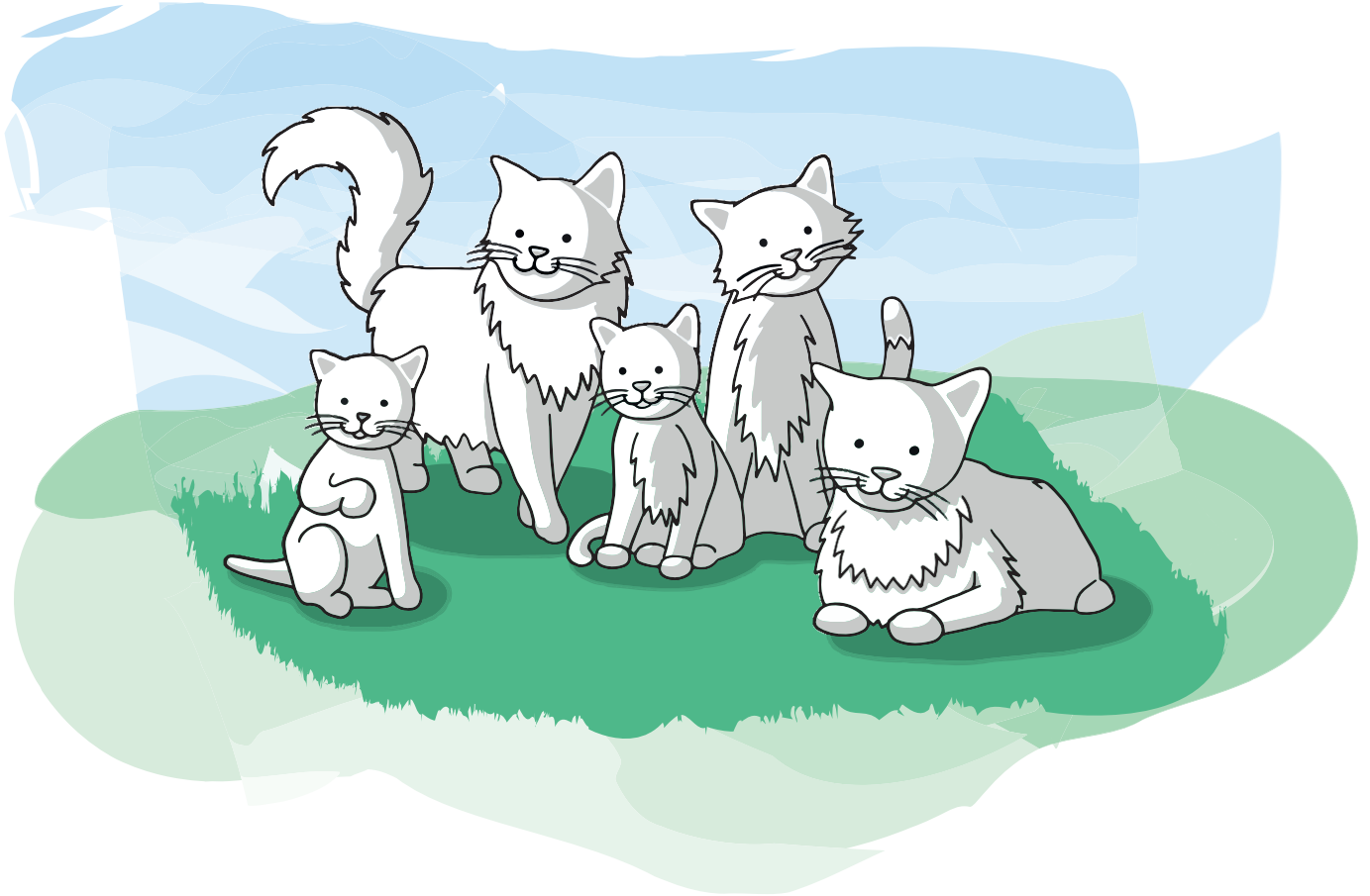


TELLTAIL



*understanding feline behavior and personality to increase
the human-animal bond in order to prevent owner-surrender*

Master Thesis by *Gracia Murriss*





TELLTAIL

*understanding feline behavior and personality
to increase the human-animal bond
in order to prevent owner-surrender*

Master Thesis by
Gracia Murris

May, 2018

The Design for Animals Lab
MSc Design for Interaction
Faculty of Industrial Design Engineering
Delft University of Technology

CHAIR

Prof. dr. ir. Pieter Desmet

Faculty of Industrial Design Engineering
Delft University of Technology

COACH

Ir. Wim Schermer

Faculty of Industrial Design Engineering
Delft University of Technology

PREFACE

One of the most enriching relationships of human beings is the relationship between owner and companion-animal, including more specifically the relationship between owner and cat. Cats are the third-most important source for social support and security for human-beings. Cats are relatively easy to take care of and make people feel needed. Owners often see them as a friend, child or partner in the relationship.

Cats have similar emotions as humans, which lays a foundation for the relationship; they express emotions, however, quite differently. Therefore, owner and cat don't always understand each other, which often results in confusion, frustration, annoyance and uncertainty in the owner.

The relationship between owner and cat is an emotional one, full with positive and negative interactions. Too many negative interactions could, in fact, eventually lead to an abrupt termination of the relationship.

This project is about the development of the owner-cat relationship and what leads up to the unexpected termination of it: when an owner decides to give up the relationship and surrender the cat to the shelter.

The decision to owner-surrender is often grounded in several reasons of the owner. I believe some of these reasons can be solved and unnecessary surrenders can be prevented. What are some of the reasons that owners decide to surrender their cat? What problems may arise in the relationship? How does the relationship work? And what emotions play a role in the relationship?

To answer these questions, this project maps the emotional of journey of owners with their cats and explores the interactions and behavior of owner and cat during this journey. With these findings as a guide, I created a final design, Telltail, which is a product meant to help new owners understand their cat's behavior to increase the bond between owner and cat.

On this small planet, with so many different living beings, I believe it is important to get along with each other and to make the world flourish. God gave me a sense of respect for nature and its inhabitants. I believe He created us, humans, to be stewards of this Earth to take care of it, not to exploit it.

Special thanks to:

Leo, Lola, Mika, Newton, Lulu, Tommy, Tum Tum, Kiwi, Loekie, Doedel, Poekie and the owners of these lovely cats.

ACKNOWLEDGEMENTS

This graduation project was a wonderful conclusion to my time at IDE. I had the opportunity to learn and try new things over the course of this project. I was able to combine two great loves of mine together: designing and animals. Exploring the behavior of humans and animals, interacting together in a relationship, was a fascinating experience. However, I could not have done it without the different people (and animals) around me.

First of all, I want to thank God for giving me strength and standing by me during my college years, a period which was sometimes difficult for me due to my health problems. I want to thank my awesome husband who always supports me. Arie, you were of great assistance during the Ideation phase carrying out my experiments together with our cat Indy. You and Indy were both a source of inspiration for me. I am also grateful for your perspective on my design process and report.

I want to thank my parents for teaching me to love and respect nature, for always supporting me and driving me to be my best and to keep going. I want to thank my mother-in-law as well, for spending time and effort assisting me to refine my report.

I am also grateful for my supervisory team, Pieter and Wim. Thank you for sharing your insights and creativity with me in exploring this new area of design. You gave me inspiration with your playful attitude, gave great advice, but still left me free to investigate my own ideas and directions.

Finally, I want to thank my fellow students of the Design for Animals lab. It was fun and motivational working alongside you. Your insights gave me inspiration for my own research.

CONTENTS

1. INTRODUCTION	p. 11
1.1 Context of topic	p. 12
1.2 Glossary	p. 12
1.3 The project	p. 14
1.4 Structure of report	p. 16
2. METHODOLOGY	p. 19
2.1 Introduction	p. 21
2.2 Design for Emotion	p. 22
2.3 Research-through-Design	p. 24
3. RESEARCH	p. 27
3.1 Introduction	p. 29
3.2 Methods	p. 30
3.3 Results	p. 37
<i>I. The start and development of the owner-cat relationship</i>	p. 37
<i>II. The emotional journey</i>	p. 52
<i>III. The termination of the relationship</i>	p. 55
3.4 Conclusion	p. 62
4. VISION	p. 65
4.1 Introduction	p. 67
4.2 Guidelines	p. 68
4.3 Design goal	p. 70
4.4 Interaction vision	p. 71

5. IDEATION	p. 75
5.1 Introduction	p. 77
5.2 Design directions	p. 78
5.3 Creative session	p. 79
5.4 Experimental stage	p. 81
5.5 Conclusion	p. 87
6. CONCEPTUALIZATION	p. 89
6.1 Introduction	p. 91
6.2 Concepts	p. 92
6.3 Final Concept	p. 100
7. EVALUATION	p. 111
7.1 Introduction	p. 113
7.2 Procedure	p. 115
7.3 Review	p. 117
7.4 Conclusion	p. 125
7.5 Recommendations	p. 126
REFERENCES	p. 134

1. INTRODUCTION



1.1 Context of Topic

People often adopt animals as a means of companionship [Beck & Madresh, 2008]. Humans are beings that are relation-oriented. Companion animals can fulfil this universal need and enrich people's lives: giving pleasure, relaxation, affection and security [Walsh, 2009].

However, like all relationships, the human-animal relationship may deteriorate. When this happens, the owners may come to a decision to relinquish their companion-animal. They bring their companion-animal to the shelter, or they abandon or dispose of them.

Owners are often motivated by a combination of reasons [Alberthsen, Rand, Mortan, Bennett, Paterson and Vankan, 2016], ranging from owner-related issues (e.g. moving away, lifestyle changes) to pet-related reasons (e.g. behavior problems) [Salman, New, Scarlett, Kass, Ruch-Gallie and Hetts, 1998].

Cats are the most popular companion-animals in the Netherlands; since relatively more cats than dogs (Dutch second-favorite companion-animal) are owner-surrendered [HAS Hogeschool & Universiteit Utrecht, 2015], this project will focus on the owner-surrender of cats.

The home environment plays a central role, as it is the environment in which the human-animal bond develops between owner and cat. Animal shelters also play an important role in the vital touch-points of companion-animal ownership: adoption and owner-surrender. The street, where cats are abandoned, plays a smaller role in the Netherlands, since cats are generally quickly taken in by shelters. As the context for this project is the Netherlands, the project focuses on the outcome of a termination of an owner-cat relationship in specifically owner-surrender. There are other possible stakeholders in this context that

can play a role in design interventions, including pet shops and pet food companies (see fig. 1).

The key aspect of the owner-companion-animal relationship is the human-animal bond: this bond is formed when an owner takes care of and nurtures an animal. This includes providing not only food, water, bedding and health care, but also companionship and affection [Bayne, 2002]. Owners often believe that they not only give affection and love to their companion-animal, but also receive it [Dotson & Hyatt, 2008]. Humans, however, often have trouble in reading the emotions of their companion-animals, which may cause behavior problems. Alternatively, behavior problems may be dealt with in the wrong way, in turn leading to owner surrender [Salman et al., 1998]. The journey and the end of the owner-pet relationship is laden with emotions— and emotions are often a drive for adopting and surrendering a pet.

1.2 Glossary

The most-used terms in this report are defined in this glossary.

Companion-animal

The term 'companion-animal' is used to signify the psychological bond between owner and companion-animal and their mutual relationship.

Owner

Owners are seen in this project as the caretakers and human-companions of the companion-animals, with the responsibility of taking care of them and their well-being and giving them

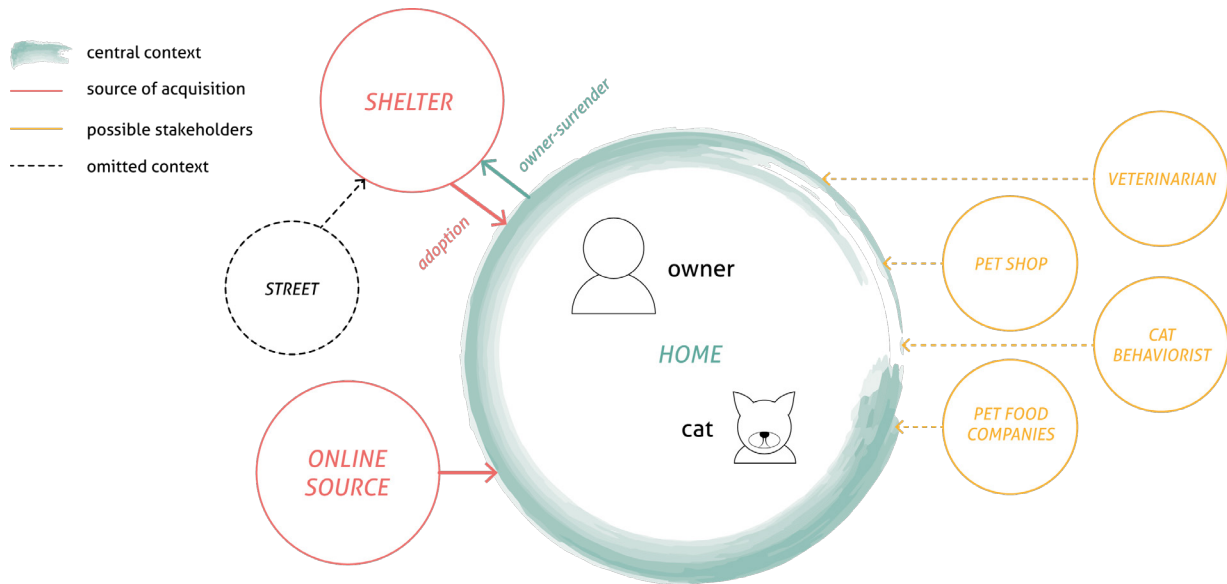


figure 1. The home context with stakeholders

proper treatment. Instead of the word 'caretaker', the word 'owner' will, however, still be used to signify that the person has adopted the animal and takes responsibility. To ease exposition, I choose to denote the owner as female, and the cat as male.

Companion-animal relinquishment

Relinquishment occurs when an owner voluntarily gives up possession or ownership of their companion-animal. This includes companion-animal surrender, abandonment and euthanasia [Coe, Young, Lambert, Dysert, Nogueira Borden & Rajić, 2014; Alberthsen et al., 2016].

Owner-surrender

This occurs when the owner of a companion-animal that is no longer wanted takes the animal to an animal shelter or municipal pound and legally surrenders all further claim to ownership of the companion-animal [Coe et al., 2014].

Human-animal bond

The human-animal bond is a mutually beneficial and dynamic relationship between people and animals that is influenced by behaviors that are essential to the health and well-being of both. This includes, but is not limited to, emotional, psychological and physical interactions of people, animals and the environment [AVMA, 2018].

1.3 The Project

Objective

Owner-surrender is a universal worldwide problem, negatively affecting the lives of animals and humans. Even though this problem is widespread, geographical and social differences make it complex. Although the reasons for relinquishment are often avoidable, few interventions until now have been explored.

A unique component of this context is animal behavior: because companion-animals cannot communicate explicitly, the root causes of human-animal relationship difficulties may not be apparent. This project aims to generate insights and gain knowledge about the development of the owner-cat relationship and the human-animal bond that is fundamental to the relationship. Ultimately, the goal is to find solutions that help reduce the owner-surrender of cats.

Relevance to IDE

This project is part of the Design for Animals lab (with a focus on meaningful interactions between humans and animals) and the Delft Institute of Positive Design (which aids in the development of knowledge that supports designers in design for happiness, human flourishing).

Many emotions are at play in the various human-animal interactions. For example: when the owner feels depressed, the companion-animal comes near and cuddles the owner to comfort her. When the animal is stressed, however, humans may not know how to respond. These (emotional) interactions are a part of what shapes the human-animal bond. So, how do the owner and companion-animal interact with each other; how do they experience this human-animal relationship?

The proposed assignment for this project is:

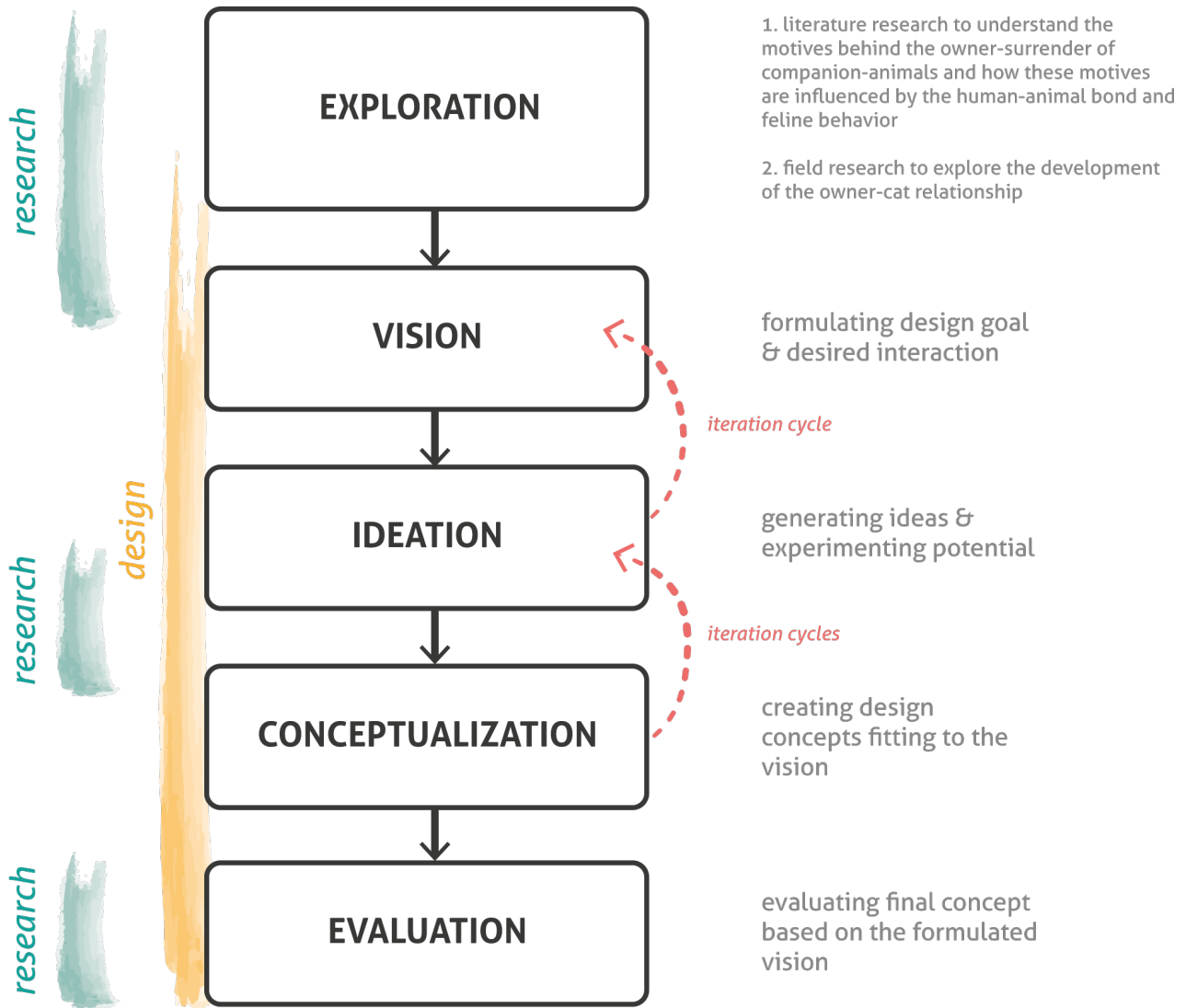
To design one or more interventions for people who have recently (in the last year) acquired a cat, in order to affect their attitude towards companion-animal commitment. In this way I hope to contribute to the prevention of surrendering cats to animal shelters in the Netherlands.

These are questions fitting the Design for Interaction master.

Approach

The project is centered on the human-animal relationship and the interactions that occur in this relationship between two very different actors: the human and the cat. To create knowledge on human and cat behavior and experience, this project takes a human-centered and animal-centered approach. Qualitative research will generate insights into people's activities, experiences, motivations, dreams and fears, when it comes to cat ownership. Both existing literature as well as new observations will be used to generate insights into the ways cats behave (in general) and interact with humans (more specifically).

Two methodologies are chosen to be used in these approaches: emotion-driven design and research-through-design. These methodologies are discussed in depth in Chapter 2, Methodologies.



Project Phases

The project is divided into five phases. In the Exploration phase, research was first done in order to gain understanding and insights on the context. Results from this literature and field research drove the second phase of the project: the design Vision. The design vision formed the basis of the third phase,

Ideation. This leads to the Conceptualization phase, where different concepts were created followed by the final concept. The fifth and last phase focuses on evaluating the final concept, referring back to the design vision and defined guidelines.

1.4 Structure of Report

Chapter 1. Introduction

This chapter introduces the topic and goal of this project. A glossary of often-used terms is provided. The phases of the project, as well as its approach are explained, and the structure of the report is outlined.

Chapter 2. Methodology

The Methodology chapter explains the theoretical models that are used in this project and why they are useful in this context.

Chapter 3. Research

This chapter consists of the literature and field research on owner-surrender and development of the owner-companion-animal relationship. There was often an interplay between the literature and field research, so the choice was made to place the insights gleaned from this in a single narrative.

Chapter 4. Vision

The Vision chapter converts the insights from the research to guidelines for design and then creates a vision on the design and its interaction.

Chapter 5. Ideation

The Ideation chapter explains several design directions and the ideas that are generated within them through creative processes. Some interesting ideas are also selected to experiment with, in order to discover their potential.

Chapter 6. Conceptualization

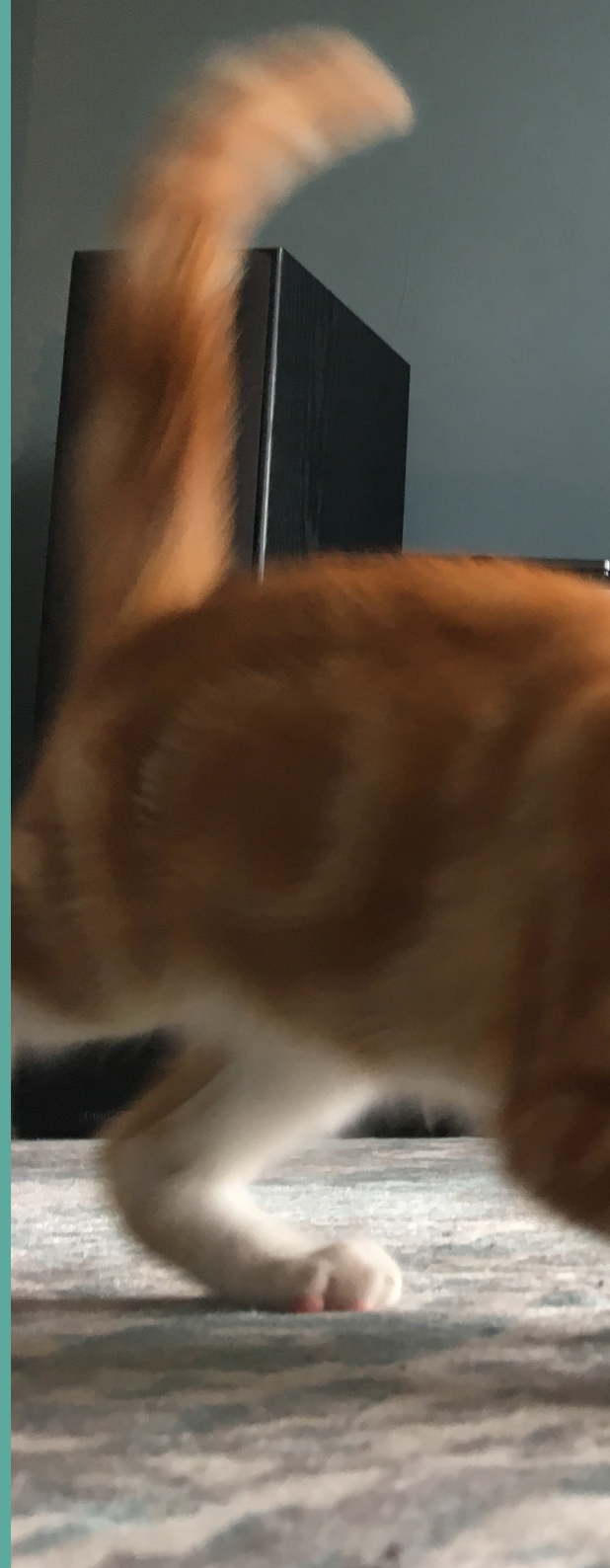
This chapter combines the findings of the Ideation phase to create three different concepts. The evaluation of these concepts leads to the final concept. Attention is given not only to the purpose and use of the final concept – but also to the spirit behind it.

Chapter 7. Evaluation

This chapter describes the final user evaluation on the final concept. This evaluation motivated the conclusion and recommendations on the final concept.

Appendix

The appendix presents several materials used for research, and provides further explanations on some of the topics. The appendix is provided in a separate document.



Indy as a kitten





2. METHODOLOGY

2.1 Introduction

This project used several methodologies to create knowledge on the topic and to evoke inspiration for a meaningful design of a product that can be used to improve the relationship between owner and companion-animal. Certain parts of the project made use of a given methodology as a whole; other parts seemed to call for partial use of a given methodology; the unique combination of methodologies used in this project forms the theoretical framework of this project.

This chapter discusses each of the methodologies used, distinguishing the principles on which each methodology is built and explaining their relevance for this graduation project.

2.2 Design for Emotion

People are emotional beings, pursuing in various ways their well-being in relationships. Life events elicit a range of emotional responses. Emotions, triggered by things and situations, may arise from certain underlying concerns. Sometimes we cannot fully understand these concerns. There is a great need to understand better what these underlying concerns are, due to the seriousness of the results of decisions based on emotions. Design for Emotion is an approach that focuses on eliciting the emotions of people and finding their underlying concerns. Where do these emotions come from, and how can classifying them lead to better design of these products?

Our emotions, our relationships and our well-being

Every day, we experience a range of emotions in our lives. Different things trigger these emotions. For example, you may become angry because a friend pulled a prank on you or you may experience joy because the sun shines. Emotions affect our sense of well-being, seemingly 'making us' feel good or bad. Not only that, they also influence our behavior: angry people, for example, may be more likely to want to lash out at the person who wronged them and joyful people may tend to open up and embrace a desirable event. Emotions also provide an instinctive protection mechanism: they safeguard our well-being in our relationship with the world and with everything that happens in it. Events happen that can hurt or support our well-being. Our emotional behavior is wired in such a way that it can help us adapt to these events: aiming to create or strengthen relationships that contribute to our well-being or aiming to break or weaken those relationships that

threaten it. Thus, our emotional behavior is driven by relational aims, and directs us to an ideal future state of the relationship [Desmet, 2010].

Appraisals of emotions

Each person appraises a given event differently: the same event may be positive for one person and negative for another. It is the personal significance assigned to the situation that causes the emotion, and not the situation itself. A person's appraisal is influenced by her personal concerns (see fig. 2).

With regard to Design for Emotion, three types of user concerns are relevant: *goals* (what do individuals want to accomplish), *standards* (what expectations do individuals have about the behavior of objects, themselves and others) and *attitudes* (what qualities of objects, activities and people are individuals disposed to like and to dislike). Observations of people's emotional responses may reveal the underlying concerns of these individuals, making these concerns not only more visible but also potentially understandable [Desmet, 2002].

Appraisal is influenced also by the product in the interaction. Product stimuli (i.e. the ways the product affects the user in question) can be differentiated as follows: 1) the product itself (*product focus*), 2) the activity that is facilitated by product usage (*activity focus*) and 3) the identity of the user that is influenced by the product (*self-focus*) [Desmet, 2010].

Together, concerns and product stimuli form a matrix of nine sources of product emotions; see figure 3 [Desmet, 2010]. Designing for emotions can be used to create products that facilitate behavior change.

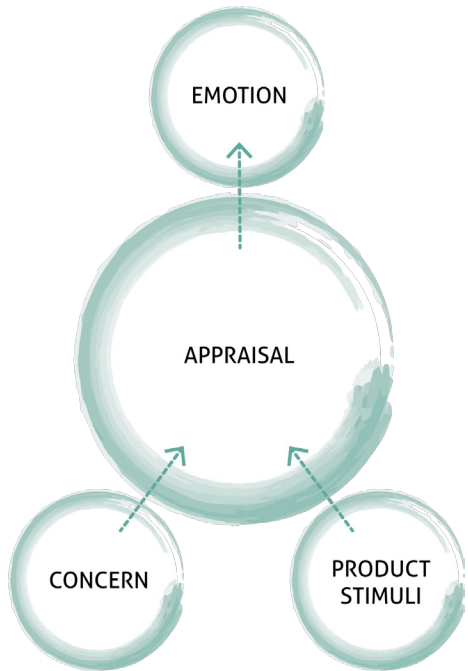


figure 2. Appraised personal significance

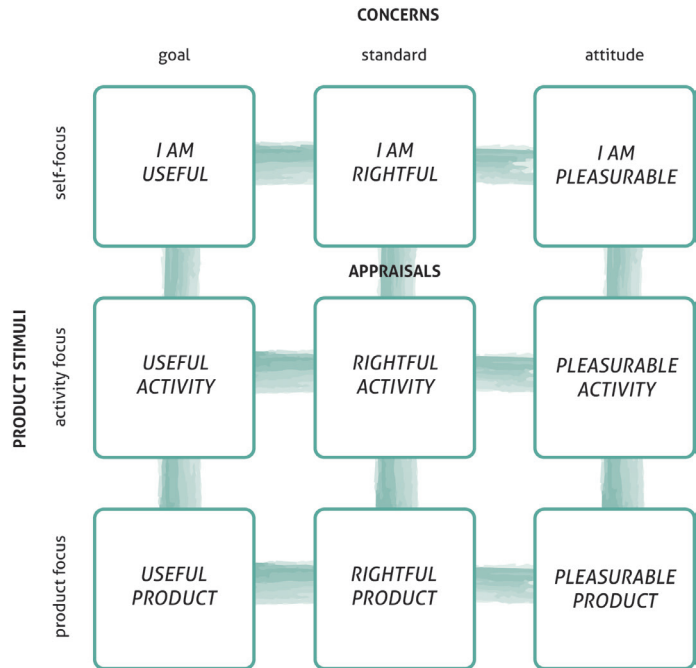


figure 3. Matrix of nine sources of product emotions, stating some examples: useful, rightul and pleasurable

Why Design for Emotion is useful in this graduation project

The owner-surrender of a companion-animal is a decision that the owner makes to terminate her relationship with her pet. Apparently, several events occurred which triggered emotions saying that this relationship negatively affects the owner's well-being.

When a prospective owner decides to adopt a companion-animal, she has certain expectations of the relationship, herself and the companion-animal itself. The owner also likes or dislikes certain characteristics of the companion-animal and her interactions with it, as well certain goals she wants to reach in the relationship with her companion-animal. The owner's standards, attitudes and goals are all influential concerns related to how the owner reacts to situations occurring during the relationship with her companion-animal, and thus eventually determine whether the relationship is worth pursuing.

Given the influence of these companion-animal-owner concerns, it is important to understand not only why some owners decide to break-up their relationship with their companion-animal —but also how it might be possible to positively change their behavior, so that the owner-companion-animal relationship can flourish.

2.3 Research-through-Design

Knowledge can be acquired in several ways. Interviewing is often used to try to discover and understand the concerns people have. However, as is explained in the former section, concerns mostly arise when a person has an (automatic) emotional response to a certain event and alters her behavior accordingly. The Research-through-Design approach uses (different) design activities in context to generate richer knowledge. In this way the behavior of people (and animals)— what they do— provides more information than what they say.

Why Research-through-Design is suitable for this graduation project

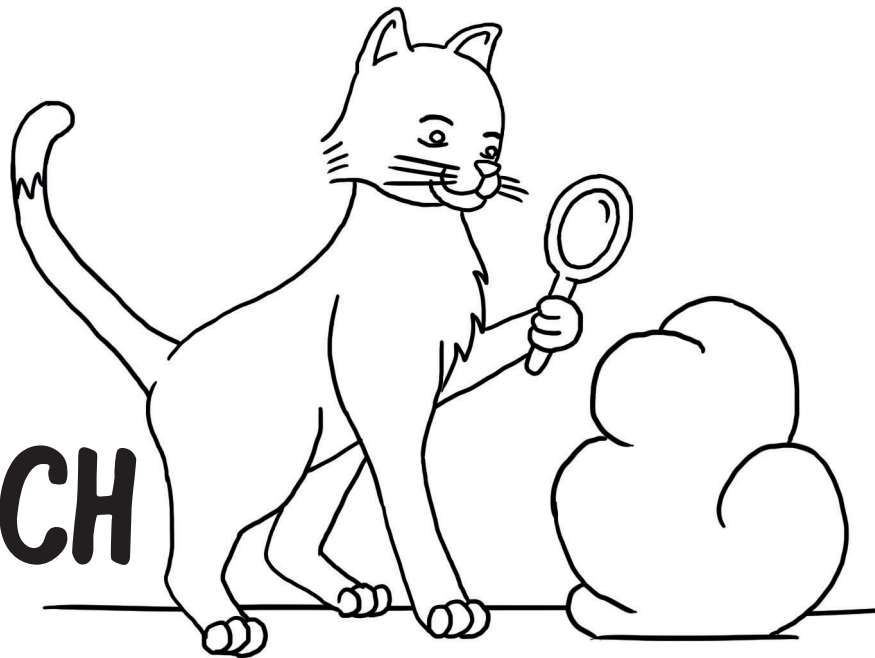
The relationship between owner and companion-animal is an emotional affair. Possibly, conflicting emotions arise in the owner: for example, the owner is relieved that 'the problem' goes away when owner-surrendering her cat, but experiences guilt for failing to take care of the animal. Often this guilt or other related emotions prevent the owner being able to talk about the situation and the events that led up to it [Coe et al., 2014; Alberthsen et al., 2016]. Design interventions can trigger emotional responses and make it possible to explore how some particular emotion may affect a person's behavior. This knowledge can then be used to determine hidden concerns, which would otherwise lay dormant. Design interventions can also be used to reveal hidden expectations an owner could have of her cat and the relationship. These expectations are often revealed when they are confronted.

Interventions are also useful to elicit certain behavior of the cats themselves to see what interactions can be initiated between owner and cat, as humans and animals cannot communicate explicitly with each other.



Experimenting with Indy

3. RESEARCH



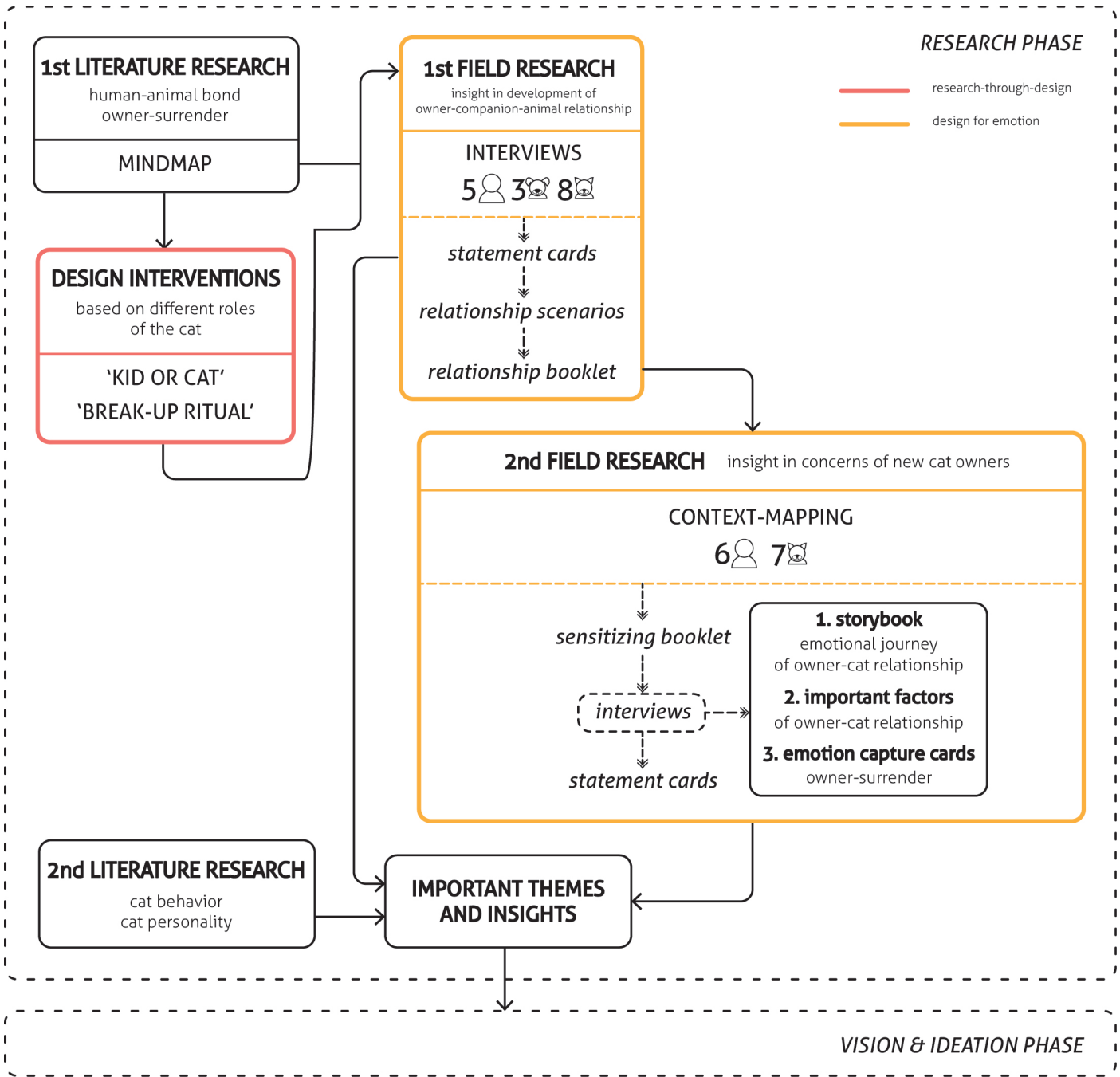
3.1 Introduction

To create greater understanding of the issues and find opportunities for solutions, we need to explore the facets of the human-companion- animal relationship. What problems may arise in these relationships? What role do emotions play? What is the relevant context?

The second section of this chapter states the research questions, research methods and their procedures. The aim of the different research methods and what the results lead to are explained as well.

The third section of the chapter answers the research questions. We look into the relationship between owner and cat, its interactions and development. What are the motivations for people to adopt a cat and what developments may eventually lead to the termination of the relationship?

Finally, the chapter concludes by stating the key insights and opportunities in developing a flourishing owner-cat relationship in order to prevent owner-surrender.



3.2 Methods

In the course of this project, several research questions were determined. To answer these, I used various research methods. This section begins by explaining why certain methods were used and what procedures were adopted.

First Literature Research

To understand more about the context, I first conducted a literature research. The main research question is: why do people surrender their companion-animals? The following research questions focus on the structure of the owner-companion-animal relationship:

- *What motivates owners to adopt an animal?*
- *Why is the human-animal bond important in an owner-companion-animal relationship?*
- *What does the human-animal bond entail?*
- *Why do owners decide to surrender their cat?*
- *What are the risk factors of owner-surrendering a cat?*
- *What is the gap in owner-surrender solutions?*

Based on the insights of this literature research, I created a mind map. This mind map yielded several interesting themes to explore further: roles of companion-animals in the family, expectations of the owners and the development of the owner-companion-animal relationship.

Design Interventions

The *Research-through-Design approach* is used when researching roles of companion-animals through design interventions. This approach is also used during the Ideation experimental phase.

To investigate how people see the different roles of cats in the family, I set up two design interventions: 'kid or cat' and 'the break-up ritual'.

DI-1: Kid or Cat

'Kid or Cat' focused on the role of the cat as child. Different statements were put on social media (Facebook) that could possibly apply to one of three options: both a cat and child, one of them or neither of them (e.g. 'he pees himself to get attention'). People were asked who they thought the statement applied to. The rest of the statements can be found in appendix A1.

DI-2: Break-up Ritual

'The Break-up Ritual' intervention focused on helping owners see their cat as their partner. Two participants were given cards with different possible questions that you might conceivably ask when breaking-up with your significant other (e.g., 'did I do something wrong?'). The participant would then start a conversation with their cat, using those questions as though their cat were posing these questions to them. All questions can be found in appendix A2.

First Field Research

Other themes were investigated through the first and second field research. As shown in the research methods visualization, the first and second field research adopted the Design for Emotion approach. The aim of the first field research is to map the development of the owner-companion-animal relationship into scenarios: from the first desire to adopt a companion-animal to the relinquishment or death of the companion-animal. Five owners (one dog owner and four cat owners) participated in the interviews that formed the basis of the scenarios. All participants were experienced owners. The predetermined research questions are:

- *What are the owner's expectations of the owner-companion-animal relationship?*
- *Through what phases do owners go in an owner-companion-animal relationship?*
- *What happens during the different phases of an owner-companion-animal relationship?*
- *How do the phases of an owner-companion-animal relationship influence each other?*

The scenarios (see appendix A4) were used as a template to create a storybook, which was used for the second field research.

Second Field Research

The second field research was a context-mapping session. The goal for the context-mapping was to get insight into the concerns of new owners and their expectations of the relationship. Six owners who recently adopted their cat (within 12 months or less) participated in the context-mapping.

Sensitizing booklet

The context-mapping started with a sensitizing booklet to warm up the participants for the one-on-one interview. The sensitizing booklet, submitted to the researcher before interviews took place, provided the researcher already some insight into the relationship between owner and cat. The owner had






- *Why do people want to adopt a cat?*
- *What are new cat owners expecting from an owner-cat relationship?*
- *What are the roles of the cat in family dynamics?*
- *What strengthens and weakens the bond between an owner and her cat?*
- *Why do owners decide to surrender their cat?*

to fill in four assignments: each day one assignment. These assignments were: 1) tell some general information about yourself and your cat, 2) fill in a timeline with the daily routine of you and your cat, 3) describe moments / interactions with your cat where you experienced this emotion (joy, surprise, sadness and frustration) and 4) describe your cat's favorite activity / toy / moment and why. All of the completed sensitizing booklets can be found in appendix A5.

Interviews

The interviews took place at the home of the participants, where I could be on-hand to observe the interactions between the owner and cat. The interview consisted of three parts: 1) filling in together the storybook, which visualized the owner's emotional journey from the desire to adopt a cat to the present (to gain insight into the owner's emotional journey and their goals and attitudes), 2)

PARTICIPANTS 1st FIELD RESEARCH

nr.	gender	nr. animals*	names of animals
1	female	3 	Fasco, Lucky & Baruch
2	male	1 	Joey
3	female	4 	JJ, Max, Roxy & Penny
4	female	2 	George & Mittens
5	male	3 	Muis, George & Mittens

*these are the number of animals they talked about it (current and past companion-animals)

table 1. participants of the first field research

PARTICIPANTS 2nd FIELD RESEARCH

nr.	gender	cats' names	cat's age	duration ownership	source
1	female	Newton	2,5 months	1,5 weeks	Marktplaats
2	female	Lola	3,5 months	3,5 months	Born there
3	female	Tommy & Lulu	10 months	8 months	Marktplaats
4	female	Leo	4 months	1 month	Shelter
5	female	Mika	3 months	2,5 months	Marktplaats
6	female	Tum Tum	12 months	6 months	Shelter

table 2. participants of the second field research

an exercise where participants had to rank their ten most important factors in the owner-cat relationship through using photos and statements printed on carton (to get insight into the owner's standards) and 3) roleplaying the situation if the owner would surrender her cat (emotions and motivations of the owner were captured through the 'Emotion Capture Card' method). Data generated through parts 1 and 2 can be found in appendix A6 and A7. An explanation of the 'Emotion Capture Card' method can be found in appendix A8.

tumtum
hij om ons
te zien

2. DE DAGELIJKE ROUTINE VAN U EN UW KAT



→ dagen dat de week heetsch en tumtum kan naar buiten

± 7:00
- thuis
- tumtum naar buiten

8:30 school
8:45 tumtum binnen waal den en weer naar buiten

12:00 eten
13:00 tumtum naar buiten
15:00 school tumtum binnen den en weer naar buiten



en die u doet door en zonder. Voelt en tekeningen te beschrijven.



op verschillende momenten tijdens de dag waar u positieve of negatieve gevoelens had. Wijs ze aan op de tijdlijn door de passende smiley toe te voegen.

↳ hij wil mee naar school ☺

→ heetsch



± 17:00 avondeten
tumtum naar vore
(dagen dat ik week heetsch)

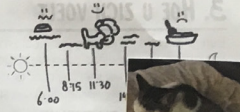
± 19:30
naar bed



± 21:00 tumtum binnen en qualitytime knuffelen en
± 22:00 slapen.



→ tumtum komt bezelen.



Stap 3

In de laatste stap kies 1 positief moment uit en beschrijf het waarom u zich zo voelde.

positief:

negatief:

Sensitizing booklet of owner of Tum Tum

- Je eigen kat kunnen vormen: van kitten naar volwassen kat
- knuffelen met de kat
- wederzijdse affectie tussen jou en je kat
- kat kan vredig interacteren met kinderen
- kat kan naar buiten
- kat is ontspannen
- je meubels/kleding blijven mooi
- tijd voor jezelf hebben
- door de nacht heen slapen
- kat heeft zijn eigen plek

Important factors of owner of Tommy and Lulu



Tommy and Lulu

HELLO, GOODBYE

een storyboard over de relatie tussen kat en eigenaar



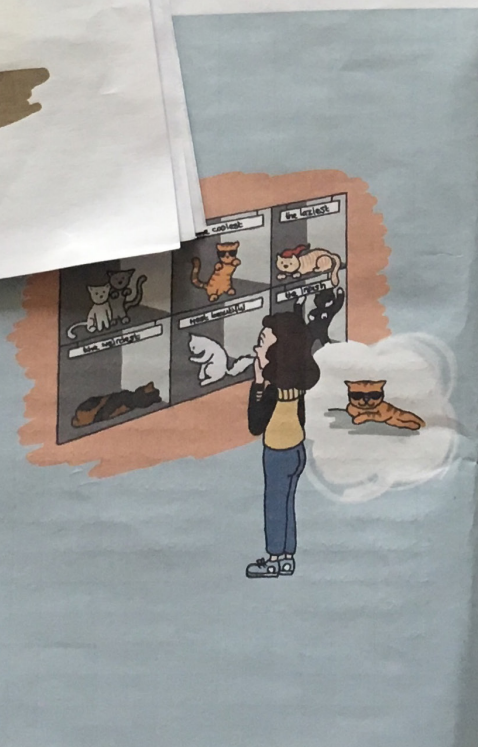
FASE: INTERACTIES MET DE KAT DIE U WIL DOEN

Ja, Jackson zullen we samen een vlog maken? Jij die piano speelt, super leuk! Moet je wel even een leuk t-shirt aan doen Jackson! Waarom wil je het nou niet aan doen, het is echt heel erg leuk! Wat ben je nu aan het doen? Nee, sta nou eens stil!

Nou, vooruit zullen we dan samen knuffelen op de bank? Dat deed ik altijd samen met Max. Waarom wil je niet stil liggen, Jackson? Ik wil met je knuffelen! Ik dacht dat we deze dingen samen konden doen.



blij/opgelucht	verwarring dat
dat ze zo goed	ze hebben luije als
zijn ons pet	niets snapt
blij dat ze leuk	Schrok heel erg toen
en nu ffelig is	ze ineens op rand
ik voel gewaardeeld	balans sprong
omdat ze graag	↳ knuffelen emotie eruit
bij je is en kee	
doet	



FASE: DE KEUZE

Moet je al die katten zien! Ze zijn allemaal zo leuk. Hmm, die rode kat is bij verreweg de coolste! Zie hem daar zo sloer staan, ja dat wordt hem. Oh, ik weet de perfecte naam voor hem: Jackson!



gecharmeerd/blij	inwifel, onzeker
↳ hij zacht toeradering	↳ zijn we geschikt
↳ gelijkt spelen met ons	voor hem en hij voor
opgelucht dat we	ons
de beslissing hebben	
gemaakt	

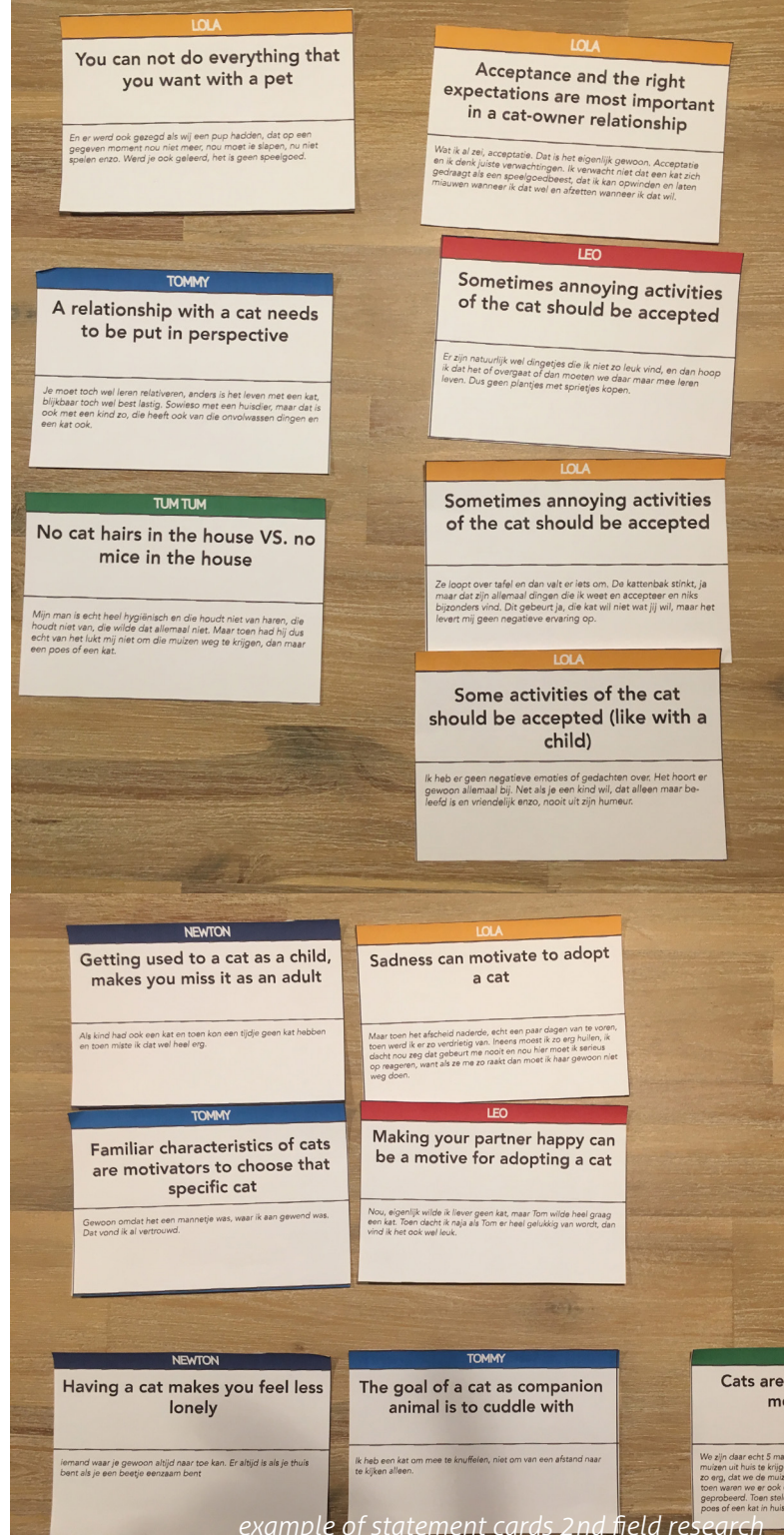
Important Themes

Several themes were identified through the statement cards (the statement cards of the first and second field research can be found in appendix A9 and A10). These themes hold a significant meaning for companion-animal owners and can be used as inspiration and opportunities for design interventions.

Second Literature Research

I carried out a second literature research to broaden my understanding of some of the themes that are important to (new) cat owners, namely a cat's behavior and personality:

- *What is typical feline behavior?*
- *Why does a cat's personality influence its behavior?*
- *What are a cat's personality traits?*



example of statement cards 2nd field research

3.3 Results

The start and development of the owner-cat relationship

What motivates owners to adopt an animal?

The last decades have seen a growth in the relationship between humans and animals. A greater appreciation has been developing for keeping companion-animals [Coe et al., 2014].

People may have different reasons to decide to adopt a pet. Hirschman (1994) suggests six different reasons for pet ownership (see table 3).

The increase in pet ownership is most substantial where people see their pets as companions and not as working animals, which suggests that people's attitudes towards animals influence pet ownership [Bernstein, 2007]. In this project, the focus will be on **owners** who see their pets as companions. So instead of using the definition of 'pets', I opt to use the definition of '**companion-animal**'.

Compared to other ways people interact with animals (see table 3, which indicates the many ways people might interact with pets), owners spend more time with their companion-animal, spend more money on them, make more effort to maintain the relationship and attach important meanings to the animal [Cavanaugh, Leonard & Scammon, 2008]: they take more trips to the veterinarian to make sure their companion-animal stays healthy, they dress them in funny clothes or (in the event that their companion-animal is lost) issue high rewards for their return. Most owners see their companion-animals not as objects to be owned, but as their friends and/or family members [Walsh, 2009].

Companion-animal

The term 'companion-animal' is used to signify the psychological bond between owner and companion-animal and their mutual relationship.

Owner

Owners are seen in this project as the caretakers and human-companions of the companion-animals, with the responsibility of taking care of them and their well-being and giving them proper treatment. Instead of using the word 'caretaker', the word 'owner' will, however, still be used to signify that the person adopted the animal. To ease exposition, I choose to denote the owner as female, and the cat as male.

REASON

MEANING

REASON	MEANING
Animals as objects	representing an extension of the owner
Animals as ornaments	for aesthetic value
Animals as status symbols	-
Animals as avocations	for people who exhibit or show their pets
Animals as equipment	as protectors, guides, search and rescue animals and therapy animals
Animals as people	companion, friend, family member, sibling or child

table 3. Reasons for pet ownership by Hirschman (1994)

These trends indicate the importance of the owner-companion-animal relationship in our lives.

Humans developed a relationship with animals a long time ago. It began with the shared need for shelter, food and protection. Dogs protected their humans against bears and wolves, and cats protected the crops by killing rodents, while the humans fed and sheltered them. This mutual cooperation led to the domestication and socialization of the animals [Archer, 2009; Beck & Katcher, 1996]. They became increasingly important to family life: their care and nurture provided companionship as well as pleasure [Walsh, 2009].

Animals play a big role in human lives since time immemorial: they increase quality of life. Humans see animals as “alternative sources of social support”: Beck and Madresh (2008) state that relationships with other humans are often challenging, but relationships with companion-animals are often experienced as uncomplicated and rewarding. Several other scientists suggest that this view of animals developed from the human trait of **anthropomorphism**.

Anthropomorphism

The ability of attributing human mental states, like thoughts, feelings, motivations and beliefs, to nonhuman animals.

This trait could have made humans engage in certain actions to make the animals comply more with their view: humans started to breed animals favoring physical and behavioral traits that facilitate anthropomorphism [Serpell, 2002]. Bernstein (2007) states that cats, for example, could be favored because of their small size, soft fur and their willingness to be held, petted and cuddled by their

Neotenization

The keeping of juvenile features in adult animals.

human companions. You could see this as a form of **neotenization**. Owners have often a preference for a certain appearance of their companion-animal. This could be because of the juvenile features, but also because of owners have certain associations with an appearance.

“We chose Lulu, because she is a tortoise cat, which we liked. I can’t even remember how the other female looked, I think I didn’t like her little snout. The other ones looked nicer out of their eyes.”

- owner of Tommy and Lulu

“I chose her because of her appearance: she was the fuzziest.”

- owner of Lola

“I always wanted a red cat, but they are not easy to get and I heard they are not really friendly.”

- owner of Tommy and Lulu

Why is the human-animal bond important in an owner-companion-animal relationship and what does it entail?

The first interaction (and subsequent interactions) between a human and a companion-animal could be initiated because the human feels interested in the companion-animal due to one or another of the favorable traits mentioned above. However, they develop a close **human-animal bond** only when they spend time in each other’s company and there is an

Human-animal bond

The human-animal bond is a mutually beneficial and dynamic relationship between people and animals that is influenced by behaviors that are essential to the health and well-being of both. This includes, but is not limited to, emotional, psychological, and physical interactions of people, animals, and the environment.

exchange of different positive interactions [Archer, 1997]. Then, owners and their companion-animals will enter a **relationship of mutualism** [Dotson & Hyatt, 2008].

Relationship of Mutualism

Owners not only give love and affection, but also believe they receive it from their companion-animals.

Dogs and cats seem to give their owners love and affection: dogs show attachment and are attentive to their owners and cats like being stroked and petted by their owners. People have interactions with their companion-animals that are an adaptation of interactions they have with other people, like cuddling and having a conversation (albeit seemingly one-sided).

"During the extra care needed after his accident, I really noticed that he appreciated the attention. I think that he got more affectionate because of that."

- owner of Tommy and Lulu

"Playing and cuddling: I think it is cozy that she comes looking for me and sits next to me. It is just so cozy. I think she likes to be with me. It gives warmth and affection. You feel connected."

- owner of Lola

The most-owned companion-animals, cats and dogs, have emotions and moods similar to those of humans. It is this similarity, which is increasingly being recognized, which forms the basis of the communication between owners and companion-animals [Archer, 1997].

When you are in a rough spot, companion-animals seem to understand you, forgive you and console you. Companion-animals can serve as 'confidantes with no risk of betrayal' [Dotson & Hyatt, 2008].

"Indy often comes purring in my lap when I am sad and / or crying, which makes me feel more secure and comfortable."

- researcher, owner of Indy

Several researchers have found value in extending the **attachment theory** to better understand this relationship [Melson, 2003]. By using this theory in research, they found that companion-animals could be a consistent source of security [Beck & Madresh, 2008; Sable, 1995]. Beck and Madresh (2008) also show that owners compare relationships with their companion-animals to relationships with humans. Participants in my study certainly did so. This may mean that it is indeed probable that the attachment theory (which describes originally the relationship between mother and infant) can be extended to the human-animal relationship. However, according to Fraley and Shaver (2000), a relationship does not need to be a true attachment in order for it to have an attachment-related purpose [Beck & Madresh, 2008].

Attachment Theory

"Attachment is described as a long lasting psychological connection with a meaningful person that causes pleasure while interacting and soothes in times of stress. The quality of attachment has a critical effect on development, and has been linked to various aspects of positive functioning, such as psychological well-being" [Bowlby, 2008].

"It is still your kid; you need to take good care of it."

- owner of Leo

"I thought it was terrible. You don't abandon an animal! You started with it as a puppy. You don't surrender it; you don't also surrender your child, right?"

- owner of Tommy and Lulu

"I don't have a family, so they are my family."

- owner of Lola

Melson (1989) summarized four dimensions that influence the attachment between human and companion-animal:

1. *time spent with, and activities directed toward, the companion-animal;*
2. *interest in and affection expressed toward the companion-animal;*
3. *knowledge about the companion-animal and its care;*
4. *behavioral responsiveness to the companion-animal and its needs.*

Companion-animals influence owners in more ways than providing merely security and social support. Bernstein (2007) found that both cats and dogs contribute to the mood of the family: they make daily stress more tolerable, help them cope with crisis and facilitate positive interactions. He attributes this to their quiet, accepting and nurturing demeanor. Companion-animals give (and receive) unconditional love and friendship, as well as affection. They can increase their owners' feelings of happiness, security and self-worth and they can reduce feelings of loneliness and isolation [Sable, 1995]. The attachment between owner and companion-animal can contribute to healthier, happier and longer lives [Walsh, 2009].

Why do people want to adopt a cat?

One of the favorite companion-animals of humans is the cat. In the Netherlands, the United States and China, more people have cats than dogs (traditionally 'man's' 'best friend') [Bernstein, 2007: HAS Hogeschool & Universiteit Utrecht, 2015]. Reasons for the high number of cats could include the increase of urbanization, the growing numbers of single households, increases in the elderly population, restrictions on dog ownership and diminishing birth rates. The choice then often falls on cats, because they are easier to take care of than dogs, small enough to keep in smaller living spaces and able to endure a longer time of separation than dogs [Bernstein, 2007]. In light of these demographic trends, the trend of cats as companion-animals will probably only increase.

"A cat is way easier. You can leave her alone more easily. It is better to put some food down instead of feeding her three times a day. It is a lot less maintenance than a dog, but just as cozy."

- owner of Mika

"A cat is manageable and doable in terms of effort, but you get everything from it what you want."

- owner of Newton

"That independence, which you can find in the relationship, I need that independence now in my life. I am not saying I will never get a dog, but not now."

- owner of Tommy and Lulu

"Bacardi, the daughter of Nynke, was just like a dog. She could fetch and if you called her she came. If I wasn't at my parent's home for a year and I came back and I called her, then she still came. She was a really good 'dog'. I was not really close to Moor, the other daughter of Nynke. She was always away, outside."

- owner of Mika

Cats are often used as an additional source of support for owners. They rank third place in terms of sources of social support relied upon by humans (with other humans ranking first, dogs ranking second). Researchers found, however, that cats were better at making people feel needed, providing companionship, being something to take care of and something to look at [Bernstein, 2007].

"I like it when she is meowing. Then I think, she still needs us."

- owner of Mika

"I am the caretaker and they are the vulnerable ones. That will always be like that. It is not a child that will grow up, they always stay small and vulnerable."

- owner of Tommy and Lulu

"I really feel like a mother that has to nurture him. You are a cat, but I can still teach you things."

- owner of Tum Tum

"I am a caring type, so I like it that I have something, that I have animals to take care of."

- owner of Lola

People have not always seen cats as sources of social support, however. In Medieval times, cats were seen as accomplices to witches: malevolent demons. Bernstein (2007) says that even now, owners in many countries believe that cats would sleep on the faces of their children and smother them. In the Netherlands, one political party wants to prohibit cats walking around freely in the neighborhood: they see cats outside as being pests and their defecation as a health hazard to children ["Verbod Op Loslopende Katten?", 2018]. Thus, even though the cat (as companion-animal) population is increasing, they are still often vilified.



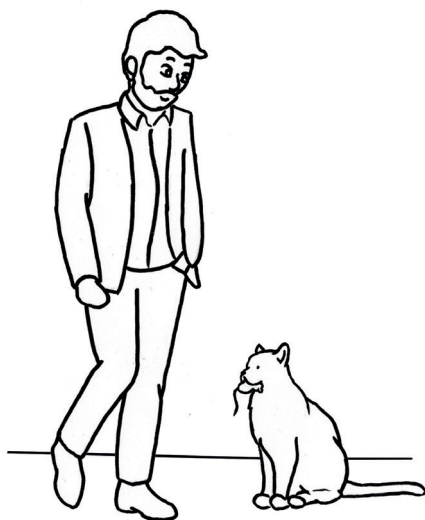
Cuddling with Indy

What are the roles of a cat in family dynamics?

The role of the companion-animal envisioned by the owner depends on the adoption motivation. Dotson and Hyatt (2008) state four possible roles for dogs in a dog-human relationship. Based on earlier research described in the former sections, these roles can, I believe, be used in another relationship: the owner-cat relationship. In table 4 you can find the specific roles. As can be seen, these categories are pretty similar to the reasons of pet ownership described in table 3.

ROLE	MEANING
Object-oriented	cat as possession
Utilitarian / exploitative	cat providing benefits to the human (like hunting mice)
Need-dependency	cat as companion or child
Actualizing	cat as respected significant other

table 4. The different roles of cats in the owner-cat relationship



Object-oriented

Some people view their cats not as a companion-animal but more as an extension of themselves. They try to find a certain personality and / or appearance to cultivate, complement or fill the voids in their own sense of identity. This kind of relationship may help the person to become more comfortable with his identity [Cavanaugh et al., 2008].

Utilitarian / exploitative

People started to domesticate and use cats in the past for hunting rodents in order to protect their produce (see section 'human-animal bond'). As stated before, the focus on the utilitarian use of cats has for some time been shifting toward having a companion. However, owners may sometimes still adopt a cat with the main reason for hunting mice in their house.

"It took us five months to get the mice out of the house and then it had become so bad that we saw the mice walking over the walls. At that time we were completely done with it, we already tried everything. Next my husband suggested getting a cat, because nothing else helped."

- owner of Tum Tum

Need-dependency

Cats and dogs are good at making people feel needed. This is probably also the reason why people often choose a dog or a cat to have as a companion.

One of the possible roles a companion-animal could have is the role of a child. 5 out of 6 participants of the 2nd field research saw their furry companion as a child. According to a study mentioned in Archer (1997), companion-animals are seen not only as dependent creatures (in physical care, like food and shelter), but also as a source of fun and play, which is similar to what makes a relationship with children satisfying. There is more evidence that owners see their relationship with companion-animals as relationships they have with children. They treat them like children in different interactions: in playing with them, talking to them in *baby-talk*, referring to them as child or baby and holding and cuddling them as they would a baby [Archer, 1997].

In view of the evolution of animals in the human household and the human trait of anthropomorphism, it is possible that humans could increasingly see their companion-animals as their children.



Baby-talk

The way mothers talk to their young children: it includes simplified grammar, repetition, exaggerated speech melody and diminutive forms of words, like 'doggie'. There is also a tendency to comment on what the animal just did: e.g. 'are you digging a big hole in the sand, sweetie?' ["MOTHERESE", 2016].

"It is still your kid; you need to take good care of it."

- owner of Leo

Actualizing

Turner (2017) found evidence that cats may even appear to take the role of the significant other in the relationship. This often happens in the case of older people living alone. Archer (1997) mentions another study that found evidence that companion-animals can be used as partner substitutes.



"I think it gives added value and peace to your own company when you are sitting on the couch cuddling with your cat instead of sitting there alone."

- owner of Mika

What is typical feline behavior?

Cats are generally seen as more independent and less 'social' compared to dogs. Dogs often want to interact more with their owners or other people, while cats seem more aloof, as described in one study mentioned by Bernstein (2007). Positive cat behaviors that were observed were that cats let their owner pick them up and the cat made friendly contact with the interviewer. Other positive behaviors included the cat rubbing against his owner's leg and coming to sit on his owner's lap (seen as an initiation of the cat that the owner should pet him). The cat also moves his body to lead his owner to the right area to be petted and affirms the location by closing his eyes, laying still or purring [Bernstein, 2007]. In my field research I found that owners liked the following cat behaviors: when the cat comes near you, when the cat listens when you call him, when the cat allows you to cuddle him and pet him, and when the cat engages in playing.

"We really felt charmed by him, because he sought rapprochement."

- owner of Tum Tum

"When you talk to the cat, she talks back. She appreciates your voice, I like that."

- owner of Newton

"He really likes attention. Patting against my head is so cute, it charmed me. I feel loved, I think he liked me. He likes to be with us."

- owner of Leo

Participants were also curious as to what kinds of things cats do, how they act and react and how they develop in general.

"It is entertaining and fascinating to see what they do. Interacting a lot with them, playing and cuddling. We were all very happy."

- owner of Tommy and Lulu

"We were all entertained with playing those games with him. It is really fun to see what he does."

- owner of Tum Tum

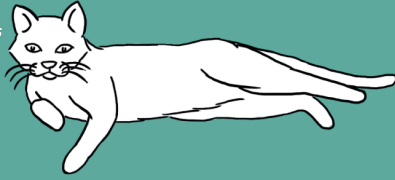
Vocalizations

Another behavior that cats often engage in are their vocalizations. Cats 'meow' often to get attention; depending on the situation and context, these vocalizations can mean different things. High-pitched meows are mostly positive, while the low-pitched are often negative. However, research indicates that these vocalizations are relatively nonspecific, and owners have to learn their meanings together with other contextual information [Bernstein, 2007].

Expressing emotions and moods

Cats have similar emotions and moods as humans, but they use their behavior and body language to express them differently. The cat's posture, movement and position of his tail, the movement and position of his ears and his eyes and the position of his whiskers are all important signs for his expression. To understand the behavior of a cat, it is important to look to his total body language: observing not only his tail or his ears, but also to what his whole body is expressing (see figure 4 for different poses of cat behavior).

squinting eyes



relaxed



trusting

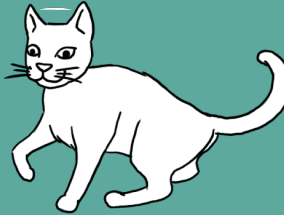


content

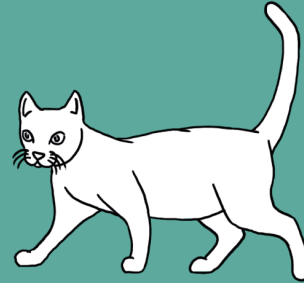


attentive

radar ears



interested

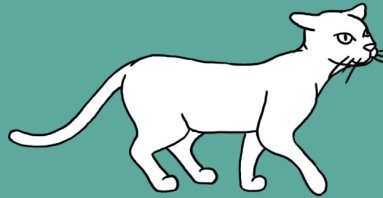


friendly

twitching tail



irritated



anxious

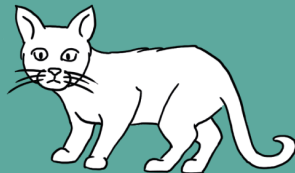
a bit shaky,
fluffy tail



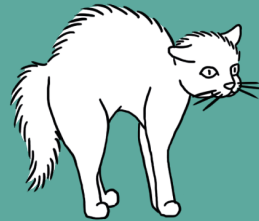
excited



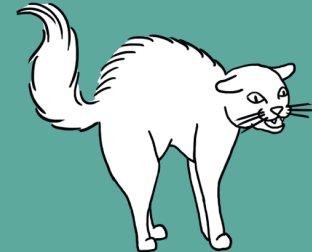
submissive / worried



cautious



afraid



aggressive / terrified

figure 4. Different poses of expressing cat behavior

Why does a cat's personality influence its behavior?

Another important aspect of a cat's behavior is his personality. Participants in my context-mapping research mentioned that their cat's personality was one of the positive traits of their cat.

"We really felt charmed by him, because he sought rapprochement."

- owner of Tum Tum

"When you talk to the cat, she talks back. She appreciates your voice, I like that."

- owner of Newton

"He really likes attention. Patting against my head is so cute, it charmed me. I feel loved, I think he liked me. He likes to be with us."

- owner of Leo

Several studies have found different personality types that seem consistent (see table 5).

A study from 2017 [Roetman et al., 2017] found five personality traits in cats after observing around 2428 individual cats, called the Feline Five (see table 6). Some overlap can be seen between the personality types mentioned in table 5 and the traits mentioned in table 6. This study also established that cat personalities are quite similar to human personalities. The five feline traits have some overlap with the Big Five [Goldberg, 1981] personality traits (see table 7).

When you examine these traits, it is not unusual that personalities of cats, as well as personalities of the owners, may affect their relationship with their owner [Podberscek & Gosling, 2000; Beck & Madresh, 2008]. A trusting and curious cat will more often than not interact with people in a positive way than an aggressive and anxious cat will.

Karsh & Turner (1998)**Feaver et al. (1986)****Meler & Turner (1985):
Turner (1988): Turner (1991)**

social	confident/ easy-going	trusting
timid	timid/ nervous	shy/ fearful
	active/ aggressive	

table 5. Feline personality types

HIGH**LOW**

SKITTISHNESS	anxious, fearful of people and other cats	calm, trusting
OUTGOINGNESS	curious, active	aimless, quitting
DOMINANCE	bullying, aggressive to other cats	submissive, friendly to other cats
SPONTANEITY	impulsive, erratic	predictable, constrained
FRIENDLINESS	affectionate, friendly to people	solitary, irritable

table 6. The Big Five feline traits: expression of the trait on the high end and low end of the spectrum [Roetman et al., 2017]

Feline Five**Big Five**

Skittishness	Neuroticism	Some similarity
Outgoingness	Extraversion	Some similarity
Dominance	<i>No Big Five equivalent</i>	<i>No similarity</i>
Spontaneity	<i>No Big Five equivalent</i>	<i>No similarity</i>
Friendliness	Agreeableness	Some similarity
<i>No Feline Five equivalent</i>	Openness	<i>No similarity</i>
<i>No Feline Five equivalent</i>	Conscientiousness	<i>No similarity</i>

table 7. Comparing the Big Five human personality traits with the Feline Five traits [Roetman et al., 2017]

What are the owner's expectations of the owner-companion-animal relationship?

Although the human-animal bond is a wonderful enrichment to our lives, the connection between owner and cat does not always come easily. Owners have certain expectations of their cats and the relationship they have with them. I found that owners often do not think consciously about their expectations, but encounter the mismatch of expectations with the real-life experience at the moment it is happening. Most of the time, owners prepare for their relationship with the companion-animal only in a practical sense (like buying the food and utilities), but not emotionally or mentally—even though a relationship with a companion-animal is very emotional for both parties. Turner (2017) determined that the relationship between owner and cat goes two ways: they both adjust their behavior to that of their partners. It is possible that when owners consciously savor and reflect on the interactions they have with their cat, they can alter their own behaviors and expectations more easily. Owners may then also change how they view the demonstrations of their cat's behavior; in other words, they may alter in what they find acceptable and what they see as a problem [Bernstein, 2007].

When an owner starts looking for a cat, she has a certain image in her head of what she thinks is a nice cat. The behavior, personality and appearance of a cat are certain characteristics that may comply with that ideal image. Shelters often use a matching program to match the cat to the image the owner has in her head, so that her expectations will be met (see appendix A11). Owners who get their cat from sources like Marktplaats don't have this matching program, and often choose cats based on their availability and appearance. The appearance of the cat is what makes the owner fall in love with the cat.

This may be charming in the beginning, but later on, as the cat's behavior and personality become more apparent, conflict may arise if these developments are not in line with the owner's expectations (see figure 5).

"At Marktplaats we were a couple of times too late. I thought we had to wait until someone in our neighborhood got kittens, which would happen eventually. But I didn't want to wait that long."

- owner of Tommy and Lulu

"You have to react very quickly on the Marktplaats advertisements: you need to be able to reschedule your plans very quickly to come look at the kittens. Otherwise someone else has already come by and made the first choice."

- owner of Mika

"I am especially happy that it is 100% better than expected. He is exactly — well you never know exactly what you want — he is what we hoped him to be."

- owner of Leo

"We were unsure if we would do well to choose the right ones. We did not experience their personalities before we made the choice for them."

- owner of Tommy and Lulu

While anthropomorphism can help humans relate with animals, Serpell (2002) notes that anthropomorphism can also contribute to wrong expectations of the owner towards their cat, which could lead to owner-surrender, abuse and hoarding. Owners attribute motivations to their cat when they behave in a certain way. These motivations are often human motivations and not at all related to the reasons why a cat does certain things.



figure 5. Owner's expectations about the relationship

During the design intervention 'Kid or Cat', several statements were placed on social media that could possibly apply to a child or a cat, both or neither. For example, one of the statements was: 'he pees himself to get my attention,' Many respondents believed that cats do that and children do not. Others thought they both did it. Respondents shared personal anecdotes to back their claims. Many of these statements created sometimes humorous discussions between the respondents. It is clear from this intervention that people have different perspectives on cats (and children) based on their own experience (see appendix A12). Evidently, anthropomorphism plays a significant role in a human's expectations of a cat, as a cat is a different being that may have other motivations than humans have for his actions.

"Once she peed everywhere in house out of protest. To make matters worse, she peed all over me when I was sleeping on the couch. She really expressed anger because she was not allowed to go outside."

- owner of Lola

"My partner placed her high on the boxes, almost near the ceiling. Then he went to the bathroom and Newton wanted to get off the boxes, she tried to jump. And I was all like 'Noooo, you can't get off that high, I can't reach you!' And Newton was looking at me like 'What have you done, help!' So my partner had to come quickly and then it was alright again."

- owner of Newton

"He wants to play then and I don't have time. And then he bites me a little or attacks me, as if to say, 'Hello, I am still here!'"

- owner of Tum Tum

Although humans often project their expectations, feelings and needs on companion-animals, companion-animals are more than the objects of humans' projections: they are intelligent and sentient beings who have significant cognitive, emotional and social intelligence. However, they vary in the degree to which they exhibit these abilities [Walsh, 2009].

Bernstein (2007) states that expectations of owners can be modified with an increase of understanding of cat behaviors. Greater understanding can help owners deal with problems and see their own role in interactions with the cat and between cats. An owner who gets to know her cat (his behavior and personality) and who can accept some of the things that are less desirable, will see her relationship with her cat really come to fruition.

"You need to put things into perspective, otherwise living with a cat will be difficult. It is still an animal. It is just like with a child, who has immature things, just like a cat."

- owner of Tommy and Lulu

"There are of course things I don't like, and then you hope it will pass or you just have to live with it. So don't buy plants with spiky leaves."

- owner of Leo

"It is just acceptance. Acceptance and the right expectations. I don't expect a cat to behave like a toy animal: a toy that I can wind up and let meow when I want to and turn off when I want to."

- owner of Lola

"It is important, because you need to collaborate and interact with each other, to understand each other. Not only that we understand her, but she understand us as well."

- owner of Mika

The emotional journey

From finding the perfect companion to having a fulfilling relationship, the journey of an owner-cat relationship is an emotional one full of positive and negative interactions. These interactions can contribute to the development of the human-animal bond.

The phases of the owner-cat relationship

Figure 6 illustrates what interactions with corresponding emotions contribute to a positive or a negative development of this bond. This emotional journey is based on the findings from the storybook that the researcher and participants filled in together

In the beginning of the relationship, the owner is enthusiastic, charmed, curious and fascinated with her new furry friend. After a while though, these emotions subside because the relationship is not 'new' anymore.

"We are enthusiastic for something (the cat) new in the house, see how it goes."

- owner of Tum Tum

"It is not like I didn't give it (the cat) attention anymore, but in the beginning it is always more fun. Then you give it more attention."

- owner of Leo

The relationship mainly develops positively through taking care of the cat and by feeling appreciated by the cat. The relationship deteriorates due to negative cat behavior.

What strengthens and weakens the bond between owner and cat?

The most important factors in the owner-cat relationship for the participants are shown in table

8. These factors can be divided into the following categories: 1) needs of the cat, 2) positive interactions between owner and cat and 3) having an ideal cat. Mutual affection between the owner and the cat is the most important factor for the owners. Although the owner often initiates in caring and affectionate activities (cuddling, playing and giving food),

TOP 10 IMPORTANT FACTORS

1. Mutual affection between owner and cat

2. Cat's health

3. Cuddling with cat

4. Cat is able to go outside

5. Cat is relaxed / happy


6. Being able to shape your own cat: from kitten to adult


7. Cat interacts peacefully with children

8. Cat listens to owner

9. Cat being able to play

10. Understanding the behavior of your cat

 positive interactions between owner and cat

 needs of the cat


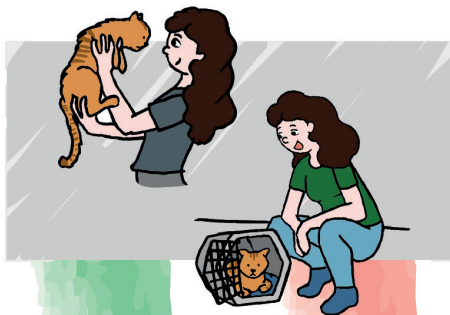
 having an ideal cat

table 8. Top 10 most important factors of cat owners

1. THE DECISION

he is so sweet and beautiful!
this is the right cat, right?

*enthusiastic and enamored
trust and uncertainty*



2. THE ARRIVAL OF MY NEW FRIEND

finally he is home! what is he going to do?

*enthusiastic and relieved
curious and fascinated*

3a. POSITIVE INTERACTIONS

kindness and love

taking care of and cuddling with my cat



entertained and curious

playing with/ enjoying the play of my cat

mainly in the beginning of the relationship!

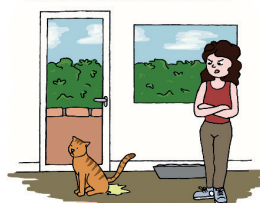
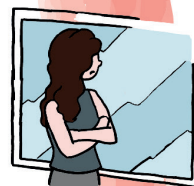
curious and fascinated

differences in my cat's behavior

mainly in the beginning of the relationship!

affection and appreciation

when my cat listens to me & when my cat wants to be near me



3b. NEGATIVE INTERACTIONS

worried

that an accident will happen outside with my cat

confused

when my cat doesn't understand me

annoyed

when my cat asks for attention during inconvenient times

angry

when my cat does things not allowed

frustrated

when I don't understand my cat's behavior

THE DEVELOPMENT OF AN OWNER-CAT RELATIONSHIP

figure 6. The development of an owner-cat relationship: from the decision of a specific cat to various interactions during the relationship

she also wants the affection to be returned. However, cats express their emotions differently from humans. Understanding a cat's behavior could then be helpful to know when the cat is being affectionate. The participants expressed how they experience affection by stating, for example, 'that the cats listens to you' or 'wants to be near you'. However, as cats differ in personality, it is possible they can also show affection in different ways such that humans may have difficulty picking it up.

"It concerns me more that I get to learn their personality and that I can take it into account. Then a bond will grow spontaneously. I will then try to not do the things they don't like and will often do the things they like. Then a relationship can grow."

- owner of Lola

"All interactions help, mostly the positive ones, but also the negative the ones. You get to know each other. It is most important that you learn from it, that helps improve your bond."

- owner of Leo

The difference in expressing emotions is also the chief cause of confusion and frustration in owner-companion-animal relationships. In a study by Zasloff and Kidd (1994a), owners mentioned that they find their cat's behavior 'annoying' (which was not further defined), too aggressive or destructive, or not social enough— or they stated that the cat did not give enough affection [Bernstein, 2007]. These are often reasons for owners to surrender their cat.

The participants in my study said they experienced frustration or worry when they didn't understand their cat or confusion when the cat didn't understand them. They also experienced annoyance when the cat was asking for attention at a bad time or anger when the cat did things that were not allowed (like

scratching the furniture and curtains or urinating on floor or rug). Thus, it is essential to understand the cat's behavior, needs and personality (the green category of important factors).

"I was frustrated, because it took such a long time for the cat to get used to his new environment (cat kept meowing). I was not used to that."

- owner of Newton

"It is frustrating that he keeps coming back to bite me. What should I do with that?"

- owner of Leo

"The annoyance and impotence that you don't know why something happens. It is really hard to remove the smell. I can't throw it in the washing machine to clean it."

- owner of Tommy and Lulu

Summary

People can have different reasons to adopt a companion-animal. Some of these motivations can steer them toward adopting a cat: cats are easy to take care of and give social support in difficult times.

The choice of a specific cat depends on the expectations of the owner: how should her ideal cat behave, what should the relationship be like, and what is the role of the cat in the house? However, every cat has a unique personality; this, in combination with a lack of knowledge about feline behavior (and thus, anthropomorphizing too much) can lead to a reality quite different from expectations, which in turn can lead to an early termination of the relationship. Understanding and time spent with each other is necessary to develop the bond between owner and cat in order to establish a strong long-term attachment.

The termination of the relationship

Why do owners decide to surrender their cat?

People decide to surrender their companion-animal for different reasons. Salman et al. (1998) determined 71 different reasons why an owner would surrender his companion-animal. The most popular reasons for surrendering cats are stated in table 9. Salman's study is based in the United States, it is possible that the ranking of the most popular reasons is different in the Netherlands. In a study that was based in Australia, the ranking of reasons was as follows: companion-animals not allowed (21%), too many animals (18%) and behavior problems (4%) [Alberthsen et al. 2016]. Geographical and social differences could explain the difference in the ratio of reasons.

However, owners often don't have a single reason for deciding to surrender their 'beloved' cat, but rather several reasons that build up to the final decision. Researchers were also surprised that behavior problems were often not the case in the decision to surrender a cat. They assume that owners who want to give up their cat because of behavioral reasons give a different reason to the shelter because they think it gives the cat a better chance to find a new home [Alberthsen et al. 2016]. This shows that reasons to surrender a companion-animal are part of a complex situation.

In my field research I asked participants to come up with a reason why they might ever decide to surrender their cat. Most participants thought it was difficult to give a possible reason for owner-surrender. The most stated reason was 'incompatible with (future) children'. This shows that there is a sort of hierarchy in a family, with children being above companion-animals. Several participants were able to state several reasons that might induce them to surrender

their cat, which affirms the study of Alberthsen et al. (2016). One participant mentioned that her sister actually gave up her cat because of house soiling. She knew it was a health problem, but did not want the responsibility for her cat's health. Other reasons for possible owner-surrender are presented in table 10.

The feelings surrounding owner-surrender

As the relationship with a companion-animal is an emotional one, it goes without saying that the termination of the relationship is emotional as well. According to Alberthsen et al. (2016), another possible consideration explaining why owners don't mention behavior problems when surrendering their cat is that they experience guilt. They assign the reason for surrendering the animal to something beyond their control, thereby possibly deflecting the blame from themselves and their cat. Coe et al. (2014) mentions that it is also possible that owners don't dare to reveal their real reason for surrender, because they don't think it is socially acceptable. In the study of Salman et al. (1998), 9.2% of the owners surrendering their companion-animal did not want to be interviewed (which might be the case because of the shame or guilt they felt, or just because they were too busy or didn't like interviews) and 2.6% of the owners indicated that they experienced too much emotional stress to be interviewed.



OWNER-RELATED REASONS



CAT-RELATED REASONS

<p><u>housing issues (14%):</u> moving to another house (8%) landlord not allowing companion-animals (6%)</p>	<p><u>behavior problems (10%):</u> house soiling (5%) aggression (5%)</p>
<p><u>economic (8%):</u> cost of companion-animal maintenance (8%) inadequate facilities (2%)</p>	<p><u>undesirable behavior (~7%):</u> destruction of furniture unfriendly & unsocialised needing too much attention disobedience too active other undesirable traits</p>
<p><u>quantity (17%):</u> too many animals (11%) no homes for litter mates (6%)</p>	<p><u>incompatibility with other animals (2%)</u></p>
<p><u>health issues (11%):</u> allergies (8%) pregnancy or new baby (6%)</p>	
<p><u>personal problems (~10%):</u> relationship problems lack of time lack of responsibility expectations</p>	

table 9. Different reasons, divided into categories, for owner-surrender of cats

CAT'S NAME	PARTICIPANTS' REASONS			
Newton	cat is unhappy			
Leo	incompatible with children	relationship problems	allergy	
Lola	financial problems	can't take care of herself anymore		
Tommy & Lulu	personality change cat	incompatible with other animals	extreme house soiling	destructive behavior
Mika	incompatible with children			
Tum Tum	incompatible with children			

table 10. Participants' possible reasons for owner-surrender

What if this guilt becomes so strong that people no longer want to give up their companion-animal? With this question in mind, I developed a small design intervention: 'Break-Up Ritual'. Participants would engage in a 'conversation' with their cat. All questions and the complete results of the intervention can be found in appendix A3 and A13. Two participants (a couple) who are thinking of surrendering their pet were asked separately to start this so-called break-up ritual.

The guilt increased a lot in both participants, just like the feeling of sadness about missing their cat. The ritual was really confronting and they both never wanted to do the ritual again or even think about owner-surrender.

Consciously experiencing and reflecting on the termination of the owner-cat relationship can increase the connection between owner and cat. The situation can become really confrontational. For these participants it changed their mindset about owner-surrender and convinced them that they did not want to do it anymore or even think about it.

I asked my 6 context-mapping participants (these have owned their cats 12 months or less) to imagine how they would feel and what they would do should they ever decide to surrender their cat (see figure 7). I captured their words and emotions with the Emotion Capture Cards (see section 'Methods').

The emotion 'guilt' appeared in this research as well. Half of my participants started crying during this part of the interview. This happened because they tried to imagine the situation, but also because they remembered similar experiences in the past that resembled the loss of a cherished companion-animal, one way or another (surrender of a former animal, animal being in an accident or death of an animal). Half of the participants also compared surrendering their cat to losing their cat because it died.

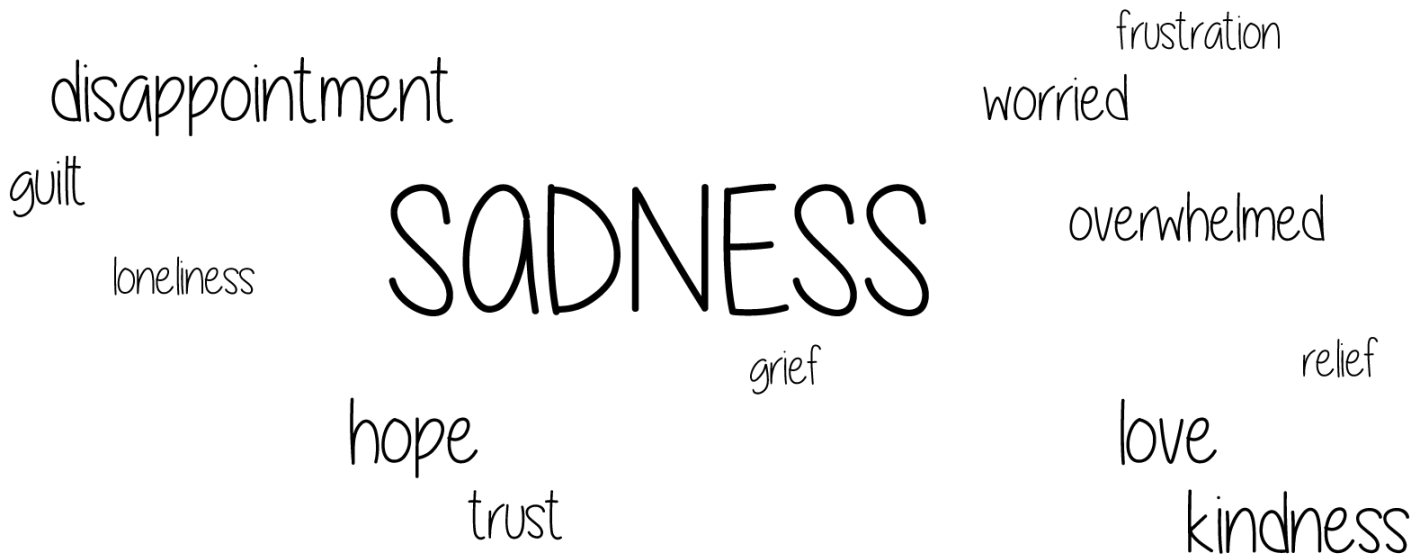


figure 7. Emotions that participants experienced during the role-play of owner-surrender

"It was a strong feeling of loss, the same when someone dies. I think grief and sadness."

- owner of Lola

"I compare it to losing a family member, something I also never experienced. It is hard to imagine. I compare it to dying as well."

- owner of Leo

"crying - we are now very close to the emotion of last Saturday, we almost had this moment, but then with death. This is awful, terrible. You don't start a relationship with an animal for this. No. And the little creature was just grinning lovingly to me and then you think, maybe you have to die soon."

- owner of Tommy and Lulu

Some participants also felt a sense of disappointment with themselves, wondering why they could not make it work.

"They eventually decided to surrender him, they still thought it was difficult. They felt like they failed."

- owner of Leo

(about sister's owner-surrendering)

"I would be disappointed in myself because I could not fix it."

- owner of Tum Tum

Though it was a really sad experience for the participants, they expressed their love for their cat as well in other different ways: 'hope' and 'trust' (in a higher power) that their companion would find a better home, 'worry' if their cat would find a better home and 'love' and 'kindness' because they still tried to take care of their cat.

What are the risk factors for owner-surrendering?

Various studies have determined risk factors that increase the chance of a cat being surrendered [Alberthsen et al., 2016; Bernstein, 2007; Rodan, n.d.; Salman et al., 1998]. These factors, based on characteristics of the cat and the owner, are presented in table 11.

Behavior problems such as aggression, house soiling or destructiveness are the result of a cat being in a stressful situation at home. This could be because the cat doesn't work well with another companion-animal, because there are too many beings (people or animals) in the house or because the cat experiences a lack of (positive) stimulation (e.g. interactive play session that simulates hunting). Behavioral problems can also arise from health problems. House soiling could, for example, also occur when the cat has kidney problems [Rodan, n.d.].

According to Salman et al. (1998), 58% of people surrendering cats thought that cats misbehaved out of spite. This could be because many people attribute human motivations to cat behavior (anthropomorphism), which is often a misconception. This same trait in combination with a lack of knowledge of normal cat behavior may drive people not only to assess behavioral problems in the wrong way and to try to solve them inappropriately, but also to have mismatched expectations about the cat's role in the family and the relationship being more work than expected. First-time adopters present an extra risk factor, because they lack experience in owner-cat relationships [Bernstein, 2007].

What is the gap in owner-surrender solutions?

Table XX presents possible and existing solutions mentioned in literature and field research. The following two sections discuss these solutions in greater depth.

Possible Solutions

Several research papers have already suggested a range of solutions to the problems underlying owner-surrender of cats. The most-mentioned interventions included providing education on normal feline behavior and support as to the best way to redirect undesirable behaviors [Bernstein, 2007; Coe et al., 2014; Rodan, n.d.]. Alberthsen et al. (2006) suggested 'companion-animal-friendly' accommodation as well. The reason to surrender a companion-animal because of accommodation restrictions would then be removed, and extra houses could be added for other unwanted and excess cats. They also suggested a greater role for veterinarians in preventing owner-surrender: veterinarians could help in assisting and educating owners about the importance of cat sterilization and responsible pet ownership. I would add greater use of a cat behaviorist as well, as they could aid owners in resolving cat behavior problems. Another interesting opportunity would involve looking into playful and accessible ways to educate new owners in the behavior and personality of their cats— approaches that can also reach owners who don't spend money on veterinary care (or cat behaviorists) or lack the guidance of a shelter.

Existing Solutions

At the moment, there are different interventions in place to diminish the numbers of owner-surrendered cats. In different locations in Australia it is obligatory to sterilize cats as soon as possible to diminish the cat population in general. In the Netherlands it is advised, but not made mandatory, to sterilize your cat.

1 The reference of Rodan, n.d. (no date) has no known publication year



OWNER-RELATED RISK FACTORS



CAT-RELATED RISK FACTORS

think cats misbehave out of spite ^{1,4}	sexually intact (unsterilized) ^{1,3}
lack of knowledge ³	allowed outdoors ^{1,3}
lack of attention ³	never receive veterinary care ¹
have expectations about cat's role in the family ^{1,3}	stressful social situations in homes ³
first-time adopters ¹	incompatibility among individuals ³
have children in the house ^{1,3}	crowding ³
obtained their cat 'for the children' ¹	being more work than expected ¹
being younger than those who originally adopted the cat ¹	mixbreed ^{2,3}
being male ¹	young cat (between 5 months and 3 years) ¹

table 11. Risk factors for owner-surrender of cats (1 Salman et al. (1998), 2 Alberthsen et al. (2016), 3 Bernstein (2007), 4 Rodan, n.d.)

POSSIBLE SOLUTIONS

EXISTING SOLUTIONS

education on feline behavior	sterilizing cats
support in redirecting undesirable behaviors	behavioral advice
companion-animal friendly accommodation	veterinary consultations
guidance of veterinarian	provision of resources for owners
guidance of cat behaviorist	shelter matching programs

table 12. Overview of possible and existing solutions for the owner-surrender of cats

However, the amount of owner-surrendered cats has not really decreased in Australia as a result of the intervention [Alberthsen et al., 2016], which suggests that it may not be an effective solution. Coe et al. (2014) reports different kinds of educational programs: behavioral advice, veterinary consultations and provision of resources for owners.

Some shelters in the Netherlands use a matching program for cats and owners. They match cats to owners based on the cat's personality and the prospective owner's wishes. Sometimes the cat still comes back to the shelter after being matched up, but the policy has decreased the number of cats returning to the shelter. Unfortunately, a kind of matching program like this does not exist when an owner gets her cat from a source like Marktplaats. Some sellers still try to match their cat to the right new owner, but more often than not the cat is merely an object to be sold.

"What I really liked, was that the woman where we got Leo gave us advice and things to help us, because we were still a bit unsure about everything. She helped us a lot and gave us information about Leo's personality."

- owner of Leo

"The woman of Marktplaats could tell us a lot about her personality and how she was doing until now. Because of that I got more confidence in getting Newton specifically."

- owner of Newton

"We were unsure if we would do well to choose the right ones. We did not experience their personalities before we made the choice for them."

- owner of Tommy and Lulu

Summary

People who end up surrendering their cat have different reasons for doing so— and most of the time it is a combination of several reasons. The most-given reasons are owner-related: accommodation restrictions, too many animals or health considerations. Cat-related reasons include behavioral problems or undesirable behaviors, which are often connected to certain expectations of the owner.

The unrealistic expectations that owners may have represent a risk factor related to surrendering a cat. Other factors include a lack of knowledge and stressful social situations at home (which often cause behavior problems). An increase in education regarding feline behavior could help the new owner to attribute correct motivations to the cat, solve behavior problems and have realistic expectations about not only the relationship with the cat but also its role in the family.

The literature suggests education as the most likely solution to owner-cat relationship problems. This increase in educational efforts is already being implemented in different ways, including veterinary consultations. An interesting opportunity is to deliver education in feline behavior and personality in a more accessible and playful way, to offer options especially to those owners who may lack resources for expensive consultations.

3.5 Conclusion

Owners have different reasons— often more than one reason, in any case— for surrendering their cat. Most of these reasons are owner-related, including housing, economic or personal issues. Some of the reasons seem to be cat-related, which are mostly because of behavior that is seen as undesirable or even problematic in the eyes of the owner. Many of these reasons, however, are influenced by the expectations owners have of their cat (such as their role in the family) and the cat's relationship with family members. These expectations are based on the owner's experience, their knowledge of feline behavior and feline needs and the motives the owners had for adopting the animal.

Many people adopt a companion-animal because they are looking for an undemanding and rewarding relationship that provides social support: a relationship of mutualism, where the owner gives and receives love and affection from her cat. This unconditional love and affection from the cat can contribute to a happier and healthier life.

The human trait 'anthropomorphism' helps owners to be empathic with their cat and to create a connection that we call the human-animal bond. However, anthropomorphism can also lead owners to attribute wrong motivations and emotions to their companion-animal. Cats are still cats (and not humans), and may thus not only have different motivations but also express their emotions in different ways than humans do.

Because cats can have unique personalities, just like humans do, cats may vary among themselves in their behavior. Five feline traits have been established in the literature to determine a cat's personality: skittishness, outgoingness, dominance, spontaneity and friendliness.

Unrealistic expectations and lack of knowledge regarding feline behavior and personality are risk factors for owner-surrender. Increasing the knowledge of owners can be helpful in this respect: coaching them to attribute the right motivations and emotions to their cat and to shift their expectations. Greater understanding could help owners deal with problems and see their own role in interactions with the cat and in the end possibly improving the human-animal bond.

The human-animal bond relates to the attachment between owner and cat. The attachment increases with 1) knowledge about the cat and its care, 2) the behavioral responsiveness to the cat and its needs, 3) interest in and affection for the cat, and 4) time spent with and activities directed toward the cat. In the beginning of the relationship, this latter dimension of attachment is not yet well used, setting the stage for the owner-cat relationship to become increasingly sensitive for negative experiences.

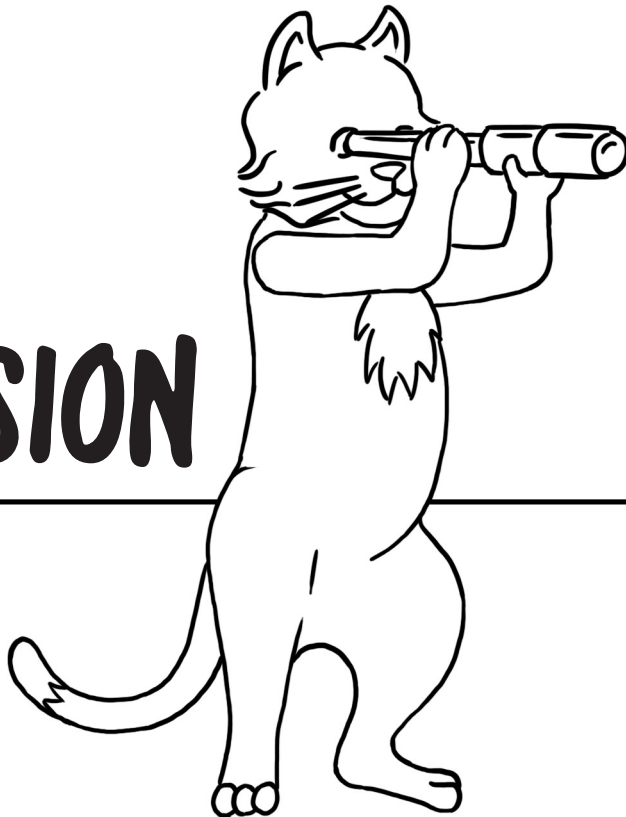
The relationship between owner and cat is an emotional one: from the enthusiastic desire and curiosity in the beginning, to the caring, appreciative, but also frustrating and annoying interactions in the middle to the sad, overwhelming and guilty termination of owner-surrender or death.

Design interventions could explore the possibility of delivering education in feline behavior and personality in a more accessible and playful way during the interactions between owner and cat at home, making use of the potential source of fun and play that a cat can provide (like the relationship with a child).

Interventions could also utilize the attachment dimensions to increase the human-animal bond. By getting to know her cat, an owner could cultivate a relationship of mutualism.



4. VISION



4.1 Introduction

This chapter illustrates the vision for the desired situation. First comes definitions of the design's guidelines, which are based on the research results. Then, a preliminary design goal is created by combining the project goal and the direction for the desired situation. Several details of the design goal are explained, in order to reveal the relation with the research results. Finally, I devise an interaction vision accompanied with interaction qualities, which are used to describe the desired interaction and experience. The design goal together with the interaction vision lay the groundwork for developing ideas to create a meaningful interaction between owner and cat.

4.2 Guidelines

The project goal, as stated in the chapter Introduction, is to find a way to affect owner's attitudes towards companion-animal commitment in order to prevent the surrender of cats to animal shelters.

An owner may have several reasons to surrender her cat. Some reasons may be very practical, such as accommodation issues. Other reasons may be emotionally charged; these are often the personal reasons, involving the owner's expectations. Because the bond between owner and cat strengthens or weakens through different emotional interactions, it is important to examine the emotional reasons.

To change the attitude of owners, you should look to their mindset. An owner's mindset consists of the view she has not only of cats in general but also toward her specific furry friend, which is based on her expectations and emotional experience of the relationship. When the owner's first expectations (her desires) of the cat are being met (for example, an attractive appearance), the owner falls in love, as it were, with the cat and wants to bring him home. However, an attractive appearance is not enough to ensure devotion in the relationship.

The emotional experience of the relationship continues to be influenced by positive or negative experiences with the cat. This involves the cat's behavior, personality and the communication between parties. These things, among others, decide whether the initial attachment between owner and cat grows. Attachment can be increased through:

1. *knowledge about the cat and its care*
2. *the behavioral responsiveness to the cat and its needs*
3. *interest in and affection toward the cat*
4. *time spent with the cat and activities directed toward the cat.*

These four dimensions can be used to grow the bond between human and animal. When the attachment between owner and cat develops, the owner will probably increasingly experience an urge to be affectionate toward the cat and to care for him. This urge is called love.

Another important part of the owner-cat relationship is that owners feel that they not only give, but also receive love and affection, which is the relationship of mutualism. Experiencing the mutual affection helps to confirm this relationship of mutualism, increase the owner-cat connection and help the owner love their cat even more. However, cats may show affection in different ways than owners would expect, so it may not always be possible to **feel** this emotion. With knowledge about their own cat's behavior, however, the owner can also **know** when she is loved. Thus, it is about the **experience of affection**.

One important emotion in the beginning of the owner-cat relationship is the curiosity the owner has about her cat. This curiosity triggers the owner to participate in the four dimensions of attachment stated above. However, this curiosity subsides quickly when the cat is no longer 'new'. If curiosity can be turned (through use of a product) into a more

powerful emotion, like fascination, then owners will participate longer in the attachment dimension and increase the bond between them and their cat. The experience of fascination can be used to stimulate owners to explore and understand their cat's behavior and personality; in this way they will experience affection from their cat and so be motivated to be committed to the relationship (see figure 8).

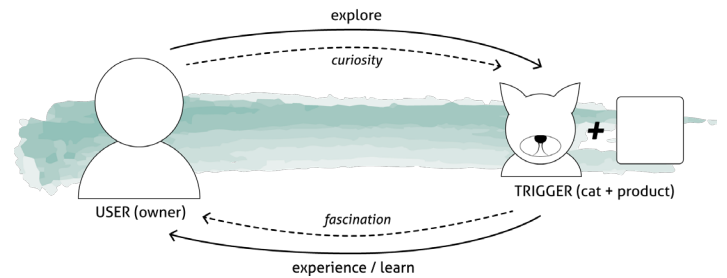


figure 8. The interaction between owner and cat; curiosity and fascination; exploring and learning



Spending time with and affection towards Indy

4.3 Design Goal

Based on the determined direction of the desired situation, a design goal is created:

“To support new owners in understanding their cat’s behavior and personality in order to experience mutual affection in their relationship.”

Target group

The users of the design are new cat owners. These are owners who don’t have much experience in taking care of a cat and who just adopted a cat. When the owner has just adopted the cat, the relationship is in the starting phase: the human-animal bond is still developing and there is no strong attachment yet. This is also the most critical phase of the relationship. If the owner experiences a lot of negative interactions during this phase, the chance is high she will give up on the relationship and surrender the cat, because she does not feel a strong enough connection yet to the cat to keep it and to continue trying to work on the relationship. Hence, new owners need extra support and guidance to develop their relationship with their cat.

Understanding to mutual affection

Cats express emotions and moods different from humans. An owner could possibly experience affection from her cat when she understands the cat’s behavior and personality. This leads to the a relationship of mutualism: believing that the owner not only gives but also receives love and affection. A relationship of mutualism strengthens the bond between owner and cat.

Context of use

The design will be used at the home of the owner.

This is a space where cat and owner spend most of their time together and where most interactions between them are initiated.

Desired effect

The desired effect is that through the created understanding and developed experience, the owner continues to reflect and work on the interactions between herself and her cat. Further, it is desirable that the bond between owner and cat will grow and that the owner feels devoted to her cat and their relationship.

Design challenges

There are several design challenges that need to be achieved for the owner to experience mutual affection and to increase the human-animal bond between owner and cat:

- *increase the owner’s knowledge about the cat and its care;*
- *increase the owner’s behavioral responsiveness to the cat and its needs;*
- *owner must be triggered to take an interest in the cat;*
- *owner should express affection toward the cat;*
- *owner and cat must interact together.*

4.4 Interaction Vision

The interaction vision that accompanies the design goal depicts the desired interaction between owner and cat. Following the need-dependency perspective, humans could see their cats as their children. This view could possibly increase due to the evolution of animals in the human household and the human trait of anthropomorphism. I use this perspective as inspiration for the interaction vision.

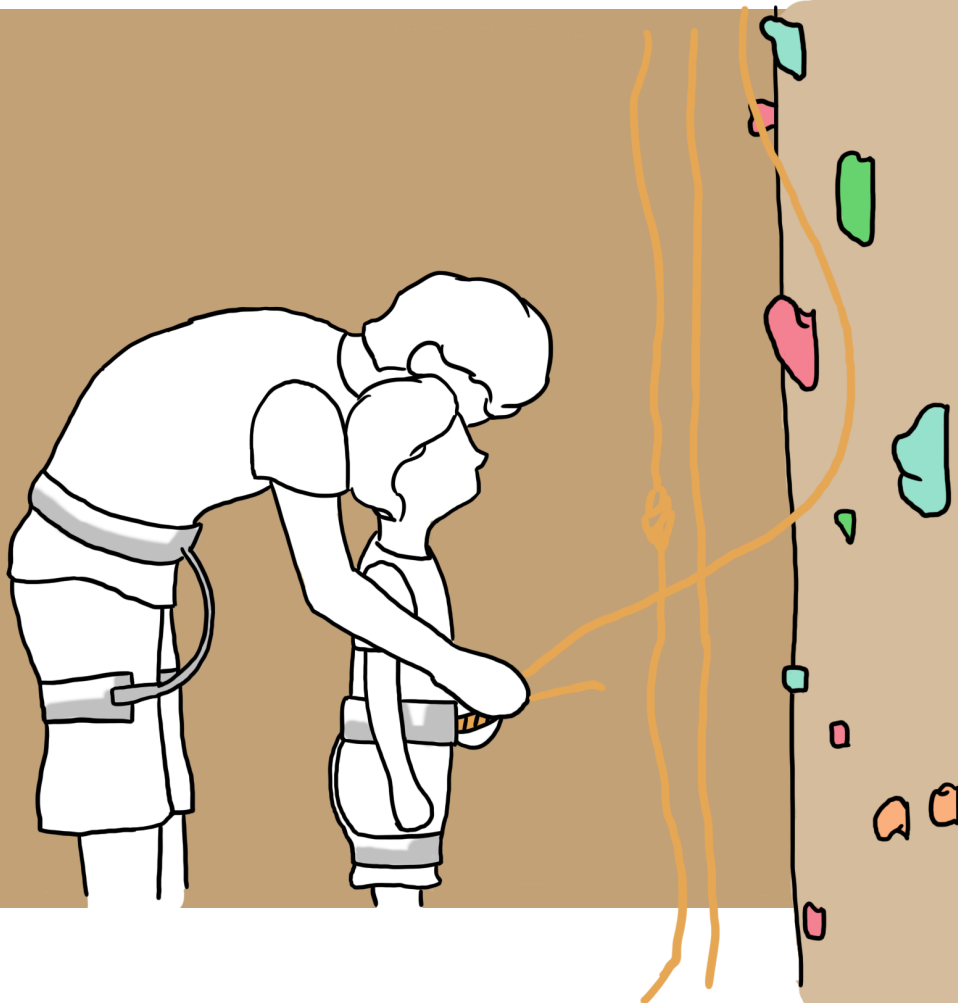


figure 9. Parent and child sharing adventures

The desired interaction between owner and cat should be like *parent and child sharing adventures* (see figure 9). Together they go on adventures, experience new things and go to new heights. They are interested in each other and would like nothing better than getting to know each other. The parent wants to take care of his child, but also recognizes his child's unique individuality. The adventure they share is a good way for the parent to see his child's development and to get to know his talents and preferences. Four interaction qualities follow from this metaphor:

Feeling Close

The design should make owners feel 'close' to their cat. This could be by literally being near to each other; doing activities together; or figuratively by familiarizing with the cat. The feeling of closeness creates a connection and strengthens the relationship.

Being Playful

The design should trigger playfulness. Parent and child often connect with each other through play. Play helps to connect with others because it creates openness. Being playful can also make activities and spending time the cat more engaging.

Generating Fascination

This quality will play an important part in the design. It drives an owner to *explore and investigate* her cat's behavior and personality. The knowledge she obtains supports her in understanding the cat's care and in her behavioral responsiveness to the cat's needs.

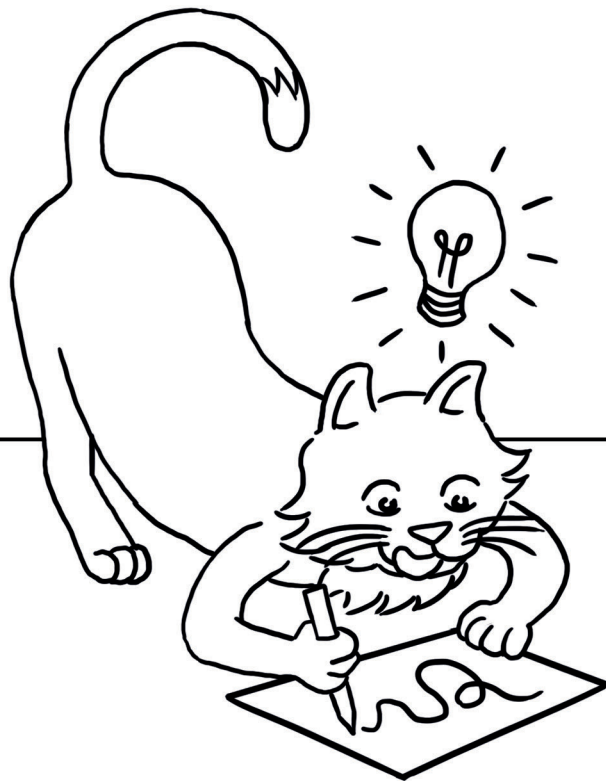
Developing Respect

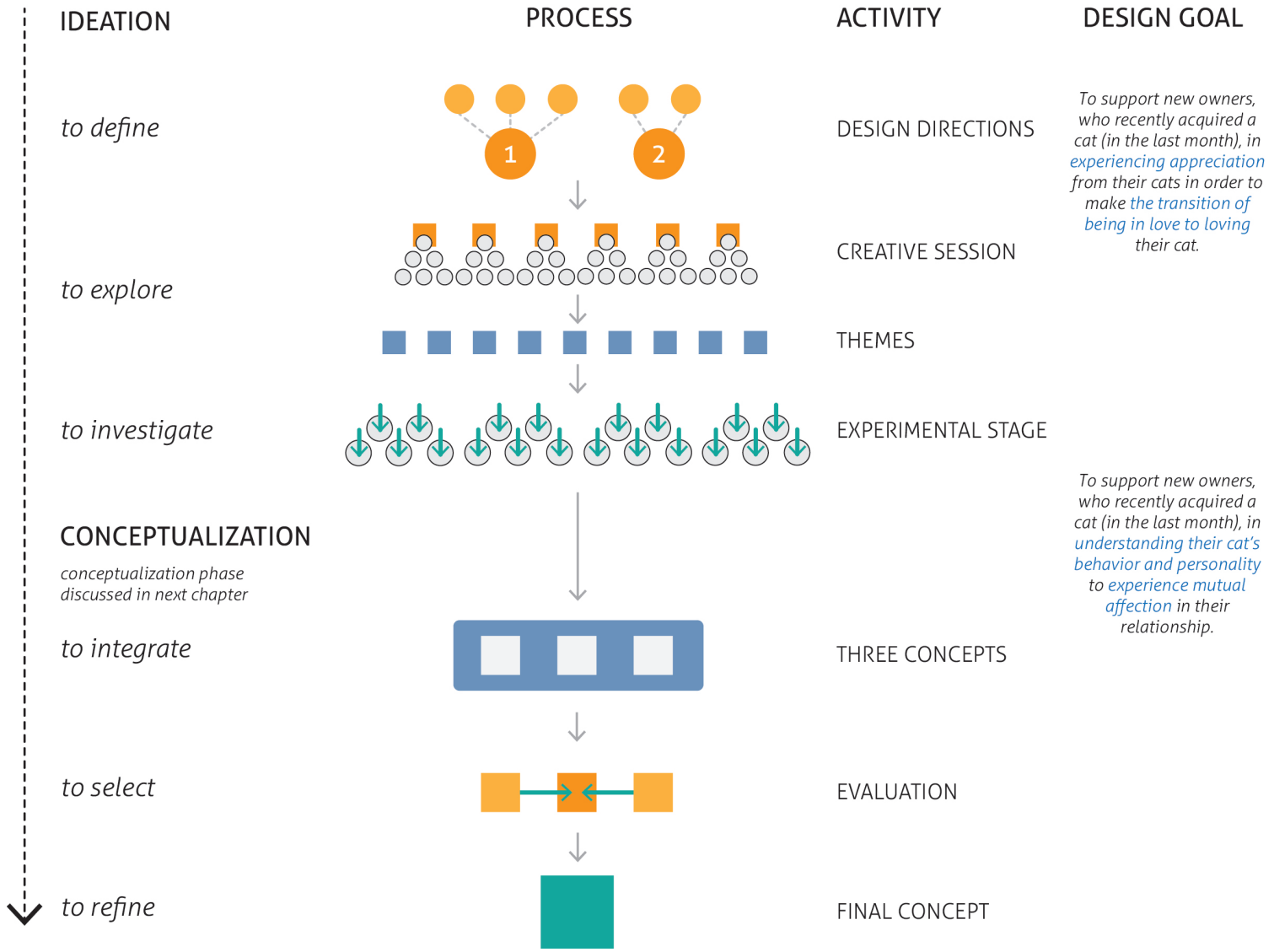
The design should recognize the individuality of the cat and demonstrate to owners that not all behaviors of the cat are wrong or problems, but part of his personality. The cat's unique qualities and abilities *deserve admiration* and the design should trigger owners to *regard their cat as worthy*.

Contribution to love

Fascination and play are a good start to initiate interactions between owner and cat and develop closeness. Fascination and play help in exploring (hidden) things. During this phase of exploring the owner could find out characteristics of the cat that conforms to an internal or external standard of the owner and develop respect for the cat. By understanding the cat and its characteristics the owner could experience affection from her cat. This way fascination and respect could lead to love.

5. IDEATION



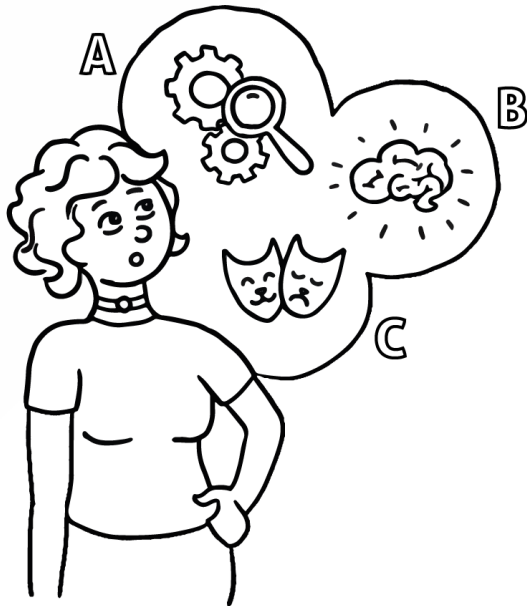


5.1 Introduction

During the Ideation phase, ideas are generated based on insights of the research phase and the vision of the desired situation. These ideas are generated during creative sessions, during which designers get inspired by six How-To questions based on predetermined design directions. These ideas were recategorized in nine themes. From these themes, 20 ideas were selected on which to run experiments. A new owner and his1 cat participated in these experiments. These experiments were done to test the potential of the ideas: how does the owner experience the interaction and how does the cat react to it? From the conclusion of the experiments and the inspired ideas, three concepts were created. These three concepts and (last, but not least) the final concept are presented and discussed during the next chapter, Conceptualization.

5.2 Design Directions

Several design directions resulted from the research and vision. These directions are categorized in two main directions. The first direction focuses on the interaction from the owner's side and the second one on the interaction from the cat's side.



1. Change the owner's attitude-- *the owner needs to interpret the cat's behavior differently:*

- A. transform the owner's curiosity to fascination;
- B. help owner get to know her cat's personality;
- C. increase the owner's knowledge base about the general behavior of felines.



2. Stimulate existing cat's behavior:

- A. to increase physical contact between owner and cat;
- B. to increase social contact between owner and cat.

5.3 Creative Session

Based on these directions, six How-To questions were created to spark the inspiration of designers during the brainwriting session. Six designers participated in the session. The procedure of this session is explained in appendix B1.

1. *How to increase physical contact between owner and cat?*
2. *How to increase social contact between owner and cat?*
3. *How to help owners better understand their cat's behavior?*
4. *How to help owners become fascinated about their cat?*
5. *How to get to know the feline personality?*
6. *How to discover unique characteristics of a particular cat?*

The ideas generated with these questions were categorized in different themes (see figure 10). Several ideas were chosen to experiment with, to see if there is potential to fulfil the design goal and to evoke the established interaction qualities. These ideas were selected on the basis of my personal interest from a design perspective. Some other ideas were used directly as inspiration for the conceptualization, without prior experimentation.

Themes

Some of themes will be explained to show their interesting potential in the design directions.

A possible way to change the owner's attitude about her cat is to literally change her perspective and align her perspective with that of her cat's. During the creative session, the designers found two ways to accomplish this: 1) role-play a cat: be a cat and 2) see the world through the cat's eyes.

To investigate your cat's body language and his behavior, you can zoom in to the details using many different images (like pictures) or you can use a tangible experience.

There are many human personality tests around the world (for example, the Myers–Briggs Type Indicator and the Big Five Personality Traits); these have formed inspiration for the designers to come up with ideas for getting to know your cat's personality, for finding his traits or fitting him into a stereotype.

It is also interesting to place your cat's experiences and your experiences with the cat together in a narrative. A bit like: the cat is a hero and goes on an adventure; let's see how the cat and your relationship with him develops and how you overcome challenges.

Finally, several ideas were activities that can be enjoyed by both owner and cat: explore together different physical or mental challenges or attract the cat in different ways to be near you (playful and close physical contact).

THEMES	IDEAS					
roleplay like a cat	act out cat habits	groom your cat with a tongue brush	dress up as a cat and follow cat around	copy cat's behavior to show how annoying he can be	yoga for pussies: stretch like a cat	hunt mice together
a cat's perspective	put a gopro on your cat's head	hidden cameras in places only your cat can come	have a docu made of the secret life of your cat	place gps on cat and see map of his journey's at night		
explore together	treasure hunt for your cat: disguise its treats	improve its character strengths	test your cat's abilities	competition between human and cat	cat parcourse	teach him a trick
body 'language'	make a sculpture of your cat	analyze the different cat body parts	daily cat selfie	wall of cat fame	very zoomed in, detailed cat photos	app that interprets cat behavior using the camera
personality tests	what kind of super hero would he be?	cat mood boards	check generic cat behaviors: how unique is your cat?	fit your cat into catsonas	cat facts tear-off calendar	
find your story	book to fill in with like: what is your cat's favourite spot to sleep	write a story as a character inspired from your cat	write a diary for your cat: you decide his personality	fill in story: choose your words on the blank spaces	photo report, make a diary with pics of cat's behavior and reflect on it	
change the scenery	put objects in different places	change up rituals / routines	feed them at different times every day	travel around with your cat		
playful contact	toy attached to hand, move the fingers to attract cat	owner and cat attached to each other	moving laser lights on sweater	kittytinder: meeting up with differnt cats	cat party	climb together
close physical contact	feed your cat by hand	spray yourself with catnip	eating together	pillow for cat that is made to keep in your lap	dance with cat	cat human art
					make music with cat	
					shared sweater	turn cat into backpack
					shared box	heating pad in your shirt
					place box on lap	use cat as scarf

 selected ideas for experimentation
 ideas used for inspiration

figure 10. Generated ideas during the creative session categorized into themes

5.4 Experimental Stage

In this experimental stage the Research-through-Design approach is used to see if some of the interesting ideas had indeed the potential to change the owner's attitude or stimulate the cat's behavior (or even both), and would eventually fulfil the design goal and evoke the desired interaction qualities. 20 experiments were done (nine about changing the owner's attitude and 11 about stimulating the cat's behavior) with a new owner and his cat. The complete procedure of the experiments can be found in appendix B2. The next page shows pictures

of some of the experiments. Several recorded videos of the experiments can be found on the attached cd in the appendix.

The following figures (figures 11 and 12) present the results of the experiments, categorized in the two main directions. The experience of the interaction qualities and two extra criteria (ie. 1) informative and 2) together) are displayed. The criteria informative is added to identify what kind of activities can best transfer knowledge about the cat, its behavior and its

CHANGING OWNER'S ATTITUDE

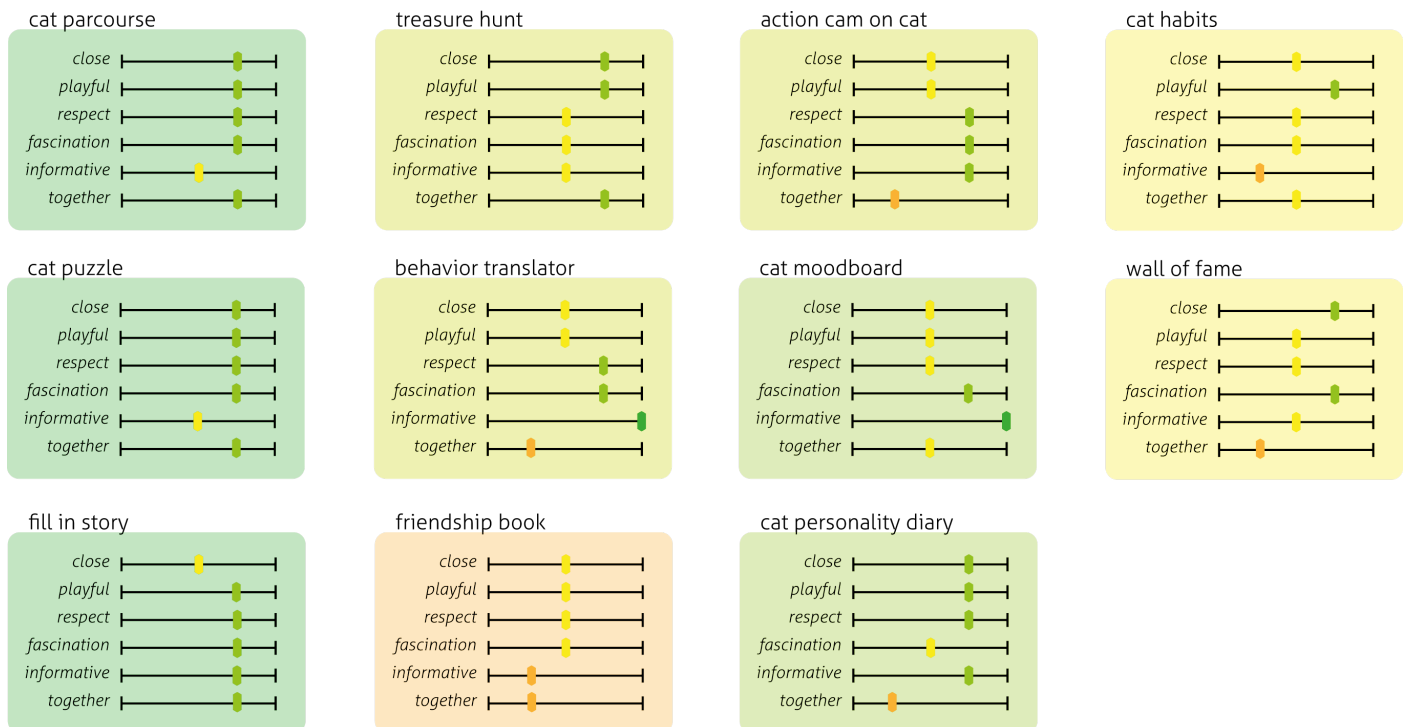


figure 11. Experienced interaction qualities during experiments in changing the owner's attitude



experiment: wall of fame



experiment: playing piano with cat



experiment: cat parcours



experiment: box on lap



experiment: cat moodboard



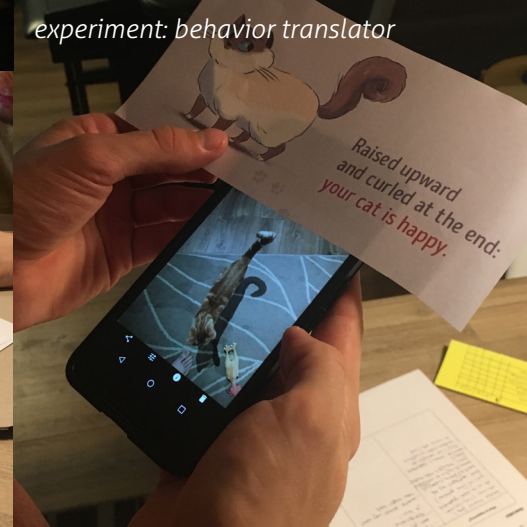
experiment: kangaroo sweater



experiment: cat puzzle



experiment: cat art



experiment: behavior translator

STIMULATING EXISTING CAT'S BEHAVIOR

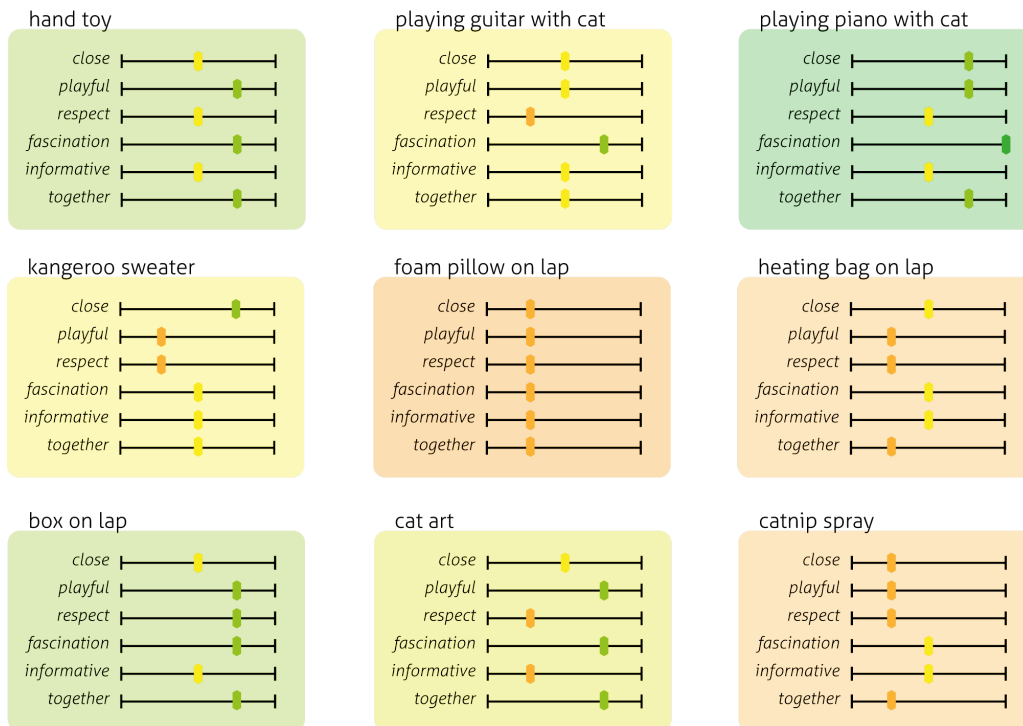


figure 12. Experienced interaction qualities during experiments in stimulating existing cat's behavior

care; the criteria together was added to determine if the user experienced the time spent and the activity directed to the cat (see attachment dimensions in chapter Vision).

Emotions that were experienced during the different activities of the experiments were also recorded (see figure 13). As can be seen, a range of emotions was experienced. The most-felt emotions during the activities, for each direction, were as follows: for direction 1) changing owner's attitude: sympathy, amusement, anticipation, inspiration, fascination, satisfaction; for direction 2) stimulating existing cat's behavior: anticipation, amusement, inspiration and disappointment.

It is a good sign that **spending time and doing certain activities with the cat** is experienced as fun by the new owner. This experience mostly took place during the playful activities such as the hand toy, playing the piano, role-playing cat habits and the treasure hunt. Sympathy, inspiration and fascination were mostly experienced with informative activities that gave more **understanding of the cat's behavior**, such as the personality diary, behavior translator, mood-board and the cat parcourse.

An emotion closely related to sympathy is *respect*. Respect was only consciously experienced during three experiments: the cat parcourse, the box on the lap and the personality diary. The owner experienced

respect during these experiments (respectively) because 1) he got to learn the cat's specific *skills*, 2) he learned the cat's *needs* and 3) he recognized the cat as a *unique being with his own emotions*.

Anticipation accompanied almost every activity experienced, and this often also resulted in the negative emotion of reluctance and disappointment. This happened because the owner created a certain expectation for what would happen, and this expectation was not met in the interaction with the cat. It is important that this experience is kept in check or negated in the final concept; otherwise, instead of changing the owner's attitude, the unrealistic

expectations and their consequences could escalate. It is not wrong to have a certain expectation, but it is important to understand that it is also not wrong that sometimes these expectations don't line up with the real experience—in other words, it is preferable that the event can be seen as a learning experience.

In these cases, reflecting on these 'other than expected' situations could help the owner to process the experience and turn it into knowledge that can be applied in future interactions with and in the care of the cat.

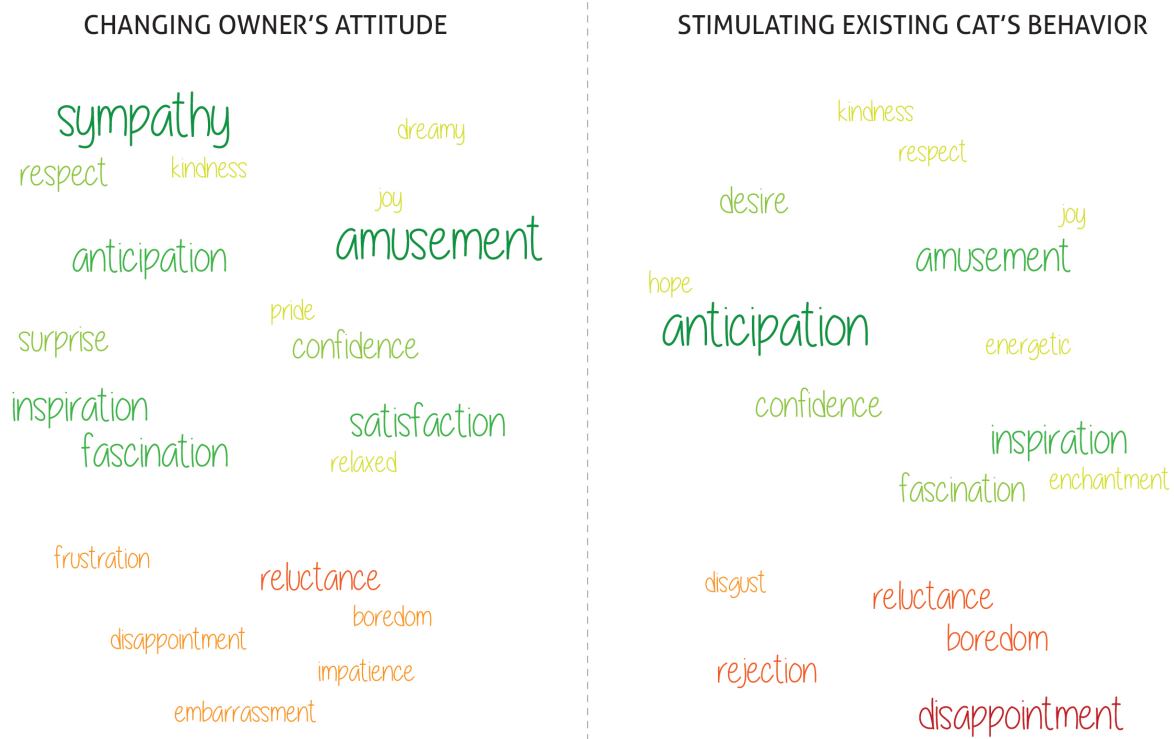


figure 13. Experienced emotions during the experiments

One of the insights gleaned from the experiments was that it was possible to combine the two main directions in several activities: changing the owner's attitude by stimulating the existing cat's behavior. This was easily accomplished in the following activities: the treasure hunt, the cat parcourse and the puzzle made with toilet rolls. The combination was probably made possible due to the activities having one guiding action being set in an environment with many variables that could be experimented with. Users need simple instructions as to the use and purpose of a product, to avoid being confused or overwhelmed by the possibilities. However, in the interaction between owner and cat, it could be an added value to create an environment that lends

itself to open-ended play.

Each experiment, be it an activity with the cat or reflecting on the cat's behavior, had its own individual effect. However, the fact of doing experiments with your cat already helps you get to know your cat better. You find out things he likes or doesn't like, his abilities and so forth. Reflecting on this information helps you in making future decisions concerning your cat. The most important thing is to explore the world together with your cat; the activities themselves don't really matter. Joel Zaslofsky (n.d.) said it well:

"Fascination represents a desire to connect, a willingness to embrace discomfort and motivation to learn how things work."

To create fascination in the relationship you have with your cat, you need to do the following:



1. pay attention

2. experiment!

3. keep saying:
how does it work?

4. experience it like it
is the first time!

5.6 Conclusion

There are two main design directions where interactions between owner and cat can take place: 1) changing the owner's attitude and 2) stimulating the existing cat's behavior. These design directions can also be combined to offer a third direction as well: changing the owner's attitude by stimulating the existing cat's behavior.

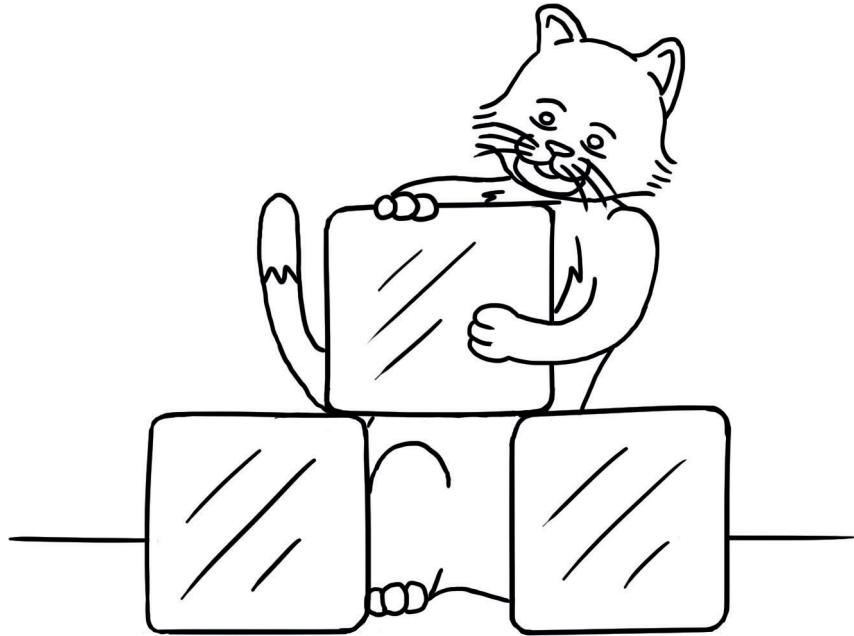
The generated ideas can be categorized in nine themes: role-playing a cat, taking a cat's perspective, exploring together, learning a cat's body 'language', personality tests, finding your story, changing the scenery, engaging in playful contact, stimulating close physical contact. Twenty ideas from eight of these themes were selected with which to experiment and to discover their potential. The following experiments fit most closely with the interaction qualities: cat parcourse, cat mood-board, cat puzzle, fill-in story, cat personality diary, hand toy, playing the piano with the cat and box on lap. The insights from these experiments, including the top-five ideas (test your cat's abilities, make a sculpture of your cat, fit your cat into catsonas, cat-facts tear-off calendar, book to fill in with your cat's personal facts (favorite food and so forth)), serve as inspiration for the developed concepts.

To experience *respect* in interactions with her cat, the owner needs activities where she gets to know her cat's skills and needs and where she can recognize him as a unique being with his own emotions and thus personality.

To experience *fascination* in the interactions with her cat, the owner needs to remain attentive, to experiment with her cat, to keep asking how things work with and for her cat and to keep experiencing the relationship 'as if it were the first time'.

In the end, the most important thing is that the owner spends time with her cat and does activities together with him. Such activities create an open-ended environment that facilitates the owner being free to play and reflect, and so to learn about her cat's behavior and personality. Owner and cat explore together to learn from each other and communicate with each other to create a relationship of mutualism.

The ideas that stimulate the owner the most in this experience were selected to create three different concepts, which are discussed in the next chapter.



6. CONCEPTUALIZATION

6.1 Introduction

This chapter discusses the three concepts that were developed based on the results of the Ideation phase. The ideas that act as the foundation of these concepts and the concepts itself are presented. The three concepts are evaluated with four new cat owners, with two cat behavior therapists and from a design perspective.

This evaluation allows the creation of a new, final concept, which arises from the combination of the aspects from the three concepts that best fulfilled the design goal and desired interaction qualities. A description of the final concept is presented through a user scenario and a discussion about the spirit of the design. Possible channels for introduction into the market are also discussed.

6.2 Concepts

Concept 1 Basic Instinct

Concept 1 is a customizable puzzle toolkit for you and your cat. This toolkit will help you get to know your cat and develop together his skills.

The concept consists of several basic components in the shape of cylinders. The cylinders can be attached to each other with rubber pieces in several ways, and thus may form different constructions.

The cylinders come in different sizes and colors with small windows. There are also skins of various materials to give the cat a tactile experience, as well turning wheels to add dynamic movement.

An instruction booklet is added to give examples of different puzzles: some puzzles are more suited for certain cat personalities. Through scientific research, researchers found that there are five main cat personalities. The puzzles are developed in such a way that they fit certain personalities. Through this you can find which personality is closest to that of your cat.

By experimenting with the puzzles you get to know the skills of your cat and you can develop these.



1. The product consists out of a box with different basic components:

cylinders in different sizes and colors with small windows

2. An instruction booklet is included with several construction examples:

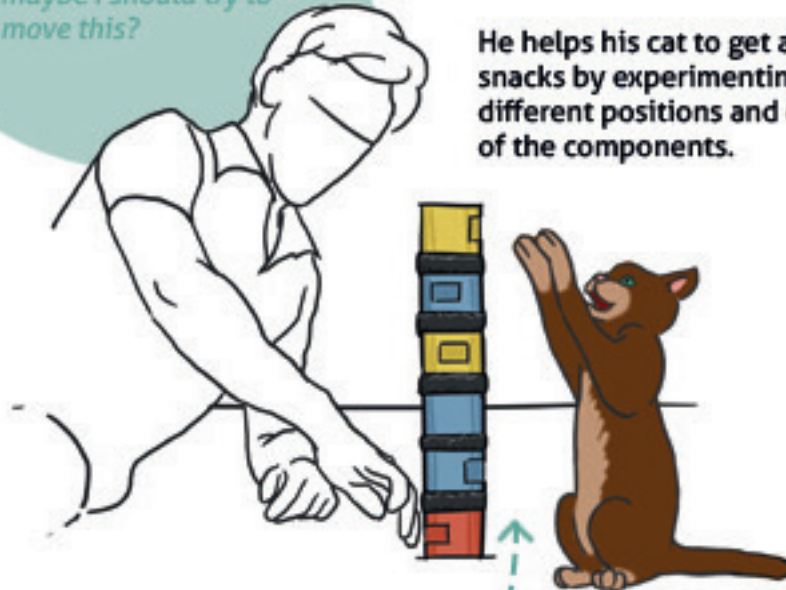
some puzzle constructions are more suited for certain cat personalities



- 4.** The user constructs the puzzle. He puts different snacks for his cat in different places in the puzzle.

He helps his cat to get all the snacks by experimenting with different positions and orientations of the components.

maybe I should try to move this?



which construction fits my cat?

what is my cat able to do?

- 3.** The user chooses a construction based on the personality he thinks his cat is.



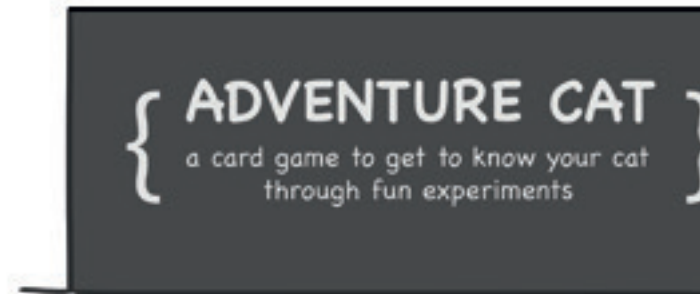
Concept 2 Adventure Cat

Concept 2 is a card set with which you can explore your cat's behavior and abilities together with your cat in your own environment.

The card set consists out of different card categories (cat's habits, senses and skills). The front of each of these cards features some general information about your cat. For example, in the category senses you read on the card that your cat uses whiskers to determine if he can go through a narrow passage.

On the backside of the cards there is an instruction on how to set up a parcours circuit for your cat in your house to see how your cat personally uses that skill, sense or habit. For example, when does your cat think the passage is too narrow? You can set up these parcourses in your house with basic materials you already have in your house and experiment with it together with your cat. There is also a difficulty range in setting up and using these parcourses.

The goal of this concept is to give the cat owner general information about cats and their behavior. However, as this is still general information, it can differ from cat to cat depending on your cat's personality and talents. With the parcourses you get the chance to see how this general information applies to your cat and to get to know his personality.

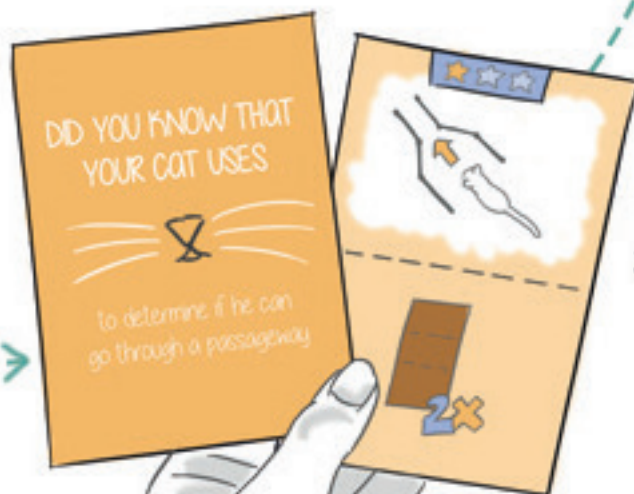


1. the product is a box of cards which are a combination of fun facts with matching experiments you can do with your cat



2. the cards are divided in different categories: senses, skills and habits

4. the user can follow the instructions on the card and experiment with it to get to know her cat's specific behavior and abilities



3. on the front of the card there is information about a cat's behavior or abilities (depending on the category)

on the backside of the card there are instructions for a parkourse, which is related to the information on the front

Concept 3 Pawsitive Pursuit

Concept 3 is a card game where you build a statue of your cat based on his personality. When the statue is finished you have an image of your cat that depicts his complete personality.

As explained in concept 1, there are five main cat personalities (based on the Feline Five). In this game, each personality has a color associated with it. There are different colored blocks (in the same colors as the personalities) that you can acquire by doing small assignments with your cat.

These small assignments are divided into different categories. The category from which you take an assignment depends on the throw of a die. An example: in the category 'reaction' you do a certain small experiment and see how your cat reacts. Next, you choose one of the preselected reactions on the assignment card that is closest to your cat's reaction. Finally, you acquire a building block with the color that is associated with the chosen reaction.

After acquiring enough building blocks, you are able to finish your statue, which represents the understanding you have developed about your cat's behavior and personality. The statue doesn't necessarily have to be finished in one evening; you can take as long as you want to finish it.



2. which building blocks you need depends on the outcome of the assignments

the user throws the die, takes a card from the thrown category and conducts the indicated experiment, the result earns her a specific color building block



SKITTISH



OUTGOINGNESS



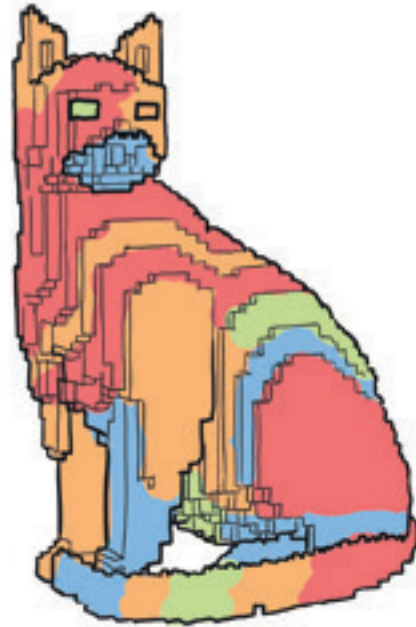
DOMINANCE



SPONTANEITY



FRIENDLINESS



1. there are 4 different main categories where you can gain building blocks: 'reaction', 'skill', 'habit' and 'questions'

which category you should choose depends on the throw of a dice

there are two bonus categories: 'general information' and 'mouse'

reaction

1. do a certain experiment with the cat
2. see how cats reacts and choose reaction from the card closest to it
3. chosen reaction determines color building block

habit

1. choose the habit you have seen your cat do
2. act the habit out
3. reward is corresponding building block

general information

these are cards that give information about cats, there is no building block as reward

skill

1. choose on of the cat actions available on the card
2. try the action with your cat
3. the action your cat is able to do determines color building block

questions

1. answer questions about your cat's behavior: e.g. what is his favorite activity?
2. you choose from preselected answers

mouse

your cat caught a mouse! choose your own category

3. eventually, you build a statue of your cat comprised of different colored building blocks, each color is associated with a personality

users keep carrying out assignments until their statue is complete

Concepts evaluation

The three concepts were evaluated by different sources: four new cat owners (adopted their cat 0-6 months ago), to get the owner perspective; two cat behaviorists, to get the feline perspective; and myself, for the design perspective. The result of the evaluation is presented in figure 14, which is based on the Harris profile.

Owner's perspective

The concepts were evaluated on different points from the owner's perspective: 1) if they would experience the desired interaction qualities, 2) if they think it would fulfil the design goal, 3) what they like or don't like about the concept and 4) if they would use the concept.

The cat owners would not use the first concept because cats are often happy with things already present in the house, which is a big advantage of concept 2. The cat owners were pretty enthusiastic about concept 2: they like the fun facts and the use of in-house materials to experiment with different parcourses. However, they don't like the fact that the concept is just cards and express that they would rather have an object for the cat to go with it. The owners loved the possibility of getting to know their cat's personality in concept 3 and see all his different reactions. They also liked that they had something that visualized the personality and that they could keep as a reminder. However, they did not like building the cat statue and expressed that they would rather have something functional. They would also like to be offered some supplemental information on how to manage your cat based on the outcome of the assignments.

Cat's perspective

Two cat behaviorists were asked their expert opinion about the concepts. They were asked about possible ethical issues that could surface in the concepts and if they think it would work with cats.

The most important remark of the cat behaviorists is that the fun facts of the cats (concept 2) must be correct; otherwise, the cat behavior problems would only increase. They thought concept 2 was the most interesting and informative concept about cat behavior. Concept 1 was the least interesting, because they didn't think it would fulfil the design goal. Concept 3 could be interesting, they said, but the literature on feline personalities is still an ongoing investigation.

1. BASIC

INTERACTION QUALITIES

CLOSE	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PLAYFUL	<input type="checkbox"/>	<input type="checkbox"/>
RESPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>
FASCINATION	<input type="checkbox"/>	<input type="checkbox"/>
DESIGN GOAL	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SHARED ACTIVITY <i>with the cat</i>	<input type="checkbox"/>	<input type="checkbox"/>
ORIGINAL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PREFERENCE	<input type="checkbox"/>	<input checked="" type="checkbox"/>

figure 14. Concept evaluation based on the Harris profile method

Conclusion

Both concept 2 and concept 3 have a lot of potential. To strengthen each other these two will be combined to one. Concept 1 becomes one of the activities in the final concept.

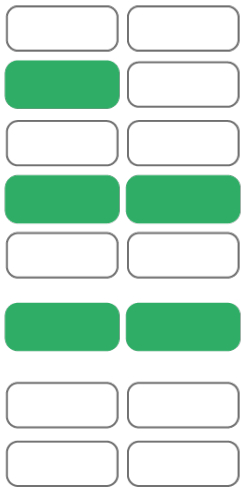
Positive aspects of concept 2 and 3 are:

- offering fun facts about the cat behavior in combination with fitting activities;
- indicating activities that use in-house materials;
- experimenting and observing cat's reactions;
- providing a sense of the cat's personality.

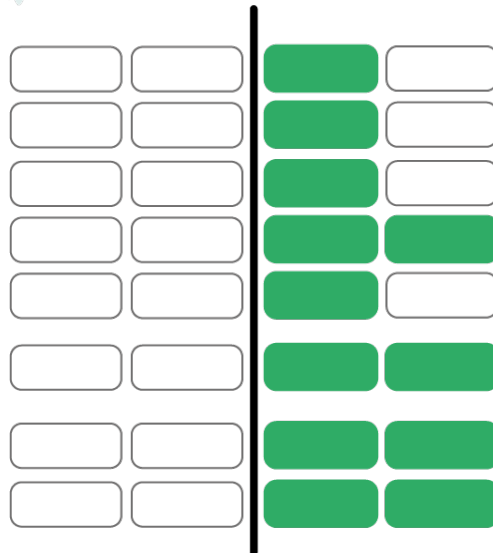
Aspects to be added are:

- extra object to facilitate owner-cat interaction;
- a functional visualization of the cat's personality;
- information on how to manage the cat based on his personality.

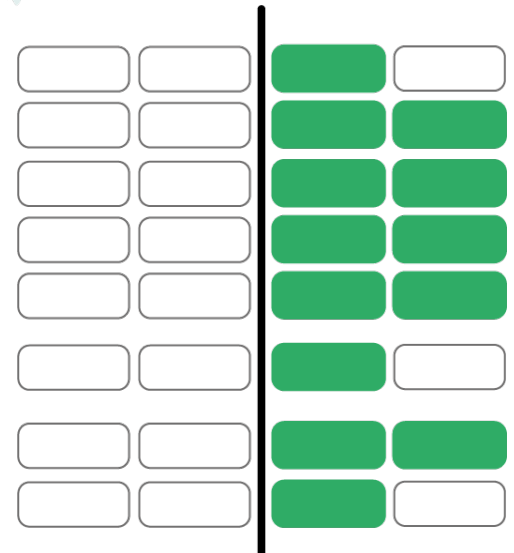
INSTINCT



2. ADVENTURE CAT



3. PAWSITIVE PURRSUIT



6.3 Final Concept

Based on the evaluation of the three concepts, a new concept emerges. This final concept incorporates different aspects from all three concepts.

The foundation of the final concept is based on the big Feline Five personality traits that are also used in concept 3. The owner still works towards creating a visual representation of her cat's personality. For this purpose, I developed the so-called telltail. The telltail is a piece of rope, on which markers denoting the different components that represent the feline traits are attached. Together, it looks like a colorful tail that visualizes the personality of the cat.

Telltale

A thing serving to reveal or disclose something; a sign.

However, instead of doing the activities of concept 3, the owner will do activities based on concept 2: fact-based activities. The cat puzzle of concept 1 is integrated as one of the activities.

The goal of the final concept is to create understanding regarding the cat's behavior and personality and to establish a deeper connection between owner and cat. The concept gives the owner different facts about cats, categorized into skill, sense and habit. They act as the foundation of different activities the owner can do with her cat. These activities help her explore the personal abilities and habits of her cat. Through reflecting on these activities and the reactions of the cat, the owner could identify the personality of her cat. Because there are 30 activities, with each having

ten possible outcomes (5 feline traits, each having a high and low score), (and the order of the activities may be random or some activities could even be left out), every telltail is a unique representation of the cat's unique personality.

Iterations

Two iterations are done with the final concept with one owner and his cat. The first iteration was to test the overall flow of the concept and see if it elicits the desired interaction qualities and possibly fulfils the design goal. The procedure and the complete evaluation of the first iteration can be found in appendix C1.

The owner felt overwhelmed by the amount of possible activities. He needed some guidance on how to choose a certain card: for example, deciding on which card to take, based on how much time the owner has for one activity. The owner also still had some ideal expectation of the outcome of the activity. It should be clear to the owner that every result is fine. Which shape (associated with a feline trait) to choose, was also not very intuitive. After the first iteration I decided to make the following adaptations:

1. *add some guidance during the 'choosing an activity' phase by adding new card traits: expected time needed (difficulty level) and indication if it is event-driven or not.*
2. *make clear that any outcome of the activity is admirable.*
3. *make the decision on which shape (trait) to choose more intuitive.*

The second iteration is focused on making the decision on which shape to choose more intuitive. Each feline trait is actually a spectrum with a high (very much of that trait) or a low end (nothing or almost nothing of that trait) on the scale. The pressed out shapes should indicate these two ends of the scales.

Different designs on feline trait pairs (for example, outgoingness high - low) are made; online participants are asked which design is most clear in indicating the difference between a high and low score of the trait. The feline trait pair with full color circle for the HIGH score and the circle with the same colored minus sign for the LOW score were experienced the most intuitively by 15 participants. The circle with a black stop sign for the LOW score was a close second. The four tested designs can be found in appendix C1.

Pictures of the prototypes can be found in appendix C2.

User scenario

The next two pages show the user scenario of the final concept, beginning at the moment the user desires to adopt the cat until the accomplished goal of experiencing mutual affection.

Some remarks are stated here to provide additional information on the user scenario and concept. The numbers correspond with the subscripted numbers in the scenario.

1. The booklet of the feline traits describes the characteristic of each trait consisting of a description and a visualization of the cat's behavior.

The booklet of the Five Feline traits and tips on managing cats have both two sides to it to show the high and low score of each trait.

2. The activity cards are categorized in three themed categories: skill, sense and habit, and divided in preparation times: short, medium and long (fig. 15).



figure 15. Categories of activity cards

In appendix C3 you can find the designs of all activity cards and in appendix C4 and C5 the complete overview of the Five Feline traits booklet and the booklet tips on managing cats.

The future owner develops a desire to adopt a cat.



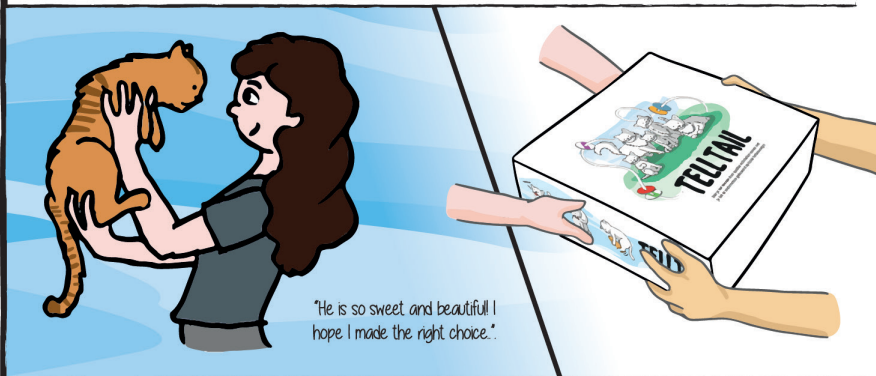
"I like to have a friend again whom I can play with and cuddle. Someone to take care of."

She starts searches for her new furry friend. She has certain expectations of what the cat and the relationship should be like.



"Look at all these cats! They are all so cute! Oh, I like the red one the most! He is so cool, yes that is him!"

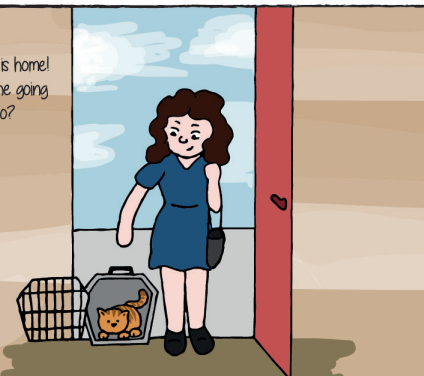
At the shelter the new owner is matched with one of the cats. She also get 'Telltail' from the shelter, to help her guide with the new relationship



"He is so sweet and beautiful! I hope I made the right choice."

She brings her new friend and the 'Telltail' home.

Finally he is home!
What is he going to do?



She looks through the box.



She reads through the description of the 5 feline personality traits.¹



The fun cat facts attract her eye. These facts are interesting and she gets to learn surprising things of cat behavior. Looking at the corresponding activities, she chooses one to do with her cat.²

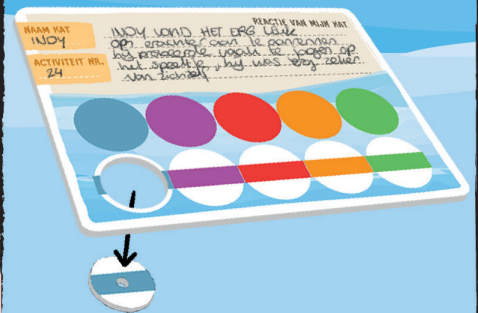
The owner spends time with her cat by doing the chosen activity.



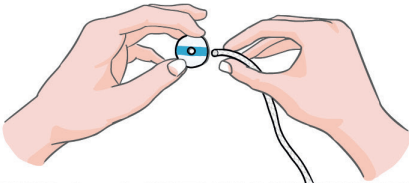
After the activity, she reflects on her cat's reaction and behavior.



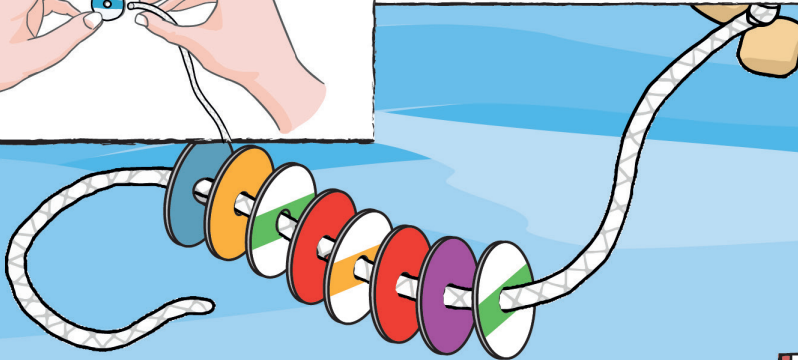
Based on her reflection, the owner chooses the feline trait that is most fitting.



She places the chosen trait on the telltail...



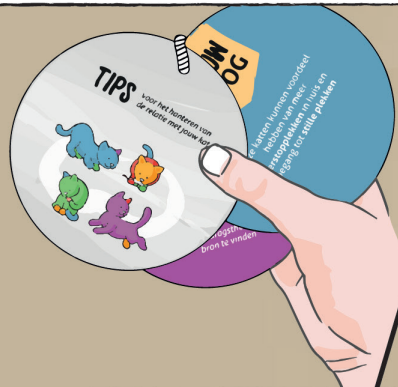
...After doing several activities, the cat's personality becomes apparent.³



The telltail itself is also a toy to play with the cat.



She reads through the description on tips on how to manage her cat based on his personality.



She applies the tips for her cat in her home, making her cat feeling stress free.



Owner and cat got to know each other and experience mutual affection.

HAPPY CAT- HAPPY OWNER!





figure 16. Final prototype final concept

inside box

The spirit and purpose of the design

The goal of the design, as well as the qualities of the desired interaction drive the spirit and purpose of the design. The design goal is to support new owners in understanding their cat's behavior and personality in order to experience mutual affection in their relationship. The four interaction qualities are close, playful, fascination and respect.

The final concept (fig. 16) exists of five different components: 1) the booklet about feline traits (fig. 18 and 18), 2) the activity cards (fig. 20), 3) the reflection cards (fig. 21), 4) the telltail (fig. 22) and 5) the booklet containing tips on managing cats (fig. 19). It is important that the concept appears as a whole for the user: each component is useful to eventually strengthen the human-animal bond. Thus, the style of the design should be consistent on the whole.

Furthermore, the concept aims to give information in a respectful yet lively way and to encourage playful, close interaction with the cat. The concept should express a gentle, trustworthy and cheerful feeling. This can be accomplished through soft, natural curves, as well as bright and soft colors. The overall concept is simple: to affirm the advisory role of the concept in understanding the cat's personality and to colorfully communicate the variation in unique cat personalities.

The tone of the activity guidance as well as the tips on managing the cat strive to be objective and non-judgmental, while still stimulating the user to take appropriate actions. Not only should the owner show respect to her cat, but the concept should also show respect to the user. I decided to add the tips on managing the cat in order to provide some applications of the knowledge that is gained through identifying the cat's personality— in this way demonstrating concrete benefits of getting to know the cat's personality. The booklet on the Five Feline traits serves to help the owner know what characteristics to look for.



fig. 17 booklet 5 feline traits:
front side



fig. 18 booklet 5 feline traits:
back side



fig. 19 booklet tips
on managing cats

front side: fun facts



back side: activities

figure 20. Activity cards

Activity cards

On front of the activity cards a part of the fact is stated, starting with the words, 'did you know that cats...' to incite curiosity in the user. On the back of the card more information about the context of the fact is given to already fulfill some of the user's urge to know more, but also drive the user to do more: experimenting with the cat in context of the fact, which helps to develop the user's fascination in her cat's life. This fascination should encourage the user to participate in activities with her cat: desiring to know how her cat deals with different situations and interactions.



figure 21. Reflection card

Reflection cards

Reflection cards are added to the concept to give the user a moment to consciously think about her cat's actions and reactions on objects and events. Writing the reflection makes the user more aware of her own thoughts. It is possible that the user skips this part and immediately chooses a trait. Still, the action of choosing demands a kind of reflection on the situation. The traits are five different colors to represent the five different traits and in two variations: full colored circle and a circle with the same colored minus sign, representing respectively the high and low score of the trait.

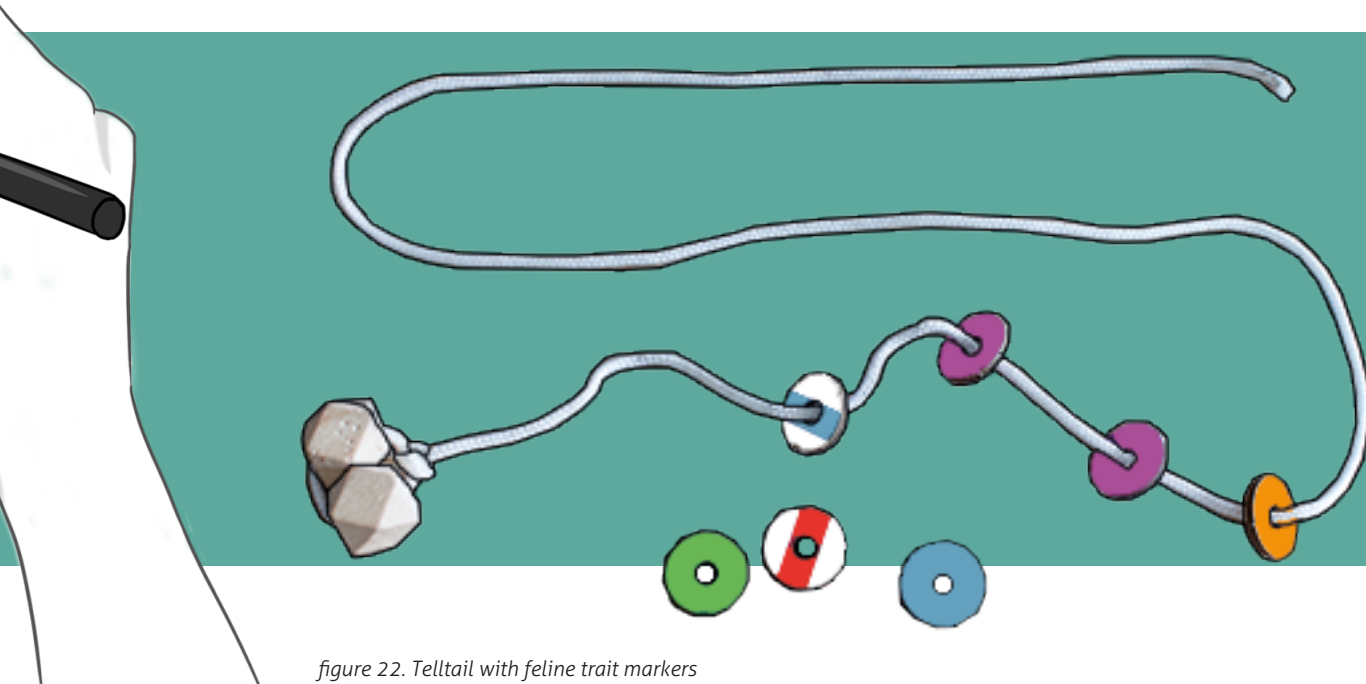


figure 22. Telltail with feline trait markers

Telltail

The telltail consists of a strong, white animal-safe rope with two beads at the end to indicate to the user where to hold the rope. By following the science of light, all colors together are white. It was decided to use a white rope to emulate light: all colorful traits together depict the goodness of nature, a cat that is worthy of love, respect and affection.

Introduction Channels

The concept may be introduced in the market through different channels. It is wise to make use of several channels to reach as many owners as possible.

Most owners probably get their cats from sources like Marktplaats or via a friend, family or neighbor. 2200 cats were offered on Marktplaats, Speurders and Marktplaza during one week in 2015 [HAS Hogeschool & Universiteit Utrecht, 2015].

This could imply that 114,400 cats are offered in a single year, but probably it would end up being a bit less, as advertisements stay on websites longer than one week. However, with current numbers there is no way to tell. The next source where people tend to go to adopt a cat is the shelter (20,000 cats in 2014 in the Netherlands [HAS Hogeschool & Universiteit Utrecht, 2015]).

Some shelters use a matching program to match the right cat with the right owner, implementing a sort of support system to guide owners during the first few months of having a cat (see more about the inner-workings of a shelter in appendix XX). However, one of the biggest and oldest shelters of the Netherlands, Stichting Haags Dierencentrum, expressed that they would like to provide more support to their adopters, but lack money (and thus people and resources) to do that.

The concept can provide this support in the first few months of having a cat. The shelter can give this concept (available with a small contribution) to the owner when the owner comes to pick up their new cat. Since cats are not given away at the shelter, but sold to new adopters in order to get a bit of income to take care of the cats at the shelter, a small increase in the price to add the concept for extra support would not be too strange. The shelter could also add their own contact information in the booklet, 'tips on managing your cat' to create a personal connection with the shelter.

A possible way to reach owners who acquired their cat from sources like Marktplaats is to collaborate with cat food companies. Cat food companies can sell the concept together with their food products through a campaign. As the box of the concept can be quite big, it will probably not be added to packages containing the small food products but will accompany the large packs, sold in big stores like Ranzijn or in online stores like Zooplus.

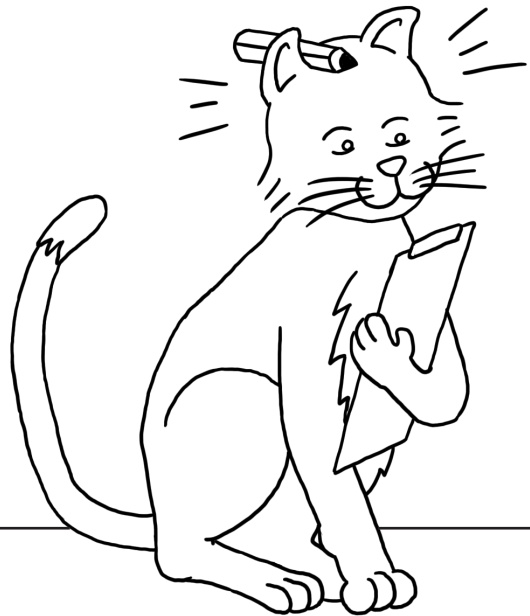
A cat behaviorist expert mentioned that big cat food companies like Royal Canin are often interested in this kind of campaign. However it is possible that owners who get their cat from Marktplaats might be less interested in spending money on expensive cat food, but are more likely to get their cat food from a private label at a supermarket or at a discount from online stores. A collaboration with a private label of cat food will seemingly reach more people, but this kind of company may have no priority, interest or money to invest in owner-cat relationships.

The concept can also be introduced in the market via a campaign in pet shops, or through a veterinarian or cat behaviorist. However, this also assumes that only owners who are already invested in their relationship with their cat visit these shops and people.

It is recommended to introduce the concept through several channels via a campaign to reach the 'new' owners as much as possible; these are:

1. *the shelter;*
2. *collaboration with a food company:*
 - *in a supermarket;*
 - *wholesaler;*
 - *or online;*
3. *the pet shop*
4. *veterinarian or cat behaviorist*

7. EVALUATION



7.1 Introduction

This chapter presents the user evaluation of the final concept. This evaluation determines if the concept achieves the design goal and evokes the desired interaction qualities during the use and experience of the product. The chapter also discusses the procedure and the results of the evaluation, concluding with recommendations for the product.

7.2 Procedure

Purpose

The aim of the user evaluation is to assess the design goal and its effectiveness, to examine the user experience in determining if the design evokes the desired interaction qualities and to gather some final recommendations. The following research questions are established:

- To what extent is there an increase in the understanding of the user about the cat's behavior and personality?
- To what extent is the attachment increased, according to the four dimensions of Melson (1989)?
- During use of the product, to what extent does the user experience mutual affection in their relationship with their cat?
- What emotions are experienced during the use of the product and why?
- To what extent is the interaction perceived as close, playful, fascinated and respectful?
- How do users value the aesthetics of the overall experience?
- With regard to the use and experience of the product, what are some points for improvement?

The experience of mutual affection is a long-term goal of the product and as such may not be experienced after just one or even a couple of uses. To decide if the product fulfills this goal, I attempt to answer this question by letting the user imagine long-term use of the product and by verifying its effectiveness.

Effectiveness

I test the effectiveness of the product by evaluating the product against the four dimensions of attachment:

1. knowledge about the cat and its care;
2. the behavioral responsiveness of the owner to the cat and its needs;
3. interest in and affection toward the cat;
4. time spent with the cat and activities directed toward the cat.

If one or more of these dimensions increase sufficiently during the user's experience of the product (and the other dimensions do not decrease), then it might be said theoretically that the bond between owner and cat has increased.

Method

The evaluation was conducted at the participant's own home, which is the context of use of the product. Time management constraints dictated that the product would be used by the participant during one evening, followed immediately by the evaluation. Use was made of a high fidelity prototype representing the aesthetic and material qualities of the product (see 6.3 Final Concept). After the goal of the product was introduced, the user was allowed to use the product for approx. 30 minutes. After using the product, the user completed an evaluation form (see appendix D1). The evaluation concludes with a short interview (see appendix D2).

Participants

Five new cat owners and five cats participated in the user evaluation. The owners vary in level of experience in feline behavior and duration of being a cat owner. The level of experience noted is based on the owner's own perception. One participant was also a participant in the second field research during the Research phase. All participants mentioned they saw their cat(s) as their child(ren) and/or used 'baby talk' while interacting with their cat, following the need-dependency perspective.

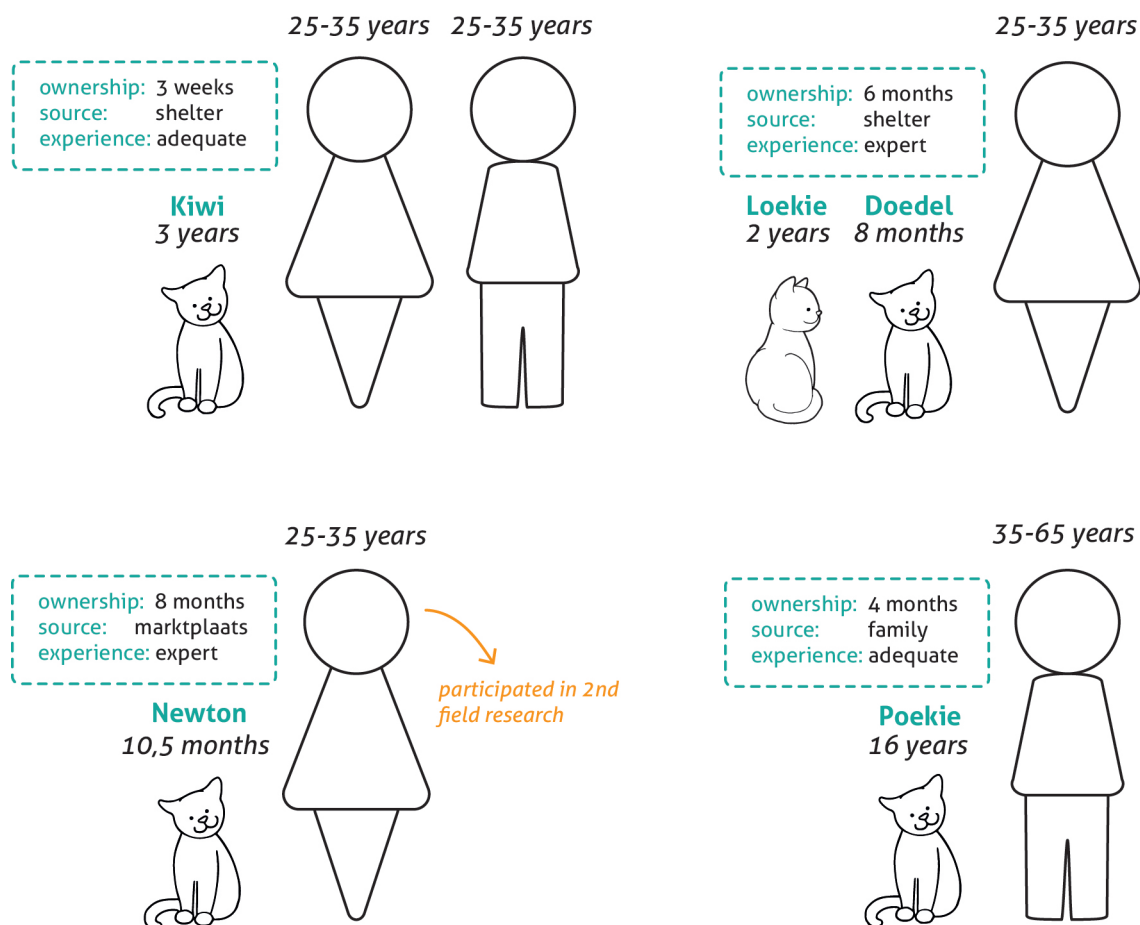


figure 23. Participants user evaluation

7.3 Review

Effectiveness

All the four dimensions of attachment increased to some extent. The knowledge and behavioral responsiveness of the owner increased according to all participants. According to one participant, the behavioral responsiveness could increase even more with more specific tips. All participants also reflected that they will do more activities with their cat and some indicated that they would also spend more time with their cat, because of the many new suggestions of fun activities. Two participants noted that they would not spend more time with their cat, but would do more activities: the way of spending time would be more enjoyable. They reflected that the interest towards their cats would also increase due to the new collected insights; this interest could, however, diminish after a while when there are no more new experiences. Most participants also thought their affection towards their cat would increase in the long term because both the owner and cat would get to know each other better— get used to each other, because they do more activities together. In general, all participants thought that the bond between owner and cat would increase: participants and cats would get to know each other, the owners would gain knowledge of feline behavior and emotions, the owner's behavioral responsiveness would increase and they both would enjoy the process of spending time and doing activities together.

Design goal

As stated in the effectiveness section, all participants thought that the product increased their knowledge of feline behavior and personality. One participant indicated that it did not increase a lot— but this

participant already saw herself as an expert in feline behavior and had experience with several cats. Thus she already had quite some knowledge on the subject. This suggests that inexperienced owners would likely benefit more from the product. All participants also thought that the mutual affection became more apparent with this product. Some said it also increased. However, sometimes the affection could diminish (from both the owner and cat), because some activities were annoying for the cat.

"Often you want more in the relationship, but you don't know how. This (product) gives a foundation to start with, see what is applicable on your cat."

- owner of Newton

"This product confirms and strengthens the bond. This because you get a better understanding in the emotions of the cat and the same time you interact with your cat."

- male owner of Kiwi

"You get to know your cat better and you know better how to react on her behavior. It makes you more conscious, this makes you a better owner. And this in turn strengthens the bond."

- female owner of Kiwi

"There is mutual affection because you give your cat attention and do things together. However, with the first activity, with the sound, I was mean to her, so that kind of things do not strengthen the bond."

- owner of Newton

"It is more the awareness of the mutual affection, than that the affection itself increases."

- male owner of Kiwi



doing an activity with Newton



Experience

General

The participants expressed that the product allowed them to learn playfully about their cat's behavior and personality. The product has pleasing aesthetics and the activities are entertaining—both of which made it more enjoyable to interact with their cat. The facts stated on the activity cards were evaluated as amusing, clear and interesting, making you think more about your cat and the relationship. Two participants were put off by the amount of reading, however, which made reflecting for one participant a bit confusing. Also, spending time with the cat while doing one of the activities provides a mere snapshot of the cat's personality. It does not always line up with the knowledge you already have of your cat.

The participant owner of Newton (expert owner) noted that after a while you don't need the product itself anymore, because you know all the knowledge and activities by heart now, and how to possibly make life more comfortable for your cat. This suggests that the product may have a catalyst effect for more experienced owners.

"It is nice to be busy with your cat through this box, my old, fat cat gets more energy"

- owner of Poekie

"It makes me think more about my cat and through this product it is enjoyable to spend time and do activities with my cat."

- female owner of Kiwi

"I like to learn playfully about my cat through scientifically substantiated facts."

- male owner of Kiwi

"After a while you don't need the box anymore, you know it by heart."

- owner of Newton

First impression

The first general impression of participants was focused on the cheerful design of the product. Their eye often fell on the activity cards, which they found entertaining and amusing. The participants indicated that they felt that the product was thoughtfully designed and gives a lot of information. They were often eager to start using the product with their cat and to find out how it works.

Most participants were happy that the instructions were just one page; some still thought it was too much text, however, and did not read it. From this comment I assume this non-reading response made using the product in some phases a bit confusing, as these individuals quite often asked questions about issues that were already addressed in the instructions.

"Oh! This looks super fun, really professional. All these colors and compartments make me want to start using this product with my cat -- like opening a gift!"

- female owner of Kiwi

"The product looks well thought out. I have no idea yet how it works, but I am curious."

- owner of Newton

Aesthetics

All participants thought the aesthetics of the product was very pleasing. They thought it was friendly, playful, fun, colorful, joyful, inviting, but also calm and clear. This made the product very interesting and fun to use for the participants, with information that was clear and easy to take on board.

"The game feels friendly because of the cute drawings and colors."

- male owner of Kiwi

"It feels cheerful and playful, but still calm and clear."

- owner of Newton

"The aesthetics are really inviting and playful."

- female owner of Kiwi

"It is really colorful, it would be also suitable for children to use."

- owner of Poekie

"It is calm and pleasing. Immediately clear which parts there are."

- owner of Loekie and Doedel

Emotions

During the use of the product, participants recognized several experiences, most of which differed a great deal in nuance. Some of these experiences were intended and were close to the desired interaction qualities. For example, the cluster of 'intimate' is similar to the quality 'close'; the cluster of 'loving' is similar to 'experiencing affection'. One other experience — specifically, 'warm' — was not intended, but still desirable (see fig. 24).

The emotions most often experienced during the use of the product were 'amusement' and 'surprise' (see fig. 25). Both the product itself and the activities conducted together with the cat were

experienced as amusing: reading the fun facts on the activity cards and watching their cat's reactions. Both these things also evoked surprise: finding out new information or a reaction of their cat that they did not expect. Participants also experienced 'love' and 'pride' while spending time with their cat and when their cat achieved a hoped-for result in a given activity.

"You give me tips, I haven't seen before."

- owner of Poekie

"I am fascinated how the product works and to start with it."

- owner of Loekie and Doedel

"I feel like I am starting a game, I am interested to start with it!"

- male owner of Kiwi

"I like it, it is fun! I want to try more, it is cool to see what happens!"

- female owner of Kiwi

"It was really amusing to see the different reactions of my cat."

- owner of Newton

"It was surprising that the cat played along and reacted like the card predicted."

- male owner of Kiwi

"The behavior of my cat while playing was amusing."

- owner of Loekie

"I felt love while playing with my cat and wanting to strengthen the bond."

- owner of Newton

"Being together and cuddling with my cat, makes me feel more affection towards her."

- female owner of Kiwi

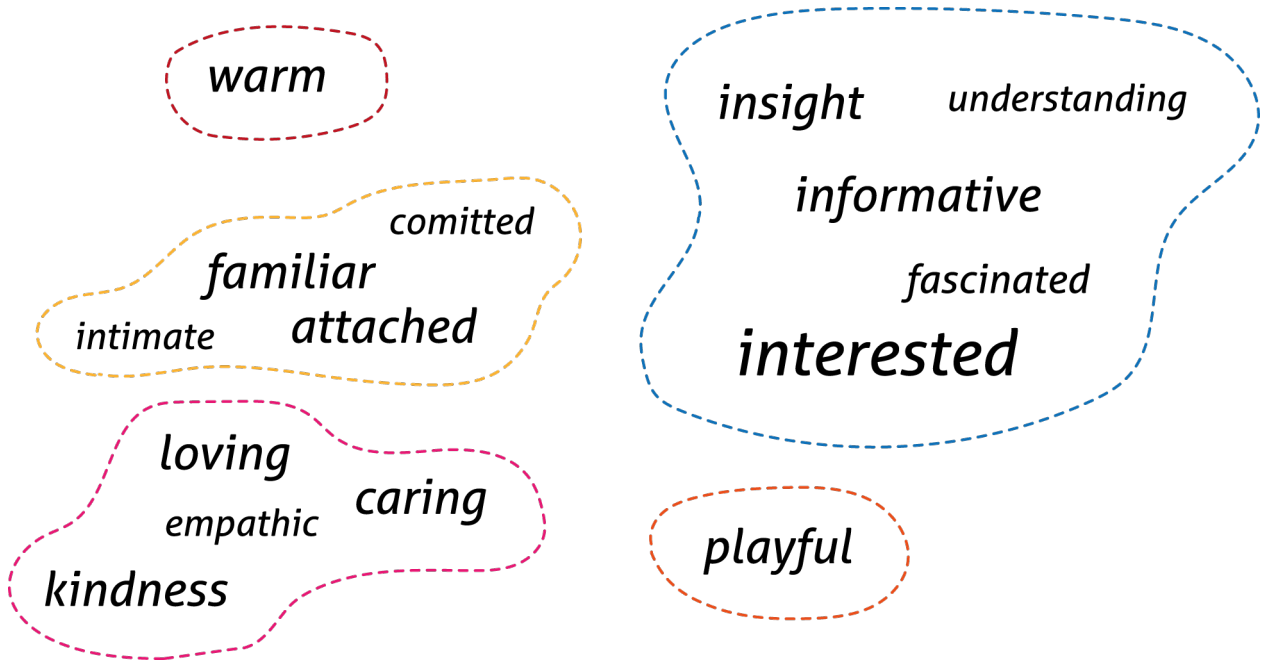


figure 24. Experiences during the use of the product

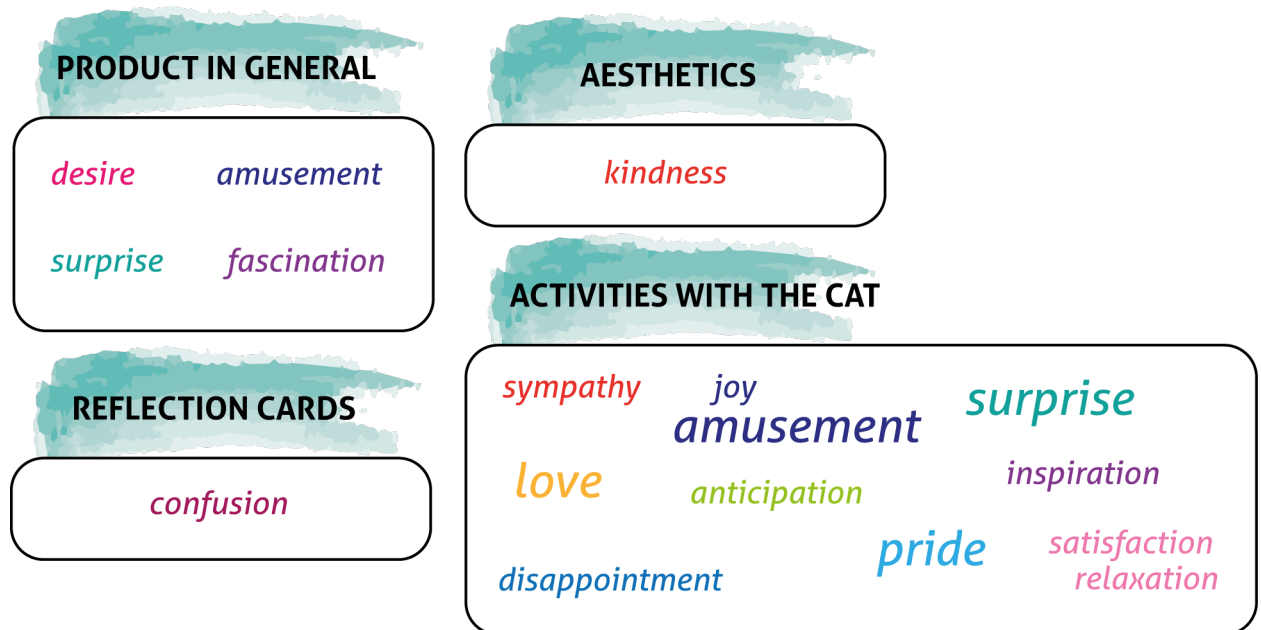


figure 25. Experienced emotions during the use of the product

Two participants experienced an emotion that was not wanted. One participant experienced disappointment. This happened when the cat did something else than she expected, especially because she thought she knew her cat differently. The other participant experienced confusion, because she did not know which color marker belonged to which feline trait. However, she also said this was because she had not had the patience to read the feline traits booklet. These two emotions were the only negative emotions that participants indicated that they experienced during the use of the product.

Most emotions were experienced while interacting with their cat. So what is the value of the product? The product facilitates these activities and makes spending time with the cat more interesting and fun, so that owners are more inclined to interact with their cat and gain more knowledge about him.

"It was a pity when the cat wasn't doing what I expected, what I know of her. It feels like something isn't right."

- female owner of Kiwi

"I was confused when I had to find out which color belonged to which trait. I need more patience while reading."

*- owner of Loekie
and Doedel*

Interaction Qualities

Fig. 26 represents how much the interaction qualities are experienced in each phase of product use. The feeling of 'close' was most experienced when the owner was spending time with her cat, as well as when reflecting on her cat's reactions and reading tips on how to make life more comfortable for her cat. 'Playful' was also most experienced during the interaction time with the cat, but also during choosing an activity. This was probably due to the aesthetics of the activity cards, which the participants also described as amusing and entertaining. The emotion 'fascination' was strongly represented throughout the whole experience and use of the product. Surprisingly, participants did not indicate that they experienced this emotion very much when choosing an activity. I had thought that reading the fun facts on the activity cards would incite some fascination in cat's behavior. The emotion 'respect' was mostly a continuous experience. Participants experienced it the most when interacting with their cat and reading the tips on managing the cats. This happened probably because during these phases the owner got to see her cat's specific abilities and learned her cat's needs.

In the whole experience of using the product all desired interaction qualities are experienced clearly.

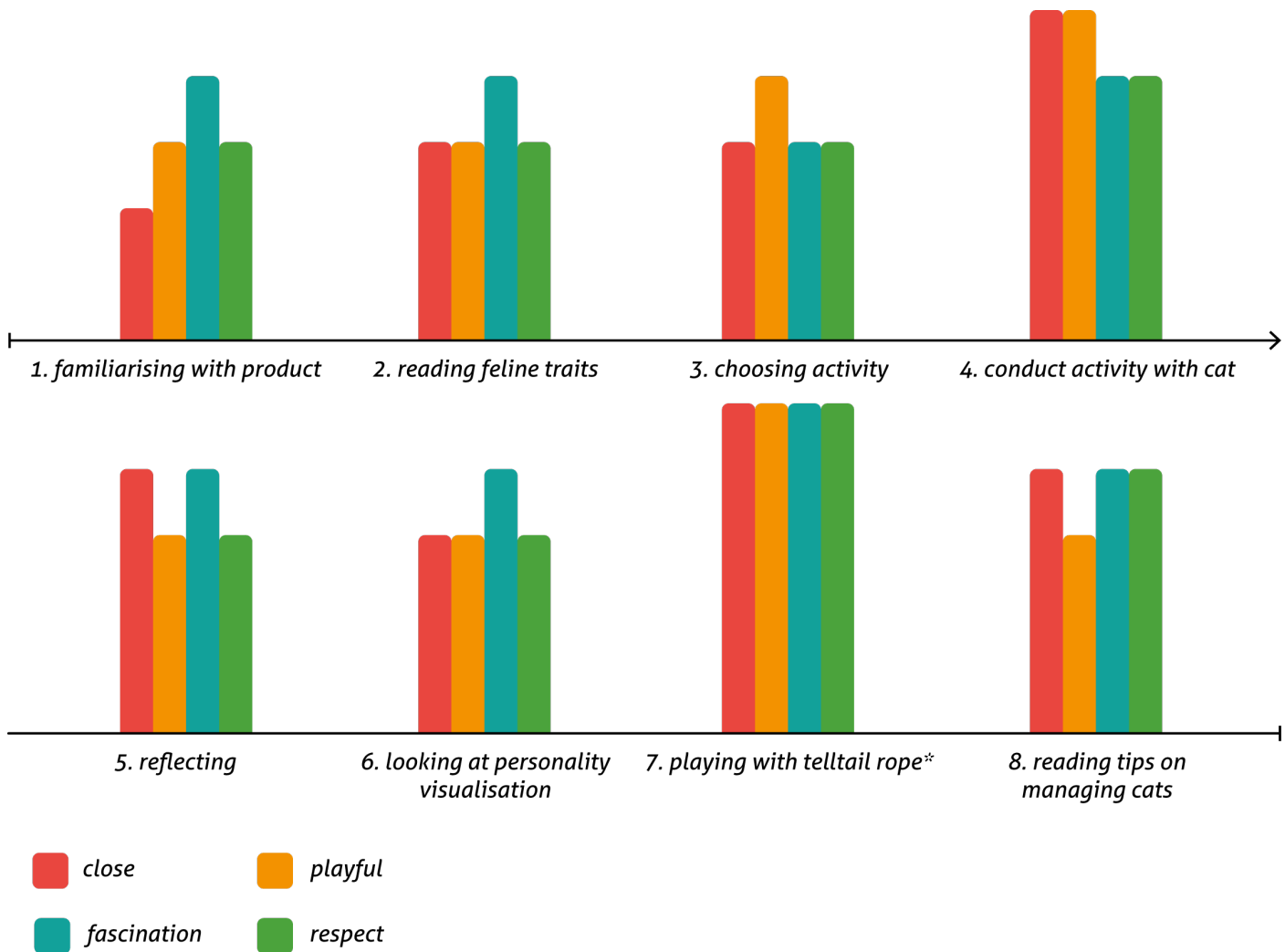


figure 26. Experienced interaction qualities

* The phase of 'playing with the telltail rope' was only done properly by two participants. Three participants neglected to use it as a play toy. This may have to do with the rope's appearance: at first sight it does not really look like something you can use to play with your cat. The three participants mentioned above used the rope only as a means to

visualise their cat's personality. It was also not clearly stated in the instructions that it had the possibility to act as a toy as well. The two participants who did use the telltail rope to play with their cat really like it, though, and expressed that they experienced strongly all of the interaction qualities. strongly all of the interaction qualities.

Use

All participants, except the expert owner of Newton, would want to use and buy the product. One participant was so enthusiastic that he wanted to keep the prototype. Two participants mentioned that it would be especially helpful with 'problematic' cats: for example, cats that came from a rough past, had behavior problems or even obese cats, because with the activities the cat would move more.

The participants also suggested that it would be nice to use this product with multiple owners, doing the activities together.

The icons on the activity cards representing the thematic and preparation time categories were not really clear in meaning (which was only stated by text in the instructions); it would have been better if the icon was right next to the explanation. Participants also thought the reflection cards were too nice to write on, they would rather have had thinner paper. They also thought it was wasteful to not use all the trait markers, it might have been better to give the markers separately and to fill in the chosen trait on the reflection card.

"I desire tips on his personality and new situation. He used to be an outside cat, now he is always inside because of my living situation. I also want him to move more, because he is fat."

- owner of Poekie

"It is not only fun for me and my cat, but is also entertaining to do it together with my boyfriend."

- female owner of Kiwi

"You can see the development of your cat through time on the telltail rope, maybe you should also fill in a date on the reflection card."

- male owner of Kiwi

"It feels wasteful to write in on the reflection card. It is real thick, I would not throw it away."

- male owner of Kiwi

"It is especially useful for cats with a past. This way these cats could also learn new things slowly."

- owner of Loekie and Doedel

7.4 Conclusion

Although the participants only had to do at least one activity during the evaluation, they wanted to keep doing more. They seemed to be very interested in the activities and eager to do them together with their cat. The participants were anxious to see their cat's behavior and their evolving personality. Sometimes they were surprised by their cat's behavior and wanted to know why their cat did certain things. They felt the experience of fascination almost throughout the whole experience and use of the product. The participants liked that could learn more about their cat in a playful way. This was managed through the playful and clear aesthetics and the supply of creative ideas for spending time with their cat. In this way they also felt more close to their cat. The feelings of interest and playfulness were the most apparent. The participants did experience more respect and closeness with their cat while reading the specific tips on how to make their cat's life more comfortable. I think these feelings would become more distinct when participants actually apply the tips.

Thus, all interaction qualities were experienced throughout different stages of using the product. The experience of respect could be a bit stronger though, in my opinion. Now, it is more in the background.

All participants experienced some level of better understanding of their cat's behavior and personality, as well as an increase in the four dimensions of attachment. All dimensions of attachment were experienced clearly during the use of the product. Through using this product, all participants felt an increase in the human-animal bond, as well a more conscious experience of mutual affection. This was evident already during the use of the product in one evening; it's likely that this bond of affection would increase even more during long-term use. It is certainly possible that after a while owners wouldn't need the product itself any longer for their interactions with the cat: the product has then done its work as a catalyst; the owners have consumed the knowledge and the design goal of understanding is achieved.

7.5 Recommendations

This section makes several recommendations for the product based on the results of the user evaluation and some suggestions the participants themselves gave.

The first three recommendations are more general suggestions regarding the product's development:

1. Co-design: I suggest that the product will eventually be co-designed with a cat behaviorist and/or veterinarian to ensure that all activities are beneficial to the cat and don't cause unnecessary (extra) behavior problems. There could also be another version of the product that is actually focused on cats with behavior problems and helps owner and cat to get used to each other more easily.

2. Product portfolio: the product lends itself for the creation of an entire product portfolio. The booklet of tips on managing cats provides several tips to make the life of a cat more comfortable. Several other products can be designed to fulfill these needs of the cat (or owner) and the booklet could refer to these products.

3. Long-term use: the design goal for this product is actually partly a short term and partly a long term goal, with the understanding being short-term and experiencing mutual affection being long-term respectively. The product has been only tested on the short-term. Understanding of the cat's behavior and personality was more or less accomplished. As the full visualisation of the cat's personality is only visible after long-term use, this was not yet completely achieved. However, participants were confident they would develop these understanding,

as well an awareness and/or experience of mutual affection. To see if it actually happens though, the product should be tested on the long-term. It is possible that the product becomes boring with long-term use before the visualisation of the cat's personality is complete or the owner had a chance to experience mutual affection. So to what extent is mutual affection experienced during long-term use of the product? And do owners keep desiring to create understanding of their cat's behavior and personality?

The main interaction of the product is the owner conducting one of the activities with her cat. This is possibly the strongest part of the product, where all attachment dimensions come together. It is possibly also a weaker link. One participant mentioned the temporal value of these activity cards and thusly also the rest of the product, as the other interactions are dependent on this one. After a while all activities are known and the cards are no longer necessary. Another participant stated that in the beginning she would want to try all the cards and so would spend more time with her cat. However, when every activity is done, she thinks she will revert to her old amount of spending time.

To increase the product's value, to make it less temporary, several adjustments can be made:

4. Extra cards: expansion packs could be created with more activity cards and new knowledge, these expansion packs could also be focused on certain cat breeds or be aimed at indoor or outdoor cats (as they have different needs). Extra reflection cards and trait markers can also be bought this way.

5. Cat toy: the telltail's second function of being a cat toy was not clear. Making the telltail more obviously a cat toy (by adding feathers to it, for example) could increase the value of the product as a whole— especially if it is designed and marketed to be a cat toy that could be used to train your cat's abilities.

6. Multiple cats: there could be a second version of the product, or an expansion pack as well, that makes the product suitable for households who have more than one cat.

There are also some usability improvements to be made in the activity and reflection cards:

7. Categories: the thematic and preparation time categories were not clear in meaning. During the observation of the participants I saw little value in the thematic categories (skill, sense and habits), so I think it is safe to remove those categories and possibly to use them only to note future expansion packs. The category of preparation time did provide significant value for choosing a certain activity. To clarify the meaning for participants, we could add the word 'preparation' in front of it or find a clearer icon.

8. Snapshots: all of the reactions of the cat during activities can be thought of as snapshots of his personality, and thus can be influenced by the emotions or moods of the cat (or even owner). By adding a date to the reflection cards and using the order of the traits on the telltail, owners can gain a visual representation of the development and personality of the cat. It should be clear to the user that the reactions are best seen as snapshots, and that the telltail could display her cat's emotional development.

9. Trait markers: owners needed to press out the trait marker from the reflection card; this task did not seem to add value to the interaction of reflection. Most participants mentioned it was wasteful to not use all the trait markers. The trait markers can thus be given separately, and the chosen trait can be filled in on the reflection card. This means that it is not necessary for the reflection card to be made of such thick material. The label on the reflection card that states the chosen trait could be clearer, posed as a question like 'Which feline trait fits the reaction of your cat the best?'. The text in the feline traits booklet could also state that the trait markers match the color of the described feline traits; this clarifies the meaning of the trait markers for owners.

Summary

To sum up, the main suggestions for the product are as follows:

1. co-design product with cat experts;
2. create product portfolio to complement the tips on managing cats;
3. test the long-term effectiveness and value;
4. create expansion packs consisting of specific activity card (and possibly extra reflection cards and trait markers);
5. design the telltail rope more as a cat toy, so that it is used not only as a visualisation of the cat's personality;
6. make the product suitable for households with multiple cats;
7. clarify the meaning of the activity card categories;
8. state clearly that the reaction of the cat may be thought of as a snapshot of his personality (suggest that owners add date to reflection card);
9. clarify the meaning of the trait markers and provide markers separately from the reflection cards (add chosen trait to reflection card).

This adjustments should be made first to the product, before testing and developing the product further.

AFTERWORD

The goal of this project was to create a product for new cat owners to affect their attitude towards companion-animal commitment, contributing to the prevention of owner-surrender of cats. I tried to accomplish that by designing a product that creates an understanding in owners of feline behavior and personality. With the vision that cats have their own personal needs, emotions and moods, but express those differently than human beings, this understanding should lead to common ground and establish a connection between human and animal. The owner should then also become aware of her cat's affection. Through the experience of mutual affection, the owner will be more committed to the relationship, the bond between owner and cat will increase and she will be less inclined to terminate the relationship.

This project was focused on human-animal companionship. Both owner and cat are interactive parties in this relationship, reacting on each other. I found that play is a meaningful way to explore feline behavior and to facilitate bonding with each other at the same time. I am so pleased that adding a design that provides guidance in a playful way is a valuable addition to the development of meaningful human-cat relationships. Products like this may also be very valuable for shelters or cat behaviorists to provide extra support at the owner's home.

I think that designers can take the position to design meaningful products that can increase understanding between humans and animals, establish connection and strengthen relationships.

Throughout the project I used the Design for Emotion and Research-through-design approaches. The human-animal relationship commences at the moment the owner develops the desire to adopt a cat and has certain expectations of the relationship. Decisions facing the owner — on what kind of cat, how to develop the relationship and to possibly terminate the relationship early — are all based on the emotional experience of the owner. Design for Emotion provided a means to create an understanding of this experience and of the owner's concerns.

There are, however, two interactive parties in the relationship. In this project the focus was more on the emotional experience of the owner. However, the emotional experience of the cat could influence the interactions as well. For example, it is possible that the cat is in a tense mood and does not feel like interacting with his owner at all, but rather crawls away in a dark space. I suggest that for further research in designing products for feline behavior, tools should be developed to assess feline emotions and moods, probably together with cat behaviorists.

The approach of Research-through-design could also be of added value here. As cats are incapable of human speech, using design interventions to elicit certain feline behavior could assist in assessing feline emotions and moods. I already thought this approach was very helpful in stimulating certain feline behavior during my Research and Ideation phase and in observing the owner's behavior and evoking certain human experiences as well. Certain tools to guide these interventions could be helpful to know where to start or to go.

REFERENCES

- Alberthsen, C., Rand, J., Morton, J., Bennett, P., Paterson, M., & Vankan, D. (2016). Numbers and characteristics of cats admitted to Royal Society for the Prevention of Cruelty to Animals (RSPCA) shelters in Australia and reasons for surrender. *Animals*, 6(3), 23.
- Archer, J. (1997). Why do people love their pets?. *Evolution and Human behavior*, 18(4), 237-259.
- AVMA, 2018. Retrieved from <https://www.avma.org/KB/Resources/Reference/human-animal-bond/Pages/Human-Animal-Bond-AVMA.aspx>
- Bayne, K. (2002). Development of the human-research animal bond and its impact on animal well-being. *ILAR journal*, 43(1), 4-9.
- Beck, A. M., & Katcher, A. H. (1996). *Between pets and people: The importance of animal companionship*. Purdue University Press.
- Beck, L., & Madresh, E. A. (2008). Romantic partners and four-legged friends: An extension of attachment theory to relationships with pets. *Anthrozoös*, 21(1), 43-56.
- Bernstein, P. L. (2007). The human-cat relationship. In *The welfare of cats* (pp. 47-89). Springer, Dordrecht.
- Bowlby, J. (2008). *Attachment*. Basic books.
- Cavanaugh, L. A., Leonard, H. A., & Scammon, D. L. (2008). A tail of two personalities: How canine companions shape relationships and well-being. *Journal of Business Research*, 61(5), 469-479.
- Coe, J. B., Young, I., Lambert, K., Dysart, L., Nogueira Borden, L., & Rajić, A. (2014). A scoping review of published research on the relinquishment of companion animals. *Journal of applied animal welfare science*, 17(3), 253-273.
- Desmet, P. M. A., 2010. Three levels of product emotion. In *Proceedings of the international conference on Kansei engineering and emotion research* (pp. 236-246).
- Desmet, P. M. A., 2002. *Designing Emotions* (doctoral thesis). Delft, NL: Delft University of Technology
- Dotson, M. J., & Hyatt, E. M. (2008). Understanding dog-human companionship. *Journal of Business Research*, 61(5), 457-466.
- HAS Hogeschool & Universiteit Utrecht, 2015. *Feiten & Cijfers Gezelschapsdierensector 2015*. 's Gravenhage: Ministerie van Economische Zaken, Rijksoverheid.
- Hirschman, E. C. (1994). Consumers and their animal companions. *Journal of Consumer Research*, 20(4), 616-632.

Melson, G. F. (1990). Studying children's attachment to their pets: A conceptual and methodological review. *Anthrozoös*, 4(2), 91-99.

"MOTHERESE." *Encyclopedia.com*, Concise Oxford Companion to the English Language, Retrieved March 01, 2018 from Encyclopedia.com: www.encyclopedia.com/humanities/encyclopedias-almanacs-transcripts-and-maps/mothere-se.

Podberscek, A. L., & Gosling, S. D. (2000). Personality research on pets and their owners: Conceptual issues and review. *Companion animals and us: Exploring the relationships between people and pets*, 143-167.

Rodan, I. (n.d.). Cats as Pets and Keeping Them From Returning to Shelters. DVM. Retrieved from http://www.dvm-360storage.com/cvc/proceedings/sd/Feline%20Medicine/Rodan/Rodan,%20Illona_Cats_as_pets.pdf

Roetman, P., Tindle, H., Litchfield, C., Chiera, B., Quinton, G., Kikillus, H., Bruce, D. & Kays, R. (2017) Cat Tracker South Australia: understanding pet cats through citizen science. *Discovery Circle initiative*, University of South Australia, Adelaide.

Sable, P. (1995). Pets, attachment, and well-being across the life cycle. *Social work*, 40(3), 334-341.

Salman, M. D., New, Jr, J. G., Scarlett, J. M., Kass, P. H., Ruch-Gallie, R., & Hetts, S. (1998). Human and animal factors related to relinquishment of dogs and cats in 12 selected animal shelters in the United States. *Journal of Applied Animal Welfare Science*, 1(3), 207-226.

Serpell, J. A. (2002). Anthropomorphism and Anthropomorphic Selection—Beyond the "Cute Response". *Society & Animals*, 10(4), 437-454.

Turner, D. C. (2017). A review of over three decades of research on cat-human and human-cat interactions and relationships. *Behavioural processes*, 141, 297-304.

"Verbod Op Loslopende Katten? 'Laat Ze Wandelen Met Een Tuigje.'" *RTL Nieuws*, EditieNL, 8 Jan. 2018, www.rtlnieuws.nl/editienl/verbod-op-loslopende-katten-laat-ze-wandelen-met-een-tuigje.

Walsh, F. (2009). Human animal bonds I: The relational significance of companion animals. *Family process*, 48(4), 462-480.

Zaloslofsky, J. (n.d.). "The Art of Being Easily Fascinated". *Becoming Minimalist*. Retrieved from <https://www.becomingminimalist.com/fascinating/>





TELLTAIL

*a master thesis about designing a product for
understanding feline behavior and personality
to increase the human-animal bond
in order to prevent owner-surrender*