aim of the spoon is to sharpen the sensory perception of the food and to enable savouring.

The user tests showed many people choose a spoon instead of a knife and fork, independent of the type of food when eating alone. The spoon seems easier to handle and more comfortable for them. When closely analysed, it is also the most versatile piece of cutlery. For this reason, the spoon was chosen as initial shape and adapted to the aim of sharpening the sensory perception.

The spoon is shaped and held in a unique way to draw attention to the usually automated process of eating and contains a lens to magnify food and bring magic into eating. The spoon's shape with the integrated lens enables both, eating and magnifying food and was chosen to optimally encompass the lens. Seeing details that are otherwise only known from high budget food-photography in everyday home meals can help to rediscover a positive relationship with food. Since especially fresh food offers many visual details, the spoon also draws a closer look at what exactly is on the plate and its quality. Additionally, the mindful spoon comprises pleasant and interesting haptics as well as mouthfeel. The reels on both edges enable airflow when taking the food off the spoon with the tongue. This can increase the perceived taste intensity of the food.

Figure 4.61: Spoon with lens



Happiness enhancing activities and savouring strategies

The mindful spoon focuses on the happiness enhancing strategies of replaying and savouring life's joys and taking care of your body introduced by Lyubomirski (2007). Savouring is addressed through sensory perceptual sharpening.

Replaying and savouring life's joys (Sensory perceptual sharpening):

The spoon helps to focus on the food and to forget about eating alone or the surroundings. By showing interesting visual details that are otherwise only known from macro food photography, the attention is drawn to the food which enables savouring.

Taking care of your body:

Focusing on the food can lead to thoughts about the impact of the food on the body and encourage people to take care of their body. As fresh fruit and vegetables offer many visual details, they are particularly interesting to be eaten with the magnifying spoon and can shift the attention to this type of foods.

Context

The concept focuses on people eating alone since previous tests showed that many people do not invest much effort when preparing food for themselves. Often they eat in front of the TV and are not very conscious of the eaten food. This is often the case because people feel lonely when eating. Therefore the savouring strategy "sensory perceptual sharpening" is applied to help people savour their eating experience, even when eating alone.

Material

As the lens requires a transparent material, glass and acrylic glass were taken into consideration. These enable the whole spoon to be transparent which was very appreciated in tests as well as the lens to have an integrated, not additional character. Finally, glass was chosen over acrylic glass because of its precious appearance and inherent weight. Research showed that people tend to perceive the food to be better quality (see 2.2.5) when eating with heavy cutlery. The solid and compact shape of the spoon allows it to be produced by pouring glass into a mould without bearing any risk of fragility. This is especially important for the user's perception of a spoon made from glass.

Requirements

- a special shape which requires a different handling than a normal spoon
- a nice and interesting mouthfeel and haptics of the spoon
- heaviness of the spoon in order to enhance the food quality perception
- smaller spoon bowl than usually to make people eat small bites and enable mindful eating
- a shape that allows the integration of a lens with a high magnification level

Figure 4.62: Mindful spoon



4.5.2 Sharing plate

Inspiration

The concept of the sharing plate was inspired by a Facebook post by Khalid Al Ameri, a blogger who writes about Arab culture and relationship advice. In one of his posts he talks about sharing in a relationship:

“A lot of people have asked why do we as Muslim and Arabs sit on the floor when we eat, well for us personally there are two reasons, one is based a lot on our religion and culture, the second is how eating together on the floor, from the same plate, has shaped our relationship. I think the biggest mistake I made when I got married is assuming that life was now about having two of everything. Having two cars to get around the city, ordering two plates whenever we went out to eat or buying two of everything to make sure both of us were happy. At a Majlis one day I heard a beautiful story of an elderly Arab couple who were so in love that they could only eat when they were together and from the same plate. Since hearing that story my wife and I always eat from the same plate and only order one drink to share. What this taught us is the value of sharing in a relationship and how sharing brings two people closer together, here is the story.” (Khalid Al Ameri, 2018)

Description of the sharing plate

Inspired by this part of Arab culture the sharing plate was developed from the learnings of the previous design process. The aim of the plate is to inspire people to serve their food in a nice and creative way that encourages sharing. Therefore it offers enough space to make the food look as pretty as in a high-class restaurant. The plate consists of a whole set of different plates and bowls combined in one object and is flexible for different ways of serving so that people can express their creativity and feel in charge. It provides a suitable surface to serve a variety of different meals. No shape is used twice in order to encourage serving the food in one portion but for two people. This can range from simple one-component dishes like pasta with bolognese via dishes with more components like meat with a side dish and vegetables up to multi-component dishes like burritos with different filling ingredients.

The plate is elevated in the middle and becomes lower towards both sides. This shape creates a friendly and comfortable area of contact between the user and the edges of the plate. Additionally, it elevates the main part of the food and attributes more value to it. When using the plate the couple sits opposite to each other and balances the plate on their legs which connects the couple. To hold the plate in place, the couple has to sit down and get up together which prevents multitasking and

starting to eat or finishing at different times. Additionally, sharing the food from the central plate lets the couple talk about food preferences and quantities. This encourages conversations that can also support relationships in day-to-day life. The plate is made from three elements that fit into the dishwasher. When not in use the plate hangs on the wall as a decorative element which at the same time functions as a reminder to be used.

Figure 4.63: Plate division



Happiness enhancing activities and savouring strategies

The sharing plate supports the happiness enhancing strategies of replaying and savouring life's joys and nurturing relationships introduced by Lyubomirski (2007). Within savouring, the strategy of sharing with others, both in the sense of food as well as feelings, is applied.

Replaying and savouring life's joys (Sharing with others):

The plate assists people in savouring through sharing. When eating with the partner, the plate inspires to not only share the food but also emotions.

Nurturing Relationships:

Sharing food from the same plate is a very intimate act which requires confidence in the relationship. Also, the couple is connected physically and has to get up and sit down together. This can also help to nurture the relationship beyond the experience of eating.

Context

Relationships are an intimate space to share feelings and be supportive towards each other. All too often, this chance is not fully taken advantage of and couples do not talk about the things they have on their minds during dinner but silently keep to their own plate and multitask with their phone.



Figure 4.64: Sharing plate

Material

The plate is made from Corian which is composed of acrylic polymer and alumina trihydrate (ATH), a material derived from bauxite ore. Its most common use is as a countertop/benchttop surface but is a very versatile material with many different application areas. It looks very similar to porcelain but has a functionality similar to plastic.

Requirements

For the design of the sharing plate, the following requirements were determined:

- one big plate in the centre to serve and share food
- at least 5 bowls with different depths to put in extra components such as sauces, dips or bread
- a least one small but deep bowl for liquid sauces (e.g. soja sauce)
- one space for a drinking glass
- no surfaces that could be interpreted as individual plates (no large areas directly in front of people)
- high profile in the centre and low profile on the edges facing the user
- disassembling of plate into parts that fit into the dishwasher (max 35 x 50cm)
- pleasant art piece to hang on the wall when not in use



Figure 4.65 & 4.66: Sharing plate



4.5.3 Travelling Tin

Inspiration

The travelling tin is inspired by the Herman bread, a sourdough starter that is shared and passed on from one person to another. The starter serves as a substitute for baking yeast and can be used to make many kinds of yeast-based bread or frozen for future use. It is similar to the Amish Friendship Bread, for which the ingredients are passed from person to person and which continues to grow as it contains yeast and lactic acid bacteria.

Description of the travelling tin

Inspired by the Herman bread, the travelling tin encourages people to give homemade food from their culture to a person from another cultural background. In order to encourage random acts of kindness and connect as many people as possible, the tin is given to a new person each time it is passed on. Using a pin people can indicate the place where the dish comes from on a cork map in the lid of the travelling tin. The different marks that are caused by the pin make the journey of the tin visible over time and encourage passing it on. Additionally, information about the dish can be added in an online diary using a QR code. Eating a dish for the first time, especially when it is a surprise gift, accompanied by a personal story, can be an exciting and very memorable event. This can contribute to the aim of building memories and enhance reminiscing.

The cuboid shape with rounded edges is inspired by the layout of a world map and visually differentiates the box from others. The long but flat shape allows serving foods of different volumes and cultures up to 1,2 litres in a nice way without stacking. Additionally, the box can be divided into two different compartments with a slider to prevent the mixing of different ingredients.

Happiness enhancing activities and savouring strategies

The travelling tin uses the happiness enhancing strategies of replaying and savouring life's joys, practising acts of kindness and nurturing relationships introduced Lyubomirski (2007). Within savouring, the strategy of memory building is applied.

Replaying and savouring life's joys (Memory building):

The tin helps to build memories by unexpectedly receiving a gift and probably eating a foreign food for the first time accompanied by a personal explanation from a friend. Also, the website helps to keep engaged in the journey of the tin and collect and keep these memories e.g. in the shape of a recipe.

Practising acts of kindness:

Giving the tin filled with food to a person without receiving it back is an altruistic act that can contribute to happiness.

Nurturing Relationships:

The tin inspires people to pass it on to someone with a different cultural background. This nurtures relationships, contributes to the integration of people originating from different backgrounds and raises comprehension for other cultures.

Context

Nowadays, there are many reasons for migration which cause a very mixed population in most cities. Even though societies become more multinational, integration is still difficult. Food is one element that can form a bridge and help overcome this cultural chasm and form bonds between people.

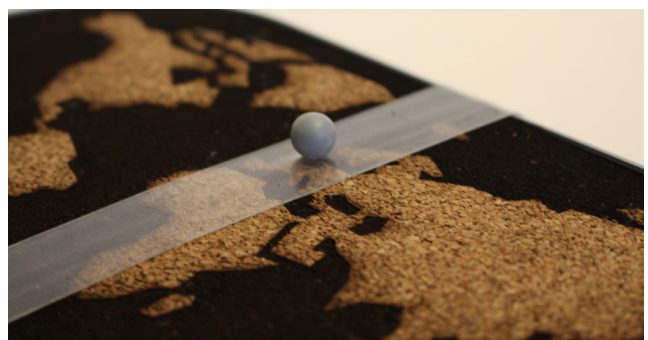
Material

The tin itself is made from stainless steel which is food-safe and durable. It only shows traces of usage after a very long time and stays appetizing across many users and usages. The lid contains a silicon rim which makes it watertight. Additionally, it encompasses an inlay made from a one-centimetre thick layer of cork which is waterproof and washable but also enables the pin to leave visible marks of its journey. The pin is also made from stainless steel and attached to a silicon rubber band that is used to seal the box.

Requirements

- a shape and look that differs from the average boxes
- a shape that allows serving foods of different volumes and cultures in a nice way
- different compartments within the tin that allow storing different ingredients separately and prevent mixing
- washable materials that show the travelling character of the tin
- durable materials that stay intact and nice looking over a long time
- watertight seals that prevent leaking
- inspiration to pass the tin on to the next person

Figure 4.67: Travelling tin, pin



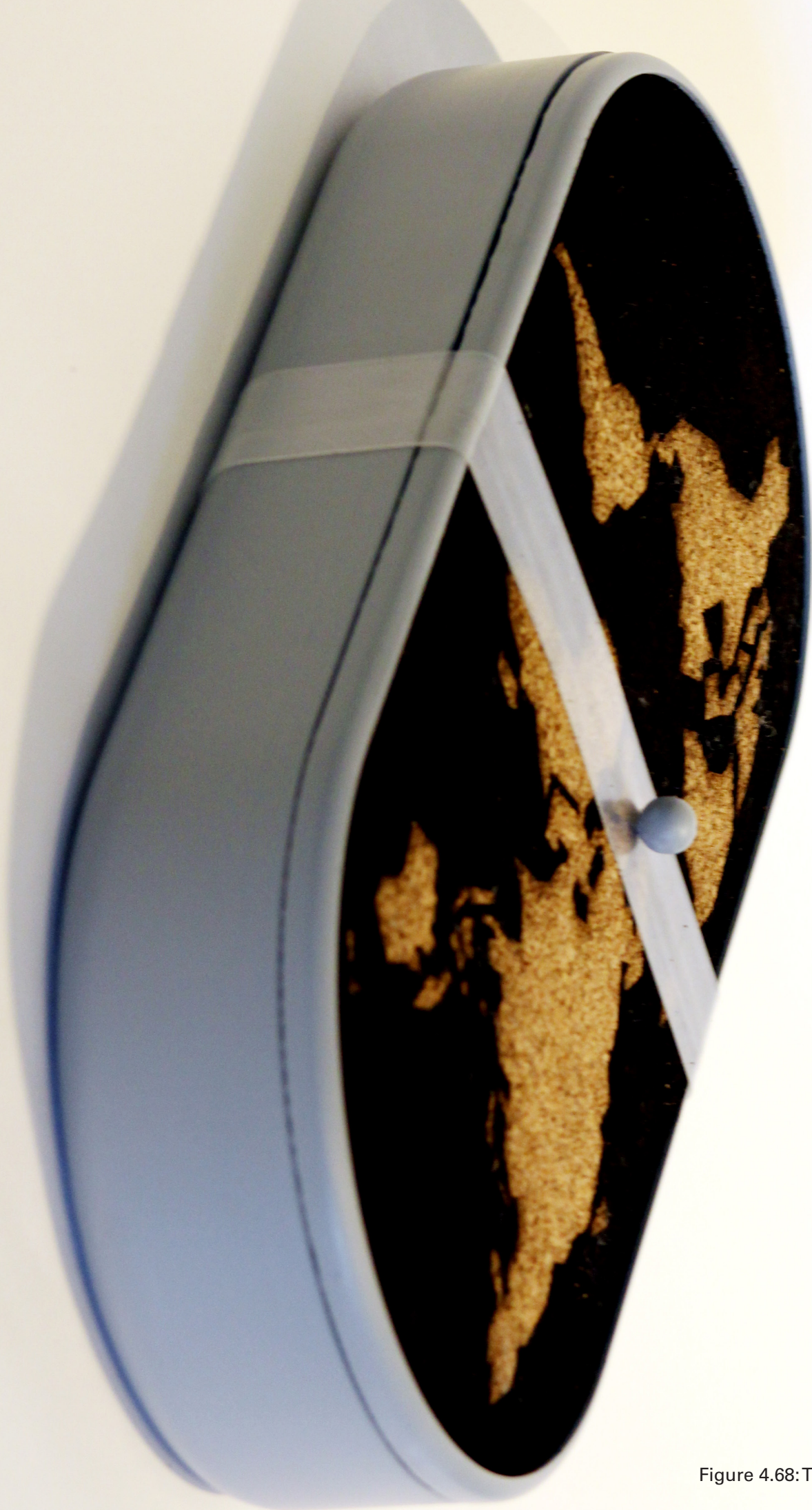


Figure 4.68: Travelling tin



Figure 4.69: Travelling tin

Figure 4.70: Cork map

1. What did you prepare?

2. Where is that dish from?

3. From which country is the person you will give it to?

Optional questions

4. What is your first name?

5. Which city are you from?

6. Is there a story about the dish you prepared?
(origin, preparation, special ingredients, personal significance)

7. Would you like to provide the recipe or a link to a similar one?

8. Upload an image of the dish
Übermittelte Dateien:



Figure 4.71: Input questions website

The following graphics show the website which allows tracing the journey of the box and adding food details like recipes.

Figure 4.72 & 4.73: website "travelling-tin.com"

Fill this tin with a dish that reminds you of home and give it to a friend with a different cultural background!

white pepper chicken
Min, Taiwan
-> the Netherlands

This is a typical dish from my childhood.

Fried rice, chicken and paksoi
Lina, the Netherlands
-> the Netherlands

My mother made these dishes when I was young. The chicken wings deserves a mention: it is cooked and marinated with coke! So it will taste a little bit sweet.

Vegaration quiche
Elise, Arnhem
-> the Netherlands

During a cooking class funded by some dairy union, my mother learned a recipe on quiche. This recipe has become a family classic.

Lentil Balls
Pelin, Istanbul (Turkey)
-> Mexico

This dish is one of the many classics prepared for big gatherings and tea parties.

Lentil Balls
Pelin, Istanbul (Turkey)
-> Mexico

This dish is one of the many classics prepared for big gatherings and tea parties. It is consumed cold, it does not contain any dairy or meat so it's a completely vegan dish containing a lot of spice. Ideally, it's served with lettuce and lemon juice.

<https://www.nefisyemektarifieri.com/kolay-mercimek-koftesi/>

Fill this tin with a dish that reminds you of home and give it to a friend with a different cultural background!

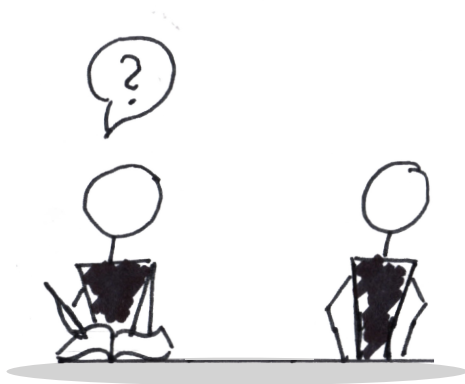
5 Reflection



In the design phase the three concepts of the mindful spoon, the sharing plate and the travelling tin were developed by combining insights and interventions from the ideation and prototyping phase. While the mindful spoon targets the savouring strategy of sensory-perceptual sharpening, the strategy of sharing with other is pursued by the sharing plate and the strategy of memory building is present within the concept of the travelling tin. Following these strategies, all

concepts are supposed to enable blissful eating experiences. The following chapter will examine if these assumptions hold true with the help of user tests. All concepts will be tested with seven participants or couples and their ability to contribute to savouring and blissful eating will be evaluated based on the findings. Additionally, recommendations for further improvement of the prototypes will be derived from the user tests. Finally, the reflection will complement this thesis.

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5.1 Evaluation

- 5.1.1 Interview questions
- 5.1.2 Indicators for bliss
- 5.1.3 Participants evaluation
- 5.1.4 Evaluation mindful spoon
- 5.1.5 Learnings mindful spoon
- 5.1.6 Recommendations mindful spoon
- 5.1.7 Evaluation sharing plate
- 5.1.8 Learnings sharing plate
- 5.1.9 Recommendations sharing plate
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- 5.1.12 Recommendations travelling tin
- 5.1.13 Limitations
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5.2 Personal reflection

- 5.2.1 Learnings
- 5.2.2 Acknowledgements

5.1 Evaluation



For the final evaluation, all three product prototypes were tested by 7 participants each. After the test, an interview about the experience with the product was conducted. This chapter gives an overview of the details of the tests, learnings and recommendations.

5.1.1 Interview questions

The aim of the tests was to evaluate if the 3 developed concepts support savouring in the aimed for ways and if they assisted people to experience blissful eating. For this reason, the following questions concerning bliss indicators and savouring strategies were asked. The same questions were used for all 3 concepts to compare the concepts with each other and to evaluate how effective each of the concepts worked. Additionally, product specific questions were asked for each concept.

General questions

How did you test the product?

Did the product change your eating experience? If yes, how so?

Was the experience memorable in any way?

Which emotions did the experience cause?

Compared to everyday eating experiences, was this a peak experience in any way?

Did it make you feel connected with your food more than usual?

Did it make you feel connected with others more than usual?

Is there anything that could be improved?

Did the product contribute to any of the following savouring strategies?

Memory building

Sharing with others

Sensory-perceptual sharpening

(Participants were asked to read through the descriptions and examples of the savouring strategies provided by The positive Psychlopedia to familiarize themselves with the strategies (The positive Psychlopedia, n.d.).

Concept-related questions

Mindful spoon:

Did you use the magnifying function? To what extent? When/why?

Would you prefer to have the lens positioned somewhere else?

Did it change your experience of eating alone?

Sharing plate:

Did you use the plate on your laps or on a table?

Did you serve the food individually or use it as one plate together?

Where did you put glasses? Would you like to put them on the plate?

Were the bowls and plates usable? Were they deep enough?

Would you hang up the sharing plate in your home when not in use?

Travelling tin:

If this wasn't a user test: would you have passed the box on to a friend or acquaintance or kept it for yourself?

Did you use the pin? Into which country did you stick it?

Would you follow the journey of the box or look at the website? If so, how and why?

5.1.2 Indicators

To reflect on whether the three concepts meet the goal of assisting people in savouring and enabling blissful eating experiences both, the results of the interviews and observations were used.

To evaluate the aspect of bliss, five indicators were derived from the definition of bliss within this project (see 1.1). The indicators include positive change through product, memorability, peak experience, connectedness with food and connectedness with others.

Positive change through product: The indicator evaluates if the concept changed the eating experience and if those changes were of positive nature.

Memorability: Within this indicator, it is assessed if and to what extent the eating experience was memorable.

Peak experience: The indicator investigates if the eating experience had a peak character compared to everyday eating situations.

Connectedness with food: It is evaluated if participants felt connected with the food during the eating experience more than usual.

Connectedness with others: The indicator shows if participants felt connected to other persons within the eating experience more than usual.

Each indicator is connected to an interview question. The answers of the participants thereby serve as a foundation and were used to determine an approximate average on a scale of 0 to 3. Due to the qualitative nature of the test, this can only be seen as an indication.

To assess the extent of savouring, the application of the three positive psychology savouring strategies identified to be important for the eating context was examined. These comprise memory building, sharing with others and sensory-perceptual sharpening. The strategies were already described in chapter 4.4.1. In the area of savouring, the main strategy is marked with a grey box.

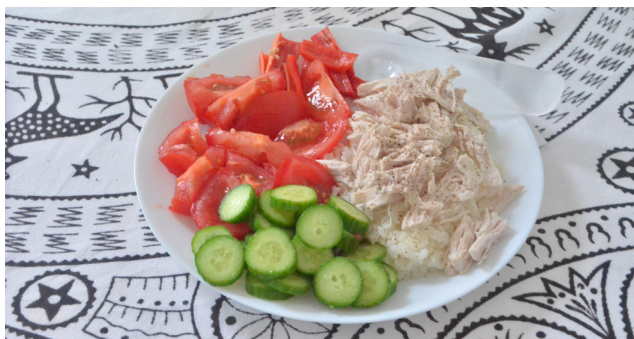
5.1.3 Participants

Participants were recruited via convenience sampling since no compensation could be paid. For this reason, most of the participants were design students between 25 and 35 years old from different cultural backgrounds. Additionally, parents of students and friends from different backgrounds were recruited for testing. For each concept, 7 tests were conducted. Since the sharing plate was tested by couples, this sums up to 28 participants in total.

5.1.4 Evaluation mindful spoon

To test the spoon, participants were provided with a fully functional prototype of the spoon made of acrylic glass. They were asked to use the spoon for a visually interesting meal which they were encouraged to have by themselves without company. In order to get insights into the long-term effect of the spoon, participants kept the spoon for 1 to 4 days, depending on how many days they were willing to participate. Most of the meals were without company. In order to keep the test setup as natural as possible, there were no observations but participants were interviewed about their experience after using the spoon.

Figure 5.1: Documentation by participant 1



"It's transparent but at the same time it feels high quality, not like that crappy cutlery you get for single use."

"I wanted to use it again (for every meal). I put it in a special place so I wouldn't forget to use it."

Interaction with the lens

The interaction with the integrated lens was generally perceived as fun by the participants. Unfortunately, the magnification was not as high and clear as it could have been due to limitations in the precision of manually prototyping and sandpapering the lens (chemical polishing was not possible). This was also commented on negatively by some participants who mostly said that they would use the lens more if it offered a higher magnification. The lens was mostly used in the beginning and in eating breaks or while chewing and the extent of usage depended strongly on how visually interesting the food was. Additionally, the adaptation to the lens was quite strong for some participants: The first time participants used the spoon, they used the magnification a lot but in later meals, they only magnified interesting details and magnified fewer times. Two participants also expressed the wish for the lens to be bigger.

"Looking at it while I am chewing gives an extra dimension to what is in my mouth and immerses me more into the food."

5.1.5 Learnings

General

The participants used the spoon for 1 up to 6 meals. For all participants except one, the number of meals correlated with time span they kept the spoon. One participant used the spoon only for 2 meals in 4 days because he did not want to eat food that is usually eaten with a knife and fork with a spoon. All participants used the spoon without the aid of additional cutlery. In general, the eating experience with the mindful spoon was rated very positively and multiple participants stated that it took their mind off eating alone.

"Normally I have music or video to not feel lonely but this time the magnifying did that."

Look, feel and haptics of the spoon

The look, feel and haptics of the spoon were mentioned very positively by all except one participant who was bothered by the plastic-like material of the prototype. The participants often mentioned that the different shape of the spoon and also its mouthfeel created positive awareness of the eating experience and the spoon felt nice in the hand as well as the mouth. The grip and curvature at the back of the spoon were mentioned as being too steep by two participants.

The position of the lens was liked by most participants because it automatically made them see the magnification of their food while eating which functioned as a reminder and pleasant surprise and did not require any effort. Additionally, the transparency of the spoon was mentioned positively (the prototype becomes transparent when wet) because it allowed seeing the food through the spoon.

As expected, the lens got smeared or misted often while eating. This did not pose a problem with most foods like sauces, milk or solid foods because the spoon was cleaned automatically in the mouth or in extreme cases could consciously

Figure 5.2: Documentation by participant 1



be licked clean. Very oily foods turned out to be more problematic. Two participants reported that oily food clogged up the lens and made it difficult to clean it after each bite. At the same time, both of them stated that it made them conscious about the amount of oil they were eating and that they would like to change this in a future meal.

*"Adaptation at the fourth meal was pretty strong but it helped that the meals were different and there were always new details to explore."
"It allowed me to sit down and really look at things and made me think that I should be more attentive. It really created some awareness."*

Savouring with the mindful spoon

Participants also stated that they

- savoured the food more,
- focused more on eating,
- took longer to eat,
- wanted to pay more attention or
- were nudged to pay attention to their food by the spoon

Also, the habit of watching TV when eating alone was mentioned during the interviews. One participant mentioned that she would like to use the spoon to be more attentive when eating alone but still would like to watch TV every now and then with food that is not special. Another participant reported eating with the mindful spoon in front of the TV but being distracted from the TV by the spoon.

*"Recently, I did a mindfulness exercise with eating. This really reminded me of it and made me eat more mindfully."
"It was nice food which I tried to savour and the spoon enhanced and helped with that and made me savour it more."*

Bliss indicators

Positive change through product

*"I really looked at each spoon full."
"Through the magnification it took me longer to eat and made me more conscious."*



Memorable

*"The way you look at your food is different and these images really stick in my memory."
"It's a different way of eating."*



Peak experience

*"I was more focussed on the eating itself and not doing or thinking about other things."
"I really liked the food I was eating. When I ate it in company, with my boyfriend yesterday I didn't realize that it tasted that nice."*



Connectedness with food

*"Definitely, it nudged me to be more connected."
"I felt some pride in having made the food."*



Connectedness with others



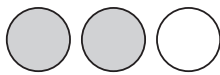
Emotions caused by the product which were described by the participants in the interviews

less lonely **aware** relaxed
focussed amazed surprised
attentive **immersed**
mindful calm

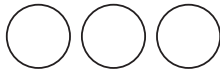
Positive psychology savouring strategies

Memory building

"I am still able to remember what I ate that day (normally I am not)."

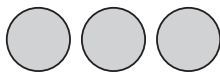


Sharing with others



Sensory perceptual sharpening

"I felt a bit like a child, when I still had time to look at all the details of life, nowadays eating becomes faster and faster and I don't have time anymore."



5.1.6 Recommendations

The user tests and interviews led to recommendations for the improvement of the mindful spoon:

All participants used the spoon without the aid of additional cutlery. It should be made clear that supplementary cutlery (fork and knife) can be used to make eating of some kinds of food easier.

Two participants mentioned that the curvature at the back of the spoon was too steep. This led to the insight that the curvature should be changed.

One participant stated that he did not like the material of the prototype because of its plastic-like appearance. Replacing the acrylic glass by glass (which could not be prototyped) would solve the problem while maintaining the positive property of softness towards the skin. Additionally, fat would stick less to glass than to acrylic glass which makes it easier to clean the lens with each bite.

Interviews showed that some participants would use the lens more if it was bigger and/or offered a higher magnification level. The magnification level was due to prototyping issues, but the size of the lens should be increased if possible. This needs to be evaluated by a physicist.

The highlighting of the lens by sandpapering the rest of the spoon and making it frosted does not seem necessary as it was mentioned positively that the spoon turns transparent when wet. One participant also stated that it would be nicer if the whole spoon was transparent.

5.1.7 Evaluation sharing plate

For the user test a prototype of the plate was made from spray-painted CNC cut foam (expanded polystyrene) and given to the participants. For the test 4 couples and 3 pairs of friends were asked to participate. The participants were invited to use the plate as a couple and have a meal of their choice on it. Since the plate's material is not food safe, participants were also asked to put some baking paper underneath their food. In order to keep the test setup as natural as possible, there was no observation but participants were asked to video themselves without sound. After analysing the video material the participants were interviewed about their experience.

5.1.8 Learnings

General

In general, the plate was perceived very positively and the participants liked its uniqueness. After seeing the plate all participants stated that they wanted to make an extra effort to prepare nice food. Two other couples stated that they wanted to change their initial dinner plans to serve their food in a visually interesting way to fit the plate. One couple even stated that they spent more money on the ingredients than usually. Figures 5.3 to 5.8, show some of the participants using the plate and how they served the food onto the plate. From these pictures, it is visible that the plate offers a space to serve all sorts of different dishes. Also, the pictures can be interpreted as that the plate succeeds in its goal of assisting people to serve creatively and make their food look nice.

"This shape feels inviting and as if the thing in the middle is something special. It sections the plate a bit."

Look, feel and haptics of the plate

Participants liked the shape of the plate, especially the combination of bowls and the slope towards the central part. However, the materiality of the prototype was mentioned negatively because of its look and feel as well as the need of covering for eating. Two participants stated that one side of the plate seems more functional than the other. All participants were positive about hanging the plate on the wall as an art piece when not in use and stated that they particularly liked this feature.

"It reminded me of "serpme kahvaltı" (little little into the middle), in middle anatolia, they sit on the floor and eat from a big metal tray."

Serving of the food

Even though participants received instructions to put round pieces of backing paper onto the prototype for food safety reasons, some of them covered it with one big piece of plastic wrap which was not flexible enough to reach the bottom of all bowls. For this reason, especially these participants mentioned the bowls and plates as not being deep enough. Additionally, the slope of the plate made the bowls less deep than expected. For most participants, it was a little bit difficult to serve on the plate in the kitchen because of space restrictions. One participant suggested solving the problem by having a dismountable plate.

In general, most of the couples served their food onto a common surface and shared it. Only some participants served some small elements of the meal in individual portion. This was done either because the participants had different food preferences, e.g. spiciness, or thought it looked nicer to spread some ingredients out by dividing them. The participants positively mentioned the variety of bowls which enabled creative serving. Some participants wanted to put food on all surfaces or bowls and had difficulties reaching the most remote parts which are actually not meant to be filled with food.

One couple also used additional plates when having Vietnamese spring rolls because the rice paper needs to soak in water before eating this dish. Most couples ate next to their usual table where they put things like glasses, salt and pepper etc. Some participants tried and would have liked to put glasses on the sharing plate but also expressed concerns about the glasses falling over and spilling. Additionally, some couples were missing the opportunity to put down cutlery on the plate.

"It's fun to put the food in all kinds of holes, you can really change it around and customize."

"I liked that all the bowls were different, you could play with how you serve the food."

Figure 5.3: Documentation by couple 3



Figure 5.4: Documentation by couple 2



Figure 5.7: Documentation by couple 4



Figure 5.5: Documentation by couple 5



Figure 5.8: Documentation by friends 6



Figure 5.6: Documentation by couple 3



Interaction with the partner

Some participants did not want to put the plate on their laps but instead ate from it on a table. They still enjoyed the experience and shared their food. Other participants mentioned restrictions in moving or crossing legs as well as the concern of spilling when positioning the sharing plate on the laps. Nonetheless, those participants preferred to use the plate on their laps instead of the table. Additionally, participants mentioned a few unusual situations they encountered with the plate, like struggling to carry it alone, and stated that they enjoyed how this made them work as a team.

„I like how the borders become elusive. Normally, there is my plate and her plate, clear borders, with this thing it is a lot freer.“

“It was about the dish, we were doing the same thing, eating the same dish, not like he is eating his and I mine. We needed to make conversation.“

Savouring

Participants mentioned that sharing plate

- made them talk more,
 - made them work as a team
 - helped to focus on the meal and being mindful
 - disrupted their routine of eating in front of the TV and not talking to each other
- also:
- they wanted to change their routine of eating in front of the TV from now on
 - the interaction enhanced remembering and reminiscing
 - they talked about food division
 - it was nice to cook and eat together

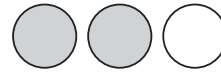
“It makes you have dinner in a different way and helps you wake up, like hacking the dinner experience.“

“It gave us the opportunity to enjoy and we didn’t really notice how the time went by. We took our time to enjoy and ate longer than usual.“

Bliss indicators

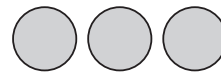
Positive change through product

“It was nice not to look around or to our phone. We really focused on each other.“



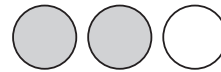
Memorable

“My girlfriend was really sad when I came home because of a recent death in the family. Somehow this product managed to help cheer her up.“



Peak experience

“When we saw the plate, we wanted to change our initial dinner plan and make something nicer and plan what to put where.“
“It made us hold hands (that’s something we do at special dinners). I felt more invited to do that because we were closer than usual.“



Connectedness with food



Connectedness with others

“We talked a lot, the plate helped with that. It also helped us communicate that I had some ingredients on my side and she had some on her side so we had to work together.“
“Eye contact, knees touching and keeping it stable together.“

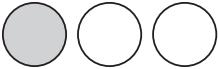


Emotions caused by the product which were described by the participants in the interviews

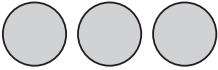
enjoyment
connected conscious warm
amusement closeness sincere
way more fun than usual kind
bonding face to face

Positive psychology savouring strategies

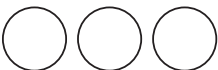
Memory building
"We were eating from the same plate like in India, that makes you very connected. Sharing the same plate creates trust and feeling welcome, it's a nice connection, you also speak about the food. When everyone orders something different, then that is not possible."



Sharing with others
*"Normally we often eat in front of the TV and don't do a lot of talking, now we did. Later we even discussed that we should eat at the table without watching TV more often."
"I guess usually when we watch TV we don't watch what we put into our mouths. This time I was really doing cherry-picking and paid attention."*



Sensory perceptual sharpening



5.1.9 Recommendations

The user tests and interviews led to recommendations for the improvement of the sharing plate:

The participants were only provided with minimal instruction and the request to try the plate on their laps if possible. The aim was to see how the participants would naturally use the plate and if the minimal instruction was already enough. However, some participants stated that more explanation would have been beneficial. This led to the insight to extend the explanation and include the recommendation of using a pillow to even out extreme height differences between partners.

One participant suggested dismantling the plate for serving because the space in the kitchen was limited. Two other participants mentioned the wish to take the plate to a picnic or other places where no table is available. The dismantlability of the final product will support both, serving as well as transportation.

All participants ate next to a table and put glasses as well as many other things such as salt, pepper, coffee pot there. The plate can not offer space for all of these things and should be focused on the food. Additionally, participants felt uncomfortable at the thought of balancing glasses on the table, therefore there will not be an area for glasses on the plate.

Although people liked the interaction with the sloped shape of the plate, it limits the depth of the bowls. This led to the recommendation to section the plate into a flat serving area and a sloped area that is not used to serve food. Additionally, some of the bowls should be made bigger, especially the ovals ones.

5.1.10 Evaluation travelling Tin

For the user test, a prototype of the box was built. While the box itself was 3d-printed from PLA, the map in the lid was cut from cork and engraved with a laser. The use of glue or paint was avoided due to food-safety. The participants received the box filled with food from the last participant (I started the test by giving the box filled to the first participant). Participants were asked to fill it with a dish from their home country, mark the food's origin and pass it on to the next person. Some safety instructions that were necessary due to the nature of the prototype (e.g. prototype melts when heated) were provided. Additionally, the participants were invited to leave further information about their dish in the online diary.

For this purpose, a mockup of the website was created that was connected with a Google online survey for data input of new food entries. The data and pictures the participants entered were later manually transferred into the website mockup which was sent to the participants at the time they received the box from the previous participant. The participants got to choose whom to pass the box on to from a list of 15 people (5 Dutch, 10 international) they knew and who were also recruited for the test. In order to effectively evaluate the memory building, participants were interviewed about their experiences with the box 3 to 7 days after they had used it.

5.1.11 Learnings

General

In general, the box was rated very positively. All participants stated that they would also have passed on the box on in a non-test setting. Two participants mentioned unclarity about how to eat the received food. The positively mentioned factor to be important was a surprise because the participants did not know that they would receive the travelling tin in advance and what it would contain.

"It was made by someone and it was important to them, not just a dish. The background and this 'home feeling' made it also seem important to me."

"I was super excited when I received it. I felt really loved."

Look, feel and haptics of the box

The box was generally considered to have a nice look and feel even though it was only a prototype. One participant mentioned that the shape of the box reminded him of a world map. Additionally, the divider was mentioned positively and all

participants explicitly stated that the food looked very nice in the box. While some female participants considered the box as too large and simply concluded to eat from the food twice, this was not mentioned by male participants. One participant expressed doubts about immersing the cork prototype into water.

"The nice box really adds to the experience."

Figure 5.9: Documentation by participant



Culture exchange

The intention of the product that the box would be passed on from a Dutch (native) to a foreign person and vice-versa could not be met due to the convenience sampling. Additionally, only two of five Dutch people from the provided list were included in the test. The box was mainly passed on between foreigners. Although the aim of integrating foreigners in a new country was not achieved in this constellation, it helped the participants to foster relationships with each other. These constellations were probably amplified by the large group of internationals included on the list (10 of 15). Moreover, the box was once passed from a person from Taiwan to a person who was born in the Netherlands but had Chinese roots. As the Taiwanese and the Chinese cuisine are very similar, the exchange did not lead to an experience of newness but caused feelings of nostalgia instead. When the box was passed between close friends, the feelings of appreciation and gratefulness did not seem as intense as in other constellations because they already knew each other well and probably also shared food in the past.

Additionally, participants mentioned that it would be interesting to know the dietary requirements of the receiver. It is very likely that participants would talk about their dietary preferences in normal settings. However, the test was run under time restrictions and the box had to be passed on within two days which made it difficult for some participants to get into contact before.

"It was nice to feel like I am sharing something from my own culture."

"It really felt like I got to know a little bit of the country by the taste."

Interaction with the world map and website

The explanatory sentence “Fill this tin with a dish that reminds you of home and give it to a friend with a different cultural background!” seemed to work well and according to participants took away the pressure to cook something extravagant. The same applies to the question “Is there a story about the dish you prepared? (origin, preparation, special ingredients, personal significance)” in having a positive influence on the explanation of the food.

Seeing the traces of previous pinning and details about the food on the website was exclusively mentioned as positive by the participants. They found it interesting to have a look at the previous stories about the food on the website. While one participant stated that she would only read the story of the person who gave food to her, most others were interested in checking the website multiple times, e.g. for recipes. The history of the box was generally considered more interesting than its future. One participant stated that she lacked an opportunity on the website to interact with and thank the giver. Another one explained that he would like to follow the path of the box on social media. Sticking the pin into the cork map caused confusion for a few participants as they were not sure whether to show their own or the receiver’s country. Also, pinning the countries close to the edges of the box made it hard to properly wrap the silicone band around the box.

“It reminded me of the Herman bread but it is way nicer because you can follow it on the website.”

Savouring with the travelling tin

Since the box is not microwave safe, all participants ate from a plate and took time to serve the food nicely which assisted them in savouring. Furthermore, all participants stated that the tin supported them in the savouring strategy of building memories and that the random act of kindness made them feel appreciated. In detail, the participants mentioned that they:

- tried to notice details in the food
- considered the food as special because it had a meaning
- liked the uniqueness of the food which cannot be bought
- appreciated the food because it was “cooked with love”
- felt connected to the giver’s home country because of the personal explanation
- were more aware because of the new flavours

Additionally, one participant said that she shared the received food with her partner and talked to him about the differences and similarities between the received dish and her home cuisine. She described the experience as learning something new which she had not tried before.

“It made me more conscious for 2 dinners: once while eating the foreign food and once while cooking and thinking about my own heritage.”
“When you cook for someone, you are pushing yourself a little and putting more attention to it. I could also feel that with the person who gave it to me.”

Figure 5.10: Documentation by participant



Positive psychology savouring strategies

Memory building

“Because I saw it had already travelled 6 people before me and contained their stories!”



Sharing with others

“Not sharing directly but indirectly. I really like it because you pass it on to someone new.”



Sensory perceptual sharpening

“You are by yourself, you are exploring something new which is a surprise for you. It’s like thinking I didn’t order this, but nice!”



Emotions caused by the product which were described by the participants in the interviews

enjoyment
 surprise excitement connected
 fun love feeling appreciated
 new experience heart-warming
 anticipation happy like receiving a gift
 grateful wow honoured

Bliss indicators

Positive change through product
"It made me feel connected with the culture and the person. I got to know the other person a bit further and learned a personal story. It was so sweet!"



Memorable
"When we are talking about it now, I can remember really well what the food was and how it was like, the consistency, the texture. Usually, I don't think of these things."



Peak experience
"It was more entertaining and enjoyable than a normal meal. 'A touch of something' that is added to the experience through this setup."



Connectedness with food
"It made my eating experience more colourful and adds spice to it."



Connectedness with others
*"I was surprised and felt honoured I got chosen because we are only acquaintances."
 "The story on the website made me feel connected to the person who gave it to me even though she was just an acquaintance."*



5.1.12 Recommendations

The participants were only provided with minimal instruction to see if the concept of the travelling tin was easy to understand. As some participants felt insecure about how to use the box and the pin, it was concluded that the website should contain a short explanation to familiarize users.

To encourage following the journey of the tin online, the QR code inside the tin lid should be designed in a way which makes users think that they can find valuable and personal information and that it is worth visiting the website.

As two participants mentioned difficulties about how to eat the received food, a nudge to leave a note about the way of eating for difficult dishes should be included in the website.

None of the participants cooked a dessert although one of them mentioned that she would have liked to. It should be indicated that the type of food (starter, main dish, dessert) does not matter.

Also, the flexibility for cultural diversity which was already considered should be kept in mind with any changes to the website since the test showed all sorts of possible combinations of cultural backgrounds and living situations.

Two participants missed an opportunity to interact with the giver. For this reason, possibilities to give the website entries a more note-like and personal character or to include a "to" and "from" section should be examined.

One participant suggested the implementation of the website into social media and used "humans of new york" as an inspiration. Possibilities for integration should be further investigated.

5.1.13 Limitations

Despite the positive feedback in the user tests, the concepts still face some limitations which should be considered for further development.

The wide scope of the project only allowed to run 7 user tests per concept which was enough to gain valuable insights for improvement but further tests should be done for quantifiable results.

Although participants were surprisingly happy to test any of the three concepts without a compensation, I could only recruit them in my personal surroundings. I tried to find as diverse participants as possible but many of them were designers between 25 and 35 years old. Also, most participants were recruited at the university and are therefore not representative of the average population.

While the mindful spoon was used by the single participants up to six times, the sharing plate and the travelling tin were only used once. While the travelling tin is only supposed to be used once per person, further tests for the spoon and the sharing plate should be carried out to learn from multiple usages and long-term experience.

The test setup was not comparable with the normal use scenario in terms of being attentive because participants often pay extra attention during a test scenario. This special situation and the fact that is a new and unknown product makes people more mindful of the object to be tested in order to provide feedback afterwards.

The wide scope of this project did not allow to go into the detail about the production of each product. For this reason, only a material suggestion was provided and recommendations for further development were given.

For the tests, it was not possible to build the prototypes for the travelling tin and the sharing plate food safe which influenced the participants' experience negatively. This concerned mainly the sharing plate because of the smell of spray paint and the need to cover the plate.

5.1.14 Conclusion

Despite the mentioned limitations, the user tests delivered very positive results. All concepts succeeded in the assumed savouring strategy to full extent and additionally had an effect on others which was clearly visible from the participants' reflection. Furthermore, all concepts achieved high scores in the developed bliss indicators which suggests that the concepts can assist people in experiencing blissful eating experiences. The comparison of the three concepts in terms of bliss indicators showed that each concept has its strengths and individual profile. While the mindful spoon achieved a high score for connectedness with the food and a low score for connectedness with people, the sharing plate scored the other way round. The travelling tin also was rated high in connectedness with others but also achieved good results in connectedness with the food.

All concepts managed to keep a good balance between focusing on eating but also provided additional impact on participants' lives. While the emphasis of each concept was on hedonic pleasure and enjoying food, the participants additionally reported many positive emotions that go beyond this. Examples are the feelings of connectedness, mindfulness and appreciation. This shows that food also has the potential to contribute to eudaimonic happiness which is an interesting insight for designing for the food context. Furthermore, it gives some indication about the fit with the aimed for happiness enhancing strategies of taking care of your body, nurturing relationships and practising acts of kindness which are difficult to evaluate in a short-term test.

Moreover, the objects were often used (and enjoyed) in a slightly different way than asked in the user test. This indicates that the concepts have additional potential beyond the assumed context. Besides the context of eating alone, the mindful spoon could be used in a group setting to inspire a conversation about the discovered food details. The sharing plate could be used in a group setting to serve dishes in the middle of the table and the travelling tin could also be passed on between people of the same cultural background to encourage feelings of nostalgia and connectedness or explore new cuisines together.

Despite the positive feedback, the concepts still showed some weak points and have to be detailed further. This applies especially to the materiality and the production process which would be the next step in the development process. To execute these further steps, it is recommended to involve material experts for glass and Corian into the process. Furthermore, small adaptations concerning the functionality and shape of

the prototypes are necessary. The most important adaptation for the mindful spoon is seen in improving the handle. Within the concept of the sharing plate, the slope and the shape and size of the bowls and plates should be adjusted. For the concept of the travelling tin the accompanying website should be improved. After the described adaptations further user tests should be carried out with a higher number of participants than in the previous tests.



Bliss indicators

Positive change through product



Memorable



Peak experience



Connectedness with food



Connectedness with others



Positive psychology savouring strategies

Memory building



Sharing with others



Sensory perceptual sharpening





5.2 Personal reflection

Working on the project “Bliss in the eating experience” has been a pleasurable experience for me. On the one hand, it sometimes was very challenging but on the other hand, I feel like I have never learned so much during a relatively short time period before. Combining insights gained from literature research as well as personally conducted qualitative research and using the insights for design was very valuable for me and showed me the necessity of research and design to go hand in hand.

I am very proud of the three design concepts that resulted from my project. Although all three concepts will need further user tests and iterations before a possible market introduction, the reactions and answers of the participants in the final user tests were very positive and confirmed me in considering further development. I am especially proud of the following things:

Writing this report was very challenging for me, especially in the beginning. Due to the helpful comments and recommendations by my supervisors and personal engagement, I think I could really improve my writing skills.

Working on three concepts and prototypes in parallel was not always easy and required a lot of coordination and planning. However, I am very glad I chose to work on three concepts to deliver solutions for different eating constellations.

Planning and coordinating the user tests for three concepts was challenging because of the high number of 28 participants and the short time span. Having finished the project I am happy I put in all this effort because I gained valuable insights and could derive recommendations on how to further improve the concepts.

5.2.1 Learnings

Starting with the broad context of ‘bliss in eating’ made it challenging to focus in the beginning. For this reason, the literature, as well as the qualitative research, were rather widely defined. Narrowing down the topic earlier and specifying the interview questions more might have delivered more precise and sharpened results. During the design phase, it worked very well to narrow down the focus and refine the goal during the process.

This example also showed me (once again) that I sometimes have difficulties in making decisions which complicates continuing with the following steps and creates more work for me. Seeing these consequences I got more decisive during the process and I will try to further improve.

Working on the three different parts of the project (literature research, qualitative study and design process) was very valuable for me. It showed me that my personal strength lies in the design process but research is also a very interesting field from which I can learn a lot.

Overall, the project has made a meaningful contribution to my personal development as an interaction designer and confirmed me in the type of designer I want to become: Working and designing with and for food is my personal passion and also talent and I hope to make a positive difference with it.

5.2.2 Acknowledgements

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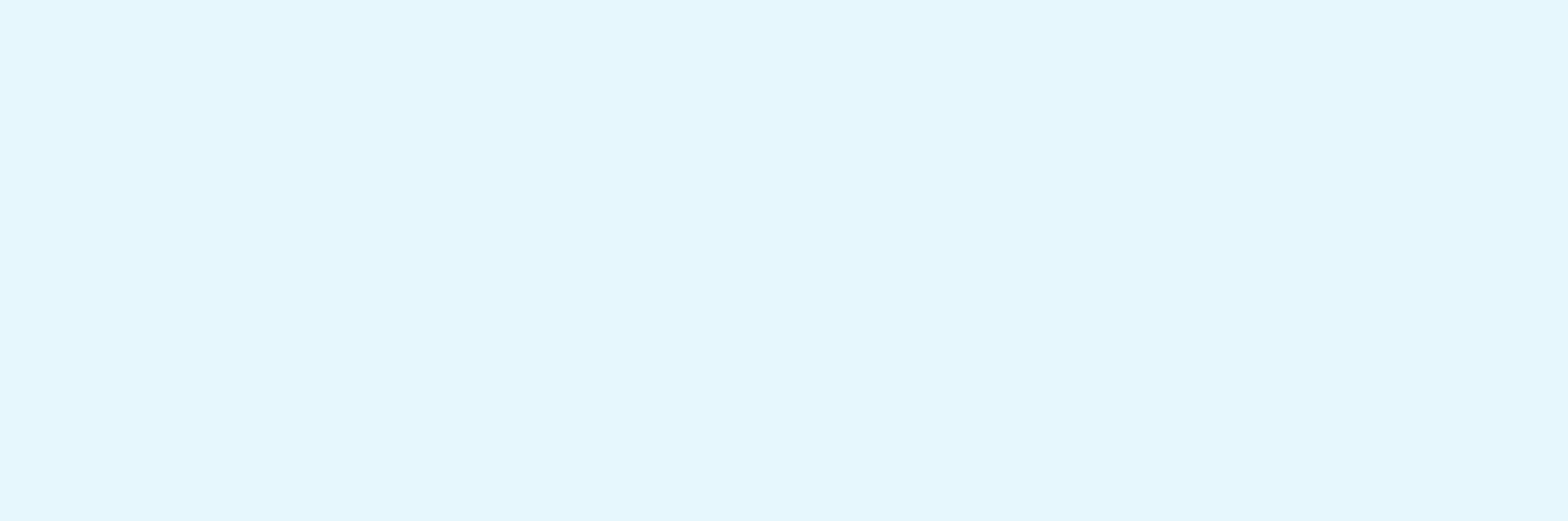
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