Emotional first aid for broken hearts

Translating psychological strategies into a tangible form

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Master Thesis Report
MSc Design for Interaction
Delft University of Technology

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*"...and I'm so tired of dating
and every time I do it again."*

- Honey Bunny, 34

Acknowledgements

Abstract

What do we do when we make a mistake, get rejected at a job interview or by a romantic prospect? Loneliness, loss, and failure are common everyday experiences that every one of us goes through. However, many brush aside such 'emotional injuries', or even make them worse, 'picking on their wounds' by engaging in unhelpful coping strategies (Winch, 2013).

Because of our fundamental need to establish meaningful relationships, emotional injuries can be especially painful in our romantic lives. The rapid and often 'impersonal' nature of modern online dating can enable frequent negative experiences; small rejections and heartbreaks that can negatively impact people's self-esteem and wellbeing (Andrighetto et al., 2019; Her & Timmermans, 2021).

Practising emotional first aid can help to cope with the 'invisible' pain of such small injuries and help to efficiently recover from them, building resilience that allows people to withstand life's hardships (Winch, 2013). Designers can help people deal with these injuries by facilitating positive emotional experiences in human-product interactions. Positive design interventions focusing on resilience and self-compassion can contribute to emotion regulation, leading to improved personal and societal well-being (Gilbert & Choden, 2014; Petermans & Cain, 2019; Yoon et al., 2021).

Using a Research through Design approach, the project explored how designers can translate psychological techniques into tangible solutions and introduce positive psychology interventions for emotional injuries in the context of dating.

Using a framework based on 7 everyday injuries outlined by Winch (2013), and the 13 fundamental needs theory of Desmet and Fokkinga (2020) a 'map of injuries' and corresponding 'injury cards' were developed based on a diary study with currently dating singles. The map and the cards discuss the triggers and the nature of the possible injuries in addition to the needs to be fulfilled by the design intervention. The map and the cards were used to generate design concepts, which were introduced to experts in social sciences and relationship studies during three separate sessions. Using sketches and short scenarios as prototypes for discussion, design objectives for providing emotional first aid were collected. These objectives are demonstrated in a final concept called '*Huggle*'.

'*Huggle*' is a physical tool and service directly offered by, and integrated into the online dating platform. The product is a collection of self-compassion prompts in the form of colourful acrylic pills wrapped in mycelium coating. The prompts allow people to practice self-compassion after a negative event, accepting and observing their feelings instead of turning to self-criticism and withdrawal.

Using the concept as a research tool during two evaluation studies with users has shown that tangible interventions for emotional first aid need to follow the main principles of flexibility, unobtrusiveness (intimacy), and simplicity. Creating product meaning through personalization and sparking interest and curiosity might help to entice repeated use, aiding reflection and learning.

The findings of this project can give foundation to future work in the area of designing psychological interventions in the domains of emotional first aid, coping, and emotion regulation.

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Glossary

Already at the beginning of this project, many different understandings of the word 'dating' came up, which highlighted the importance of defining the terminology.

The following glossary lists some of the keywords and their intended meanings that are used in this report.

Term	Intended Meaning
Dater	The person seeking a relationship or engaging in any other form of dating.
Dating	Refers both to an activity and stage/period when a person is socially engaging with another (one or often multiple people) with the intention to explore romantic and/or sexual compatibility. ('Dating', 2021)
Dating anxiety	A feeling of distress when it comes to interacting with possible romantic partners that can undermine one's ability to form intimate relationships. (Rizvi et al., 2022)
Dating platform	A digital system (website or application) that enables people to find others with the intention of dating.
Emotional injury (also called psychological injury (Winch, 2013))	Result of an experience that elicits a negative emotional response (e.g. rejection, guilt, or failure.) Psychological injuries are emotionally painful and can be psychologically damaging if they are not dealt with. The injuries in this project are not pathological; they are common, everyday experiences that are a natural part of life.
Expert	While everyone is an expert in their experiences, in this report the term refers to members of the 'consortium'; outside collaborators from academia and the industry (see Chapter 5.2).
Ghosting	The person of interest ends all communication without warning or justification, ignoring all further attempts of communication. ('Ghosting (Behavior)', 2022)
Match	A person with whom one shows a mutual interest in each other by picking ('liking', 'swiping right' etc.) one another.
Matching	Pairing up or getting paired up with someone on the dating platform. It usually means 'liking' each other's user profiles.
Unmatching	Revoking the pairing made on the dating platform. Depending on the specific service, by doing so the person disappears from one's list of matches and makes any further contact through the application impossible.
Mindfulness	A balanced awareness of our feelings and experiences present in the moment (Creswell, 2017).
Person of interest	A person one is pursuing/dating.

Term	Intended Meaning
Relationship	In this report the word is used its broader understanding; being a relation between two people, which is not necessarily a romantic endeavour. The latter is specified as a 'romantic relationship'.
Research through Design (RtD)	Using design as a method to do research; doing design activities with (also) the goal of generating and communicating knowledge. (Stappers & Giaccardi, 2017)
Resilience	"A skill of rapid recovery following unpleasant events." (Balgiu, 2017, p. 93)
Self-compassion	"A positive and caring attitude towards oneself." (Ewert et al., 2021, p. 1063)
Swiping	Browsing profiles on a dating application such as Tinder. (Usually includes making selections by 'dragging' said profile; indicating interest (right) or disinterest (left)).
Well-being	"Optimal psychological functioning and experience." (Ryan & Deci, 2001, p. 142)

Note

Throughout this report, third-person pronouns are generally referred to as 'they/them' to avoid gender bias, unless the specific case calls for making a distinction. Nevertheless, the writer acknowledges the differences among genders when it comes to dating. Different genders and sexual identities have their distinct challenges.

Still, one thing is in common;
we all get hurt, we all go through emotional injuries,
and we can all learn and grow from these experiences.

I.
PROJECT DESCRIPTION

1.1 Background

Every person goes through **negative experiences** in life. Just as people have minor physical injuries; cuts and bruises, we also have **emotional injuries**; failures, rejections, and losses. While we have first aid kits with band-aids and disinfectants to assist in the healing of small physical injuries, there is no equivalent available for our everyday psychological hurts. As as opposed to a cut on a finger, people don't seem to be equipped to deal with such negative experiences (Winch, 2013). However, leaving our emotional injuries unattended can lead to a possible decrease in general well-being and mental health (Cisler & Olatunji, 2012; Joormann, 2010; Joormann & Gotlib, 2010).

The expression '**emotional first aid**' first appeared in the 1930s (Google Ngram Viewer; (Michel et al., 2011)) and was later popularized by Guy Winch (2013). It means a set of **strategies** that people can use to deal with everyday emotional injuries. He suggests **exercises** that individuals can carry out after facing minor emotional difficulties in life, such as employment rejection, losing a friend, failing an important test, or not being invited to a birthday party. We all know how to treat a cut so it doesn't get infected, without having to run to the doctor's office. We could **deal with everyday emotional injuries** similarly, preventing them to turn into something more severe.

Online dating was chosen as a **context** of this project to explore small emotional injuries. Emotional injuries can be especially painful in one's romantic life, affecting mental health and happiness (Kansky, 2018). On top of this close relation, the rapid and often 'impersonal' nature of online dating, compulsive app use and unsuccessful endeavours can have a negative outcome on people's well-being (Her & Timmermans, 2021) which makes online dating a suitable research area with plenty of room for improvement.

People could benefit from learning how to cope with their negative experiences and build emotional resilience that allows them to withstand life's hardships. To do so, and to allow to do so, is our shared responsibility as individuals, communities, and service providers.

1.2 How design can help

Designers are realizing their role in **facilitating positive emotional experiences** in human-product interactions, thus the possibility of improving people's personal and societal wellbeing (Petermans & Cain, 2019). Designers have long been concerned with designing exciting products; promoting positive emotions such as surprise or desire to increase profit. However, Yoon et al. (2021) propose a focus on designing for the 'affiliative and soothing system' instead, which can enhance resilience and self-compassion in people, and **help with the regulation of negative emotions** (Gilbert & Choden, 2014).

Positive design means designing with the goal of human flourishing (Desmet & Pohlmeyer, 2013); promoting high emotional-, psychological-, and social wellbeing (Keyes, 2002). Studies show that subjective well-being is associated with (positive) behaviour (Van Boven & Gilovich, 2003; Zawadzki et al., 2020). Therefore, **encouraging meaningful activities by design**; behaviours that help to manage negative emotions is a worthy pursuit to mitigate the potential negative effects of everyday emotional injuries.

1.3 Aim and research question

The expression 'first aid' has some connotations. We think of a small box with band-aids and antiseptics; it's a tool we can reach for. Out of the author's love for material design, as well as building on the promising prospects of tangible positive psychology interventions (Desmet & Sääksjärvi, 2016) this project set out to explore the physical qualities (and possibilities) of emotional first aid. The central question was;

*How can we translate psychological techniques
into tangible solutions that can provide a remedy
for the emotional injuries of young singles during dating?*

The additional research questions were explored;

- What kind of emotional injuries do people go through in (online) dating?
- How do/can people deal with their emotional injuries (in the context of online dating)?
- What is the role of objects when it comes to dealing with these injuries?
- Can we design tangible solutions and remedies for everyday emotional injuries in dating?

1.4 Structure

This report gives answers to the above-mentioned questions by introducing the procedure, insights, and the outcome of the research and design work of a graduation project of the Master Design for Interaction programme at TU Delft.

Chapter II: 'Literature review' describes the secondary research done about the theoretical background of emotional first aid, dating, and the role of design in these domains.

Chapter III: 'Methodology' introduces and explains 'Research through Design' as a key methodology applied in the project.

Chapter IV: 'Exploring emotional injuries in dating' reports on a qualitative study that was carried out to understand the process, pitfalls, and coping strategies of people who are engaging in dating.

Chapter V: 'Design phase' tells about the ideating and iterative design process supported by experts in the fields of relationship studies, social psychology, and positive design.

Chapter VI: 'Dealing with negative emotions' describe coping styles and strategies in dating based on the literature and the insights from Chapters IV and V.

Chapter VII: 'Final Concept' synthesises the findings of the previous chapters in the form of a design goal and design requirements. The section introduces '*Huggle*'; a fictional service by Tinder that helps to tackle the emotional challenges of dating by using tangible means to stimulate self-compassion.

Chapter VIII: 'Evaluation studies' reports on the qualitative studies testing and evaluating *Huggle*.

Chapter X: 'Conclusion' summarizes the outcome and results of the project.

Chapter IX: 'Discussion' reports on the limitations and additional insights of the project, and lists further recommendations on the topic of designing with emotional first aid techniques in the context of dating.

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II.
LITERATURE REVIEW

2.1 Emotional First aid

The reader of this report is likely not a stranger to small injuries in the household; all of us have cut a finger while chopping vegetables, doing arts and crafts, or working in the garden. We burnt our fingers when we impatiently reached for fresh cookies. We hit our toes, bumped our heads.

Just as people have minor physical injuries in their everyday lives -cuts and bruises-, every one of us experiences emotional injuries, too; failure, rejection, loss... These injuries are just as common as the aforementioned ones, and hurt just as much (or even more) (Chen et al., 2008; Eisenberger et al., 2003; MacDonald & Leary, 2005). The only difference is that they are often invisible. This makes them harder to be noticed and cared for. When we cut a finger, we all know what to do: clean the cut and put a band-aid on it. Meanwhile, people don't learn to deal with emotional injuries the same way they do with their physical ones.

Negative experiences are inevitable and natural part of life. However, leaving our emotional injuries unattended is often disadvantageous (Flynn et al., 2010; J. T. Gross & Cassidy, 2019; Nezlek & Kuppens, 2008). Rumination might turn into depression and anxiety, and failure and rejection might decrease our self-esteem (Winch, 2013). These mental health problems can have a significant impact on our lives and even society at large.

An *emotional injury* is an experience that elicits a negative emotional response (e.g. rejection, guilt, or failure). Emotional injuries are common, everyday experiences that are a natural part of life. However, they are emotionally painful and can be psychologically damaging if they are not dealt with. (Winch, 2013)

What if we could treat our emotional injuries the same way as we do our physical cuts and bruises?

2.1.1 What are emotional injuries?

Everyone goes through negative experiences. However, not all of these experiences are considered to be injuries. Emotional injuries are minor psychological injuries that, even though they are not traumatic, result in negative feelings and/or have a lasting effect on an individual.

Whether a negative experience becomes an injury depends on factors such as;

The person's perception of the experience
People have different reactions to the same stimuli. Appraisal theory (Scherer et al., 2001) explains this by saying that events are not positive or negative on their own. They are evaluated to be one or the other. If the person perceives the event negative, they will feel bad. Meanwhile, seeing things in a positive light elicits positive emotions.

See more about *appraisal theory* in *Chapter 6.1*

The person's sensitivity to the injury
Personal history and available resources to cope with a certain event influence the way we can deal with an event. E.g. low self-esteem makes people more sensitive to other injuries (Winch, 2013).

Frequency of the experience
Luhman & Eid (2009) found that repeated life events affect people's life satisfaction. However, it depends on the nature of the experience whether people adapt to certain events, or enter into a downward spiral. This author found that the effect of repeated small experiences can accumulate in the context of dating. For example, a person not answering a text message might not be a big deal at first. Yet, when repeated, it might decrease self-esteem and increase loneliness.

Guy Winch (2013) defines **7** common **types** of emotional injuries;

- **Rejection**
- **Loneliness**
- **Loss and trauma**
- **Guilt**
- **Rumination**
- **Failure** and
- **Low self-esteem**

During the first study it was found that these injury types can occur simultaneously and are often related to each other (see *Chapter 4.1.5*).

Each of the above-mentioned injuries elicits certain **wounds** (see *Table 1*); negative emotions and reactions such as anger or self-defeating tendencies (Winch, 2013). We often brush aside our emotional injuries, ignore them, or even make them worse by 'picking' on these wounds through negative self-talk and other unhelpful coping mechanisms. However, doing so will only sustain or deepen the injury (Cacioppo & Hawkley, 2005; Gil et al., 1990; Joormann, 2010).

Instead, Winch (2013) suggests 'emotional first aid'- techniques; exercises that we can all practice in our everyday life to deal better with these injuries and recover quicker from them.

Injury type	Loneliness	Failure	Rejection	Rumination	Loss	Guilt	Low self-esteem
Symptoms (Wounds)	**Increasing criticism** (of oneself and others) **Self-defeating** behaviour **Shame** **Damaged confidence**: Feeling helpless, trapped, passive **Self-sabotage** (choking, performance pressure)	Seeing goals out of reach Damaged self-esteem (making **negative generalizations**) Erosion in confidence, self-esteem (**generalization and self-doubt**) **Destabilized feelings of belonging**	Sharp **emotional pain** **Anger,** violence **Lowered motivation** and initiative **Lowered ability to focus** and think productively Compromised social support system	Increased /prolonged **sadness and anger** Self-perception and **identity are threatened** **Fundamental assumptions /beliefs get challenged** **Difficulty remaining connected**	**Emotional pain**	**Emotional distress** **Self-punishment** **Losing attention of own needs** and obligations **Ruining relationships**	Increased **vulnerability to other emotional injuries** Decreased ability to absorb positive feedback Feelings of **insecurity, low confidence** **Self-criticism** Feelings of being ineffective, **dis-empowerment**

Table 1; A summary of emotional injuries and symptoms (wounds) based on Winch (2013)

2.1.2 Current support for dealing with emotional injuries

Psychological health is becoming more and more important in our society. The World Health Organization's vision for 2030 is for mental health to be „valued, promoted and protected" (World Health Organization, 2021, p. 4) leading to an increased interest in well-being based interventions and solutions.

Psychologists provide helpful **strategies** for people; in the form of **counselling**, **books** and **worksheets**, and training through **videos**, **websites**, and **mobile applications**. Acceptance and commitment therapy (ACT), Cognitive Behavioral Therapy (CBT), Dialectical Behavior Therapy (DBT), Emotion-Focused Therapy (EFT), Mindfulness-Based Stress Reduction (MBSR), and Mindfulness-Based Cognitive Therapy (MBCT) are some of the methods used to teach emotion regulation strategies during psychotherapy (Kring & Sloan, 2009) which can help deal with our emotional injuries. However, counselling is not only a relatively costly and timely endeavour but also unnecessary after failing a test or being rejected by someone on a dating app.

Especially with everyday injuries, where consulting a mental health professional is not warranted, can **self-help** 'tricks and tips' give guidance on how to deal with difficult situations. There are some important benefits of self-help as opposed to traditional psychotherapy, including cost, privacy and accessibility (Starker, 2002). However, self-help strategies can be ineffective; Lyubomirsky and colleagues (2011) found that self-help interventions need to be carefully designed to maintain engagement and motivation.

Self-help **books** (also called 'Bibliotherapy') can be one tool to disseminate helpful strategies and principles to the general audience. Interviewees of the current study who read dating-related self-help books or have been in therapy before were seemingly more aware of their injuries and equipped with strategies for dealing with them (*Chapter 6.1.3*). Thus, **knowledge** might play an important role in healthy dating behaviour. Even though Bergsma (2008) does not see hard evidence that reading growth-oriented self-help books would be effective, problem-focused self-help might be useful in certain situations. However, the user group of these self-help books seem to be limited to a certain audience; those who already possess an interest in psychology and reading (Wilson & Cash, 2000). Thought- and writing exercises (such as the ones that Winch (2013) (*Figure 1*) suggests) take time and dedication. While this effort is needed for the effectiveness of positive psychological interventions (Lyubomirsky et al., 2011), people might be reluctant to turn to such excessive methods to deal with simple emotional injuries.

There are also products on the market that are specifically sold to provide emotional first aid; The Emotional First Aid Kit (Emotional First Aid, n.d.) from the School of Life (*Figure 2*) is a card set with instructions that help to get through emotional hardships in topics such as friendship, work, or love. **Card sets** are a 'step up' from self-help books; however, they don't seem to possess the quality that keeps up people's attention. Paper-based interventions run a high risk of ending up in the back of someone's drawer.

While there are both advantages and disadvantages of the above-mentioned tools and methods, the current solutions seem to consume **too much time and effort**, hence are too **excessive** when it comes to small everyday emotional injuries.
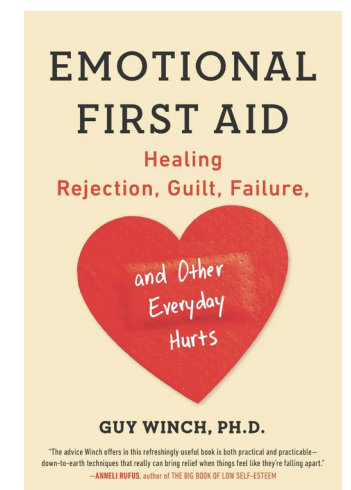

Figure 1; In his book, Emotional First Aid, Guy Winch (2013) proposes writing- and thought exercises to deal with the wounds of common everyday injuries

Figure 2; Emotional First Aid Kit by The School of Life (Emotional First Aid, n.d.)

2.2 Dating injuries

Fulfilling relationships, especially of romantic nature are linked to both physical and mental health, overall wellbeing, and happiness (Kansky, 2018). Due to this link, **emotional injuries in our romantic lives can be especially painful.**

Alone in the Netherlands, more than 3 million people live in single-person households - and the number is increasing from year to year (Centraal Bureau voor de Statistiek, 2020). But people are social creatures. The Pew Research Center (Brown, 2020) reports that at least half of the single population is looking for a partner. These people are actively seeking out new connections; they 'date' to find the right match.

Dating is a social interaction. There might be various reasons someone is seeking another; whether people are looking for something long-, or short-term, they look for a connection. Dating taps into one of our most fundamental needs; to belong. Our desire for establishing strong ties with one another has evolutionary roots; it is deeply ingrained in us. According to Kansky (2018), romantic breakups in the lives of young adults are frequent and traumatic, linked to negative mental health outcomes. Dating requires purposefully **seeking out new experiences**, putting in **effort**, and showing **vulnerability**. It can be just as much **pain**, **heartache**, and **disappointment** as it is a wonderful, exciting and fun endeavour.

Online dating is more and more widespread in western society, **speeding up the process** of dating and thus allowing these positive - but also negative - experiences to rapidly emerge. **Frequent** (but usually 'low-stake') **rejections** are plenty; e.g. not 'matching' with someone, not getting a reply to a text, or experiencing 'ghosting'. Failures in online dating are common and might impact a person negatively. This makes it a suitable case study to design for emotional injuries.

2.2.1 The current dating scene

Digital technologies made it easier than ever to find and reach out to potential partners. According to Rosenfeld and colleagues (2019), online platforms are becoming the primary way nowadays to meet romantic partners. Online dating has been around since the first chatrooms appeared in the early days of the internet, and it is thriving with around 1,500 different services currently on the global market (Andre, 2021). During the COVID-19 pandemic, people had to resort to seeking connections through their screens even more often than before (Morning Consult, 2020).

Dedicated platforms are promising to find 'the right match' such as Tinder, and Bumble (See *Figure 3*). On top of that, any form of **social media**; Instagram, Snapchat, LinkedIn, chatrooms, community forums, online games, and e-mails or direct messaging services (e.g. WhatsApp) are also part of online dating. People use these services to find others with whom they want to connect romantically and/or sexually. According to Cacioppo et al. (2013), **younger adults** (Millenials and Gen Z) are more prone to use social networking when it comes to online dating, while older generations tend to connect through e-mail.

Some argue that the **increased opportunities** might give way to **increased negative experiences** (Andrighetto et al., 2019). Dating has become more convenient, quicker, and thus perhaps less personal (Barroso, 2020). People establish a

Dating means engaging in a social activity with the intention to explore romantic or sexual compatibility ('Dating', 2021). It can include looking for -, talking to -, and meeting up with people.

'rejection mindset' while choosing from a seemingly endless pool of candidates; this can increase dissatisfaction, and pessimism, and result in closing off from seeking new connections bit by bit (Pronk & Denissen, 2020). At the same time, research suggests that long-term romantic connections that started online might be more stable and long-lasting (Cacioppo et al., 2013) which indicates that people should not abandon online dating. However, people have to learn to deal with these increased negative experiences.

Matchmaking services also need to keep their users in the loop. Some of these services operate based on a fee or a subscription model – and many of them are 'free', meaning they cover their expenses through advertisements. They profit from keeping the users engaged. When an emotional blow hits someone, the person might withdraw or even stop using the service altogether due to their frustrations. Healing after a heartbreak takes time – valuable time that people could spend on the app (or website). Therefore, it is desired for users to bounce back quickly and continue their dating journey – using the services of the providers.

There is no one way to date. People are different when it comes to our experiences; everyone has their own story, their unique views, and feelings. The diversity of romantic experiences can depend on multiple aspects;

- **ways of meeting** someone
  from classic encounters through friends, work, or hobbies, through online dating, to arranged marriages,

- **sexual and romantic orientation**

- personal **goals** such as looking for a long-term partner, casual dates, one night.

- **sociosexuality** that is the spectrum of one's willingness to engage in sexual encounters in the light of required intimacy and commitment

- preferred **relationship model**
  (e.g. monogamy, polygamy etc.)

Below (*Figure 4*) is a general model of (online) dating. This overview gives a glimpse of what the dating experience might look like. However, the 'dating process' can vary greatly due to the above-mentioned factors thus this description should not be seen as exhaustive. This is a simplification, not a comprehensive journey that includes all possibilities in the dating process. This overview will be expanded later in the report with the findings (*Chapter 4.1.6*).

Dating process in the digital age

Figure 4; A description of a modern (successful) dating process

Most popular dating apps
(by monthy downloads worldwide, 2021 May)

Tinder
65,16 million

Badoo
39,11 million

Bumble
16,96 million

Lamour
15,82 million

Tantan
15,51 million

Soul
14,91 million

SweetMeet
11,79 million

happn
10,93 million
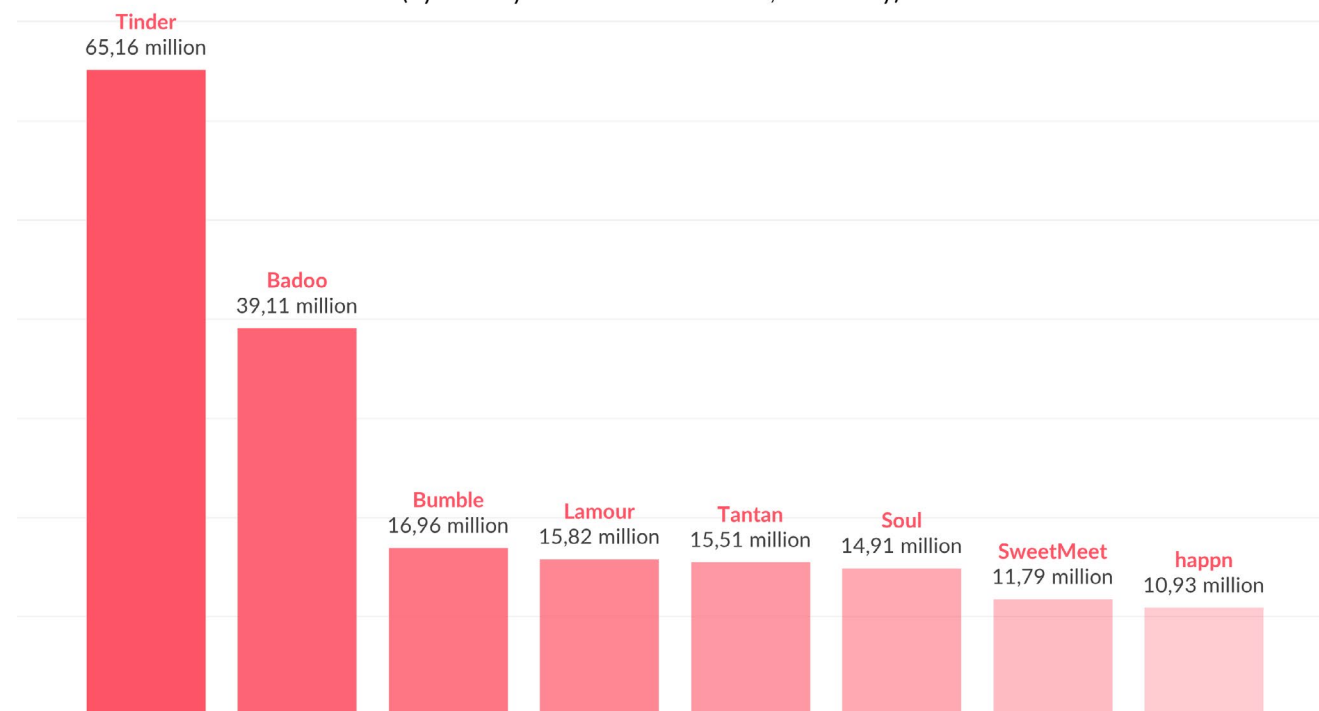
Figure 3; Tinder is the most popular dating app worldwide (Statista Research Department, 2022)

2.3 Design and emotional first aid

2.3.1 Positive Design

Positive psychology concerns itself with positive human functioning. Since the term became widely known in the 2000s, it has rejoiced in considerable attention from the academic field (Gable & Haidt, 2005). Seligman and Csikszentmihalyi (2014, p. 280) define the aim of positive psychology as the goal of building positive qualities such as well-being, satisfaction, optimism, and happiness (just to name a few) instead of focusing on pathological issues.

Besides psychologists, designers have a growing interest in increasing the well-being of the population as well. In the last ten years, design researchers in engineering- and industrial design, interaction design, but also architecture and interior architecture have made considerable efforts to grow the body of knowledge on the topic of design for well-being (Petermans & Cain, 2019). Emerging design directions are concerned with making a positive impact on people's lives.

The central goal of positive design is to design with the explicit goal of increasing people's well-being through design interventions (Desmet & Pohlmeyer, 2013). Desmet & Pohlmeyer (2013) introduces pleasure, personal significance and virtue as the three pillars of positive design (Figure 5) and argue that explicitly targeting all three of these aspects is needed for human flourishing.

Studies show that behaviours such as doing something enjoyable, using our strengths, or just replaying positive experiences in our heads can both decrease depressive symptoms and add to well-being (Sin & Lyubomirsky, 2009). Positive psychology interventions; activities that elicit positive feelings, behaviours, or thoughts are therefore beneficial to people. Design can encourage such behaviour (Petermans & Cain, 2019), and thus could not only mitigate the potential negative effects of emotional injuries (see Table 1 in Chapter 2.1.1) but also increase subjective well-being and result in a more positive relationship-behaviour of people (Neff et al., 2005; Petersen, 2014).

(Desmet & Sääksjärvi, 2016) looked into how tangibility affects the success of behavioural interventions and found that tangible solutions can support a more natural and individual approach integrated into our everyday life. The study suggests that the physical aspect of the design can act as a reminder to carry out a given task, as well as help with motivation and thus be more effective than simply giving tasks on paper. In conclusion; using tangible objects seems to have a benefit over traditional positive psychology interventions such as workbooks or bibliotherapy (described in Chapter 2.1.2).

The current project explores the possibility of translating positive psychology interventions, the 'wisdom' of self-help books, and healthy coping strategies into simpler and more useful tangible forms.
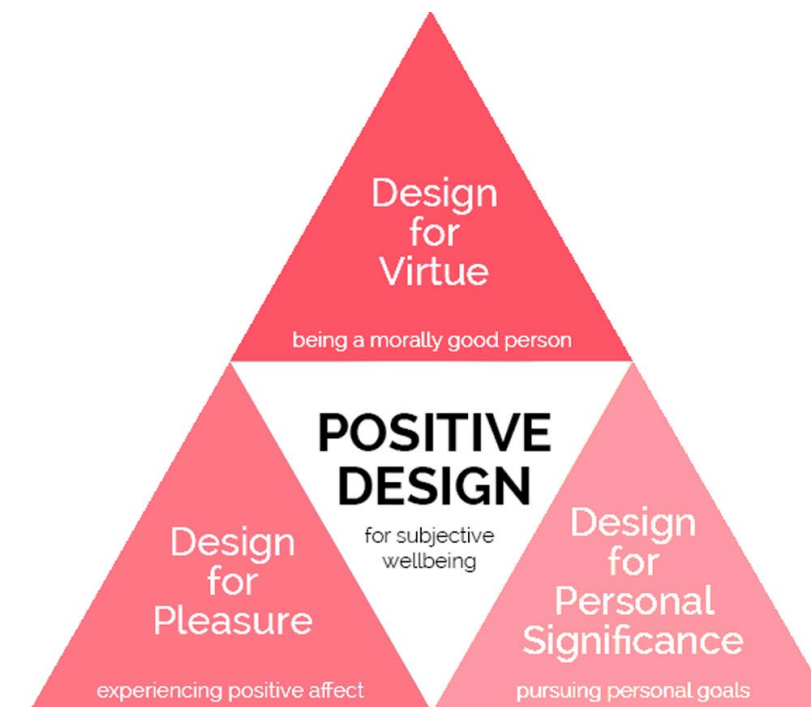

Figure 5; The three pillars of positive design (Desmet & Pohlmeyer, 2013)

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2.3.2 Power of the physical domain

Emotion regulation can be a useful way to treat our emotional injuries (see also *Chapter 6.1.1*), and the objects surrounding us can assist it. The activities we do to mitigate (or enhance) our emotions require tools. People often transmit their feelings to objects; they may break a plate in anger, drink a bottle of wine or eat a box of chocolate in sadness. Similarly, people reach to the phone to share their happiness and give gifts to show their love. Objects can facilitate and enable meaningful activities, as well as help with recollection and profoundness of positive experiences (Desmet & Sääksjärvi, 2016) in emotionally challenging situations.

There seem to be two aspects (product qualities) that can contribute to soothing our emotions; a physical-, and a meaning-based aspect. Participants of the journal exercise (*Chapter IV*) were asked during a follow-up interview to list things – activities, objects – that give them positive feelings. People were given different cues based on the discussions such as a feeling of 'connectedness', or 'confidence'. Their answers were discussed and interpreted together – that is how these two categories emerged.

The above mentioned 'physical' is part of what's called hedonic association (Casais, 2020; Hirschman & Holbrook, 1982) and refers to a pleasurable experience for the user due to the artefact's objective qualities; a teddy bear is soft and 'cuddly' and therefore can give a nice feeling to almost everybody.

The 'meaning-based' aspect can be referred to as eudaimonic association and describes a deeper meaning or fulfilment (Casais, 2020; Ryan & Deci, 2001). It is deeply personal and varies from person to person. If the said teddy bear is a gift from someone close to us, it will also bear an emotional meaning – a reminder of the connection to that person. However, this meaning will only be present to the recipient and no one else.

The objects that surround us all possess these two aspects to various degrees, ranging on a spectrum (*Figure 6)*. From the current project, it seems that both of these aspects can be beneficial when it comes to dealing with emotional injuries. However, more meaningful products might evoke stronger and longer-lasting emotional responses – therefore they can be also more powerful.

The solution needs to provide context-specific help that reaches a lot of people and allows them to engage easily with the product. For this, both physical qualities (size, shape, colour, materials, and the tangible interaction) and meaning-based qualities need to be considered. The latter can be supported by for example making the user put time and (reasonable) effort (Lyubomirsky et al., 2011) into the product by allowing input and personalization (Casais, 2020)

2.3.3 Objects supporting well-being

Tangible products that aim to deliver positive psychological interventions are plenty. Many objects are sold (and used) for their meditative qualities; for example tabletop zen gardens (*Figure 7*). Fidget toys (like stress balls, fidget spinners etc. (*Figure 8*)) are said to have benefits such as helping with focus regulation (being able to pay attention better), retention (being able to recall and recognize experiences easier), and even emotion regulation (da Câmara et al., 2018). Art therapy, and therefore tools of arts and crafts can be beneficial for short-term mood repair by stimulating positive affective and cognitive experiences (Gruber & Oepen, 2018; Nan et al., 2021). Even though all these tools can be helpful, they are quite abstract and not context-specific, hence their effectiveness is limited.

Building on more concrete psychological theories, designers can introduce positive psychology interventions in people's everyday lives. TinyTask (*Figure 9*) by Hans Ruitenberg (Ruitenberg, 2010) uses keychains -tokens- as a physical reminder of committing to new experiences that support subjective well-being. It is a small and simple solution with impact. Some make it big; Glowb from Maik de Rooij (De Rooij, 2015) is an interactive sphere hanging in the comfort room of the psychiatric unit and aimed to help patients to cope with their anger as well as redirect their attention during a psychological crisis. The emotional injuries in dating as not as serious, and are not bound to a place; a message on the phone can reach us anywhere; at home, at work, on the metro.

Further product examples (*Figure 10*) that might help with 'love struggles' are sold in gift shops, offering casual tips on how to deal with a heartbreak. For example, Flying Tiger sells a 'Bucket list notebook' that allows for thematic reflection in the form of a fill-out journal. Similar to workbooks, this asks for a lot of involvement and writing which is not everyone's cup of tea. Their inspirational postcards have a good message – yet they can be too generic (Wood et al., 2009). Social support (which is proven to mitigate the effect of negative experiences (Gable & Bedrov, 2022)) can be attained by using 'love vouchers' that people can redeem when they feel down. A decision-making ball can tip one's judgement during indecisiveness, while 'love in a can' symbolizes how love can grow - letting the user interpret this to their judgement.
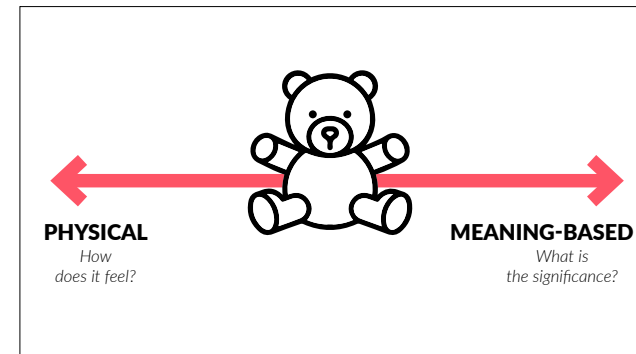
Figure 6; The spectrum of product qualities for emotional first aid

Figure 8; The fidget spinner is one of the many sensory toys on the market (Photo by David Bartus on Pexels)

Figure 7; A tabletop zen garden can help to relax in the office, sold by BangBangDa on Amazon (Miniature Japanese Zen Garden Kit, n.d.)

Figure 9; TinyTask; a small well-being solution originally designed by Hans Ruitenberg (Ruitenberg, 2010)and further developed by the Emotion Studio (Photo by Tinytask - Emotion Studio, n.d.)

Figure 10; Products that can help in dating; Bucket list notebook (top left), postcards with affirmations (top right), love vouchers (bottom left), decision-making ball (bottom middle) and 'love in a can' (bottom right). Pictures by Flying Tiger Copenhagen

III.
METHODOLOGY

3.1 Research through Design for emotional first aid

Research through Design (RtD) means doing design activities with the goal of the generation and communication of knowledge. These activities are including (but are not limited to) iteratively developing prototypes that address a specific situation and reflect, measure, discuss and analyse the effect (Stappers & Giaccardi, 2017). Research is almost always part of designing, because designers gather the information that contributes to the development of a solution. At the same time, design can be part of any kind of research activity. Research through Design finds itself between the two by building on the typical design skills for the sake of generating insights.

RtD is a constantly developing field that struggles with legitimizing its place in the scientific world (Bardzell et al., 2015; Prochner & Godin, 2022). However, RtD is a powerful and flexible approach that can address abstract and uncertain problems by building on traditional design skills such as the understanding of a complex situation by framing (and reframing) the problem at hand (Prochner & Godin, 2022; Stappers & Giaccardi, 2017).

The primary outcome of RtD is knowledge; from abstract theory to concrete proposals (artefacts) and everything in-between. RtD generates a wide variety of rich insights about the prototype, technology, the interaction, the users, the design practice, the research process, the soliton and its generalizability, as well as project-relevant domains (Stappers & Giaccardi, 2017).

Designers use sketching and drawing, virtual or three-dimensional modelling, experience prototyping (Buchenau & Suri, 2000), and storytelling (written or visual scenarios in the form of storyboards or movies) to generate solutions and as a form of communication. Thus, the prototype has an important role in RtD.

The prototype (as described by Stappers & Giaccardi (2017)) is an artefact that can realize the interaction that is being studied. According to Lim et al. (2008, p. 7:10), a good prototype shall manifest an idea, filter the qualities and aspects that are the designer's interest, and make the possibilities and the limitations of the design visible in a simple and efficient form. The role of the prototype in RtD is not to propose a solution for the consumer market, but to be a vehicle of knowledge. Instead of being a product proposal, optimized for cost and aesthetics, a research prototype is optimized for demonstrating certain principles and for learning.

To propose new, more efficient ways of dealing with emotional injuries, one has to change perspective and open up the solution space. Design is suited to do so by its explorative and iterative nature. Moreover, by taking the prototype as the central research tool, Research through Design is especially fitting for exploring the tangible tools and strategies of emotional first aid in dating.

IV.
EXPLORING
EMOTIONAL INJURIES
IN DATING

4.1 Study; the dating process and emotional injuries

4.1.1 Aim of the study

To understand and uncover the causes of emotional injuries in dating the context had to be explored. The author was seeking answers through literature study, researcher introspection (Xue & Desmet, 2019) and a qualitative study with 'daters' to find out;

- **What kind of emotional injuries** do people go through in (online) dating?

- **How do people deal** with their emotional injuries? What are the hurdles? (See *Chapter VI*)

A 10 days long **online diary exercise** was conducted with a follow-up **interview** to explore what people go through during dating. This exercise allowed the writer to follow the stories as they unfolded, and catch any **triggers** that might **cause an emotional injury**. The setup can be seen in *Figure 11* and consisted of three main steps; recruitment, a diary exercise, and an interview.
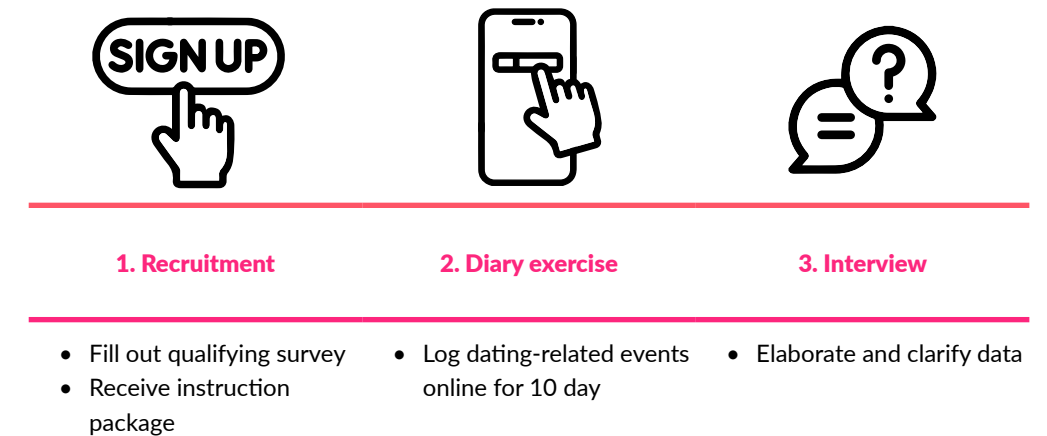

1. Recruitment	2. Diary exercise	3. Interview
• Fill out qualifying survey • Receive instruction package	• Log dating-related events online for 10 day	• Elaborate and clarify data

Figure 11; (Simplified) setup of the diary exercise for data gathering

4.1.2 Sampling

Most frequent users of online dating platforms are Millenials and members of Generation Z (Morning Consult, 2020). Therefore, people **between** the age of **18 and 40** years old were identified as the **target audience** for the study. All participants reported that they are **currently single** (not in a committed relationship) and are **currently dating** (looking for or meeting up with someone to explore romantic/sexual compatibility). No other distinction was made regarding the participants, this way people of various backgrounds, orientations, dating goals, and dating approaches were recruited to establish a heterogenous participant pool.

To recruit participants, flyers were put up around the Faculty of Industrial Design Engineering and the campus of the TU Delft. Digital flyers were sent out in WhatsApp groups of the Master's Programmes of the faculty. Participants were also recruited through word-of-mouth (personal connections) outside of the university.

Figure 12; Recruitment flowchart

Participants signed up for the study through a digital form (*Appendix 4*) that assessed their eligibility and collected demographic data (*Figure 12*). The anonymity of the participants was ensured by giving them (self-chosen) nicknames. All participants gave their informed consent (*Appendix 3*). The setup was approved by the Human Research Ethics Committee of TU Delft (*Appendix 2*).

13 (9 female and 4 male) **currently dating singles** participated in the study. Participants' age was between 22 and 34. Most were looking for a serious relationship but some also for casual dates. Five participants reported that they started to see someone recently (for less than 2 months) and the rest of the participants were talking to/dating multiple people at the same time.
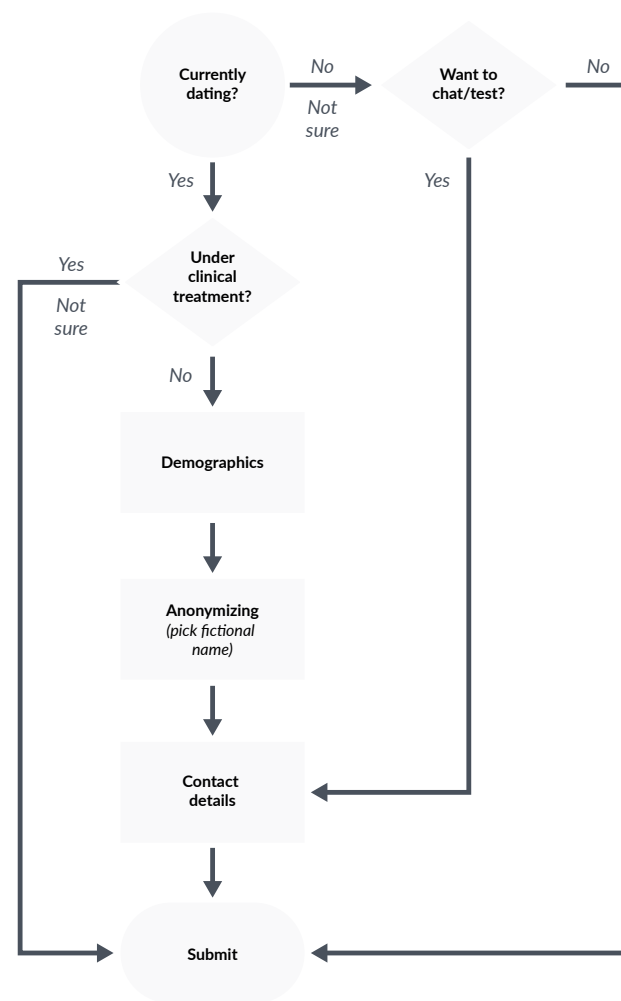

*Participant pool**

Nationality

🇳🇱 🇹🇷 🇪🇸 🇮🇹

Age (average)

26

Gender

♀ **9**

♂ **4**

Relationship status

👤 **13**

(Dating) app use

8 WhatsApp 5 bumble

4 tinder

3 Hinge 3 Instagram

2 happn

1 Breeze 1 inner circle

Participant bias was noted (Chentsova Dutton & Lyons, 2021). The majority of the participants were students of TU Delft, meaning that the data comes from a „WEIRD" participant pool; people with a Western, Educated, Industrialized, Rich and Democratic background. Dating outside of these cultural aspects might look very different. The project also did not have access to people who are divorced, have children, etc. which aspects might influence the kind of experiences they have.

* The data is based on participant's self-report

4.1.3 Method

Assessing a situation in retrospect does not always provide a realistic picture. Many people have stories about a past rejection or a failed attempt at a romantic pursuit. However, as Chentsova Dutton & Lyons (2021) write, people often fall back on their general knowledge about emotions if they have to describe them later. Therefore, it was important to **capture** the emotional **injuries as soon as possible** – when participants can access these experiences in their episodic memory, allowing for a more accurate recall.

Diary exercises are frequently used in the social sciences, as well as in design research for data gathering. Using a diary, participants record their experiences on their own, with (or without) the help of pre-defined questions and prompts (Bolger et al., 2003; D O'Gorman & MacIntosh, 2014). There are many advantages of **self-reporting**; it can be applied flexibly in different situations, and it allows to capture of rich context-specific qualitative data over time - without the close involvement of the researcher during the process (Hyers, 2018). Diaries provide **rich insights**, although they can be labour-heavy on the participants and in terms of analysis (Bolger et al., 2003).

Desmet et al. (2021) recommend **combining** emotion measurement **with qualitative interview** techniques. This way the researcher can uncover underlying information behind the data by asking **why specific events were important** to the participant. Semi-structured interviews have an open format that allows flexibility and for participants to reflect in-depth on their answers together with the researcher.

4.1.4 Procedure

Upon agreement of participation, people received a small instructions package (See *Figure 13*). Jacob et al. (2015) found that people were more likely to comply with a survey request after being given a small gift in a face-to-face setting. Having met with the participants allowed the writer to establish an initial bond with people – which came in handy when they shared details of their private life.

For (about) 10 days, participants were instructed to **mark and note dating-related experiences** as they happened, and **reflect on them in-depth** using an online diary (*Figure 14, Appendix 5*).

Figure 13; Contents of the instructions package: an instruction sheet (Appendix 6), a small notebook to mark experiences throughout the day, as well as some snacks and a pen.

The two-step process was introduced to capture emotions close to the experience, with keeping feasibility in mind.

Because many of the interactions happen online ('swiping', 'matching', chatting...) a digital diary was chosen for reflecting on the experiences. A survey-type diary was easily and always accessible through people's smartphones, thus allowing them to make instant notes, as well as the researcher to process the entries as they were submitted.

The online diary consisted of open-ended survey questions, that allowed the author to grasp the happenings and their impact.
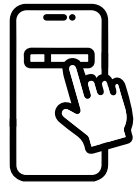
1. What happened?

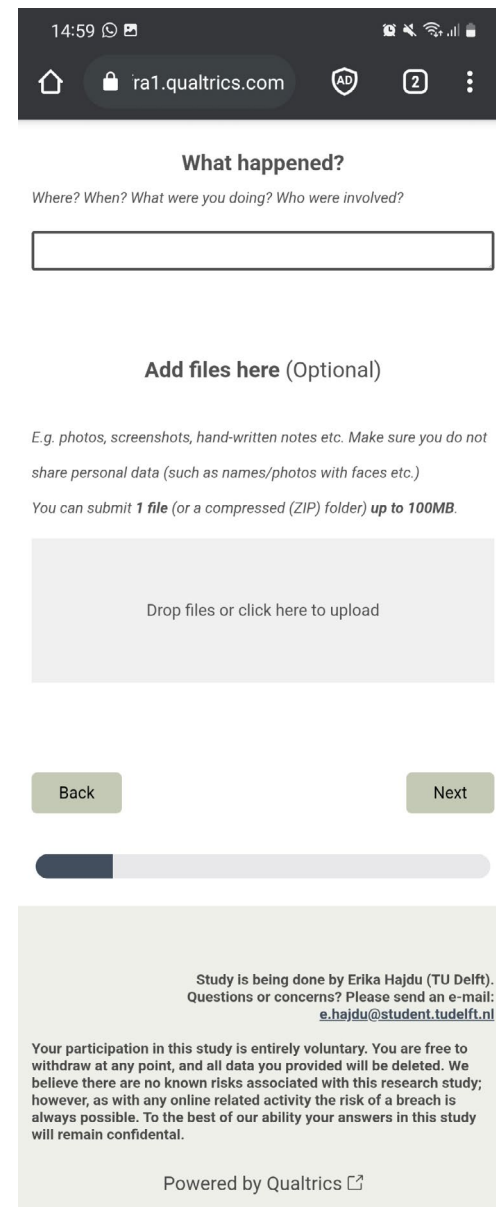2. This made me feel...

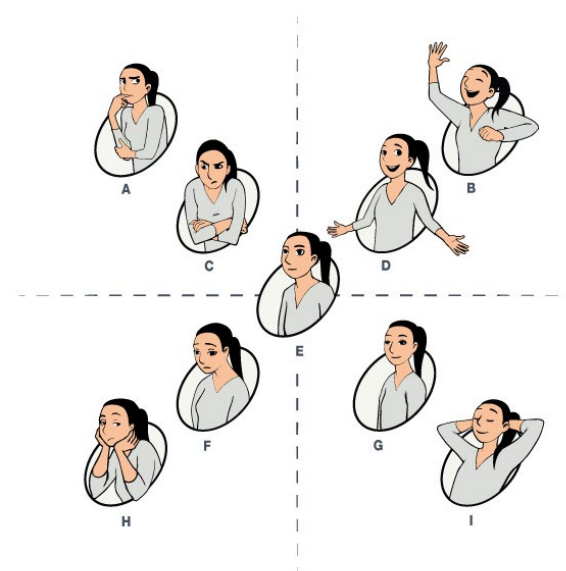3. Afterwards I....

4. Now I feel...

To see how people deal with their injuries, participants were asked what they did after an event, and how they felt afterwards. Questions 2 and 4 ought to capture the emotional injury. If participants' mood improved, it was deemed that their coping strategy worked. Chentsova Dutton and Lyons (2021) suggest using scales or standardized emotional stimuli against reporting bias when it comes to measuring emotions in a cross-cultural context. Pictorial self-report scales are especially suitable for quick and intuitive measurement. Different possibilities were considered, after which the decision fell on Pick-A-Mood (Figure 15), a pictorial self-report scale for measuring and expressing mood states by Desmet et al. (2016). Even though emotions and moods are different, there's an interaction between the two; an accumulation of emotions can result in a 'mood state', which then affects people's general behaviour (Davidson et al., 2002; Desmet et al., 2016). Participants were asked to pick a figure and describe their feelings in their own words.

Figure 14; Snapshot of the digital diary

Figure 15; Pick-A-Mood (Desmet et al. 2016) as used in the diary exercise

After the 10 days participants discussed the data with the researcher in a one-to-one interview. During these semi-structured interviews (See Appendix 7 for an example script) participants were asked about their favourite and least favourite moments in the past period, after which they were asked to elaborate on selected diary entries and explain the reasons behind their reactions. Each interview ended with an exercise of collecting things (activities, memories, objects, etc) that elicit a specific positive emotion (e.g. confidence) in the participant. The interviews lasted 40 to 120 minutes and were carried out in various locations (on-campus, online, or at the participant's home, depending on the participant's preference and availability).

4.1.5 Analysis

The events that people described in the diary were noted on a digital whiteboard using 'statement cards' (Figure 16) – a form of initial coding (Saldana, 2009). Using such cards is beneficial for qualitative data analysis since it allows the data to be organized (and re-organized) quickly (Sleeswijk Visser et al., 2007). The statement cards consist of an interpretation (paraphrase) of the data together with the corresponding quote from the participant. The transcripts of the interviews were used to enrich the data from the diary exercise with additional insights. Moreover, the cards were colour-coded according to the Pick-A-Mood characters the participants used to describe their feelings. Thus the colour-coding gave a visual cue about the nature of the participant's experience (emotion coding, (Saldana, 2009)).

These statement cards were first categorized into positive and negative experiences with the consecutive events grouped (Figure 17). 'Event cards' described what happened to the person (question nr. 1 in the online diary). 'Coping cards' told what they did about it (question nr. 2). The card groups showed whether the coping strategy that people used was successful (see more about this in Chapter VI). Statement cards were labelled by the emerging coping strategies such as 'social connection', 'withdrawal', etc. (Saldana, 2009). Often these groups of cards told a story that unfolded over multiple days, which helped to put the events into context and note long-term effects.
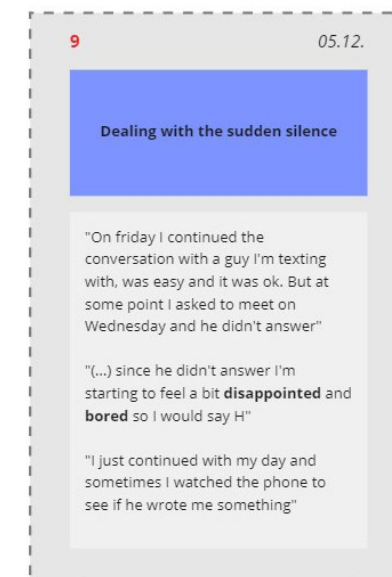

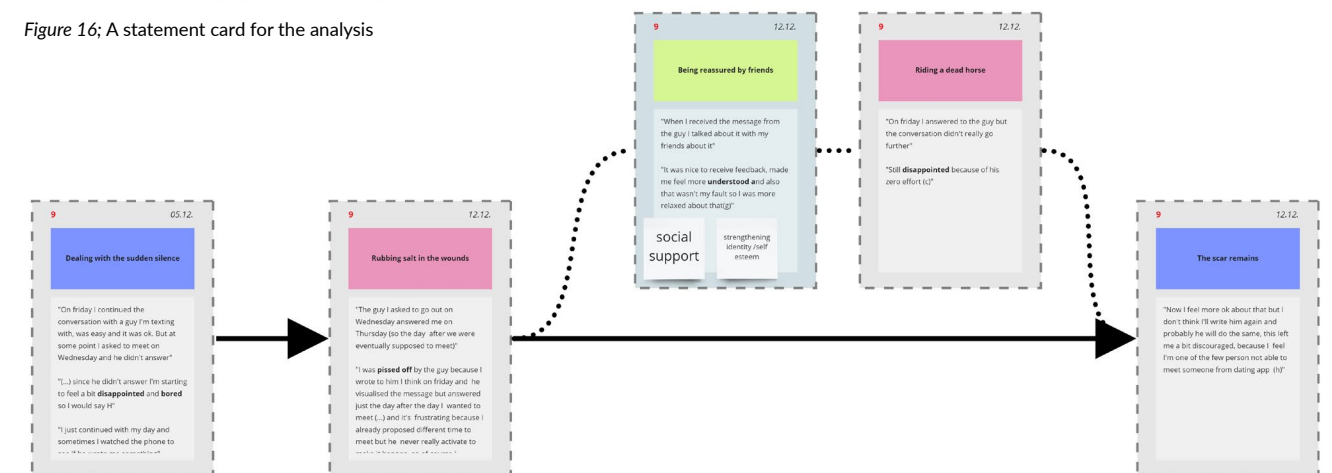*Figure 16; A statement card for the analysis*

Figure 17; Related events and actions were grouped together

Each card describes an **event and the emotional reaction** – how people felt after the event. Emotions are responses to events that are important to us (Law of concern, (Frijda, 2007)). They are regulated by our expectations (Law of comparative feeling, (Frijda, 2007)) and their intensity depends on their subjective significance (Law of apparent reality, (Frijda, 2007)). The author proposes that this **subjective significance** depends on a person's **needs** in a given situation. This idea occurred during the interview process when a participant was talking about their injury;

„ I think that my need is not important. He didn't respond, and (...) maybe it's not so big or I don't have to feel that way. I know that it's nonsense, but he didn't acknowledge me. "

/ HoneyBunny, 34 /

The quote above shines a light on two things; One is that **people might invalidate their feelings** and reactions to a certain event (see more about this in *Chapter VI*). Two; **Injuries** can be an **indicator** of people's **needs being unmet**. In this situation the participant needed reassurance from the other person; they wanted to connect at the moment. However, this need was not fulfilled, therefore they felt negative.

The statement cards were then searched for '**triggers**' – events that triggered a positive or negative emotional reaction. A card described a trigger if there was cause and effect; „X happened and that made me feel Y". The analysis focused on the triggers that **elicited** some kind of **reaction** during the time of the data gathering. Yet, some of the cards describe general anxiety; worries, and results of earlier trauma. These were noted if they were connected to a trigger event. Even though dating anxiety is outside of the scope of the current project, the presence of such data reinforces the importance of dealing with negative emotions before they grow into long-lasting mental health problems.

The triggers were further coded (See *Figure 18*) based on the trigger event (e.g. a person disappearing after a date), the (missing) need (e.g. explanation, validation), and the **cognitive, behavioural, or emotional effect** of the trigger (e.g. decline in self-esteem). The trigger cards (together with the corresponding effect and needs missing) were used then to build up a 'timeline of dating'.

This timeline was the basis of the 'Map of injuries in dating' shown on *pages 34-35*. The map describes the triggers and people's reactions to these events. By looking into the reactions and seeing them as the effects of an injury ('emotional wounds'), it was possible to 'reverse-engineer' the specific injury type that was caused by the trigger. The triggers were therefore categorized into the 7 injury types (Winch, 2013) based on the framework described in *Chapter 2.1.1* – sometimes belonging to multiple categories.

2   15.11.

Being rejected after building up expectations and having a good time

"I have met with this guy from [platform], we had hot chocolate together and I believe we had very good time. (...)However at the end he unmatched me. Even though I do not care about this guy that I only saw once in my life, I felt upset that he unmatched me."

"And after our meeting, I texted him I had a good time with him. And he also texted me the same, but then he unmatched me."

"But probably whatever he is looking for, he could not find it in me. Maybe he wanted to have a more serious relationship, and I was leaving the country for an indefinite time, and I could not give him that, or he was only looking for hook-ups, and I did not give him that too."

mi

trigger = being unmatched (ghosted) after a good date
need = understanding, explanation, validation?
effect = rocks self-esteem

Figure 18; Triggers were coded based on the event, need, and effect

4.1.6 Results (Type of injuries)

By putting the statement cards of triggers into order, it was possible to draw up a general model ('map') of how a **dating experience** might look like, and where the **pitfalls** (injuries) can happen (*Figure 20* on the *next page*). This '**map of injuries**' is only a simplification and does not include every possibility that can occur. Several other triggers can cause an injury, depending on the person, the situation, etc.

The map shows
- the **events** (triggers),
  their perceived frequency and severity

- the **effect** of these triggers (wounds),

- people's **needs** in the given situation

- the **type of injury** that the trigger causes

- the **change in people's emotional state** throughout time

- example **quotes** from the diary and the interviews illustrating the situations

The map describes what people might need in the situation in two ways; First, it **points out the missing aspects** which were contributing to the injury (e.g. when a person doesn't answer a text, people want feedback. When the person wants to end dating, people want to know the reasons why. But they also need consolidation – support and care). The second line of needs– the '**treatment**' needs were based on aligning the treatment **suggestions of Winch** (2013) with the **13 fundamental needs** of Desmet & Fokkinga (2020). This line lists the appropriate need as well as context-specific proposals (e.g. 'Confidence', 'Reassurance' (that is understood as a combination of 'Security' and 'Confidence'), or 'Belonging' (corresponds to 'Relatedness' in the list of Desmet & Fokkinga's fundamental needs)).

Next to the 'map of injuries', the analysis resulted in 14 **injury cards**; a more detailed description of the **most important triggers** on the map (*Figure 19, Appendix 9*).The journey and the cards together served as inputs for ideation (see *Chapter 5.1*).
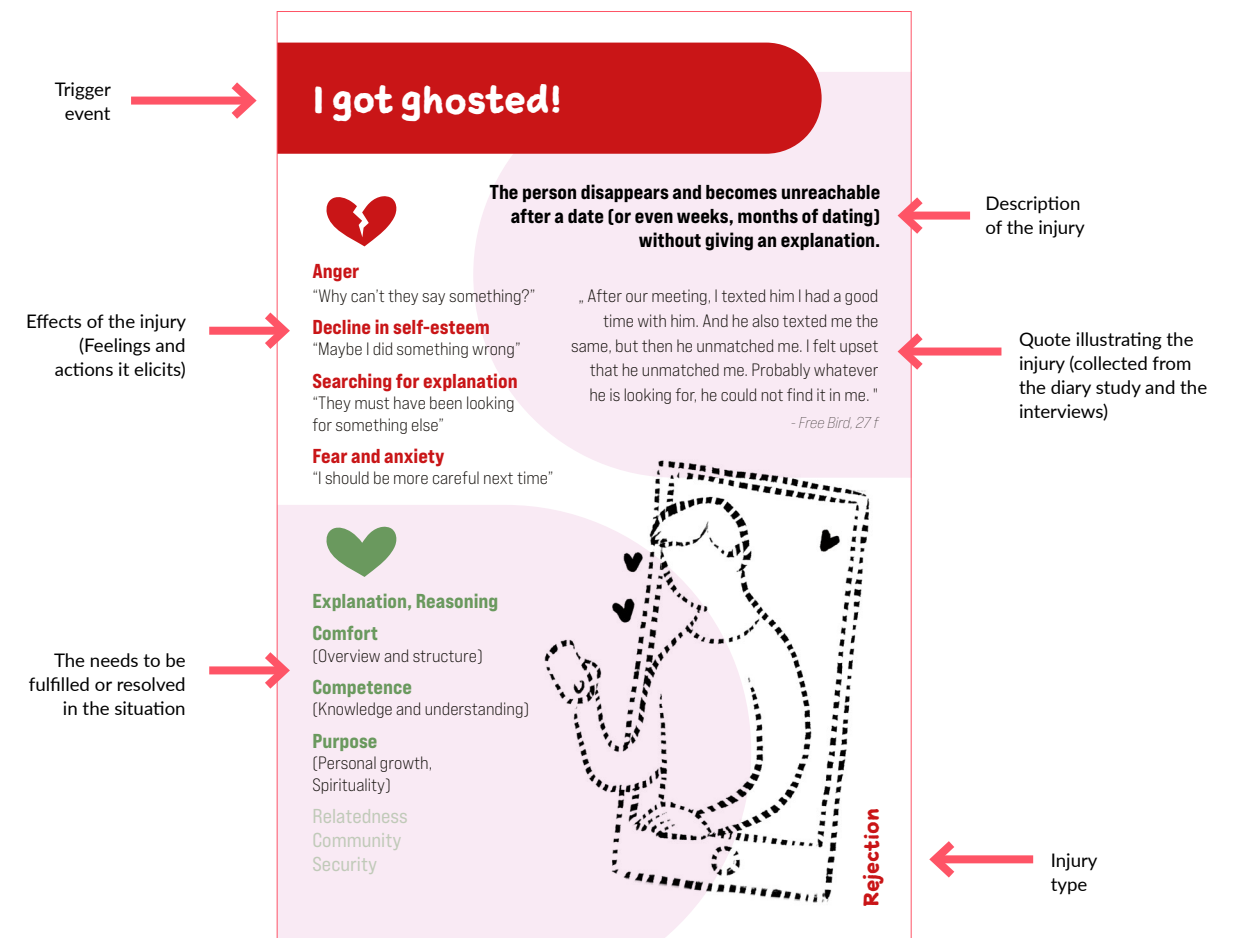

Trigger event

I got ghosted!

The person disappears and becomes unreachable after a date (or even weeks, months of dating) without giving an explanation.

Description of the injury

Anger
"Why can't they say something?"

Decline in self-esteem
"Maybe I did something wrong"

Searching for explanation
"They must have been looking for something else"

Fear and anxiety
"I should be more careful next time"

Effects of the injury (Feelings and actions it elicits)

„ After our meeting, I texted him I had a good time with him. And he also texted me the same, but then he unmatched me. I felt upset that he unmatched me. Probably whatever he is looking for, he could not find it in me. "
– Free Bird, 27 f

Quote illustrating the injury (collected from the diary study and the interviews)

Explanation, Reasoning
Comfort
(Overview and structure)
Competence
(Knowledge and understanding)
Purpose
(Personal growth, Spirituality)
Relatedness
Community
Security

The needs to be fulfilled or resolved in the situation

Rejection

Injury type

Figure 19; An injury card. The collection of cardscan be found in Appendix 9

❤️‍🩹 The pains of (online) dating...

Figure 20; 'Map of injuries' in dating (For higher resolution see Appendix 8)

Looking at the collected data and the map, **Rejection** and **Loneliness** seem to occur often in dating scenarios (more often than other types of injuries). Given that dating is linked to our fundamental need for belonging, this is no surprise.

In situations where the person of interest does not match back, doesn't answer our witty opening line, declines the date offer, disappears right before (or after) a date, people feel **emotional pain, anger and annoyance**. They start to make **generalizations** and **negative comments** about themselves which contributes to the **decline of their self-esteem**. These are typical symptoms of rejection (Winch, 2013).

While exploring our compatibility with another person, people can face small moments of friction which elicit the feeling of Loneliness. When that happens, they often **criticise themselves** (and others as well) and start to behave in a **self-defeating** way (Winch, 2013). It is not uncommon for people to **withdraw** instead of confronting the issue. This happens when the person of interest takes too long to answer, ignores texts, keeps quiet for days after a (seemingly amazing) date or says they are too busy to make time. When the person of interest wants to end things, that can make people feel especially lonely and as if they are 'not enough'.

How people deal with these triggers and their effects is an essential part of the study. Based on the literature and the coding of the coping strategies, categories of coping strategies are defined in *Chapter VI*.

Focusing on these two types of negative experiences, it is possible to make context-specific (dating related) interventions that can help people to deal with most of the hurts of (online) dating.

V.
DESIGN PHASE

5.1 Initial idea generation

Having drawn conclusions from exploring the context of emotional injuries in dating, ideas which might help with the pains of rejection and loneliness were generated. After selecting promising directions, the author used sketches and scenarios as a form of prototyping. These were presented to experts in the field of social psychology and relationship studies. The feedback from these meetings helped to identify the aspects that can contribute to successful application of helpful coping strategies (*Chapter VI*) into a tangible form (see *Chapter 7.1.1*, Design Objectives).

5.1.1 Defining Directions

As described in *Chapter 4.1.6*, most injuries in dating belong in the categories of Rejection and Loneliness. These injuries not only cause emotional pain but often make people question themselves, resulting in negative generalizations and a blow to people's self-esteem.

To treat sharp emotional pain and our damaged self-esteem, Guy Winch (2013) suggests practicing kindness instead of blaming ourselves. It is important to revive our self-worth by focusing on the good aspects; characteristics and attributes that we possess and are of value (both for ourselves and to other people). Self-esteem is important when it comes to resilience and life satisfaction (Arslan, 2019; Liu et al., 2014) as it is an important resource for coping (Taylor & Stanton, 2007).

The wounds of Loneliness overlap with the ones of Rejection and can be treated by challenging our negative perceptions and embracing a more positive and accepting outlook on ourselves, others, and the situation. People shall try to visualize success and give the benefit of the doubt to others. Both criticism and self-defeating behaviour have to be fought by taking action and seeking out social connections.

Additionally, in the face of anger and loneliness (both being a 'side-effect' of rejection), Winch (2013) suggests making efforts to replenish our social connections. Reminders of our significant relationships, engaging with another person can reduce these negative feelings.

These strategies of dealing with Rejection and Loneliness can be divided into two categories, which were used to generate initial ideas;

1. less self-criticism, more kindness, e.g

   - using counter-arguments against critical thoughts,

   - focusing on good aspects (domain-relevant values, characteristics we possess and are of value to us and others),

   - visualizing reasonable/realistic outcomes (instead of pessimism)

   - giving the benefit of the doubt to others

2. cultivate and replenish social connections, e.g;

   - reminders of significant relationships

   - (recalling) warm interactions

   - taking (social) action (hobbies, volunteering, going online, talking to people...)

Initial idea clusters on the wall during the Midterm evaluation meeting

Initial idea sketches

5.1.2 Initial Concepts

Multiple ideating sessions resulted in around 60 initial ideas. These were clustered according to the effect and nature of the ideas (Saldana, 2009). Emerging clusters were;

- **Providing sensory comfort**

- **Helping to process emotions**

- **Reformulate negative thoughts**

- **Viewing dating as a learning**

- **Raising awareness** (to notice emotional injuries)

- **Visualizing the dating journey**

- **Reminding of other external/internal sources of a missing need**

- **Reforming digital behaviour**

- Else (some ideas that did not fit the other clusters)

The most promising ideas of each cluster were selected, leading in the end to 5 initial concepts (see *Appendix 10*);

'**Little friend**' is a tennis-ball sized conversation tool that checks upon the user's emotional state, thus raising the user's awareness about an injury when it happens.
'**The bucket list**' is a scratch-off album containing dating-related 'challenges', to gamify injuries into dating achievements and thus change the perception of failure.
'**Reformulate**' is a hand-held printer that helps to challenge negative thoughts and reminds the user of sources of joy; social bonds, values, and identity by encouraging people to write out their negative thoughts and printing over them, thus destroying the negative perceptions.
'**Emoaxine**' is a 'medicine box' filled with colour-coded prompts (strategies) that can help to cope with various injuries, helping to understand and build personal coping strategies.
Finally, '**The Shell**' (*Figure 21*) is a handheld speaker filled with uplifting messages from one's loved ones.

Strengthening social bonds (and self-worth)

Effective **against Loneliness, Rejection, and Low self-esteem**

The Shell

The Shell is a **handheld speaker filled with uplifting messages from** one's **loved ones**.

The key is to use affirmations (that are relevant and believable) and/or true memories (instead of generic positive messages).

1.
Friends and family (as well as the user) can **send custom voice messages to the Shell** from an app, based on specific prompts.

2.
Each time the user is feeling down, they shake the shell and **listen back a positive** memory/**message** about themselves

3.
The personal **messages** from loved ones (**conveyed with emotions** in their tone) will put the user into a good mood and **reinforce** their **positive self-image**.

4.
If the user does not interact with the Shell, it lights up from time to time and reminds them to listen back to the loving messages - to **continuously engage with**, and **strengthen** their **positive social identity**.

Figure 21; The (first) concept of 'the Shell'

5.2 Session with experts

5.2.1 Aim of the session

Research through Design (*Chapter III*) uses design artefacts and prototypes addressing a specific situation to **discuss and analyse the effect** (Stappers & Giaccardi, 2017). The concepts described in *Chapter 5.1.2* were used as conversation tools to point out the design qualities that can convey the intended psychological strategies. Thus, the expert sessions were an important feedback point to **define** a direction and **design objectives**, as well as gather additional ideas for realizing emotional first aid in dating.

The initial concepts were elaborated in the form of sketches with short descriptions and then presented to experts in the field of social psychology. This was followed by a second round with iterations on 4 concept directions and lastly 3 concept directions gradually leading to a final one.

5.2.2 Sampling

At the beginning of the project, the project team reached out to 16 possible **partners** for collaboration. Stakeholders **in the areas** of (online) **dating**, **psychology**, and **emotions** were contacted to build a 'consortium' of people from academia and industry. The context-specific knowledge that members of such consortium can provide each other can be beneficial for all parties, yet many did not reply to our enquiries.

5 experts answered with enthusiasm to join the project. 4 of them were experts in the field of social sciences and relationship studies with together 28 years of experience in academia; one assistant professor, two postdoctoral researchers and a lecturer with a research focus on love and relationships, expertise in emotional processes and intimate relationships, and experience on supervising graduation projects in the topics of intimate relationships and mate-seeking practices. Said academics are holding a position at Tilburg University, Ghent University, the University of Twente, and Maastricht University. Additionally, a founder member of a locally-initiated dating app (Breeze) joined as an expert from the industry, as well as a graduate student who was working on the topic of female-specific mate selection in online dating, adding up to 6 attendees for the expert sessions.

5.2.3 Methodology

Given the various locations of the experts across the Netherlands and Belgium, online video meetings were deemed as the most efficient form for the sessions. Each of the meetings hosted 1-3 experts and lasted for one hour. For all these meetings there was a project summary and an online whiteboard prepared, which illustrated the ideas in the form of sketches and short storyboards (*Appendix 10*, *page 58*).

After a short recap on the project progress, attendees went through the ideas one by one, discussing them together and thus building upon each other's insights. Questions were prepared such as *"I find this useful for..."*, or *"It is unclear to me..."* which helped attendees to concretize their feedback and discuss the design aspects with the researcher in-depth.

All attendees gave informed consent (*Appendix 3*) to make voice recordings of the meetings. Recordings were transcribed and searched for additional insights. The notes that attendees put down on the whiteboard were completed with notes from the transcripts. These notes were searched for emerging themes and ideas.

Iteration sketches
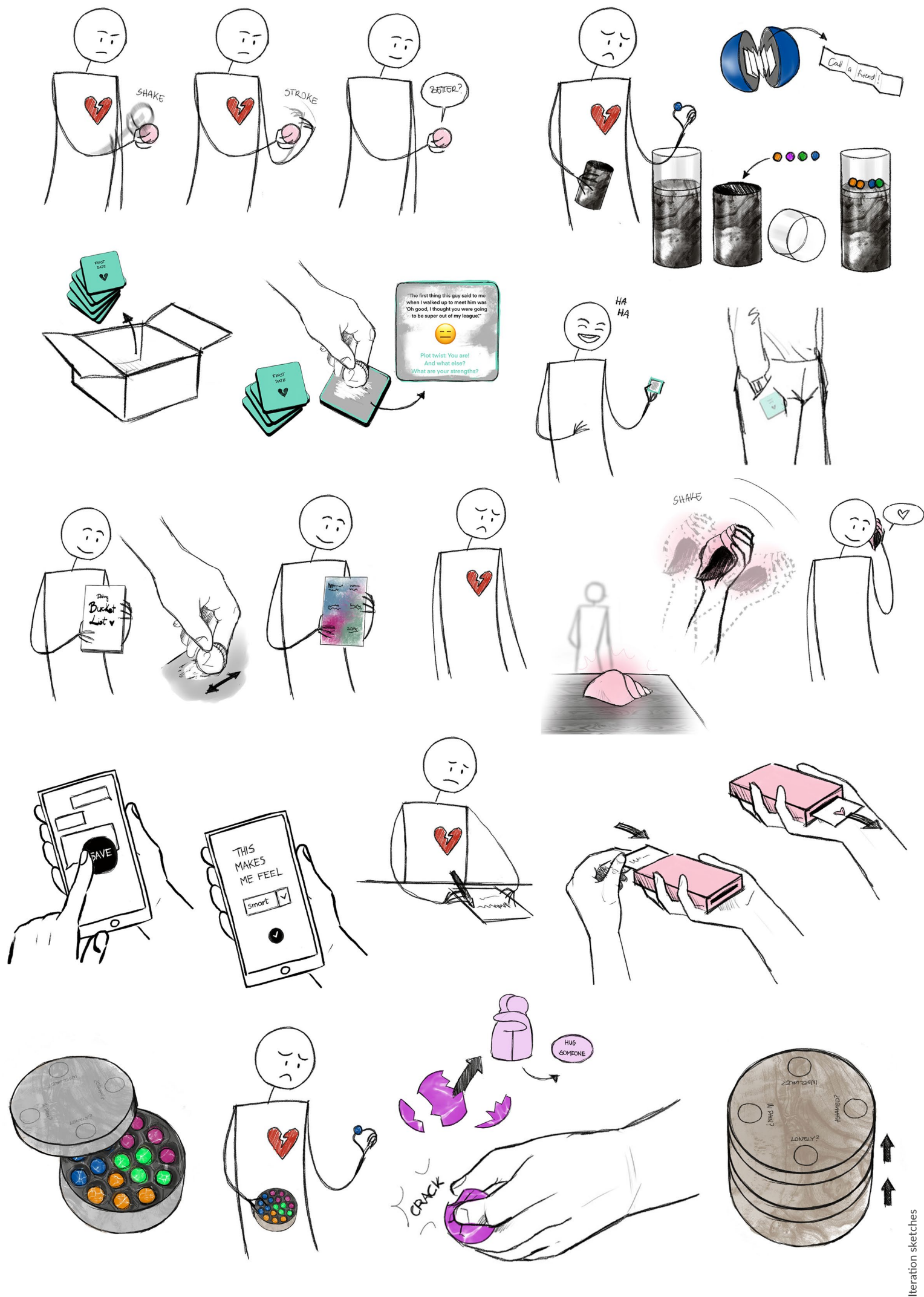
5.2.4 Results (Design recommendations)

During the first round, 5 ideas were presented to the attendees. The experts commented that they see reflection as beneficial, and found the humour and the light-heartedness to be attractive product quality. A collection of possible negative experiences ('The bucket list', see Chapter 5.1.2) was still deemed problematic, and the question came up; *„How do I feel when it's complete?"* Experts saw difficulties in engaging with the design in the moment of pain, saying it may be hard to receive and believe positive messages in a bad mood. Providing concrete examples of one's good qualities, and memories when one felt competent or loved might help to make those messages feel more real. Furthermore, by making the interaction with the design simple for the users themselves, the threshold of reaching out for help in a negative moment can be lowered. Suggestions given to people ('Emoaxine', see Chapter 5.1.2) need to be flexible and give agency to the user to increase motivation.

Two of the concepts were relying on loved ones providing heartfelt messages to the user. However, as it was commented by one of the attendees, daters might not have the available resources. They saw problems with involving one's support network to a great extent, but at the same time acknowledged the power of social support. If the user space is extended to others than the dater, these others need to be motivated to participate in a way that requires little to no effort from them. Attendees liked the aspect of common humanity; reminding the user that the experiences are not a failure of the self, but something that is fairly common many people go through. This idea is part of the concept of 'self-compassion' (Neff, 2003).

With these insights, one concept was ruled out and iterations were done on the rest. For the second meeting, four concepts were presented. Attendees shared some of the comments of the previous session, such as the need for a low threshold and for allowing the user to do first aid anytime, alone. They added insights about connotations and their importance regarding product form an interaction. Associations that are off-context (e.g. the shell form of one of the concepts being perceived 'protective' and 'mystical' but also 'fake') might be contra productive. Instead of scratching off messages, the way one reveals them could be fit to the injury (e.g. breaking, peeling, dissolving in the moments of anger, frustration, or sadness).

When one cuts a finger; there is blood, pain, and urgency. However, emotional injuries do not have an apparent trigger. People's feelings need to be validated and they need to be reminded to use their first aid tools. A subtle visual cue (e.g. soft light) might be just enough a nudge that helps people to engage with the design in a low moment.

For the last meeting, the three scenarios were presented that illustrated the same concept with different product qualities in three different scenarios. Yet again was the importance of social support mentioned; getting a message from a friend can be much more powerful than telling ourselves nice things. Turning around the experience into something positive; getting a gift or a prize one by one might also help with attrition and the design intervention losing its appeal and becoming 'yet another lamp' in someone's home.

VI.
DEALING WITH
NEGATIVE EMOTIONS

6.1 Coping styles

To provide emotional first aid to people, it needs to be understood first how they currently deal with emotional injuries. With the help of literature study about emotions and coping, as well as the data from the diary exercise (Chapter IV) the author was seeking answers to the following questions;

- **How do people deal with their emotional injuries? What are the hurdles?**

Lazarus and Folkman (1984) describe coping as a behavioural or cognitive strategy we use to manage a situation we see as taxing – or negative. Emotions are the outcome of people's coping efforts to a stressor in life; a negative stimulus (a trigger event) such as a rejection. Figure 22 shows a visualization that explains how this process looks like using the Transactional model of stress and coping (Lazarus & Folkman, 1984). Besides the negative emotions, **insufficient coping** can result in a **bad mood** and possible **emotional wounds**.

Some people see rejection as if it's the end of the world, while others quickly rebounce and move on. The first type of people experience excessive emotional pain and might ruminate over the experience, affecting other areas of their lives. Both experience the same event. However, the difference between them is how they experience it. Injuries are not (just) about the happening, but our understanding of it.

Researchers have tried categorizing people's coping styles in various ways in the past. (Ewert et al., 2021); e.g. 'adaptive and maladaptive' -, 'engagement and disengagement'-, or 'approach and avoidance – coping. One of the things that make it difficult to establish definitive categories is that **coping is situational**; what might be ineffective in one situation can be very helpful in another. **Personal differences** also play a role in this. In this report, the adaptive-maladaptive categorization is used to distinguish strategies that were **helpful or unhelpful** after a trigger event. Table 2 shows adaptive and maladaptive coping styles categorized by adaptive processes (Skinner, 2007).
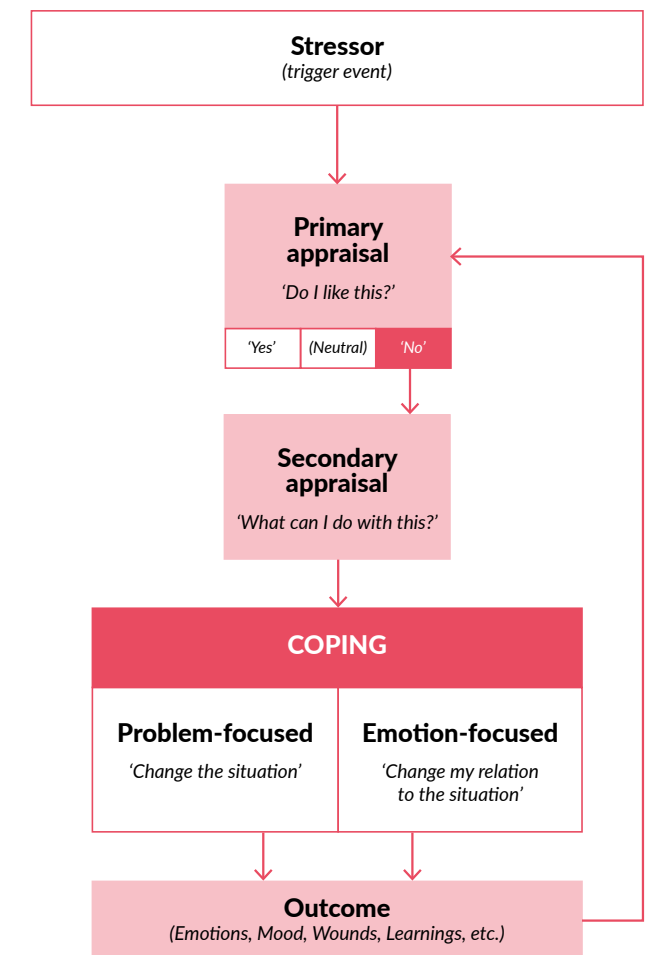
Figure 22; Model of stress (triggers) and coping, based on Lazarus & Folkman (1984)

Actions		Social rescources and reliance		Preferences and available options	
Problem-solving	**Helplessness**	**Self-reliance**	**Delegation**	**Accomodation**	**Submission**
• *Strategizing* • *Instrumental action* • *Planning*	• *Confusion* • *Cognitive interference* • *Cognitive exhaustion*	• *Emotion regulation* • *Behaviour regulation* • *Emotional expression* • *Emotion approach*	• *Maladaptive help-seeking* • *Complaining* • *Whining* • *Self-pity*	• *Distraction* • *Cognitive restructuring* • *Minimization* • *Acceptance*	• *Rumination* • *Rigid perseveration* • *Intrusive thoughts*
Information-seeking	**Escape**	**Support seeking**	**Isolation**	**Negotiation**	**Opposition**
• *Reading* • *Observation* • *Asking others*	• *Cognitive avoidance* • *Behavioural avoidance* • *Denial* • *Wishful thinking*	• *Contact seeking* • *Comfort seeking* • *Instrumental aid* • *Spiritual support*	• *Social withdrawal* • *Concealment* • *Avoiding others*	• *Bargaining* • *Persuasion* • *Priority-setting*	• *Other-blame* • *Projection* • *Aggression*

Table 2; Categorizing coping strategies by adaptive processes and families of coping (based on Skinner (2007))

6.1.1 Adaptive coping

A strategy was deemed to be helpful (adaptive coping) if the emotional state of the participant improved after employing said strategy.

Emotion regulation (people's attempts to influence their emotions) has been shown to be negatively correlated with depression (Joormann & Gotlib, 2010), and allows people to have more control over their expression of violence - which is beneficial in the context of dating, as rejection might increase anger and sometimes even hostility in people (Andrighetto et al., 2019; Winch, 2013)). Turning around negative emotions into more positive ones can help to escape the negative thinking spiral and take on a more positive outlook.

This positive change can be reached for example by reappraisal (McRae & Gross, 2020). Studies show that reappraisal or suppression of emotions is connected to people's self-esteem and wellbeing; reappraising emotions (turning thoughts around to feel better) can lead to better psychological adjustment, and improved interpersonal functioning (J. J. Gross & John, 2003; Nezlek & Kuppens, 2008).

„ I try to rationalize it say; Okay, it's not too bad. It's just a person you haven't met so they don't know (you). "

/ Cuqui, 27 /

Indeed, the data showed that self-assuring thoughts and reenforcing one's positive self-image is likely beneficial, which is in line with the strategies of Winch (2013) about managing self-criticism and reviving self-worth in the face of rejection:

„ I felt a little bit anxious. (…) And to make myself more confident, I thought about people that liked me and texted me to get my attention. And I thought also all these people are excited to get to know (me). I know my own worth, and I do not really care about this person who behaved very meanly towards me. (…)
If someone wants me, they need to watch their attitude.
If the attitude is not matching with my standards, I will just ignore them. "

/ Free Bird, 27 /

Thinking things through is not (always) enough and it depends on the person whether it is helpful at all. Most participants reported being more mindful due to doing the diary exercise itself. It allowed people to look at their experiences closely, acting as a coping strategy on its own; journaling made people reflect and be more present in their dating life.

„ I'm happy this exercise pushed me to journal.
I'm reflecting on what happened, why this happened (…) I put it in words, it is more clear, and it makes me feel more relaxed and overthink less. Reading after a while or thinking about what I have written, kind of like, introspection (…) these feelings are changing.
So I shouldn't be stuck in that moment"

/ Free Bird, 27 /

However, some were not benefitting from this reflection, saying that it made their ruminations only worse. This result reinforces that there is no 'one size fits all' - solution when it comes to coping; people have their differences.

„ It's just felt maybe like just a small thing, like, an answer on an Instagram thing... And then it becomes a bigger thing if you write it down. "

/ Cute Owl, 28 /

„ I think a lot so always analyze a lot of the situation (…) The task to do that was even more (…) I'm really an overthinker. Maybe it's not the best thing because I can focus too much on what is happening. "

/ Colorful Donut, 23 /

Sometimes refocusing one's attention or distancing oneself from dating (apps) can be beneficial;

„ I guess it also made me more calm, not to be looking at Tinder. "

/ Cute Owl, 28 /

Yet, clear communication and being open with the other person about a certain issue usually had positive outcomes;

> *„ I mentioned my worries about how he sees me (…) We talked about it (…) and he reassured me that his ex and he were not working anymore. (I'm) relieved. I feel like I am in a competition with the ghost of his girlfriend's past. But I liked that he was open and honest (…) this night we both slept fine, which felt special. "*
>
> */ Kashmir, 25 /*

> *„ (…) Made me feel glad and proud of myself. I tell the other one what I feel and I'm not ashamed of it. Yay! "*
>
> */ HoneyBunny, 34 /*

People often sought out social support as well. Some even use the dating apps together with others or make a game out of it (Sobieraj & Humphreys, 2022); browsing profiles and swiping for/instead of each other. Many participants shared their dating stories with friends and family and sometimes turned to them for advice after an emotional blow (with mixed results). The remedies for anger and loneliness (both being a 'side-effect' of rejection) Winch (2013) suggest making efforts to replenish our social connections. Reminders of our significant relationships, engaging with another person can reduce these negative feelings.

> *„ I talked to friends about it, tried not to make it a big thing in my head and worked on my project. I tried to let the feelings be, but it's hard. "*
>
> */ BooCat, 25 /*

> *„ I was with S. (…) But then I just admitted to her the thing about the other guy, and I hadn't admitted that to anyone yet. (…) I just said it out loud. That's the moment I kind of admitted it to myself as well. (I'm) relieved to be honest about the feelings I have for the other guy. "*
>
> */ BooCat, 25 /*

> *„ Afterwards I told my friends and parents about it, and they supported me. This also helped me downloading Tinder again. "*
>
> */ Marhsmallow, 21 /*

6.1.2 Maladaptive coping

Maladaptive coping is any strategy that we regard as an unhelpful or even harmful reaction to the trigger. When looking at the statement cards of the analysis, coping strategies were classified to be maladaptive if the emotional state of the participant did not change or worsened (e.g. they felt angry when the event happened and felt still angry/down after engaging in one of these strategies).

Another indication of a maladaptive coping strategy was when we noticed that certain events had a long-term effect, or were part of an accumulation; experiencing the same triggers over and over. It can be that an event was regarded insignificant at the moment, but later comments proved that they might be part of a 'collection' of similar experiences which result in an injury similar to a bucket being filled with drops of water. For example, a participant might have quickly bounced back by the first person who did not respond to their message. However, after a row of unsuccessful opening lines, they became angry and frustrated:

> *„ What the f* is wrong with girls? Natural for me would be to respond, but probably what they have, like a f*load of likes. "*
>
> */ Cuqui, 27 /*

Many people think they do not have to do anything about their feelings (Howes, 2018). In fact, we deal with our negative emotions even if we don't deal with them. Denial and avoidance are maladaptive coping strategies that are shown to be less helpful as opposed to approach styles (confronting) (Aldwin & Yancura, 2004). Davidson et al (2002) describe how the mood state of an individual (caused by these negative emotions that don't get resolved) affects behaviour; for example, people with depression are inclined to set fewer goals and do less intentional activities. The negative mood state can cause more frequent negative thoughts (Joormann, 2010); focusing on negatives both present and in their memories, making it difficult to reappraise the situation and take on a positive outlook. This can prevent them to seek out, or receive external help right after an injury (as long as they don't return to their baseline emotions with time, or experience an external stimulus that turns around this negative state). When participants of the diary study were recalling a hurt, they often expressed themselves in the following ways;

> *„ Maybe it's not so big or I don't have to feel that way. I know that it's nonsense… "*
>
> */ HoneyBunny, 34 /*

> *„ It's honestly the most frustrating experience on dating apps that I have had. Although I don't really care about it anymore, so there is that. "*
>
> */ Cuqui, 27 /*

Both of these examples show some denial and (in the first case) even the participant blaming themselves after an event. But the emotional effect was present in both cases; signifying a possible hurt that needs attention.

Another participant was speaking about 'ghosting', dismissing its effects saying it has been normalized in the online dating scene:

„ Since they are frequent and you don't know that much the people on the dating app (...) I feel like I don't care that much. (...) I am also getting more used to (it) and giving (it) less importance. Taking less personal. "

„ I'm not that surprised in general about this behavior. Because I feel like it's something really common, I heard a lot of stories about it. "

/ Colorful Donut, 23 /

While desensitizing is possible (Winch (2013) recommends deliberate desensitization as a first aid strategy for rejection), and the person says they can cope better with 'ghosting' due to this, it doesn't mean it does not affect them. Other entries and the conversation with the participants confirmed that they have anxieties that make it stressful when they have to wait for responses, creating a constant fear of the other person abandoning the conversation.

„ I never know if they are gonna answer or not. (...) it's been a while since we stared chatting but we haven't met yet. So I'm a bit scared he doesn't want to meet me. (...) And when I wait for an answer I overthink. "

„ It is frustrating that I'm making an effort and I don't really receive nothing back. I don't really know why I cannot manage to effectively go on a date. What am I doing wrong? "

/ Colorful Donut, 23 /

The repeated events might decrease hope in the future and lead to demotivation as well, sometimes resulting in people abandoning online dating altogether.;

„ Feels a bit like dirt on your memory. (...) it's not nice to collect too many people in your dating history who were not kind. Makes you less faithful in some positive ending. "

/ Cute Owl, 28 /

6.1.3 Takeaway: Avoidance and Social support

It seems that coping can also be 'internal or external' (in addition to the previously mentioned categorizations), depending on whether one deals with the situation on their own or seeks the help of others to do so. Figure 23 shows the dimensions of coping with emotional injuries in dating, as found in this project.

People seem to avoid or dismiss many of the emotions, and emotional injuries they develop during dating. Some of these injuries are so frequent, that people don't pay attention to them anymore. Some events (like ghosting) seem to be normalized, therefore people think they don't have to do anything about them. However, the negative emotions can lead to the person entering into a negative mood state, which means they will be less receptive to help - let alone seek it themselves after an emotional blow, which can lead to an emotional injury.

People tend to distract themselves; they go on with their day as if nothing happened, do sports or watch a movie instead of thinking about the situation. This approach seems to have mixed results; sometimes it can be beneficial while other times it is a result of denial. Similarly, people often reach for social support and ask for advice from others which is considered to be a helpful coping strategy. Social support does have a powerful effect; participants and experts alike mentioned it to be favourable.

Moreover, people who seemingly dealt better with their injuries were educated about dating and psychological topics by reading context-specific books (e.g. Models: Attract Women Through Honesty by Mark Manson, or The Mastery of Love: A Practical Guide to the Art of Relationship by Miguel Ruiz) or attending counselling earlier where they learned methods to deal with their emotions. Dating literacy and knowledge, in general, seem to play an important role; therefore *Competence* is a fundamental need (Desmet & Fokkinga, 2020) in dating.
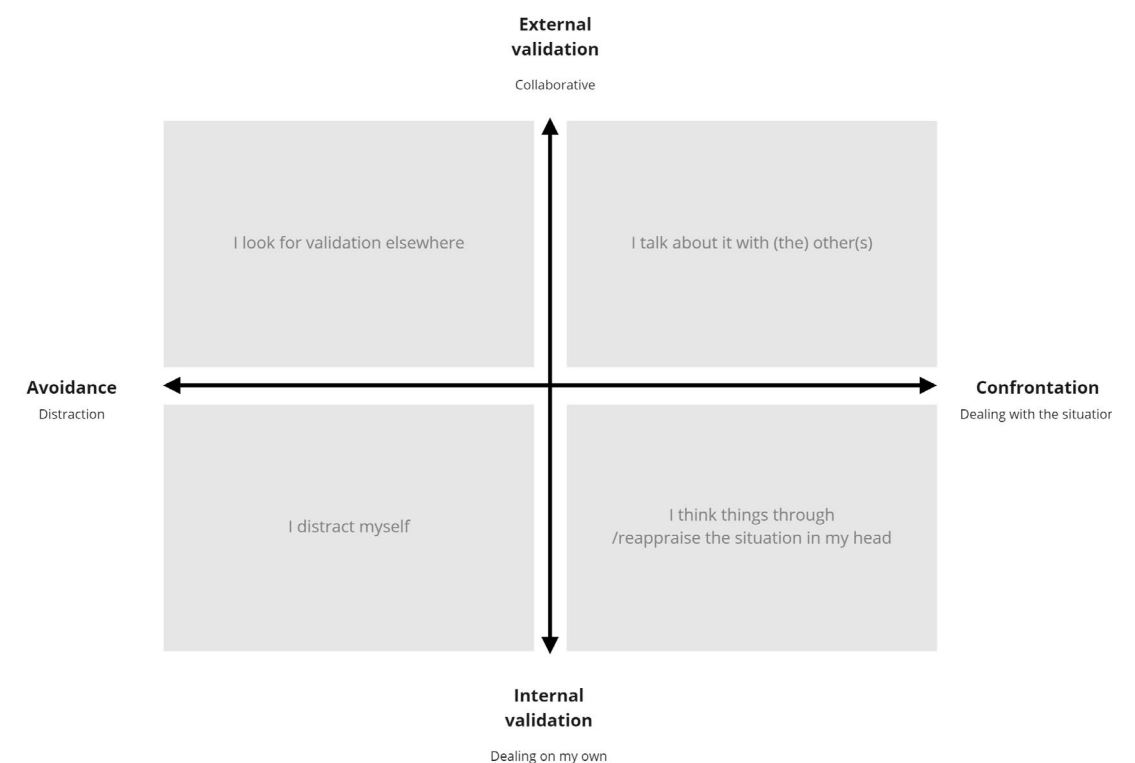

Figure 23; Dimensions of coping (insights from the project)

6.2 Self-compassion

People experiencing Rejection and Loneliness tend to damage their self-esteem even further by engaging in self-criticism (Winch, 2013). Self-criticism is an unhelpful thinking pattern including labelling (using derogatory statements about oneself) shoulding (putting unreasonable expectations on ourselves) and overgeneralizing (applying our negative situation to everything else) (Saulsman et al., 2017b, p. 5). To overcome and treat emotional wounds, people have to stop this cycle of negative self-talk and engage in something more beneficial; the opposite of self-criticism which is self-compassion.

Self-compassion is 'a positive and caring attitude towards oneself' (Ewert et al., 2021, p. 1063) and consists of three main elements;

- **Self-kindness** (versus self-judgment)
- **Common Humanity** (versus isolation)
- **Mindfulness** (versus over-identification)

Self-kindness is a tendency to care for oneself during pain and hardships. It consists of forgiveness, empathy, sensitivity, warmth, patience, and acceptance towards every aspect of ourselves, especially towards one's flaws and mistakes (Ewert et al., 2021).

Common humanity refers to seeing these flaws and failures as part of a common human experience that all people share, creating a feeling of connectedness with others amid negative experiences.

Mindfulness can be described as a balanced awareness of the feelings and experiences present in the moment (Creswell, 2017). Mindfulness and acceptance were found to have a positive impact on well-being (Sin & Lyubomirsky, 2009) as they enable one to experience one's fallibilities without judgement.

Inwood and Ferrari (2018) found that self-compassion can facilitate adaptive emotion regulation. The studies suggest that practicing self-compassion can enable processing negative experiences instead of turning to avoidance and other maladaptive strategies. Moreover, Neff et al (2005) report that it increases competence, connectedness, emotional intelligence, self-determination, and subjective wellbeing. Breaking the cycle of self-absorption leads to more positive relationship behaviour and satisfaction in romantic relationships.

Self-compassion was also used by some of the people who participated in the diary exercise (Chapter IV); a participant reported that it helped to ground oneself when intrusive thoughts were appearing. However, it requires the conscious awareness of the situation;

„ Imagining this person with someone else, what emerges is a...sort for of fear of loss. (...)

I try to stop it and say "This is normal". This is what everybody feels, this is not happening (now) (...) there's no need to worry about it twice. "

/ Lively Boris, 28 /

Self-compassion can be a tool that allows people to accept their feelings (as opposed to dismissing them, as was found during the data gathering) and soothe their negative emotions to deal with them.

VII.
FINAL CONCEPT

7.1   Design goal

One of the main goals of the project was to find out if it is possible to translate relevant psychological strategies into a tangible form. After looking into the coping strategies that people employ in the context of dating (*Chapter VI*), and aligning them with the literature and the expert feedback (*Chapter 5.2*), it was decided to provide tangible triggers for practising self-compassion after the hit of an emotional blow.

The design goal was the following;

Help young singles to practice self-compassion after an emotional injury when they are dating

- allowing them to build their repertoire of healthy coping strategies

Photo by Hannah Jacobson, unsplash.com

7.1.1 Requirements

The design objectives are based on literature, the study (*Chapter 4.1*), and the feedback from potential users and experts in social psychology and relationship studies.

- **Promote** (and increase) **self-compassion**
  (See expert sessions; Chapter 5.2.4)

  Normalizing the injuries and thus accepting the negative emotions that come with them is the first step when it comes to practising emotional first aid.

- **Flexibility**
  (See literature; Chapter 6.1
  expert sessions; Chapter 5.2.4
  and evaluation studies; Chapter 8.1.4, 8.2.4)

  Everyone is different and what works for one person might not be useful for the other. Therefore, instead of promoting a fixed method, users should be able to adapt them while they figure out what kind of coping methods work the best for them.

  Additionally, because an emotional blow can hit anytime and anywhere, the design should allow use in a wide variety of contexts – yet remain intimate.

- **Sense of Agency**
  (See literature; Chapter 2.1.2
  and expert sessions; Chapter 5.2.4)

  In psychological interventions, the client (patient, or user) needs to take conscious actions. They draw up a plan together with the counsellor/therapist, which allows them to exercise control, leading to better results. Feeling in control can also enhance motivation. Therefore, instead of giving blunt instructions to people, they should be able to feel in power; e.g. with customizing the design.

- **To be used alone** (– but incorporate social support)
  (See expert sessions; Chapter 5.2.4
  literature; Chapter 6.1
  and diary study; Chapter 6.1.3)

  Dating is about our fundamental need for belonging. It is a dynamic social process - dealing with negative experiences should be such as well. Social support is a powerful mechanism, and reminding people of their ties can have a big impact when they feel lonely. Moreover, dating is not just about 'me'; it is a journey people take together, helping each other grow. Therefore, people have to find a balance between 'dealing with' their hurts and issues themselves and resolving problems together with others. The responsibility lies on everyone included. However, feelings of loneliness make one distance themselves from others. Online daters might not have access to a strong support network (friends, family, etc.) to fall back on, and reminders of that might make things only worse.

  Therefore, the project focuses on techniques to be used alone, to deal with our injuries (just like we can put a bandaid on ourselves), yet it was important to be able to include one's support network which can have a more powerful effect than people's own efforts.

- **Simplicity**
  (See expert sessions; Chapter 5.2.4)

  People might not be receptive to help when they feel low after a trigger. The absolute nature of the emotions makes it difficult to seek help, therefore any activity they have to do has to be low-effort and relatively simple.

- **Unobtrusiveness**
  (See expert sessions; Chapter 5.2.4)

  People seem to reject interventions that are invasive and annoying, especially when it comes to changing their everyday behaviour (or thoughts). Therefore, Consolvo and colleagues (2009) suggest using unobtrusive design strategies. A small nudge, or visual reminder (without forcing the user to engage with the design) also allows them to use it multiple times, and keep up with practising self-compassion.

- **Allow for repeated use**
  (See expert sessions; Chapter 5.2.4)

  Practising self-compassion is not a one-time event. It requires repetition (Winch, 2013), thus a single intervention does not suffice. When comparing the intensity with which the given tasks (positive psychology interventions) had to be carried out, Desmet & Skääksjärvi (2016) found that it is more beneficial to spread out the different interventions across time - instead of providing everything at once. Practising positive activities for a longer period might facilitate building good habits, resulting in higher overall well-being (Sin & Lyubomirsky, 2009). People should engage in the activity repeatedly.

- **Stimulate interest and curiosity**
  (See literature; Chapter 2.3)

  Attrition (gradually degrading usage and abandonment) of eHealth tools are an issue (Eysenbach, 2005) and habituation can be present with tangible tools as well. To sustain interest (and not to be shoved into the cupboard to be forgotten), the design does not only need to be aesthetically pleasing but more; it needs to stimulate the user. In their study, Cohn & Fredrickson (2010) found that people were more likely to continue meditation (a positive psychology intervention) if they experienced rapidly increasing positive emotions as they started the practice. They suggest introducing 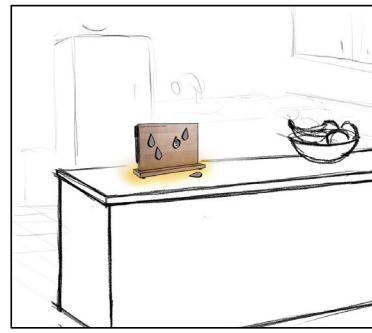something at the beginning of an intervention that elicits quick and high levels of positive emotions – leading people to appreciate and apply the skills being taught.

- **Provide feedback**
 *(See expert sessions; Chapter 5.2.4*
  literature; Chapter 6.1)

  People learn how to use first aid for their physical injuries; taught by their parents, through instruction manuals, and even first aid classes. We cannot expect people to acquire the same knowledge from one day to another when it comes to their emotional injuries. Just as people know where to find their first aid kit, and what to use for a small cut, they need to learn where to turn when a romantic interest suddenly disappears and leaves a painful mark. Therefore, the design needs to be both proactive and reactive; It needs to be most useful after a negative experience happens. Yet dealing with these negative experiences will allow people to gradually learn to cope with the ones that follow. This learning needs to be facilitated by feedback from the design, that allows people to reflect on their use of various coping strategies on a higher level.

Figure 24; Comic strip explaining the first scenario; a message board in the home
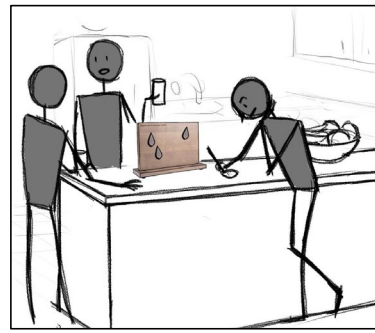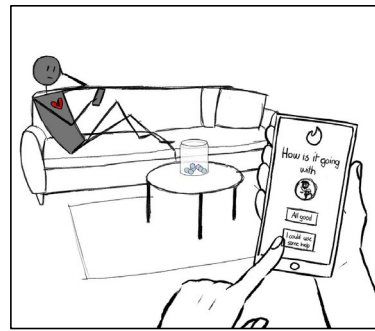
Visiting **guests** can **fill out** pre-defined **sentences**

The **user is reminded to look at the board** from time to time
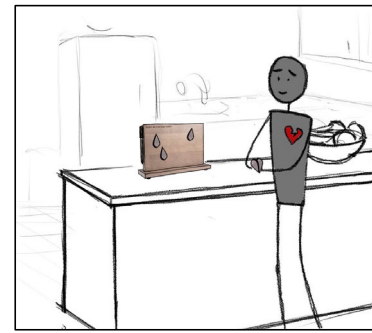
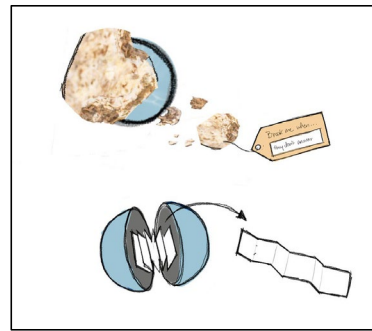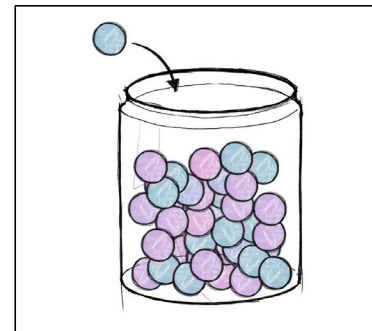**Reading the messages** to practice self-kindness

User **orders a** new **prompt through the** dating **app**

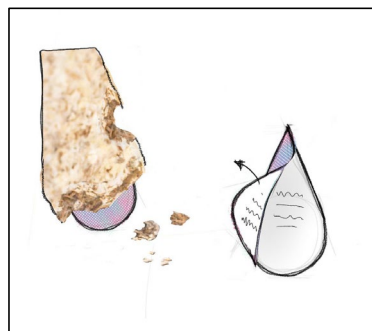Each time a card and a **mystery bag** is sent **with a marble** inside **that hides a self-compassionate question**

The user **collects the marbles** in a glass jar they can keep in plain sight

Figure 25; Comic strip explaining the second scenario; bits of self-compassion by the service provider

Users can **take a** branded **biscuit with their drink** at the cafe

Inside the biscuit there are different **multi-layer stickers with a story and** a self-compassion **prompt**
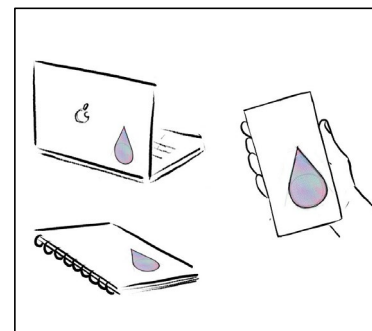
Users can **collect the stickers** as they want and **have the prompts always at hand**

Figure 26; Comic strip explaining the third scenario; collectible stickers

7.2 Developing final concept

7.2.1 Concept directions

Results of the first two expert meetings (see *Chapter 5.2*) helped to merge useful aspects of the initial concepts into one idea; the idea of *giving* (a collection of) *self-compassion prompts to daters* to help them *cope and reflect on their* coping *strategies*. This idea was elaborated through 3 different scenarios, resulting in 3 different concepts.

The starting point of each scenario was the context of use and the way people receive the self-compassion prompts. Each concept was elaborated through written scenarios (*Appendix 11*) resulting in different design qualities (shape, size, etc.) of the same concept. For the third expert session, the written scenarios were simplified to three 3 panel storyboards (short comics).

- **Scenario 1;** A magnetic *message board* (a gift item) *from friends* that one can display in their home (*Figure 24*). The user and visitors (friends and family) can fill out pre-defined short sentences and leave them as hidden messages on the board to boost self-kindness (and self-esteem). The board is placed in a prominent place in the home where it reminds the user to interact with it by glowing up from time to time.

- **Scenario 2**; Bits of self-compassion *sent by the dating service* (*Figure 25*). The dating app can send a self-compassion prompt (a question or fill-out sentence) to the user each time something unpleasant happens. These prompts can be collected in a compartment to be displayed and reused later.

- **Scenario 3;** *Collectible stickers from public spaces* (*Figure 26*). When someone orders a coffee at a cafe, often a biscuit is given to the drink. Similar to a fortune cookie, this biscuit hides a piece of paper; a multi-layer sticker with a self-compassion prompt inside. People can collect these stickers and place them on various items to always have a boost at hand.

7.2.2 Selecting the final concept

Feedback from the third expert meeting indicated that the most efficient way *to reach the target audience* is to integrate the solution into the dating service itself. By design, the service can enable (if not encourage) certain behaviours. The unending flow of options can make one establish a rejection mindset which increases dissatisfaction and pessimism, leading to reject more people themselves (Pronk & Denissen, 2020). Users can often 'unmatch' someone and disappear without 'real' consequences, normalizing digital ghosting. Some dating apps already recognized their responsibility and have interpreted features that can help their users; Bumble, for example, provides a message after someone ends a chat and has a dedicated 'Safety and Wellbeing' section that gives some tips about how to handle dating anxiety or ghosting (*Figure 27*).

By *integrating the solution into the dating platform*, the negative experiences can be normalized fruitfully; instead of accepting that hurting people is the norm, users can accept their feelings of being hurt as part of the experience. Therefore, the final concept is a service from the provider (dating app) that helps to tackle the emotional challenges of dating by using tangible means to stimulate self-compassion.

Additionally, appealing aspects of the other two concepts were merged into this idea; allowing friends and family to interact with the prompts to provide social support, and treating the prompts as a small gift – a surprise to be unwrapped.
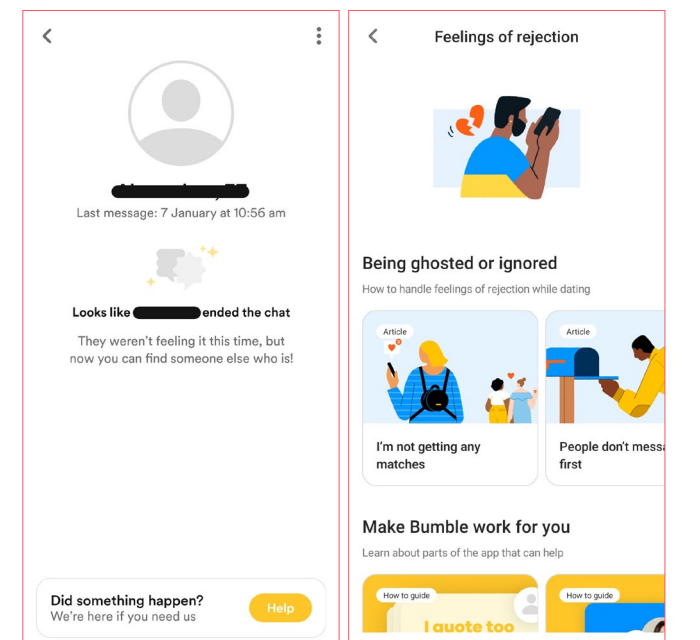

Figure 27; Bumble's current in-service solutions (Bumble Group, 2022)

7.3 HUGGLE

7.3.1 Self-compassion 'pills'

Huggle is a (fictional) **hybrid service** provided **by Tinder**, allowing people to practice self-compassion as they suffer an emotional injury. The application and the tangible product work together to normalize and accept the negative feelings that might come with dating.

The main part of the product is a **physical collection of self-compassion prompts** (*Figure 28*). The prompts are in pill-shaped compartments ('pills') which are wrapped in the mycelium. Users are instructed to **unwrap a pill** (*Figure 29*) when they find themselves **in a specific situation** - inside of the pill is a paper with a **short question or advice** to be found.

Users can order *Huggle* when they sign up for Tinder. During the order process (*Figure 30, Appendix 12*), the user can choose from 3 **different packages**; *Action*, *Reflection*, and *Connection*. (See more about the packages in *Chapter 7.3.2*.)

Huggle is a service that inspires continuous engagement by allowing people to order new pills when they need them (instead of providing the whole set at once). The basic package ('starter kit') only contains 9 pills for 9 common situations along with a user manual (*Figure 31*). These **situations** are based on the diary study (*Chapter IV*) and are so **frequent in online dating**, that everyone experiences some of them, such as people not matching back, the match disappearing or not saying anything at all. Both expert and user feedback indicated that being confronted with every injury that can happen to someone might be scary and demotivating, and help attrition as well. Pills for additional, 'heavier' events (such as a breakup) can be ordered through the app. When the user orders a new pill, they pick their situation and the type of pill (*Action, Reflection*, or *Connection*).

The use of the pills is flexible. People can **answer the questions by making a note on the pape**r (thus personalizing the pill, giving a sense of agency), or leave them as they are.

The manual suggests placing the collection of pills in a prominent place in the home. Doing so creates a **visual reminder**, and also allows people to reflect on their coping styles due to the colour-coding of the opened pills. One may take out a pill from the jar again and re-read their questions and answers. The compact size of the pill also allows users to take them along in their bags or pockets, to be used whenever they are needed.

Huggle can be integrated into the dating experience by allowing the application to monitor app usage. Looking into the frequency of messages, 'catching ghosts' and nonresponsive users gives a chance to remind the users of *Huggle* to turn to their self-compassion prompts or nudge them to order new pills if they feel down. This way, when an emotional injury occurs users might be less likely to brush them aside.

The name is a play on the words '**hug**' and '**cuddle**'/'**snuggle**'. A hug is a small, but powerful gesture with a big impact. People can hug their loved ones to show affection. Hugging can increase the level of oxytocin in the body (Light et al., 2005), and decrease feelings of pain (Gallace et al., 2011).

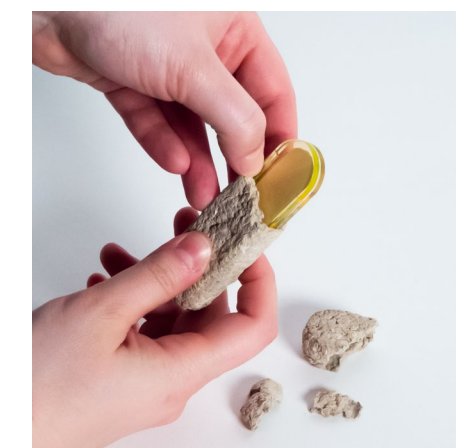Figure 28; Huggle;
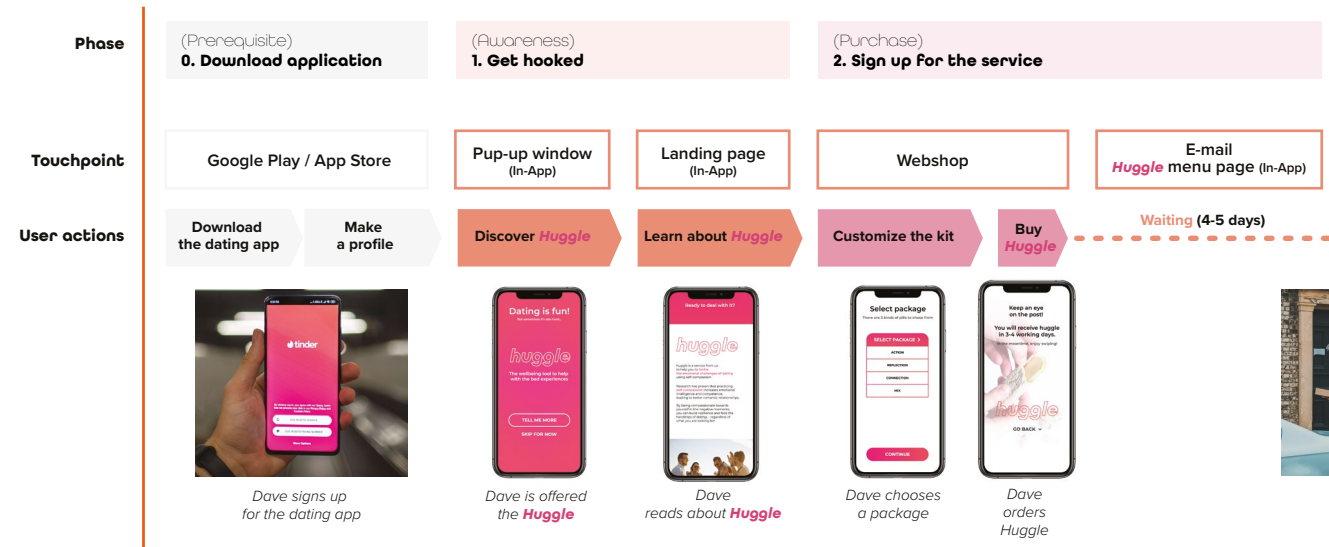a collection of self-compassion prompts

Figure 29; Unwrapping the mycelium

Figure 30; Signing up for Huggle. For the whole journey, see Appendix 12

Figure 31; Huggle user manual (for content see Appendix 13)

Figure 32; The self-compassion prompt inside the pill

7.3.2 Self-compassion prompts

Huggle uses self-compassion **strategies and exercises** to help daters to accept and process their negative emotions. A prompt (of self-compassion) within a pill (*Figure 32*) is a short text message in two steps. First, there is a statement of acceptance, e.g. *„It's normal to feel sad about this"* that allows people to validate their feelings. Second; a question or instruction of self-compassion written from the first-person point of view.

The 'pills' can be ordered in 3 variants (*Figure 33*):

- **Action** (red pills)
  Suggestions to act vary between general and context-specific tips, such as *"Let's put on my favourite clothes today!"* or *„Let's express my needs clearly and calmly to the other person, and listen to their point of view."*

- **Reflection** (orange pills)
  Questions for the moments of thinking, usually on a more abstract level. E.g. *"How could I have a balanced view on this situation?"* or *"What does the voice in my head say? What can I say to it, to calm it down with compassion?"*

- **Connection** (green pills)
  Social support and shared humanity are an integral part of dealing with negative emotions, that's why on top of an individual approach the product stimulates users to turn to their support network as well. Connection pills can be given to others and returned to the user after another person made a note on the paper in the pill. Loved ones can fill out sentences such as *"My best memory with you is when we were…"* or *"These are the things I enjoy doing with you…"*

The prompts are based on the items of The Self-compassion scale (Neff, 2003), Self-compassion exercises by Neff (n.d.), activities and suggestions from The Self-compassion Workbook (Saulsman et al., 2017a) and the emotional first aid techniques proposed by Guy Winch (2013). Moreover, some ideas of the participants (gathered during the interviews) that aligned with the general notion of self-compassion and/or Winch's proposals were integrated as well. Items and suggestions of the above-mentioned sources were translated into short sentences. These short sentences were ranked based on their subjective weight (how 'serious' they were), and assigned to a trigger event on the 'Map of injuries' (*Chapter 4.1.6*).

The fit between triggers and prompts was based on the main needs to be fulfilled in the situation (*Chapter 4.1.6*) and the nature and severity of the injury. Someone not 'matching back' is not as far as painful as a person 'ghosting' after a couple of dates and probably doesn't inflict the same suffering. An overview of the proposed prompts for the trigger events can be found in *Appendix 15*.

Most of the prompts **can be applied in multiple situations**. Users are asked to unpack the pills at a specific moment, however, after the mycelium shell is removed the same prompt can be used and revisited in different scenarios. The idea is that the labels give a sense of 'specificity' to the user, allowing them to relate it to their current experience. The right match between the trigger events and the proposed prompts was not measured, but it could be the subject of further research and development to boost effectiveness.

The above-mentioned packages ('self-compassion styles' of reflection and action) are recommended based on the conversations 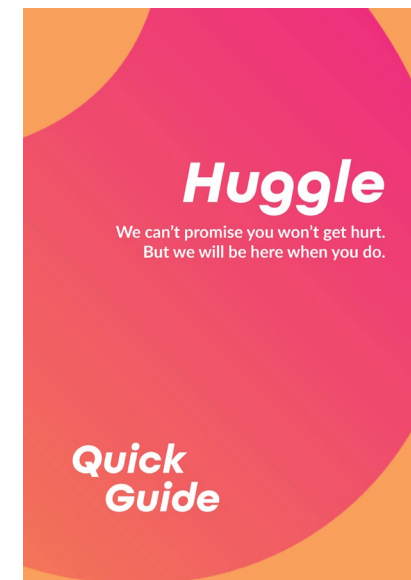with experts. Scholars introduced many different categorizations of coping strategies (see *Chapter 6.1*) and thus many different kinds of pills and packages could be proposed for the service as well. Further development of *Huggle* could fine-tune the prompts and prompt styles in a way that allows even better reflection and learning.

There is **no 'one size fits all' approach** when it comes to coping, and that is what *Huggle* promotes. Sometimes it is useful to sit down with our thoughts, while other times we can benefit from a more practical approach and concrete exercises - depending on one's state of mind and the situation they are in. This is supported by the initial research where some participants of the diary exercise found thinking and reflecting about their dating life to be quite useful, while others (people prone to rumination) were not helped by this approach (see *Chapter 6.1.1*). **Huggle proposes** some **techniques** (based on literature and user feedback), but people are responsible for **finding out what works best** for them. They have to build their own 'medicine cabinet' by personalizing the pills (writing their answers, or even changing the paper in the pill to their own messages and thoughts).

Figure 33; Pills are color-coded according to the three categories

The papier-mâché coating of the pills

7.3.3. Look and Feel

Huggle **mixes organic and natural** materials **with fresh and bright** colours. It creates a contrast that might hold a symbolic meaning; the neutral mycelium revealing the bright acrylic pills illustrates how bleak and dark thoughts can be followed by more cheerful and happy ones. Yet the interpretation is up to the user.

Nature (and natural materials) turned out to be associated with **self-compassion**. During a creative session with 6 postgraduate designers, members of the group were asked to create collages about self-compassion and coping with negative emotions in dating (*Appendix 16*). Except for one collage, all of them depict some natural elements and include greenery, trees, flowers or plants. Although Howell and colleagues (2011) found mixed results about the connection between emotional well-being, mindfulness and **nature connectedness**, their study still indicates a **positive relation to psychological well-being**.

The **mycelium coating** is not only a way to incorporate natural materials but has its **functional purpose** as well. A case study by Karana et al. (2018) found that the foam-like (not pressed) mycelium invites people to 'pluck and pick' it. This characteristic is intended to contribute to the **mindfulness** aspect of the design; just as some people tend to fidget or pick on something when they are stressed, users of *Huggle* can **pick apart the packaging material** - creating an **immersive experience** that might have the ability to calm them down amid distressing feelings. Mycelium has a 'unique temporality' meaning it needs at least 2 weeks to grow (Elvin Karana et al., 2018), making it extremely time-consuming and not suitable for quick iterations. Prototypes were made with papier-mâché (*Figure 34*), which was intended to mimic the look of the mycelium. However, the consistency of this material was much more firm, making the experience of uncovering a pill quite different.

During the *creative session*, the group was ideating on the question; *"How to be encouraged to maintain self-compassion?"* This question was their interpretation of the original problem statement; *"How to communicate multiple coping mechanisms in a tangible way?"* and unrelated to the writer's findings.

Figure 34; Papier-mâché was shaped around 'mock pills'. As the material dried, the shell was broken and the acryl pills were replaced. This method provided control over what was inside.

cool

sustainability

neon

nature

hip

green

Next to incorporating nature in the design, the style had to be in line with the the dating platform's (Tinder). Brand consistency (aesthetic similarity) helps customers to connect the product to the service, enhancing brand identity, and the effectiveness of advertising, while decreasing the price sensitivity of the users (Liu et al., 2017). Tinder could be described as fresh and young, using bright red and orange colours, which is different from the above mentioned natural approach. The mix of these two approaches resulted in a mood board (on the left) which builds on expressions of contrast such as 'cool sustainability', 'neon nature', or 'hip green'. The final design has a mixed style; bright colours on recycled paper, the natural mycelium, and the neon acryl.

The pill is a result of an iterative search for a shape that holds the self-compassion prompts. The flat design with a line in the middle hints at a pill (or a band-aid), but it's not as direct as if one would collect medicine in the middle of the living room. The flat design allows the follow-up orders to fit the mailbox (cost-effective for the provider), as well as the

pocket of the user. The colour choice limited the available materials and therefore the material thickness during proto-typing. However, with a thinner acryl sheet, the pills could even fit one's wallet.

As the collection of pills is intended to be displayed in the home (to act as a visual reminder of self-compassion), it was important to keep a relatively neutral design. Simplicity and flexibility (as also mentioned in the Design Objectives, Chapter 7.1.1) can help to integrate the product into a variety of environments, thus a glass compartment was chosen. The transparency of the material also helps with the visual feedback; seeing the (amount and type of) pills in the jar can help to engage the users.

7.3.4 Packaging the collection

The pills are shipped and collected in a cylindric glass 'jar'. Users are instructed to keep this jar somewhere they can always see it (on the desk, the kitchen counter, coffee table, etc.). By doing so, the collection serves as a visual reminder of the first aid tool they have at hand. The presence of the collection serves as a 'nudge' to use it, to casually pick a pill out and look at it even when one is not injured. This is intended to help engage in practising self-compassion regularly and plant the product into the consciousness of users, so they will know automatically where to reach in a 'crisis'.
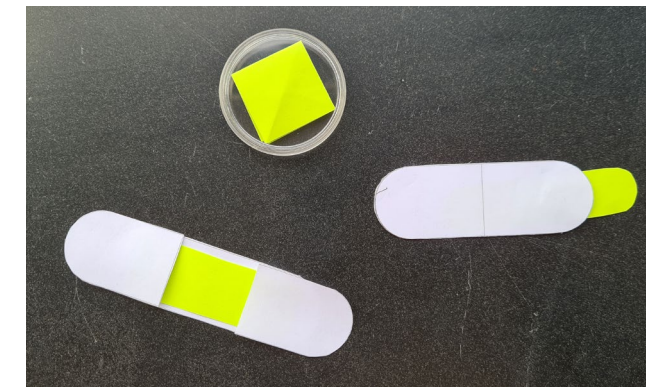
The container needs to fulfil a variety of requirements. It has to be appealing yet fit into a wide variety of environments so users will likely display it in their homes. It has to show-case the pills in a way where people can make sense of their use of the product; give feedback on the coping strategies users employ by seeing the colours in the jar (see the design objective 'Provide feedback', Chapter 7.1.1). The container has to host an object of variable amount and size; from 9 to 21 pieces of pills (the number of currently identified trigger events – 63, if someone would order three kinds of pills for each scenario) either wrapped in mycelium (approx.. 90x30x20 mm) or unwrapped (75x25x8 mm). Furthermore, there are requirements from the service side such as being cost-effective, lightweight for shipping, and protective of the pills.

Having the pills collected 'in bulk' without an order has its purpose; once the pills are opened, one can tell the type (Action, Reflection, or Connection) from the colour but not the injury it was originally referring to - nor the content. Therefore, in a 'second round of use', when people revisit the pills, they have to look for the one they want to find. They will, by design pick and open pills they were not intended to. By doing so, they read additional self-compassion messages, get reminded of the notes they made, and thus hopefully enhance the positive effect.

Figure 35; Paper prototypes exploring shapes and interactions with the message inside

Figure 36; Different but same; a smaller glass compartment with the 'naked' pills in the writer's home. The light shining through the glass leaves a mes-merizing effect on the table

VIII.
EVALUATION STUDIES

8.1 First test with users

8.1.1 Aim of the evaluation

To collect user insights about the design in the context of use, an evaluation study was carried out with *Huggle*. Current users of Tinder (or similar dating apps) were given the product for 10 days. There is already evidence in the literature about the usefulness of self-compassion (Diedrich et al., 2016; Ewert et al., 2021; Neff et al., 2005; Petersen, 2014), therefore the question was not whether the prompts work, but whether the pills convey the strategy sufficiently, and help people to engage in practising self-compassion. The followings were of interest;

- Is the use as envisioned?

    When do people open the pills?
    (intended to be done shortly after the injury)

    What do they do with the prompts?
    (intended to be read and filled out)

    What do they do with the pill afterwards?
    (intended to be collected in the jar and being revisited)

    Where do they keep the product?
    (intended to be a visible place so people are inspired to use the pills)

- Does the use of the product help with emotion regulation?
  (Does it elicit positive emotions after a negative experience?)

- Does self-compassion increase with the use of the pills?

8.1.2 Sampling

As *Huggle* is (fictionally) part of Tinder, the target users were people who were currently using the application. To expand the recruitment base, dating apps that have a similar concept (where users can 'match' and chat with each other) were brought into the pool (e.g. Bumble, Hinge). The rest of the criteria were consistent with the ones of the first study (*Chapter 4.1.2*); currently dating singles between the age of 18 and 40. Once again people of various backgrounds, orientations, dating goals, and dating approaches were sought out.

Recruitment was done through personal connections and flyers put up at the Faculty of Industrial Design Engineering of TU Delft. Over a recruitment period of 2 weeks, initially 7 people showed interest in the study. Only 4 confirmed to test *Huggle* (2 female and 2 male participants). Participants were all students of TU Delft of international background and in their early 20s.

Participant pool

Nationality
🇨🇦 🇮🇳 🇸🇬 🇮🇹

Age (average)
23

Gender
♀ 2
♂ 2

Relationship status
👤 4

(Dating) app use

tinder [3]

whatsapp [3]   bumble [2]

Hinge [2]   instagram [2]

happn [3]

okcupid [2]

Breeze [1]

8.1.3 Method

For 10 days, participants were logging the use of the product in a paper diary. This was followed by a semi-structured interview where participants discussed their experience with the researcher.

Participants signed up digitally to test the product, after which the writer reached out to them to arrange a meeting to exchange the test materials;

- The **product**
  a box with a glass jar containing 9 mycelium pills, and a user manual (*Figure 37*).

- A **test diary**

Since people were not new users of a dating platform, but already had been using them for a while and going out on dates, a variety of online and offline situations were chosen from the list of possible trigger events (*Chapter 4.1.6*, *Appendices 8,9,15*). For each of these trigger events, one proposed prompt (*Chapter 7.3.2*, *Appendix 15*) of each category (Action, Reflection and Connection) was selected. The participants have been given an initial set of 3 prompts of each type (9 altogether) so the categories could be compared during the evaluation.

Argumentations for the diary- and semi-structured interview methods are discussed in *Chapter 4.1.3*. The evaluation study was chosen to be done with a physical diary (instead of an online diary) since it was testing a physical product. Participants were to note down their dating-related experiences each day. By looking at these event, the researcher could tell whether people went through a possible trigger. Participants were asked whether they used *Huggle* that day, and what their reason was (either for using or not using it). If they did, they were to not down how (See *Figure 39*).

This time, instead of the Pick-A-Mood characters used in the exploration study (*Chapter 4.1.4*) the diary included the characters of the PrEmo self-report instrument. PrEmo was developed by Desmet (2019) to measure and has been cross-culturally validated to distinguish 14 different emotions that are elicited by products. Using this tool, participants could reflect on whether the pills had a positive emotional effect.

To simulate the service, the writer checked in two times during the test via instant messaging (WhatsApp), asking participants how they are doing (*Figure 38*). If the participant responded negatively, they were offered to have a single new pill of their choice delivered. An order form was prepared for this, giving an overview of the trigger events. Participants were also encouraged to submit photos about the use of the product.

Figure 37; Participants received 9 prompts and the short guide for the test
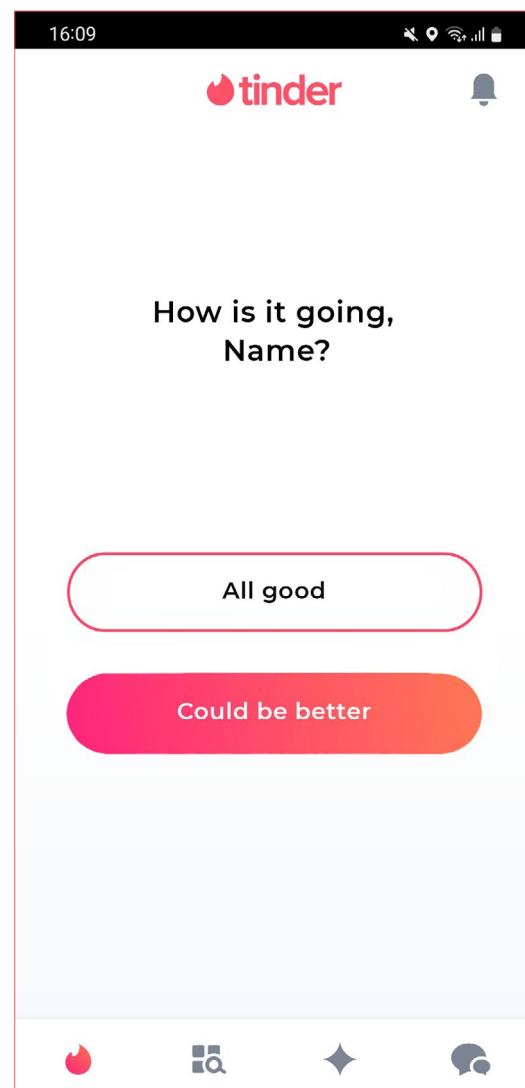
Figure 38; Check-in message sent to the participants two times during the test

To measure whether people's self-compassion is changed, the short version of the self-compassion scale (Raes et al., 2011) was filled out by participants. People answered a questionnaire of 12 statements (*Appendix 18*) about their self-compassionate behaviour before- and after using the product.

Figure 39; A page from the test diary (See Appendix 17 for more) showing PrEmo 2 by Laurans and Desmet (2017) as used in this project.

8.1.4 Results

Analysis was done by reading through the test diaries and clustering the data according to the questions listed in *8.1.1.* (Saldana, 2009) Participants gave informed consent to make a recording of the interviews, which was transcribed afterwards. The transcripts were used to enrich the diary data and to gather additional insights into the concept.

Participants opened between 2 and 5 pills within the 10 days test period. Opening the pills happened at various times; usually not right after the trigger event, but a couple of hours later. For those who were living alone, waiting to have a chance to give away connection pills to others created a buffer between the negative experience and the 'remedy'. However, the interactions with loved ones were always positive, possibly strengthening social bonds, and reminding one they can count on the others, providing a sense of belonging to users. The effect, therefore, was there - even if delayed.

„ It was the morning. (...) it was the first thing I did after waking up (...) because I had so many questions just roaming in my mind and I was like 'What should I do now?' "

/ Muffin Snuggle, 22 /

„ So I actually opened this later (a few days later), because I wanted to give it to my roommate, but she wasn't there. "

/ Cupcake, 23 /

Once opened, users filled out all Reflection-type prompts (*Figure 39*), while Action-type prompts were usually not filled in but rather 'just' acted upon. One participant started to search online for new pick-up lines, and another looked for dance lessons after being prompted by *Huggle*. The reactions and the effect of the pills were reported to be mostly positive with one exemption where the opened pill was not fitting the person's situation.

The negative emotions of an event that made people use the pills were not necessarily turned around (which is not the intention of practising self-compassion, either) but complemented with positive or more neutral ones.

„ (I felt still) disappointed but accepting of (the) possibility that it's not as bad as I think. "

/ Munchkin, 24 /

Three participants gave a Connection pill to a roommate or a friend, which they filled out together. These interactions and messages seemed to provide a sense of belonging, although some of the prompts were perceived as generic, or difficult to answer.

„ You get to refocus and then think about what else is good and also helps you appreciate that like, there is somebody who is conscious about what you're feeling and sort of helps you feel a little less alone kind of thing. "

/ Munchkin, 24 /

Afterwards, people slid the note back into the acrylic case and either kept the pill on their desk or put it back into the jar. One participant also kept (half of) the papier-mâché cover on, as they liked the aesthetics. However, pills that were opened were not revisited later on.

„ I like to be able to keep these in and around the place, I sort of put them back in their little shells, just because they look nice like that. "

/ Munchkin, 24 /

People kept the jar with the collection on their desk, according to the instructions in the manual. Keeping it in sight was intended to have a nudging effect to turn to the pills when one feels down. Instead, the attached meaning of the collection was about 'dating' in general (and especially bad experiences in dating for some).

„ I was coding and you know, you look outside and you see the thing there and I'm like... 'Oh, yeah.' And you check your phone and... 'Oh, right. Yeah, no, no matches today.' But that wouldn't have been normally my thought process. "

/ Puffin, 23 /

Figure 40; Prompt filled out by the participant

Figure 41; A participant making an overview of their pills during the interview

Participants' overall self-compassion score was compared before and after the test. The overall score is deemed to be more reliable than the sub-scale, especially when using the short scale (Ewert et al., 2021; Raes et al., 2011). Although there was some change in the scores of the individual items on the survey, there was no significant change within the overall scores that would indicate any effect of *Huggle* on people's self-compassion.

There were further insights that resulted from the study. One of these was that people didn't feel like the majority of the pills could apply to them. For the test, there was a mix of the 3 kinds of pills, and a mix of online and offline trigger events provided. One participant who was past the online stage of dating felt that the events were mostly meant for online daters, and couldn't relate to them. Another participant thought the exact opposite; that most events were for people who are in a more advanced, 'physical' stage, and only a handful for the online dater. This highlights the importance to provide relatable and specific help to one's situation. At the same time, it was suggested that labelling the pills with emotions instead of the situations might be more helpful. Having a pill for 'not matching', (which was considered to be a usual part of online dating) also gave the feeling that one should feel bad about something they did not think about before.

„ Sometimes it's more about how you feel, rather than what happened. (...) the feelings are not that different in the end. In this case--- When someone (..) unmatches you, you feel kind of rejected and I felt the same but not (in a) virtual environment. "

/ Cupcake, 23 /

The glass jar was appreciated for its aesthetic qualities, but feedback suggested other ways of displaying and collecting the *Huggle* pills. One participant made a row of the pills during the interview (*Figure 41*) which suggested the preference for a more structured overview. Upon discussing further advantages of an ordered presentation such as usability (being unhandy to take every pill in and out when one is looking for a trigger event) and aiding reflection and learning by having a clear overview.

„ There is a certain allure to having it in a jar, being able to, like grab the thing. But if it was organized in a sort of more graded way (...) digging your hand into a jar kind of reminds me of a lottery experience. And that doesn't give me as much confidence that I've picked the best solution. (...) for me, who is a little more of a meticulous person, I want to go through and see all the things I have (... whether I) found the most appropriate thing, and I'm getting the best out of this experience. "

/ Munchkin, 24 /

Furthermore, instructions on the Connection pills were told to be slightly unclear, causing confusion about whom to give it to, who is the one opening the coating, and who is the one filling it out. Therefore, small adjustments were made for the next version. Further additional findings to be found in the Discussion (*Chapter 10.2*).

8.2 Second test with users

The second user test was looking at the product/service from another perspective; **how people experience the product in the digital context** – being offered by the dating platform. The second evaluation study took place in a 'laboratory' setting where the researcher and the users could discuss the concept face to face in real-time.

Based on the insights of the first test small iterations were made on the pills (*Figures 42-43*);

- The **instructions** on when to open the pills were **adjusted to be more open-ended**. In this version a question is asked; 'Feeling down because...?' followed by the description of the trigger event, prompting the user to examine if they feel any different - instead of suggesting that they should be feeling bad about what happened.

- The **instructions on the Connection pills** were **reformulated** to make their use clearer.

- **Small aesthetic changes** were done, for example changing the way of attaching the 'opening instructions' to the coating. Keeping the material qualities of the mycelium in mind, a 'wrap' was introduced. Additionally, the idea of incorporating seed paper came up to enhance positive feelings about the pills. The flower seeds in the paper can also serve as a gift to loved ones when they open up pills for the user (relating to the 'gift' aspect mentioned by experts in *5.2.4*)

Figure 42; The new label of the pills.

Figure 43; The back side of the paper wrap explains the use of the seed paper and gives instructions for the connection pills

8.2.1 Aim of the evaluation

While the first evaluation study was focused on the use of the physical product in a real-life context, the second study looked primarily at the service integration. Practising emotional first aid with *Huggle* does not only rely on engaging with the pills, but also on engagement with the application. Users have to sign up for and order the service/product of the dating platform which is a crucial step to receiving the pills.

In the second evaluation study, the following explorative questions were of interest;

- How do users experience the link between the dating platform and the physical product?

- What are the necessities and/or the barriers to acquiring and using the product from the service side?

The product is ought to stimulate interest and curiosity (see Design Objectives *Chapter 7.1.1*) Therefore participants were also allowed to explore the physical product to find out;

- What are the elicited emotions by the product?

Furthermore, earlier feedback suggested exploring the ways of presenting the collection in a more structured, or different way (*Chapters 7.3.4* and *8.1.4*). Thus, a small exploration of packaging qualities and preferences was carried out.

8.2.2 Sampling

Recruitment was done in the researcher's network by word-of-mouth, which resulted in 7 people (3 female and 4 male) signing up to try the product and give feedback on it. Most participants were Dutch, between the age of 21 and 32 with a background in design and marketing. Participants had various experiences with online dating; some currently using dating platforms, others had found their spouse through Tinder, and one participant without previous experience in online dating.
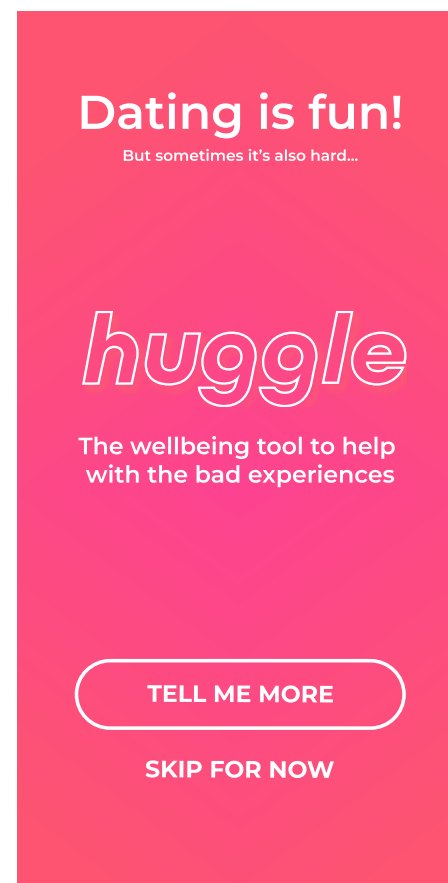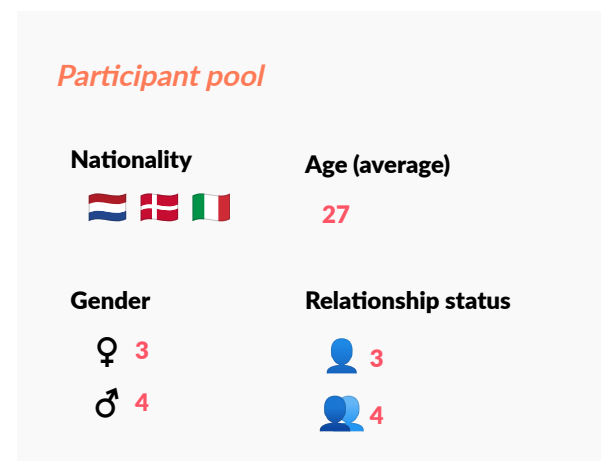
Participant pool

Nationality

Age (average)
27

Gender
♀ 3
♂ 4

Relationship status
👤 3
👥 4

Dating is fun!
But sometimes it's also hard...

huggle

The wellbeing tool to help
with the bad experiences

TELL ME MORE

SKIP FOR NOW

Figure 44; In-app advertising for Huggle

8.2.3 Method

Participants met up with the researcher for an hour-long discussion, during which they went through 3 fictional scenarios. These scenarios allowed for reflection and discussion regarding the service experience, thus the integration of the product into a digital context. The three scenarios were:

1. **Signing up** for *Huggle*
   after downloading the dating app

2. **Receiving** (and unpacking) the *Huggle* 'starter kit'

3. Experiencing a **negative in-app event**
   (a new match disappearing after a few words)
   and the service's prompt to open a pill

Using a digital prototype on their smartphone, people went through a simulated registration process for the dating platform. At the end of the registration they were confronted with a page advertising *Huggle* (See *Figure 44*) This led to a description page and the order process; picking a package (*Action*, *Reflection*, *Connection*, or '*Mix*') and paying for the product. The price of the starter kit was set to 25€ which is roughly the equivalent of the price of Tinder Gold (the subscription model of Tinder) for a month (Match Group, LLC, 2022). At the end of the signup process, participants were offered to pay for *Huggle* by either signing up for the subscription service or making a one-time payment of 25€ and paying for further pills 5€ per piece.

In the next step, participants have been presented with the physical product; the glass jar with a mix of pills (3 of each type, 9 in total) of predominantly online trigger events (such as not getting matches, or replies in the app).

This was followed by another digital prototype, where users received a message from a new match (*Figure 47*). After saying 'hi' to each other, the match disappeared, and a pop-up page asked the user how they are doing after this experience. The application suggested opening a pill they have or ordering a new one for the situation. The corresponding pill was included in the physical prototype, giving participants the chance to open and read a prompt on the spot.

To help the discussion, each participant was provided 'test sheets' (See *Figure 46*, *Appendix 19*) that ought to capture the emotional reaction to the solution in various scenarios. Here as well the PrEmo emotion measurement tool was provided (see *8.1.3*), together with quantitative measurement scales about the clarity, effectiveness, and usefulness of the concept. Participants were also asked how likely they would use the product themselves. While these questions were meant to stimulate people to reflect on certain aspects, the numeric data can help the comparison between respondents.

After the three scenarios, participants have been presented with additional sheets of paper depicting 4 different types of packaging (the original and 3 additional options, see *Figures 48-50*). The representations were selected to display a variety of possible packaging options, comparing the current 'glass jar' with other designs in terms of order (structured or unstructured representation of the pills) and material (glass, plastic, paper, and wood). With the help of similar question as described above, people were asked to reflect on the emotions these representations elicit. Participants were asked how much they like a specific packaging and whether they would display it in their homes (which was the main design objective of the packaging).
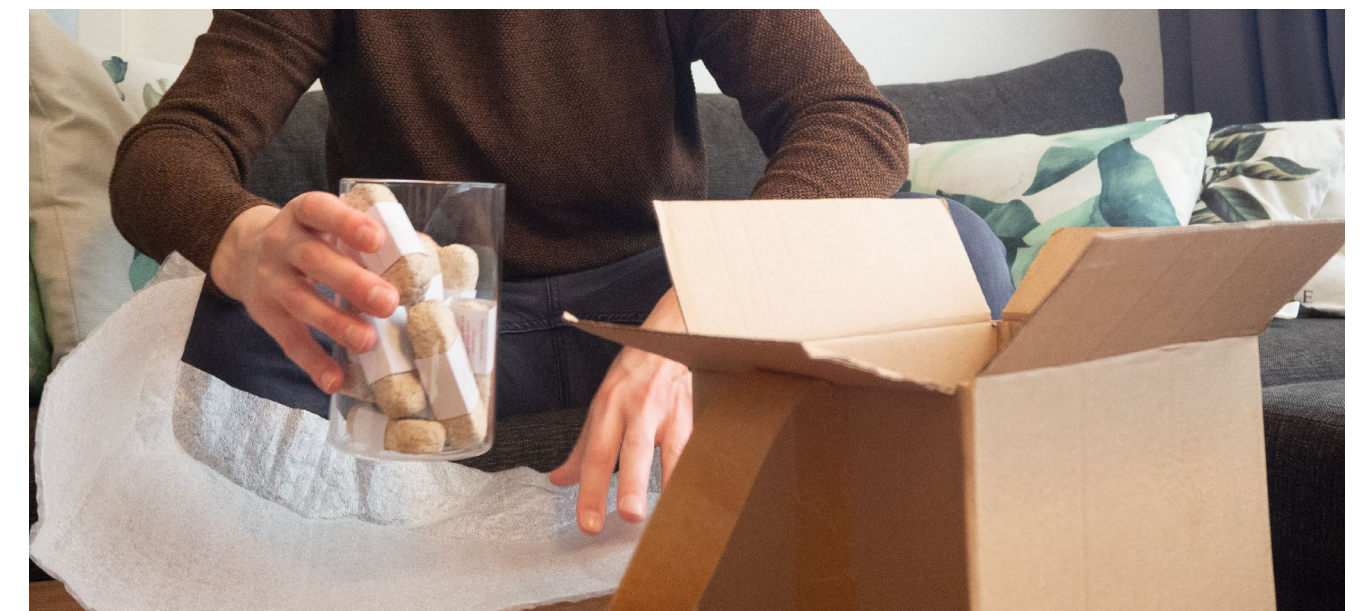

Figure 45; Taking the product out of the packaging. The glass jar needs to be protected during shipping; a foreseeable issue regarding market feasibility
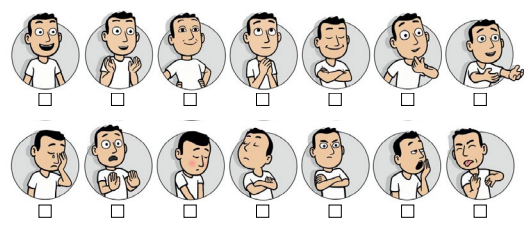
Figure 46; Example page of a test sheet (Appendix 19) for the discussion using the PrEmo self-report tool (Desmet, 2019)

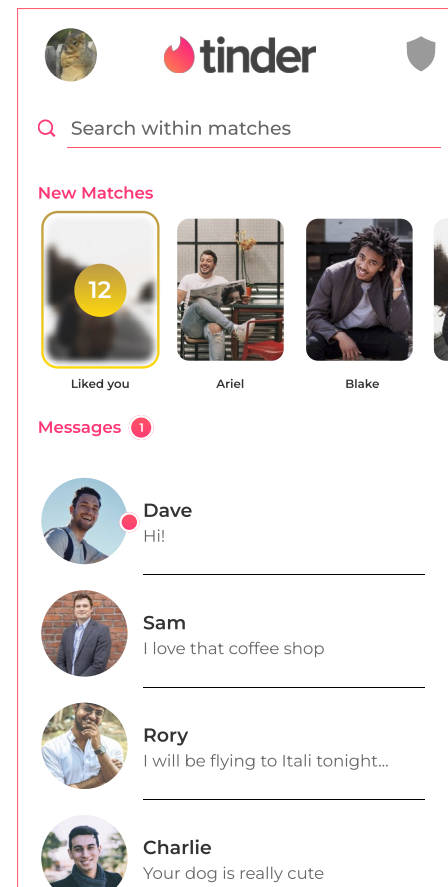Figure 47; Message from a new 'match'. User photos from Unsplash.com

Figures 48, 49, 50; Alternative packaging styles.
Pictures were based on: *rotating case from Pilot, praline pastilles from happy lab, test tube spice rack from Roost* (Souce: Pinterest)

8.2.4 Results

Analysis was done by reading through the notes made during the tests and clustering the data according to emerging themes (Saldana, 2009). Although the prototypes were not optimized from a marketing perspective, they raised fruitful discussions and the feedback pointed out considerable room for improvement in this area (see *Chapter 10.3.1*).

The service integration was received positively, but also sceptical. People felt that if a company (such as Tinder) would embrace and integrate such a service, it would have an added quality, but did not see it as realistic.

„ This would be pleasant to see on an app like Tinder. Nice to see they care. I'd be a bit sceptical knowing they don't... "

/ Strawberry fart, 29 /

„ It's a contrast with Tinder. I wouldn't expect Tinder to embrace such a concept. Real emotion, connection. "

/ dePudo, 28 /

During the first evaluation study, it was commented that integrating *Huggle* into the dating platform (as opposed to being a stand-alone product) would be preferred. Even though it was described during the introduction that *Huggle* is part of Tinder, the page probing people's interest right after the signup process was confusing to some. One person thought that it is an advertisement from an outside provider and discharged the page right away. Others commented that after registering they would first like to experience the dating app itself.

„ I'm trying to understand how Huggle relates to Tinder because I signed up for Tinder. I'm not sure because... I just wanted to see how Tinder works. Whether I can get some matches. Now it sounds like I'll get some negative experience - which I probably will. I don't want to think about it yet. Because it's not yet happening. "

/ dePudo, 28 /

Participants shared the opinion that they would not want to pay for *Huggle*, thus having to give financial compensation for the service could prevent people from practising emotional first aid. They commented;

„ I don't think I would value myself enough to pay for the pills. (...) Only when it's already included in the service. "

/ Buttercup, 24 /

„ I don't think I would spend as much for myself, more for a friend. I wouldn't spend money on something I don't feel like I need. Has to be cheap or be part of the subscription (because) you already have ways to cope. "

/ Strawberry fart, 29 /

Besides the payment, another reason why many participants would not have wanted to sign up for the service was that they did not receive enough information about the product, nor about how it would help them, and why they would need it. An interesting contrast emerged between wanting to have a quick, more visual introduction with less text, but also more information that would convince them. Still, 4 participants reported they were curious about the product, and only two chose a PrEmo character showcasing reluctance (which was a general reaction to in-app ads).

„ It seems interesting, but haven't seen anything that makes me ready for purchasing yet. "
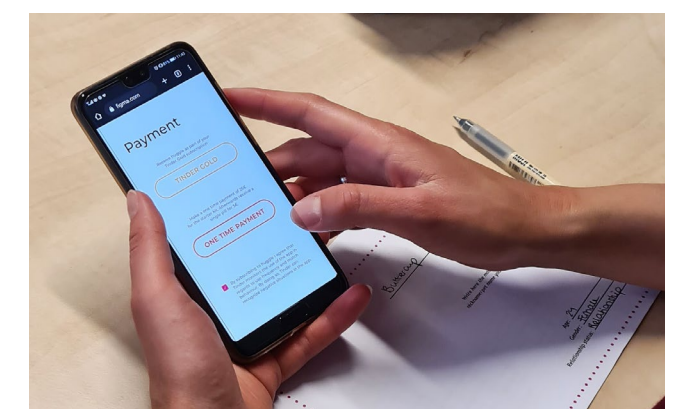
/ Señor Carrot, 32 /

Figure 51; Looking at the payment page during the test

Upon receiving the physical product, most participants **took out the pills** and **made an overview** of their possible 'hurts' (*Figures 52-53*). They looked at the collection with **excitement** and curiosity.

> „ I was excited to read through the things. It was "nice" to recognize the experiences. It does make me curious what's in there. "

/ Dracula, 25 /

In the third scenario, people went through a minor negative experience. Participants showed a visible reaction of surprise, annoyance, disbelief, and even slight anger when they were confronted with their **new match disappearing** just after saying 'hi'. It was clearly an **unpleasant experience**, yet 4 out of 7 participants picked **„it's okay"** when the service asked them if they are all right. They commented that the experience is so small, that it has no real effect. They were not feeling 'hurt', as they did not build a connection with the person. For one participant, dismissing the message was so automatic that they could not recall what it was about.

> „ I said I was okay.
> I was a little angry... maybe I wasn't okay
> but I dismissed it easily. "

/ Sjorre, 21 /

However, the (presence of the) **application's reaction** was **appreciated** by all. Similar to the first user test, people of the second test also commented that they would feel such a reaction to an event be pleasant, and instead of feeling monitored by the service provider they would **feel cared for**. Moreover, the reaction message seemed useful in terms of reminding people to use *Huggle*. **"Otherwise I would forget about the prompts"** one commented. Having this **additional reminder** with the right placement and tone of voice seemed necessary to use the pills. It raised questions about trigger events happening outside of the dating app (where Tinder wouldn't be aware of it) or being reminded when one does not have the product with them, and therefore forgetting about actually using the pill (for example during a commute, which is a frequented time for using Tinder (Tyson et al., 2016)).

> „ It looks like it cares about you!
> Even though it's a bot. "

/ dePudo, 28 /

Breaking the pills was generally enjoyed, providing both **satisfaction** (because of the tactile experience) and **hope** (that it will help). The biodegradable packaging was commented to help mitigate the negative feelings, as 'littering' would have made people feel worse.

> „ I like it quite a bit especially the mycelium part. Doesn't feel as much waste. Because what I expect here is just an assignment on a paper which is quite some waste... "

/ dePudo, 28 /

Figure 52-53; Participants took out every pill to make an overview

> „ I would probably open them all it's so satisfying. Honestly I love the breaking! "
>
> */ Sweetypie, 27 /*

> „ I like the 'Kinder Surprise'. You wanna know what your little gift is. "
>
> */ Strawberry fart, 29 /*

> „ It's like you find a pearl. "
>
> */ dePudo, 28 /*

> „ Awesome the physicality! "
>
> */ Señor Carrot, 32 /*

Participants of the evaluation study breaking the pills

Opening a prompt during the evaluation study

The **prompts** themselves elicited **different reactions**; they made people 'disappointed', 'pleasantly surprised', feel 'supported', 'proud', 'repulsed' and even 'blamed'. These were surprising reactions and possibly depend on the specific wording of the prompt. Participants also noted they would react differently after the real situation.

The instructions on the backside of the paper wrapped around the mycelium coating (describing how to use the seed paper, introduced in *Chapter 8.2*) were only noticed by a handful of participants. One of them connected it to other product parts, commenting that users could use the mycelium with some soil in the jar, and plant the flowers right there. Another participant found it 'gimmicky'.

At the end of the test, people were reflecting on **different** types of presentations (**packagings**). While people liked the wooden stand displaying the pills in a vertical row the most (*Figure 50* on *page 78*, see also *Appendix 19* - also most likely to display in their homes), participants commented they **did not would want to keep the collection around for others to see** at all. Because of this, some were favouring the box with a structure (*Figure 49*) which was perceived as 'easy to access'. However, also easy to forget about:

> *„ It would be thrown into one of my drawers and I would find it in 2-3 years and throw it out. "*
>
> */ Dracula, 25 /*
>
> *„ I would have it in the cupboard somewhere and forget about it. "*
>
> */ Strawberry fart, 29 /*

The see-through plastic tube for a structured rotary representation (*Figure 48*) was described as boring and least likely to be used and displayed, primarily because of the material quality, which would also make it more prominent upon display; **„you notice right away what's plastic in my home"** – Señor Carrot commented. These findings are in line with the natural requirements described in *Chapter 7.3.3*. The glass jar used in the test was found to be aesthetically appealing, but less useful because participants (3 out of 7) felt it would gather dust, and having to take all pills in and out could be a barrier to use. At the same time, it was commented to be more 'anonymous' if one has it on display.

> *„ I would have to take everything out first and put back the things again (...) It's already hard to start using it. You acknowledge you need it... so (it should be) as accessible as possible. "*
>
> */ dePudo, 28 /*

IX.
CONCLUSION

9.1 Overview of the study

Minor emotional injuries – everyday failures and small rejections are a natural part of life. This project was built upon the idea of emotional first aid (Winch, 2013); tools and methods that can help people to deal with the 'invisible' pain of such small injuries and efficiently recover from them. Practising emotional first aid in the long term can lead to better coping and hopefully prevent the development of more severe symptoms and mental issues (*Chapter 2.1*).

The current project explored how designers can support the practice of **emotional first aid**. Literature suggests that by facilitating positive emotional experiences in human-product interactions, **positive design** can help people get through minor negative experiences. **Tangible solutions** can be especially powerful in doing so *(Chapter 2.3)*.

The project looked at (online) **dating** as a case study. Literature and the conversations with users of online dating platforms have shown that due to the rapid and 'impersonal' nature of modern (online) dating, it is a context where small emotional injuries can quickly and frequently emerge, having a considerable influence on people's subjective well-being (*Chapter 2.2 and IV*).

The writer delved into what kind of emotional injuries people go through in (online) dating, and how they deal with those injuries. Literature research and a qualitative study with young singles in online dating were carried out to understand the context and the theory of coping with special attention to emotion regulation and the practice of self-compassion (*Chapters IV and VI*).

Using '**Research through Design**' (*Chapters III*), the project investigated whether it is possible to design tangible solutions for everyday emotional injuries in dating.

Three **sessions** were held **with experts** in social sciences and relationship studies where design ideas and directions were discussed with the help of short scenarios (*Chapter 5.2*). The scenarios opened up the design and conversation space, which helped to identify **self-compassion** as a powerful strategy to approach the emotional injuries of dating. A **design goal** was defined, which was to help young singles practice self-compassion after an emotional injury during dating - allowing them to build their repertoire of healthy coping strategies. Thus, emotional first aid was reframed not only to provide solutions for dealing with small emotional injuries but also to help people recognize their hurts and reflect on their coping strategies; to allow them to build their own emotional 'medicine cabinet' (*Chapter 7.1*).

Based on the literature, the diary study and the conversations with the experts a set of **design objectives** were defined (*Chapter 7.1.1*) which are embodied in a **final concept** called *Huggle* (*Chapter 7.3*). Two **evaluation studies** of this concept helped in gaining additional insights into how physical products can help people deal with rejection and loneliness in (online) dating (*Chapter VIII*).

9.2 Findings

The main question of this study was **how to translate the abstract psychological strategies** (of emotional first aid) **into tangible solutions**. Multiple research questions (*Chapter 1.3*) were explored; What kind of emotional injuries do people go through in (online) dating? How do people deal with those emotional injuries and what is the role of objects in that? What are the requirements when it comes to designing tangible solutions and remedies for everyday emotional injuries (in dating)?

The outcome of these explorations is a **set of design requirements and principles** (*Chapters 7.1.1 and 9.2.4*) and a final concept (*Chapter 7.3*) that represents these aspects in order to demonstrate and learn about these principles of design. The observations of this project and the requirements that have been identified can give foundation to future work in the areas of positive design and psychology for emotional first aid.

9.2.1 What emotional injuries do people go through in (online) dating?

By carrying out a qualitative diary study, the writer explored the emotional injuries people go through during (online) dating. The triggers that can elicit a negative reaction and possibly cause an injury were identified. Using a framework based on the 7 common everyday injuries outlined by Winch (2013), and the 13 fundamental needs theory of Desmet and Fokkinga (2020) a 'map of injuries' and corresponding 'injury cards' were developed which give an overview about the nature of these injuries and the needs that need to be fulfilled in the given situations (see *Chapter IV*).

It was found that in the context of (online) dating the most prominent type of injuries are **Rejection** and **Loneliness**. Possible remedies incorporate fulfilling the needs of Competence, Autonomy and Comfort. Moreover, providing a sense of Belonging, Confidence, Support, and Reassurance were identified as useful aspects to design for.

9.2.2 How do people deal with their emotional injuries?

People deal with their emotional injuries in **various ways** and there seems to be no universal solution that applies to all. The most prominent coping strategies identified in the context of dating were **avoidance** and **denial**, along with turning to **social support** (see *Chapter 6.1*).

The diary study has shown that it might be difficult to identify and accept one's negative emotions regarding small occurrences and 'normalized' online dating behaviour (such as 'ghosting') - which can lead to the development of small emotional injuries. Most of the injuries found were the results of frequent, minor occurrences which are often not salient to people, since they are considered to be a natural

part of the dating process. However, this did not seem to mean people do not react to them negatively. While such small occurrences do not have an immediate effect, they might build up and lead to erosion in self-confidence, or dating anxiety (see *Chapters 4.1.6, 6.1.2*).

The evaluation studies (*Chapter VIII*) have shown that bringing people's attention to these injuries must be carefully considered. While awareness can be the first step towards accepting and therefore resolving the negative effects of emotional injuries, through this awareness one runs the risk of creating a hurt that was not even there to begin with.

9.2.3 What is the role of objects in dealing with these injuries?

Literature and the evaluation studies have shown that the objects surrounding us can have an impact on the way we deal with our emotional injuries. Objects that can **facilitate** and trigger **positive emotions** can help with emotion regulation (*Chapter 2.3*). Furthermore, a physical object that can **trigger reflection** may help 'putting things into perspective' and prevent people from entering into a downward spiral of negative thinking (*Chapter 10.2.2*).

9.2.4 (How) can we design tangible first aid solutions for everyday emotional injuries in dating?

By building on the promises of tangibility in positive design (Desmet & Sääksjärvi, 2016), the author explored how helpful coping strategies, especially the practice of self-compassion can be translated into a physical form. By exploring the context and the literature, a set of design objectives was identified (*Chapter 7.1.1*).

'*Huggle*' is a concept demonstrating these design objectives and the required aspects of practising emotional first aid in the context of (online) dating (*Chapter 7.3*). It is a physical product offered by, and existing alongside the dating platform, that helps to practice self-compassion after an emotional injury - primarily an event that can elicit feelings of rejection or loneliness. *Huggle* is a set of self-compassion prompts that people need to break open after a negative event, and use to reflect, take action, or reach out to their loved ones. Two evaluation studies with the concept provided further insights into designing for emotional first aid (*Chapter VIII*).

The expert sessions and the following two evaluation studies of the final concept have shown that tangible interventions for emotional first aid need to allow for **flexibility** within various coping strategies and their use, providing agency to people. To help the acceptance of emotional first aid methods, the solution needs to be **unobtrusive**, **intimate**, and **simple** in regards to its use. A low threshold to engage with the product can aid in reaching out for help when one does not feel like they need help. To learn about one's coping strategies and build resilience, the design intervention has to **allow for repeated use**, and attrition needs to be minimized. This can be achieved by creating meaning through personalization and sparking interest and curiosity. Above all, a design intervention that supports people in obtaining a balanced awareness of their feelings through **self-compassion** and **mindfulness** can help recognise the emotional injuries that need attention to care for (see *Chapters 6.2, 7.1.1, 8.1.4* and *8.2.4*).

X.
DISCUSSION

10.1 Limitations

As every project, the current study also dealt with certain limitations. While such limitations can have benefits in regards to steering and keeping the design process within manageable boundaries, they can also introduce possible errors. Some of these were already reflected upon in the text.

As noted in *Chapter 4.1.2*, the participant base of the first (explorative) study, as well as the evaluation studies turned out to be more homogenous than intended. By taking to people of various life stages and a more diverse background (instead of a student majority), possibly additional insights could emerge. Therefore, both the identified injuries and the product could be validated with a wider range of user groups in the future.

Not all aspects of the design could be tested due to time constraints. For example, the material qualities of the packaging were not evaluated, as it would have slowed down the prototyping process. Growing mycelium takes time, and therefore it was substituted with papier-mâché to allow for quick iterations during testing. The mycelium coating was an important aspect of the design proposal, but its development could be a project on its own. However, such prototyping decisions and 'mistakes' can also give useful insights to the study, and are part of the Research through Design knowledge. This way other interactions could be explored such as breaking the material instead of peeling it.

During the evaluation studies, participants did not go through really painful experiences such as 'ghosting' or a breakup, which was commented to be the moment when the product could be more useful. A longer testing period would be able to assess the use and the usefulness in 'harsher' situations where people are more involved with the other person, therefore their emotional reaction and their injury would also be more severe.

During the evaluation study, the change in people's overall self-compassion level was measured. Both the statistical and practical significance of these results proved to be low. It's not only that the sample size was small, but the duration of 10 days might have been too short to elicit any effect. Moreover, any change in participants' levels of self-compassion can also be explained by other external factors. Involving a control group for the evaluation could give more insights into the matter. Furthermore, only an average of 3 pills were opened by the participants and the effect of such a small intervention can be doubted. For a more reliable evaluation, both the study length and the sample size would need to be increased. The results reported in this thesis therefore can only be seen as indicative.

Opening a prompt during the evaluation study

10.2 Additional Findings

'*Huggle*' is a physical tool directly offered by, and integrated into the online dating platform, representing the design objectives that were identified. This fictional service and the physical prototype were used as a research tool to validate these design objectives. However, as in any project, additional findings and interesting research areas appeared which are noteworthy to mention.

10.2.1. Insights about emotional injuries

The project looked into the emotional injuries in (online) dating by taking a reflective perspective, focusing on emotional first aid after **negative events**. These events are not only **frequent** in online dating, but often 'small' and '**insignificant**'. Literature suggests that 'not matching' with a person of interest is the lowest form of rejection in online dating (Andrighetto et al., 2019). During the studies (*Chapters IV* and *VIII*) it was found that 'not matching' was not seen as a negative event, nor did it seemingly cause an emotional injury. Thus this event does not seem to warrant any intervention, making it debatable whether 'not matching' or 'not getting an answer' should be included in the list of trigger events. Still, some participants agreed that not having any matches at all might wear down people's self-esteem. Even if people do not have immediate and considerable negative reactions to a single occurrence, such small events can accumulate which then can result in general dating anxiety.

Researchers might therefore need to dig deep **below the explicit level of knowledge** (Sleeswijk Visser et al., 2005) to find out what the real effects of these events are instead of solely relying on self-reporting tools. It is not easy to tell whether a person is trying to deny the importance of a happening, or they are not experiencing it as something 'bad'. As it was found during the diary study (*Chapters 4.1* and *6.1*), often the effect is **not salient** to the person, only later when a similar experience emerges – or they have to engage in the next endeavour.

Interventions that can help people to **recognize and accept** these events and their feelings about them can be a first step toward practising emotional first aid in (online) dating. The design intervention (*Huggle*) did indeed make possible injuries more salient. However, this was not always appreciated, and can even be considered **harmful**. Participants suddenly felt like they are supposed to feel bad about something they did not think about before.

10.2.2. Huggle as an emotional first aid tool

A recurring question was why can't there be a purely **digital solution** for emotional first aid. It is a logical enquiry, especially in the context of online dating where the interaction already happens on people's smartphones. In a world where our lives move more and more online; encompassed by blue screens and dependant on the Wi-Fi connection (including dating and, especially recently due to the COVID-19 pandemic; work and other aspects of social life as well) the current project aimed to highlight the importance (and impact) of our 'offline' lives. Screen-based interventions can be demanding, and less personal. It was important not to design yet another app, unseen on a smartphone (Eysenbach, 2005) and adding to the endless stream of notifications. However, it needs to be acknowledged that digital solutions can hold advantages over

„ So when somebody stopped texting, right, I normally didn't think it was a big deal. and I never thought about that as a bad thing before. Because they're in the pills, I thought, 'Oh, maybe I should feel bad' ”

/ Puffin, 23 /

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physical ones as well, especially in terms of **convenience** and **market feasibility**. Embracing any form of well-being in online dating might help with the 'uncaring' and 'faceless' **image** of dating platforms. For example, an automated service that gives one-to-one attention and care for its users could help and thus refocus the market on **quality** - instead of quantity.

Even though the effect of using the product was mostly positive in the real context, the second study yielded **different reactions** to the self-compassion prompts. Using *Huggle* helped people to '**put things in perspective**' when they were in a given situation. However, if the situation on the pill did not match theirs, it sometimes had a negative effect on the individual. This highlights that the **prompts** need to be designed carefully, and matched to people's situations since they **might also do harm** instead of good.

> *„ I'm glad I got I had the product with me, just to you know, get me out of that mood. And, yeah, focus on the present, and that it's over. (...) I feel like I would have asked myself the same questions you had written on these papers. But I feel like a part of me wants to, doesn't want to confront them. So it's like trying to escape. But with this, I had to take it. So I was like, in a more committed or a kind of forced into it. "*
>
> */ Muffin Snuggle, 22 /*

While the concept was meant to help people accept their negative feelings, it gave the sense that something external (the product, the service) cares for them. People found that it would improve their online dating experience if Tinder (or similar providers) would embrace a concept such as *Huggle*. The positive responses on the service's reaction to an unpleasant situation (the service 'noticing' a possibly negative experience and checking in on the users) reenforced this. Developing algorithms that can detect people's (possible) low moments and show **a sense of care** for the individual could be powerful in dealing with negative emotions. Such interventions might not only help to acknowledge people's feelings but also comfort users by not having to rely purely on self-help.

People seemed to appreciate the 'nudge' which reminds them to (use) the first aid kit, but user testing indicated that the **visual nudge** (displaying the design in a frequent place of one's home) might not be the best way to do so. Even though participants appreciated the aesthetics and kept the collection on their table (as they were instructed in the manual), the constant sight of the pills was also a **reminder** of possible injuries, as well as made users engage with the dating app more often.

> *„ if I had not had some things that get me to change my perspective a bit l ike the Huggle card, then I wouldn't have been able to reflect and then change my mindset later on. "*
>
> */ Munchkin, 24 /*

Because of having to display the product, a sense of '**taboo**' emerged about having an emotional first aid kit. If one lives in a shared home or expects visitors, participants indicated they would not have *Huggle* in sight. A participant of the first evaluation study hid the kit before a date to avoid uncomfortable questions. When reflecting on the different types of presentations in the second evaluation study, people also commented they would rather keep the pills in a box to 'shove it away' or use the glass jar as a more **discrete display** instead of attention-grabbing materials or shapes.

> *„ Putting it on display makes me feel vulnerable. "*
>
> */ Buttercup, 24 /*
>
> *„ I don't think I want to display my failure in dating. "*
>
> */ Dracula, 25 /*

> *„ As soon as you gave it to me, the guy came to my place. So I asked my roommate to hide it for me, because I didn't want him to ask me what it was. Especially since we were in this kind of situation where nothing was defined. If I told him like... I'm doing an experiment about dating, I'm writing about you - it would have felt maybe too much pressure for him. So I hid it. (...) after that, I left it on my desk. But then I hid it again when he was coming. "*
>
> */ Cupcake, 23 /*

As was discussed during the expert sessions (*Chapter 5.2.4*) the shape and the interaction have to be carefully considered to fit the intended effect of the intervention. **Product meaning** and semantics seem to have an important role when it comes to designing for emotional first aid. People make product **associations**, and attach meaning to the product based on its form and the terminology used. The name and used terms received mixed comments from users. One participant related '*Huggle*' to 'struggle', some found it simply 'cute'. One user pointed out that the short name connects well to other brand names in the dating sector (Tinder, Bumble, Happn). Without seeing the product, participants made medical and addiction-related associations about the 'pills', which was generally labelled as an unfortunate word choice.

People did not **revisit the pills** during the evaluation study, but it was noted they would like to do so. Originally the indication of the trigger event was meant to be lost, so people have to look through and open more pills when they are looking for a message later on. Currently, people felt like the pills are made for one-time use only, while they would anticipate going through similar experiences in the future and thus look back on what helped them last time in the same situation. This finding reinforces that emotional first aid is **not a one-time event**, but rather a **continuous conscious engagement**.

Users have to be allowed to create meaning for the product themselves (e.g. through personalization, see *Chapter 2.3.2*) which helps to connect with the object and experience emotion-regulation through the artefact. **Writing** proved to be a powerful method to do so, and also helps to sort out one's thoughts. However, many writing exercises can be excessive and don't fit everyone. *Chapter 2.1.2*) Using only a small piece of paper in the design (which people could even print and change themselves) this action was easy to carry out during the tests. Especially the small personal messages from others were meaningful to users, although sharing the pills and one's small dating injuries with others can be difficult - they commented.

> *„ Even though you have so many thoughts in your mind, I feel like writing some of those actually make you realize the thought that you had. Sometimes it's just in the in your mind, and you don't fully read into it. And then when you write it and be like; 'Yeah, this is what I should be doing.' And that's when it hits you. "*
>
> */ Muffin Snuggle, 22 /*

„ And I was in a kind of dating emergency. I felt frustrated (...) and I wanted to share it with someone but didn't know with whom and didn't want to annoy anyone (...) I called up my parents. I like to share things with them. First I didn't want to tell them not to make them worry. (...) (it would be good) if something physical can help you to make that connection. "

/ Sjorrie, 21/

Although the signup process seemed relatively straightforward in terms of technicalities, it was not clear to people what they get and why it would be useful for them. Therefore, careful attention needs to be paid to both convincing people of the usefulness of practising emotional first aid, as well as using the tool itself. Integrating the intervention into already existing services and solutions (being part of the dating platform, offered in paid packages as part of a bundle or the general subscription) or offering a trial could help with that. Additionally, proposing *Huggle* to users might be best when people are feeling the need for it after a negative experience.

Emotional first aid solutions need to be simple and require a low effort to engage with, as the emerging emotions might make it difficult for people to accept any kind of help. Another reason why the barrier of engagement needs to be at a minimum level is that people might not feel like they need anything external to deal with their emotional injuries. Any product or service that is offered as a first aid tool has to compete within an already existing ecosystem of coping and justify its place by arguing why users would gain additional benefits by using it. *Huggle* is not a tool for 'instant happiness'. The intervention does not substitute people's current coping strategies, only compliments (and possibly improves) those.

„ It's not like it's a psychologist so it cannot really fix you. So... people don't have to think that this can fix everything. It's just something to make you feel better. "

/ Cupcake, 23/

10.3 Further recommendations

10.3.1 Proposed improvements on Huggle

Although the aim of the studies was not to assess the prompts and their effects, the strategies and the suggestions inside the pills are undoubtedly a crucial point when it comes to the success of the intervention. People had different reactions to these; some were positive while some were negative, signifying that careful attention needs to be paid to this aspect. The prompts were received positive during the in-context use, which might be an indication that the effectiveness of these prompts might be situational. Future developments could be done by working closely together with clinical psychologists and self-compassion experts to fine-tune the short messages.

In terms of prototyping, the project focused mostly on the 'pills' and less on the digital part of the experience. The instructions about when to open the pills could be integrated (to be retained) into the acrylic case or the packaging of the collection to recall the connection between the situation and the prompt. Further iterations could explore how to ease the engagement, and discover the qualities that can enable the services to participate (or even lead) users' emotional self-care. A digital realization of an online well-being tool for dating apps could look like e.g. a chat agent (an automatic system, suggested by participants) that checks on the users from time to time. Further fine-tuning of the digital interface could include a database integration where the platform gives an overview to the users about their pills and guides them through which one to use in a difficult situation.

The current prototype was developed as a research tool (*Chapter III*). Many of the discussions – both with experts and users- touched upon market feasibility, (production, cost, etc.) resulting in insights that could be used to develop the solution into a 'real product'.

The way the pills are presented (packaging) could be the subject of further attention, which could improve market feasibility. The suggested first aid techniques of Guy Winch (2013) often encourage people to make lists and overviews of their thoughts, strengths and actions to take. Thus *Overview and Structure* (a sub-need identified by Desmet and Fokkinga (2020) when it comes to the need of experiencing *Comfort*) have been deemed to be important in dealing with emotional injuries (see *Chapters 4.1.5*, *4.1.6*). During the second evaluation study, most users took out every single pill of the jar to make an overview of 'what they have in store'. Both studies showed that some would prefer to have that overview at all times, also making the use of the pills 'easier', and prompting a 'moment of contemplation' by looking through their collection.

Other ideas that could contribute to the fulfilment of the need for *Overview and Structure* could be to integrate the list of trigger events into the packaging, the manual, and/or the application. If the dating platform keeps track of users' negative experiences, and the pills they have, this overview could be also personalized and the users could be helped to the right pill in a moment of distress. The injury cards developed and outlined in *Chapter 4.1.6* also provide an overview of the injuries besides suggesting solutions on a more abstract level. The descriptions of these events and the quotes from others who went through a similar experience can additionally elicit feelings of shared humanity (see *Chapter 6.2* about self-compassion), which was commented to be a desirable feature by some of the participants during the second evaluation study.

10.3.2 Additional research areas

Although gender differences were not the focus of the current project, they have to be acknowledged when it comes to experiencing and appraising emotional injuries in online dating. Male participants of the evaluation studies reported they do not find certain 'low stake' trigger events, (such as not matching back, or not answering) to cause an injury, simply because these experiences are extremely common (see *Chapter 10.2.1*). Research seems to confirm that even though male users like more profiles, they receive fewer matches and that at a slower rate (Tyson et al., 2016), resulting in frequent low-stake rejection (not matching) and thus the experience is normalized. In the same study, however, the researchers state that females are more likely to send a message after a successful match, and those messages tend to be longer as well. In the words of a participant who tried *Huggle*, these small injuries „might be more important for women, and more likely for men". Generally speaking, different genders might need different emotional first aid tools when it comes to online dating, which area could be explored more in-depth.

To help process emotions in general, suggestions were made to include positive and neutral events in *Huggle*. Since the project is about dealing with negative emotions, the prompts and events are focused on occurrences that proved to be negative during the exploration phase. However, expanding the scope could help to put one's dating experiences into a bigger perspective and reflect on all kinds of emotions. It could be a promising area for further research on whether treating experiences holistically might help people become more mindful, aware, and self-compassionate.

> *„ Huggle (is) focused on mitigating the negative effects, although I feel like a good use of Huggle would be to expand on the positive effects of it. Why did this make you feel happy? And is that a healthy thing? (...) Do you just like the attention? Or do you feel like an organic thing is coming up? That would be nice, to help you sort through your emotions. "*
>
> */ Munchkin, 24 /*

The temporal requirements of these psychological interventions could be a further point of interest. A decision was made in the design of the service around *Huggle*; which was that it should serve as a 'first aid tool' meaning people are supposed to consult it (right) after they are injured. Timing the intervention to the right moment when it is useful and relatable, but can also be accepted (once people become 'receptive' to help, see *Chapter 6.1.3*) is likely an important factor. Measuring when the intervention would be best received – in the moment of hurt, shortly after (minutes or hours) could provide important insights for designing such interventions.

> *„ When I opened it I was still a bit angry at him so I didn't really wanted to talk about it with him. "*
>
> */ Cupcake, 23 /*

The writer made the hypothesis that allowing time between the hurt and the intervention (which translates to the delivery time after ordering a single *Huggle* pill) might help with becoming receptive to emotional first aid. During the first evaluation study (see *8.1*) people did not order additional pills, and during the second (see *8.2*) some commented they wouldn't appreciate the time buffer between the hurt and the intervention.

> *„ When I'm down, I want them (the pills). In 3-4 days I already dealt with it myself. "*
>
> */ Buttercup, 24 /*

While the proposed solution was mostly appreciated by users, a considerable issue of introducing any kind of first aid solution proved to be the threshold of engagement. While the current project uncovered some of the barriers, it would be interesting to find out what's the level of effort that people are ready to exercise to learn and practise emotional first aid.

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The jar was serving as a place for collecting the packaging material during the evaluation study

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