

Navigating empathy

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Navigating Empathy

Empathic Formation in co-design

Doctoral Dissertation by Wina Smeenk

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Navigating Empathy

Empathic Formation in co-design

PROEFSCHRIFT

ter verkrijging van de graad van doctor aan de Technische Universiteit Eindhoven,
op gezag van de rector magnificus prof.dr.ir. F.P.T. Baaijens,
voor een commissie aangewezen door het Colleges voor Promoties,
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door

Wina Smeenk

geboren te Utrecht

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Voor Coby en Marieke

Summary

At the moment, our society is experiencing more and more grand challenges such as climate change, the aging population, migration, and loneliness. In the light of this increasing design complexity, many have argued for co-design as a way to catalyse multidisciplinary collaborations and for more empathy in the design process. However, empathy is a complex notion. Empathic Formation is an interactive and dynamic process including affective and cognitive aspects as well as deliberate self and other perspective taking. The design community lacks a framework of empathic formation in co-design processes and a vocabulary that helps them understand what kind of key aspects influence empathic formation in co-design and how that informs designers' role and design choices. Moreover, designers lack methodological guidance to use personal experience intentionally and credibly in building empathic capacity within co-design practice. Subsequently, there is a demand for more knowledge about 1) empathy in co-design as a strategy in grand challenges, 2) designers' objective, subjective and reflective roles within co-design projects, and 3) how designers can build empathic capacity in co-design practices.

This thesis describes research to gain insight into the complex construct of empathy and empathic formation in co-design. The case studies in this thesis focus on the delicate and complex situations of mourning and dementia. These research settings deal with the unexpected and generate emotions which makes empathic facilitation and understanding demanding and interesting to learn from. The main research question has been addressed in three empirical case studies (chapter 2, 3 and 4) and one study coupling the findings of our own work with academic work of others (chapter 5). Due to our research requirements and the limited resources in design practice, only one empirical study has been conducted in practice (chapter 3). The two other studies took place in a design education context, which enabled us to control the research conditions and to conduct systematic investigations.

In this thesis we take a step towards formalizing empathic formation in co-design as a legitimate methodology of inquiry and document intermediate knowledge that is generated from this type of ‘subjective’ design. The results consist of 1) an Empathic Formation (EF) compass, in which the key components of empathy, design and their interrelations are specified, 2) a Mixed Perspectives (MP) methodology in which personal experiences, feelings and intuition are credibly embedded, and 3) an Empathic Handover (EH) approach enabling designers to develop empathy with users they did not meet in person. Using this knowledge, designers are better equipped to navigate empathy in co-design settings, and can be more confident that the design effect is based on empathy and not on an incident.

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Definitions

The terminology used to describe empathy and co-design comes from many sources and is often inconsistent. Therefore, the key concepts we refer to in this thesis are defined as:

Design transforms current situations into preferred ones (Simon, 1996)

Co-design indicates collective creativity as it is applied across the whole span of a design process (Sanders & Stappers, 2008)

Empathy is people's intuitive ability to identify with others' lived experiences such as thoughts, feelings, motivations, emotional and mental models, values, priorities, preferences, and inner conflicts (Fulton Suri, 2003)

Empathic Design focusses on everyday life experiences and on individual desires, moods and emotions in human activities, turning such experiences and emotions into inspiration and designs (Mattelmäki, Vaajakalio & Koskinen, 2014)

Empathic Formation is defined as the formative process of becoming an empathic design professional who knows which attitude, skills and knowledge are applicable in a co-design process (Hess & Fila, 2016b)

A perspective is a particular focalization from where a designer experiences a design situation or context, information is interpreted, design decisions are made and translated into design outcomes (Smeenk, Tomico & van Turnhout, 2016)

A perspective cluster is a sequential series of two or more perspectives (Smeenk, Tomico & van Turnhout, 2016)

INTRO



CHAPTER 1

AN INTRODUCTION TO
EMPATHY IN CO-DESIGN

Chapter 1: An introduction to empathy in co-design

This chapter introduces the complex notion, benefits, and challenges of empathy in co-design and its relevance for social design challenges. It then provides a description of the research scope, aims, questions, and methodological approach. The chapter ends with an outline of the thesis structure.

1.1 The grounds for empathy in co-design

At the moment, society is experiencing increasing numbers of ‘grand challenges’, for example climate change, the aging population, migration, and loneliness, to name a few. These challenges are of such an ill-structured origin and evolve in such a dynamic context that they cannot be solved in isolation or solely by one organization or department, let alone by one team or person (Battarbee, Fulton Suri, Gibbs Howard, 2014). Accordingly, these challenges require social behavioral change, in-depth understanding and multi-stakeholder collaborations. In the light of this increasing complexity, many have argued for collaborative design (co-design) practices as a way to catalyze these multidisciplinary collaborations, and for introducing empathy to understand and act in these design contexts (Gardien, Djajadiningrat, Hummels and Brombacher, 2014).

However, above social design challenges also require different design processes and designer competences, and designers -ranging from design researchers, human centered designers, participatory designers, co-designers, empathic designers, service designers to change makers- working in these practices are exploring and searching for new ways (Chen, Cheng, Hummels, Koskinen, 2016; Myerson, 2016).

1.1.1 Economic paradigms

In a paper discussing the implications of this paradigmatic change in the design practice, Gardien et al. (2014) discuss -based on Brand and Rocchi (2011)- four economic paradigms: the industrial, experience, knowledge and transformation economies. They state that the industrial and experience economies are well-established, whereas the knowledge and the transformation economy are currently unfolding. Moreover, they argue that each of these paradigms take a different focus and deliver different value, and therefore call for different design processes and design means as well as for designers with different competences. We will discuss each of these paradigms briefly to provide for background information about the current paradigm shift in design and the kind of designer this thesis is addressing.

Brand and Rocchi (2011) refer to the industrial economy as the mass production of products by companies in the west that focus on the creation of functional commodities in an efficient way. The industrial design process is based on systematic and rigorous problem solving by using product-centered design techniques such as product sketching, technical drawings, model making and ergonomics (Gardien et al., 2014). The design outcome and process are rational and objective.

The industrial economy is followed by the experience economy with a focus on brands offering lifestyle products to consumers by the creation of branded products and experiences (Brand & Rocchi, 2011). Experience design processes can vary, and designers use for instance ethnography, touchpoints, personas, and ‘day in a life of’ scenarios to understand consumers’ needs and desires and integrate these into value propositions for specific market segments (Gardien et al., 2014).

In the knowledge economy, the focus is on self-actualization and companies create value through open-innovation processes. These processes build upon user-contributed knowledge complemented with knowledge from experts and knowledge about user behavior

(Brand & Rocchi, 2011). The accompanying design approach needs to be adaptive in a dynamic context where user behavior emerges in response to intelligent products. Designers can orchestrate the open-innovation process and leverage expert and user knowledge. As the boundary between designers and users blur however, designers function not only as objective observers conducting user studies or as mere facilitators of co-design sessions, but also as subjective participants in which they themselves are part of the solution and opportunity space. This requires them to take a first-person perspective (Gardien et al., 2014). Tools that designers use support the rapid development of interactive prototypes and help to explore product behavior, think of body storming, props, wizard of oz. Data-enabled design and data-driven visualization form new skills for designers.

Finally, in the transformation economy, the focus is on ill-structured, so called wicked problems (Brand & Rocchi, 2011). A wide variety of quadruple helix stakeholders (knowledge institutions, business, government and people) need to join forces to arrive at meaningful solutions and positive change at a societal level (den Ouden, 2012). Therefore, all these stakeholders will be required to take a first-person perspective and to be personally dedicated to make the societal transformation a reality for society and themselves. Moreover, truly sustainable solutions cannot be realized in incremental changes, but require radical approaches. This is a challenge for all stakeholders, since most of them still operate in the industrial or experience economies (Gardien et al., 2014). Gardien et al. (2014) state that designers can have an important role in these processes as they are already used to empathizing with others and so further along in understanding empathic formation. The design approaches to be used in the transformation economy are not formal yet, but should support the design of dynamic outcomes by emphasizing values such as openness, context, person dependency and development through reflection (Hummels & Frens, 2011). Subsequently, this paradigm shift requires new human centered design approaches and tools.

1.1.2 Co-design and empathy

Aforementioned paragraph clarifies why empathy and co-design are at the heart of emergent design approaches such as design thinking (Brown, 2008), service design (Evenson, 2005), design for social innovation (Manzini, 2015) and transformation design (Burns, Cottam, Vanstone, & Winhall, 2006). Aiming at positive social change by design, these approaches include, engage, facilitate, hear, and empower diverse user- and stakeholder groups for the reason that they are, in different ways, experts of the design challenge as well as part of an effective solution. Yet, due to stakeholders' different interests, experiences and expertise, it can be hard for them and designers to align and collaborate. Hence, reciprocal empathy, facilitated by a co-designer, can connect them on a deeper level and, as such, play an important role in recognizing each other's positions as well as in encouraging closer internal and external collaborations, delivering trust, better communication and greater impact. Moreover, a better understanding of each other's positions, motivations and aspirations can enhance shared decision making and benefits mutual solutions for shared problems by co-imagining alternative futures.

The study of empathy has always been an interest of user centered, human centered and participatory design (Mattelmäki & Sleeswijk Visser, 2011). The first to describe 'empathic design' were Leonard and Rayport (1997). To address more emotional, social and complex design challenges, empathic designers consciously combine and balance objective and subjective mindsets and methods. This not only results in rich insights, but also in common reference points between the designer and user(s) (Fulton Suri, 2003). Empathy is an essential aspect of co-design. The latter is an approach that stimulates collective creativity as it is applied across the whole span of a design process (Sanders & Stappers, 2008). Empathic designers actively interact with people, begin reciprocal dialogues, and develop and use generative tools, such as storytelling, role immersion and experience prototyping (Buchenau

& Fulton Suri, 2000). These processes and tools provoke people's tacit emotions, intuition, latent aspirations, and create shared experiences, intimate user insights and innovative futures (Mattelmäki, Vaajakallio, & Koskinen, 2014). Moreover, empathy in co-design is currently seen as something between the designer and the user(s), but also as something with and between design team members and other stakeholders (Holmlid, Mattelmäki, Sleeeswijk Visser & Vaajakallio, 2015). Therefore, empathy, empathic formation and empathic co-design approaches might be a way to serve the unfolding transformation economy (Brand & Rocchi, 2011). However, this re-orientation towards social innovation challenges the current design practice and its established principles: core and scope (Chen, Cheng, Hummels & Koskinen; 2015). For designers, this has at least three implications: a shift in design focus, methodology, and designers' role(s).

1.1.3 Design focus

As mentioned above, the design community increasingly moves beyond a focus on utility. Design more and more shifts from product and service design *for* and *with* users, to open ended and ill-structured design questions *within* society and communities. This leads designers to a focus on *exploration* and design *within* context (in situ) and *by* stakeholders. Whereas, in the industrial design processes, designers work from more bounded design contexts of use where specific users do specific tasks and designers develop products and services for the 'average' user, in the new paradigm, the context and stakeholder relationships are more complex and imply investigating and navigating both the eco-system and social complexity (Light & Akama, 2012). These multi-stakeholder collaborations specifically articulate multiple and more subjective agendas, perspectives and visions, involve individual and group contexts, and include (contradicting) emotions, perceptions and personal experiences. Hence, these co-design processes require more empathy, not only of the designer, but of all people involved. Empathy enhances people's ability to receive and process

information (Battarbee et al., 2014) and can lead to real engagement and in-depth understanding of the social, cultural, and intrinsic motivations and behaviors of a relatively small, yet diverse and relevant, mix of individuals, groups and contexts. Consequently, the outcomes are informed and inspired by these specific individual differences between people and their different perspectives (Myerson, 2016).

1.1.4 Design methodology

When engaged in ill-structured ambiguous challenges which are open-ended and exploratory, and articulate several agendas and visions, it is more difficult to define the precise co-design process, the role of users, stakeholders and designers, and to foresee exact design outcomes compared to present-day design. For example, users and other stakeholders may change as the process develops due to the dynamic context and/or new insights that emerge. This requires new situated strategies and/or new ways of working. Therefore, the design community has to re-orientate to adopt new methodological strategies that support design practitioners in adaptively and empathically responding to these dynamic contexts and collaborations on the one hand, and to researchers rethinking their ways of systematically analyzing (evaluating and reporting on) these processes on the other (Lee, Jaatinen, Salmi, Mattelmäki, & Smeds Holopainen, 2018). Design methodology commonly focusses on methods as ‘indivisible wholes’ instead of focusing on identifying and studying individual aspects and resources, their interconnections, and the influence of the project context on the method configuration, as suggested by Woolrych, Hornbæk, Frøkjær, & Cockton (2011). Moreover, in common co-design practices, designers’ empathic formation is often tacit and intuitive, and according to Hess & Fila (2016b) empathy is scarcely considered as a meta-level concept that can be intentionally developed by designers. However, experienced empathic design practitioners seem to intuitively know how to flexibly configure, adapt, and complement various design activities and resources (types of design elements: materials, processes and people) to fit the

needs of each specific design context (Lee et al., 2018). Yet, it is important to be explicit about what they exactly do. That being the case, it is the designer, as an orchestrator, interacting with people, utilizing own experiences and composing the order of design activities that could also be the focal point of new empathic methodology. Behavioral aspects and designers' empathic formation are then of great importance as they impact both the results and the way in which resources are combined in the process.

1.1.5 Designers' role

The abovementioned developments not only change the design focus and methodology, but also the *role* and motivation of designers, as well as their social and moral responsibilities. In design, designers increasingly shift from their expert role with clients, to taking on a facilitative role with users and other stakeholders (Sanders & Stappers, 2008) to a facilitative role in multi-stakeholder collaborations (Gardien et al., 2014). In co-design, the design facilitator enhances the creativity of others, but should also stimulate empathy towards others *and* among team members. This in order to learn together and be inspired by each other. Yet, engaging and aligning a multi-stakeholder group of people can be a messy and emotional process (Light & Akama, 2012), because of different interests, expertise, knowledge and power. So much so that, design facilitators often (need to) intuitively respond (Light & Miskelly, 2008). However, in these circumstances, the design facilitator has to be respectful and responsible, as well as receptive and responsive to, among others, heterogeneity, group dynamics, and to their own and others' emotions. Empathy is an individual capability, requires personal engagement and is first about attitude and willingness rather than a set of methods or tools (Kouprie & Sleeswijk Visser, 2009). Yet, tools can help to stimulate personal motivation. In particular, designers can struggle with regulating their own emotions on the one hand and doubts as to when to take the role of facilitator or design expert or experience expert, on the other. As a result, empathic approaches in co-design settings require

professional consciousness, knowledge about first-person perspective taking and reflection in and on action from designers (Hummels & Frens, 2011; Zhang & Wakkary, 2014; Xue & Desmet, 2019). This is especially relevant, as empathic formation is directly influenced by designers' pre-existing knowledge and skills, their attitude, and their behavior (Cuff et al., 2016). In turn, empathic formation influences the purpose of design decisions, outputs and outcomes. Depending on the approach designers choose, develop and use, and the way they encounter and behave towards others, a greater impact can be created. Along these lines, designers' first-person perspective is becoming more important than ever. Empathy therefore becomes a precondition, especially in both the intensified social interaction and in making design decisions and delivering outcomes. For a long time, incorporating this more subjective mindset has been controversial in design methodology, and as a consequence, methodology and methods to do so are scarce (Zhang & Wakkary, 2014; Gardien et al., 2014; Xue & Desmet, 2019). To summarize, there is a demand for a deeper understanding of:

1. Empathy in co-design as a situated strategy in grand challenges;
2. Designers' objective, subjective and reflective roles within co-design projects;
3. Empathic formation in co-design practices.

In the remainder of this chapter, empathy is defined, followed by a description of its benefits and challenges in co-design. Based on this background, a description is provided of the research scope, aims, questions, and methodological approach. The chapter ends with an outline of the thesis structure.

1.2 Defining empathy and its benefits for co-design

Empathy has received considerable research attention in recent decades and is commonly understood to be a multidimensional and complex construct that plays a crucial role in social interaction (Cuff, et al. 2016). Although the definition of empathy in psychology lacks

consensus, empathy is mostly viewed as a *process* whereby one person attends to the state of the other and comes to feel a similar emotion. Moreover, leading theorists tend to agree that the essential qualities of an empathic experience are the ability to (be aware of and) share emotional experiences (*affective empathy*), the ability to understand these experiences (*cognitive empathy*) and the ability to attune to or distinguish between *self and other*. The affective component is seen as an immediate and automatic emotional response to the other: feel with or feel as the empahee. The cognitive component is seen as a process leading to the understanding of the other person's feelings: imagining how the other feels. Self-other distinction is important to maintain the source of the emotion. All these components are strongly interrelated. Moreover, neuro research suggests that human beings are, by mirror neurons, hard-wired to feel what others experience as if it was happening to them (Decety, 2010; Rizzolatti & Craighero, 2004). More specifically, this means that designers have a natural tendency towards empathy (de Waal, 2010) and that this can be strengthened through training and intentional practice (Singer & Lamm, 2009). This is an important notion as it implies that one can develop practical guidance for empathic formation in co-design. Hess and Fila (2016b) define empathic formation as: the cultivation of the varying related skills that are required to become a professional empathic designer, together with an awareness of that formative process.

The advantages of empathic formation for co-design are twofold. First, empathy enables designers and teams to gain deep emotional understanding and rich, relevant and intimate user and stakeholder insights leading to more innovative and responsive design outcomes for users and stakeholders (Black, 1998). An in-depth understanding of real-life experiences and emotions supports designers and teams in uncovering the design context and imagining opportunities for positive change. A relatively new insight in co-design processes is that designers themselves can also be the experts of real-world experiences (Tomico,

Winthagen & van Heist, 2012). Based on their own similar autobiographical experiences within the design context, designers try to relate, (re)live and experience others' emotions and experiences themselves and in such a way they can find intrinsic motivation and use their intuition to find opportunities for design. Especially in design projects that require great sensitivity on the part of the designer, the wise and credible application of this first-person perspective may be a major contributor to the design outcomes (Cross, 2001; Zhang & Wakkary, 2014; Xue & Desmet, 2019). Through intentional use of relevant own experiences and feelings, people can be encouraged to relate to others and immerse themselves in others' situations (Kouprie & Sleeswijk Visser, 2009). Subsequently, the empathy derived can enhance the meaningfulness of design for people.

Second, empathy is considered to be an essential part of collaborations within teams and between designers, users and other stakeholders (Battarbee et al., 2014). As empathy enables a better understanding of the experiences, feelings, mental states, and positions of others, it can smoothen communication and trust within design teams and between stakeholders. In co-design projects, people can share and exchange experiences and develop alternative futures together. In this way, they can develop contextual understanding for each other's positions, leading to more empathy and reciprocity and eventually to a common vocabulary and common ground. Consequently, this can lead to mutual reference points among stakeholders and agreed solutions. This can be a starting point for better accepted and better implemented solutions. To summarize, in this thesis empathy is considered essential to understand delicate design settings and stakeholders, to respond appropriately, and to co-develop meaningful designs for the people involved.

1.3 Challenges for empathy in co-design

Even though the benefits of empathy in co-design are acknowledged, as motivated in the previous section, there are also challenges that hinder empathy in co-design to which this

thesis will refer: the complexity of the construct of empathy, designers' role, and resource constraints related to the design practice context. We will discuss them in the next paragraphs.

1.3.1 Construct of empathy

Despite the fact that the concept of empathy was coined over 100 years ago, empathy is not a well-defined construct (Wispe, 1986). The definition is still subject of research and discussion in social psychology (Cuff et al., 2016). According to Hess and Fila (2016b) this contributed to a scarcity in methodology and methods to understand, develop, use and teach empathy consciously and credibly. This knowledge gap can make designers uncertain and insecure in their role: they might feel underequipped to navigate empathy in co-design. More knowledge about empathy and empathic formation in co-design can support designers in utilizing the benefits of empathy better.

1.3.2 Designers' role

Empathy can be a hinder to design and designers in various ways. First, designers have their own unique experiences and empathic ability which defines their 'empathic horizon' (McDonagh-Philip & Denton, 1999). The term 'empathic horizon' also indicates that designers might have a personal limitation in empathizing beyond certain characteristics/traits such as nationality, culture, nurture, age, gender, anatomy, education, experience. However, an 'empathic horizon' is never static and designers can expand it by personal development and life experiences (Van Rijn, Sleeswijk Visser, Stappers & Özakar, 2011). Enhancing empathic skills takes time, however.

In addition, designers' individual focus can blind them from more systemic argumentation in design. Since empathy is an individual capability and interpersonal ability. It is a process of engaging to others by opening up yourself, in which designers use their own emotions as sounding board for understanding others (Battarbee et al., 2014). Battarbee et al.

(2014) argue that people who cannot temporarily let go of their role or status or cannot set aside their own expertise or opinion will fail to empathize with others who have conflicting thoughts, experiences or mental models. Empathy is thus dependent upon the interaction between designers' trait capacities and state influences (Cuff et al., 2016). Designers can underestimate the influence of one's own current state when empathizing. For instance, personal distress such as nervousness about having the courage and sensitivity to be in real emotional contact with users and other stakeholders. This is called the 'hot-cold empathy gap' (Loewenstein, 2005). Moreover, empathy can hinder designers and the design process when too much empathy blinds them to their own needs (Mattelmäki et al., 2014). For instance, contagious distress such as being very sad yourself due to listening to user or stakeholder narratives (Lamm & Singer, 2009). This is called the 'empathy trap' and can overwhelm designers, block their empathy and ultimately limits their ability to facilitate and understand others or can even cause withdrawal.

Finally, de Waal (2010) states that people are naturally biased and it is easier for us human beings to identify with proxies than with people who are significantly different from us. Subsequently, the scope and value of design outcomes may be subjective and biased towards the designer (Takeyama, Tsukui, Yamaguchi & Motai, 2012). Designers run the risk of amplifying one's own emotions over the other (Batson, C. D., Sager, K., Garst, E., Kang, M., Rubchinsky, K., & Dawson, K., 1997), and can end up 'projecting' their own assumptions on to the experiences of others and falsely rationalize design directions. This may lead to single mindedness, a present-day orientation, reinforce otherness, enhancing exclusion and ironically to designing for people like themselves (Holt, 2011). It is thus important for designers to be self-aware and to regulate own emotions in interactions with others. Yet, in learning about others' experiences, designers can not completely forget about their own experiences (Wright & McCarthy, 2005). It is even necessary to remain open to disclosing

autobiographical experiences since these also support empathy (Kouprie & Sleeswijk Visser, 2009). Despite a growing recognition of this advantage of using first-person perspectives in design (Zhang & Wakkary, 2014), it has been rather controversial to disclose personal experience in the industrial economy as it was considered ‘non-objective’ and ‘unscientific’ (Xue & Desmet, 2019). Xue and Desmet (2019) state that although introspection as a research approach has long been doubted and criticized by positivists and behaviorists, it is powerful and has value for studying subjective phenomena in human centered design. Nevertheless, there are also weaknesses of research introspection mentioned by Xue and Desmet (2019) such as accuracy problems due to unreliable retrospective data (the recollection of memory is reconstructive, distortive in nature and degrades over time), data documentation, extreme closeness leading to validity difficulties in data analysis and a lack of generalizability due to the convenience sample of one person: the designer or design researcher.

To sum up, empathy can be hindered by the designers’ identity, experiences, and role (Vink & Oertzen, 2018). The designers’ traits influence their state of mind and behavior *in situ* towards others, color the design process and the design decisions, and can (mis)lead the interpretation of others’ experiences (Mattelmäki et al., 2014). As co-designers often facilitate or take the lead in eliciting and interpreting research outputs, the scope and value of design outcomes may be biased towards the designer (Takeyama et al., 2012).

1.3.3 Design practice

The last challenge regarding empathy in co-design is related to the design practice context. Empathic design may be hindered by the culture within organizations. Daily business, fear, ignorance and stress of running the organization can easily suppress empathic design efforts. In addition, an empathic attitude needs to be championed, nurtured and practiced regularly. (Battarbee et al., 2014). In design practice, teams often are not appointed enough resources in terms of budget, time, people and expertise to conduct empathic co-design activities with

users and stakeholders, which makes it difficult for all design team members to encounter and empathize with others (Postma, Zwartkruis-Pelgrim, Daemen, & Du, 2012). Moreover, some design team members may feel uncomfortable in collaborating with users and stakeholders, especially in emotional situations. Therefore, in many social innovation projects, which often are conducted within a coalition of different organizations, this task is delegated to external design researcher(s) or to a design research department of one or more of the organizations involved. They then conduct the empathic research and convey their interpretations and insights to the rest of the coalition team. Yet, there is a risk that this transfer of (abstract) outputs may lead to the loss of the desired affective resonance of all people involved. The way in which the acquired insights are transferred to the rest of the team is crucial to embedding empathy within practice. This topic is addressed in literature (Postma et al., 2012; Battarbee et al., 2014), but mainly within an industrial context.

To summarize, empathy is a complex notion. Empathic formation is an interactive and dynamic process including affective and cognitive aspects as well as deliberate self and other perspective taking. The design community lacks a theoretical, solid and practical framework of designers' empathic formation in co-design processes which can form a basis for empathic co-design approaches and reflection. As well as a vocabulary that helps them understand what kind of key components influence empathic formation positively or negatively in co-design and how that informs the designer's role and design decisions. Moreover, designers lack the methodological guidance required to use the first-person perspective and personal experience intentionally and credibly in empathic formation in co-design practices.

1.4 Research scope, aims, questions and methodological approach

In the previous section, it is shown that empathy in co-design comes with a number of challenges. In this section, the research scope, aims, questions, and the methodological approach is introduced in order to meet these challenges.

1.4.1 Research scope, aims, and questions

The aim of this thesis is to explore, create, and formalize new knowledge for design practitioners, students and researchers in order to better understand the complex construct of empathy and empathic formation in co-design, and to guide designers' empathic formation in practice. This thesis will contribute to intermediate knowledge (Höök & Löwgren, 2012) for use in design research, and to design approaches to be utilized in design practice.

The main research question is:

- How can designers' empathic formation in co-design settings be understood and supported?

To answer this main research question, three sub-questions were defined. The first relates to design knowledge, the second to design practice and the third to design education:

- Which key components influence designers' empathic formation in co-design?
- How can designers' empathic formation in co-design be guided and evaluated?
- How can junior designers be taught to act and respond empathically towards others in co-design?

By identifying the key components of empathic formation, we can search for ways to explain and guide designers in empathic formation.

1.4.2 Methodological approach

This thesis describes research to gain insights into the complex construct of empathy and empathic formation in co-design. The case studies focus on the delicate and complex situations of mourning and dementia. These research settings deal with the unexpected, and generate emotions, which makes empathic facilitation and understanding more demanding and interesting to learn from.

The main research question has been addressed in three empirical case studies (chapters 2, 3 and 4), and one study coupling our own findings with academic work of others (chapter 5). Two studies took place in a design education context, which enabled us to control the research conditions and to conduct systematic investigations (chapter 2 and 4). One empirical study was conducted in practice (chapter 3).

In these studies, we extended existing knowledge and gained new knowledge about taking perspectives, utilizing personal experiences and empathic formation, all based on current theories and our empirical results. In the empirical studies of this thesis, design students and practitioners were observed and investigated when designing and reflecting on their design processes. Using qualitative research methods, designers' design processes were followed and compared, which enabled us to evaluate the designers' role in the design process, their design approaches, and their design decisions.

Semi-structured co-reflections were conducted with participants in action as well as post-interviews on action. Moreover, in these co-reflective sessions we were able to ask for immediate clarification or further explanation of answers given by the participants.

The very rich and diverse set of empirical data consists of reports, quotes and transcripts of our observations, semi-structured interviews, and co-reflection meetings with design students and professional practitioners. In addition, the data comprise the results of the co-creation sessions with people with dementia and their partners. Moreover, they consist of student papers and student reports, as well as images from the co-creative workshops and design outcomes.

To analyze the empirical data, participants' quotes were clustered, participants' design approaches visualized over time, and theories and models from both the design and social psychology domains were used for interpretation reasons. To structure the research findings, several additional heuristics and provisional frameworks were developed based on literature,

and ultimately these different frameworks evolved into a detailed backbone overview for empathic formation in co-design in chapter 5.

Because the case studies took place in various contexts, with diverse participants (professional peer-designers, students, users and other stakeholders) and for different purposes, our research required conscious, situated, and ethical behavior of the design researchers. Therefore, a practical and situated approach on design ethics derived from IDEO (2015) was taken. This approach explains how designers can ethically seek and share insights about people's lives. The IDEO vision offers practical guidance in collaborations for a wide range of situations where people's trust and respect are at stake. Their principles are: respect, responsibility and honesty. With respect, they refer to participants' limits that are honored and that their comfort is valued. In this thesis, we for example explicitly respected students' educational obligations and rights, and the cognitive impairments of people with dementia by adapting our research approach accordingly. Regarding responsibility, we protected participants' current and future interests by for example assuring participants' privacy, obtaining informed consent with the people with dementia and their partners, maintaining the confidentiality of any data collected, and minimizing harm. With respect to honesty, we tried to be truthful and timely in all communication. The justification of the IDEO principles is twofold. First, they are aimed at the conduct of the designer and design researcher. This kind of approach has advantages over other frameworks that are based on boundary conditions for participant treatment; it allows for more flexibility and adjustment. Second, these principles are forward-looking. Rather than attributing specific responsibilities to the designer, the principles encourage the active 'taking' of responsibility. Moreover, a forward-looking concept of responsibility is more effective in innovation contexts according to Van de Poel & Sand (2018). Yet, since this thesis deals with very emotional topics and even people with dementia, we evaluated the ethical practice in the design research of chapter 3 more

specifically by reflecting on the inclusiveness of the research participants, the choice of appropriate design research means, and the responsibilities and accountability of the participants (Robertson and Wagner, 2012).

1.5 Thesis outline and structure

This thesis is based on four journal articles which are published between 2016 and 2019. We chose to include the original text of these articles in this thesis without any adjustments other than cross-references. Any repetitions that may occur in the thesis as a consequence of this approach, have been marked in the footnotes.

Following an introduction of the research context, goal and focus in Chapter 1, the thesis is divided into two parts. The first part contains the empirical studies and the second part the conclusions (See Figure 1). Chapter 1 introduces the thesis context, goal and focus. Chapters 2, 3 and 4 (part 1) present the empirical studies conducted in the context of this thesis. Chapters 5 and 6 (part 2) present the conclusions. Chapter 5 presents an empathic formation overview for co-design. Finally, chapter 6 summarizes the contributions of the research presented in this thesis, reflects on the approach and the methodological insights gained, and proposes future research directions. The content of each of these chapters and the motivations for the studies are discussed in more detail below.

The first study, described in chapter 2, aims to provide designers and design tutors with a way to design with others and within a range of user situations, by deliberately using mixed perspectives in different phases of design processes. The study was performed in an educational context and concerns an empirical case study targeting mourning. We introduce the three basic perspectives in design and describe when and how designers employed the first, second and third-person perspectives and how they were combined. In this way, we contribute to the current understanding of taking perspectives in co-design and identify the specific value of transitions between perspectives. Perspective clusters are then introduced

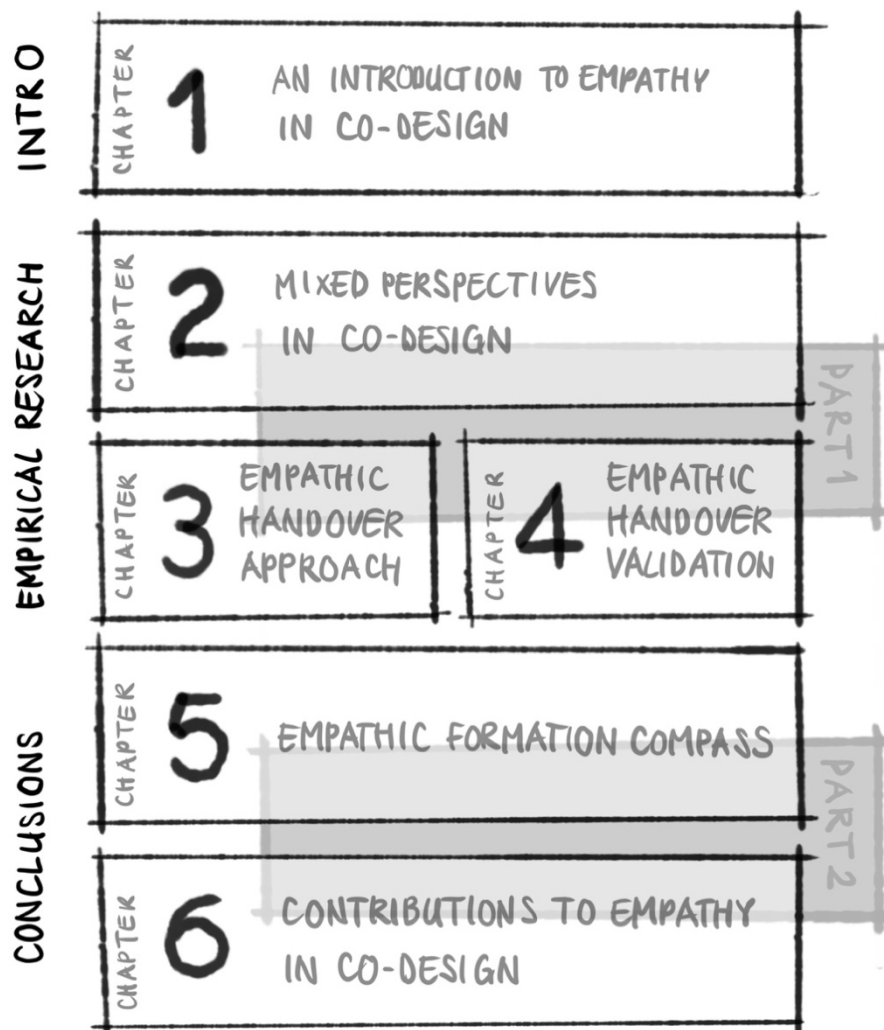


Figure 1: The thesis structure

and we highlight how these, as building blocks, could give flexible guidance to empathic design. Next, we propose the Mixed Perspectives (MP) as a fundamental design framework for empathy in co-design. The Mixed Perspectives framework especially acknowledges the value of the designer’s first-person perspective in designing. Moreover, the Mixed Perspectives framework enables designers to decouple methodology from methods as the approach forms a loosely coupled set of perspective transitions and clusters which can be

molded to the specific context of a project regardless of specific methods. This enables designers to be unambiguously supported in their own unique design process. This is important for empathic processes as designers can adapt and respond to uncertain situations. Moreover, it supports designers in employing relevant personal experiences and intuition in a more credible and intentional way.

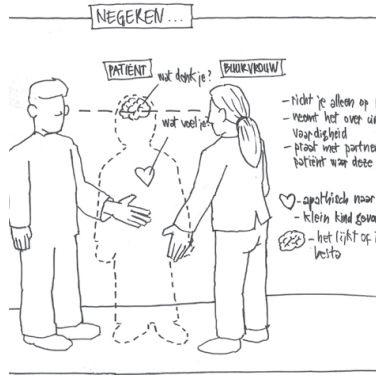
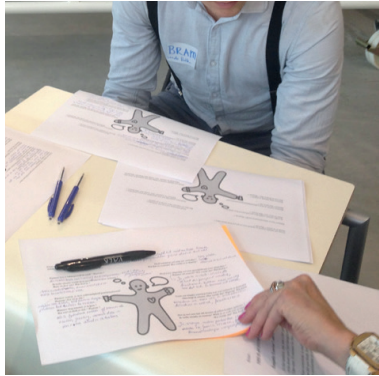
Chapter 3 aims to provide guidance to professional design teams by proposing an empathic co-design approach that enables a design researcher who encounters people with dementia to transfer the empathic insights to team members who did not meet the users in person. It presents a realistic case study which resulted in a successful dementia simulator. This empirical study proposes the Empathic Handover (EH) approach that enables a principal designer who encounters people with dementia to transfer insights to those team members who do not due to ethical and resource constraints. The Empathic Handover approach addresses three sequential co-design activities facilitated by an empathic principal designer: 1) individual harvest meetings, 2) collective handover workshops, and 3) empathic ideation workshops. We illustrate in this chapter how personal experiences can contribute to understanding others, transferring insights, and translating empathy into design. The Empathic Handover approach not only guided the design team by offering a practical and coherent process, but also enabled individual team members to be receptive, inclusive and committed to people with dementia.

Chapter 4 aims at validating the transferability of the Empathic Handover approach. The chapter evaluates the transferability of the Empathic Handover approach in design education to other design teams, other design problems, and other design contexts than the dementia simulator. Based on a heuristic inspired by social psychologists' theories, we argue that empathy in design is operationalized using five individual factors: emotional interest, sensitivity, self-awareness, personal experience, and mixed perspectives. These behavioral

factors proved valuable in the systematical comparison of the empathic capacity of design students using the Empathic Handover approach and more common approaches. The study indicates that the Empathic Handover approach enabled designers to develop empathy with vulnerable others they were unable to meet in person by taking first-person perspectives; in the cases these were mourners and people with dementia.

Chapter 5 aims to provide designers, researchers and students with a meta-level overview that provides insights into the key dimensions and elements of empathic formation in design and how that informs designers about their role and their design decisions. The chapter introduces the Empathic Formation (EF) compass, based on a comparison of existing relevant frameworks. The Empathic Formation compass strengthens and enriches our earlier work on Mixed Perspectives (chapter 2) with specific dimensions and describes the factors that foster empathy in co-design (chapter 3) from a more contextual position. We expect the Empathic Formation compass -combined with the Mixed Perspectives framework- to enhance future research by bringing about a deeper understanding of designers' empathic and collaborative design practice.


Finally, chapter 6 reflects on the research presented in this thesis. Important results are highlighted, and further research directions are proposed.



PART 1

EMPIRICAL RESEARCH





This following chapter resembles the publication: Smeenk, W., Tomico, O., & van Turnhout, K. (2016). A systematic analysis of mixed perspectives in empathic design: Not one perspective encompasses all. *International Journal of Design*, 10(2).

CHAPTER 2

A SYSTEMATIC ANALYSIS OF MIXED PERSPECTIVES IN EMPATHIC DESIGN: NOT ONE PERSPECTIVE ENCOMPASSES ALL

ORIGINAL ARTICLE



A Systematic Analysis of Mixed Perspectives in Empathic Design: *Not One Perspective Encompasses All*

Wina Smeenk^{1, 2, *}, Oscar Tomico², and Koen van Turnhout³

¹ *WiEN'S ontwerperschap*

² *Department of Industrial Design, Eindhoven University of Technology, the Netherlands*

³ *Department of Information Technology, HAN University of Applied Sciences, the Netherlands*

Although it is common for designers to base design decisions on own experiences, the specific utility, and legitimacy, validity of this first-person perspective in design is currently not sufficiently understood and recognized. In particular, wisely applying the first-person perspective in projects that require great sensitivity can be a major contributor to design outcomes. As such, a better understanding of the relative value of the first-person perspective compared to—and combined with—other fundamental perspectives (introduced as perspective transitions and clusters) can contribute to enrich and develop design methodologies.

In this paper we report on a case study targeting mourning. We describe when and how junior designers employed the first-, second-, and third-person perspectives and how they were combined. This leads to new insights. First, we improve the current understanding of perspectives. Second, we identify the specific value of transitions between perspectives. Third, we introduce perspective clusters and highlight how these—as building blocks—can give flexible guidance to design. These insights, in turn, support a mixed-perspectives approach. This approach supports empathic design by enabling designers to be receptive, inclusive, and committed toward users. Moreover, it supports designers in employing (relevant) personal experiences and intuition in a more credible and intentional way.

Keywords – Empathic Design, First-Person Perspective, Mixed-Perspectives, Mourning, User-Centered Design.

Relevance to Design Practice – This paper discusses how mixed-perspectives support empathic design. The approach guides designers in a practical way in planning a project. It enables designers to thoughtfully and explicitly apply specific perspective transitions and/or clusters. In addition, (relevant) personal experiences and intuition can be used more credibly, intentionally, and explicitly.

Citation: Smeenk, W., Tomico, O., & van Turnhout, K. (2016). A systematic analysis of mixed perspectives in empathic design: Not one perspective encompasses all. *International Journal of Design*, 10(2), 31-48.

Chapter 2: A systematic analysis of Mixed Perspectives in empathic design: not one perspective encompasses all

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2.1 Introduction

The work presented in this chapter is set up in the context of empathic design, in particular design for people in mourning situations. It seems almost a truism to say that designing for a situation as delicate, emotional and complex as mourning demands that the designer is able to build empathy and (com)passion with the people and context at stake. In building empathy with stakeholders in the design process, it is important for designers to approach the problem

from multiple perspectives and values in order to understand how diverse individuals experience and go through such rituals (e.g. mourning). Of particular concern in this chapter is the question of how designers can utilize their own feelings, intuitions and experiences in the design process. Especially in design projects that require great sensitivity on the part of the designer (e.g., empathic design), the wise application of this first-person perspective may be a major contributor to the design outcomes. Therefore, we aim to provide designers and coaches of design students with a way to design for and with others and within user situations by deliberately using perspective transitions and clusters in different phases of design processes.

Various scholars have proposed design methods that bring relevance to and support design with users (Dandavate, Sanders, & Stuart, 1996; Ehn, 2008; Fulton Suri, 2003; Koskinen & Battarbee, 2003; Mattelmäki & Battarbee, 2002; Mattelmäki & Sleeswijk Visser, 2011; Sleeswijk Visser, Stappers, van der Lugt, & Sanders, 2005). Methods and tools for building empathy with users are part of design traditions such as user-centered design (UCD), human-centered design (HCD), participatory design (PD) and co-design (Co-D). Yet, this body of knowledge focuses almost exclusively on utilizing user perspectives and user contact to inform design decisions, while design can (and implicitly does) also build on designers' own personal experiences, feelings and emotions from within the design context. Although it is well known that designers implicitly base design decisions on their own experiences, feelings and emotions, the specific utility, legitimacy and validity of the first-person perspective in design is insufficiently understood and recognized (Cross, 2001; Zhang & Wakkary, 2014).

Despite a growing recognition of this lacuna in the literature, few authors have proposed practical solutions and guidance for designers. One exception is found in Tomico et al.'s (2012) argument for an explicit application of several basic design perspectives,

including the designer's first-person perspective. That paper is a key inspiration for this study. Since the three individual perspective definitions in that paper built on a single design case, we will provide more elaborate descriptions and a structured overview of related literature to complement these definitions in the next section. In addition, this overview will help specify how the three basic perspectives can be mixed in valuable ways. In the next section, we will introduce three theories that support the expansion of our understanding of the perspectives introduced by Tomico et al. (2012).

This chapter is organized in three main sections. In the first section, we will review related work to provide a structured overview of existing literature on perspectives and to motivate our case study analysis. Next, we will present the case study. We will provide a detailed analysis of the design processes of four junior designers who tackled the problem of designing intelligent products for mourning. This analysis will give insights into the utilization and specific value of first-, second- and third-person perspectives in these projects. In addition, we will identify, specify and discuss the specific value of perspective transitions. Then we will highlight how perspective clusters might give guidance to empathic design. Finally, we will present our conclusions and discuss the impact of perspectives (including Mixed Perspectives) on empathic design research and practice.

2.2 Theoretical Background

Product design has roots in engineering design and UCD and, as such, many formal product design methodologies advocate a data-oriented, research-driven design approach (Cockton, 2009; Stappers, 2007). Increasingly, however, this paradigm is widening to include approaches that are more inspiration-oriented, co-creative, participatory and design-led (Cockton, 2009; Sleeswijk Visser, Stappers, van der Lugt & Sanders, 2005; Stappers, 2007; van Rijn, Sleeswijk Visser, Stappers, & Özakar, 2011; Wolf, Rode, Sussman, & Kellogg, 2006). As a response to this shift in focus and the subsequent expansion of the industrial

designer's toolkit, two themes have become increasingly manifest in the design methodology literature. First, there is a call to better understand designers' pragmatic practices (Goodman, Stolterman, & Wakkary, 2011; Woolrych, Hornbæk, Frøkjær, & Cockton, 2011), their subjective and reflective roles (Hummels & Frens, 2009; Wolf et al., 2006) and how they can legitimately utilize personal experiences in their design processes (Zhang & Wakkary, 2014). Second, we observe an emerging body of work calling on design methodology to move beyond 'the method' as its main unit of analysis. In a programmatic paper, Woolrych et al. (2011), for example, urged us not to see methods as 'indivisible wholes', but rather as a loosely coupled set of resources that can be molded to the local priorities and the project's context. Although many designers will recognize this idea, decoupling methodology from 'methods' is easier said than done. Four recent attempts to 'move methodology beyond the method' are particularly relevant to the work in this chapter.

First, the closest to traditional methodology may be recent work on mixed-method design research (van Turnhout et al., 2014; Johnson et al., 2014). In particular, the mixed-method research design patterns described by van Turnhout et al. (2014) give a comprehensive insight into how methods can be combined in such a way that 'the sum' of methods bring more than 'the parts' (single methods). Herewith, a more thoughtful, and thus explicit application of method mixes is advocated. The authors use the Development Oriented Triangulation (DOT-)framework to classify methods, distinguishing between five broad design strategies: 'field' (for studies aimed at getting an overview of the context of use), 'lab' (aimed at testing aspects of the solution with regard to (simulated) aspects of the context of use), 'workshop' (aimed at exploring the solution space), 'library' (aimed at getting an overview of existing work) and 'showroom' (aimed at testing aspects of the solution in relation to existing work). As van Turnhout et al. (2014) note, the labels of some of these research strategies in the DOT-Framework, in particular lab, field, and showroom, are

originally derived from those in Koskinen et al. (2011). However, van Turnhout et al. generalized those labels from their original application to research through design only, to a broader set of activities in mainstream HCI. To be able to do so they also introduced new definitions of the terms, based on the systematics of the DOT-framework. We here use the terms lab, field and showroom in the broad meaning of van Turnhout et al (2014). Although van Turnhout et al. do not explicitly reflect on the role of the designer in their study, they do acknowledge the existence of ‘inspiration-oriented’ methods alongside ‘data-oriented’ methods. These inspiration-oriented methods are intended to seek ‘inspiration’ and to ‘strengthen personal experience and intuition’ of the designer. A strong point of their work is that they rightfully draw attention to specific reasons for combining methods. A weakness is that their work is very much grounded in traditional methodology because of the framework they use for classifying methods. As such, they do not address all the concerns raised by Woolrych et al. (2011).

Second, Cockton (2009) introduced a very different approach that moves beyond the method as a major source of guidance in design. He introduced ‘meta-principles’ for designing that set requirements for codes or rules for design activity. Cockton iterated his set of principles across several papers, but we will focus on the six based on John Heskett’s (2002) position on the origins of design outcomes, which Cockton presented in his 2009 paper. Although principles for designing are more abstract than methods, they are guides to action, interpretation, explanation and/or prediction. In our view, Cockton presents three meta-principles that refer to the designer’s attitudes of *receptiveness*, *inclusiveness* and *committedness*. These three meta-principles can be coupled to the three basic perspectives (as seen in Table 1). With *receptiveness*, Cockton originally referred to designers keeping an open mind to many alternatives (e.g., ideas and inspiration) and (re)sources (e.g., data). He argued that alternatives must be well expressed and that designers need to be open to many

more sources of inspiration, including informal autobiographical reflection. With *inclusiveness*, Cockton referred to the care taken to make the design outcome fit for and inclusive of a wide range of stakeholders. He argued for also including ethical (communities of kind) and/or moral (general public) considerations. According to Cockton, *committedness* means that design outcomes result from explicit choices that design teams consciously commit to in good faith. This entails more of a virtuous feeling and demeanor/attitude than rationality.

In our view, Cockton's (2009) other three meta-principles, being expressive, credible and improvable, can be applied to design activities. However, we cannot couple them to specific perspectives, transitions or clusters (as might be done later on). The principle of expressivity refers to the importance of externalizing design elements (e.g., visualization, personas, role play) and the grounds for design decisions. Credibility concerns the quality of options and compatibility of choices. Cockton (2009) argued that means, ends, stakeholders and evaluation must be coherently and productively related to each other. It is the context of a choice that makes it credible. Finally, improvability is about aligning design purpose and evaluation purpose. Improvability therefore extends beyond evaluability to understanding and having a responsive attitude (i.e., the ability and will to fix problems). Cockton's set of six meta-principles form a very flexible set of starting points for reflecting on many aspects of design projects regardless of the specific methodology chosen. However, the abstract character of the set is a disadvantage for less seasoned designers, as the principles are not translated into a practical guide for planning a project.

The third approach, which forms the major inspiration for this chapter, is the perspectives approach described by Tomico et al. (2012). They built upon a single design case to illustrate the three basic points of view. Each of the three 'perspectives' described signifies a relationship between the designer and the design context, see Figure 2. They briefly defined

the third-person perspective as ‘designing for people and society in general’. This means that the designer is an expert and takes an objective view and designs *for* people without involving users and professional experts, non-situated. They defined the second-person perspective as ‘designing together with a group of people that are part of society’. This means that the designer is socially involved and facilitates co-design sessions *with* users and professional experts who are part of the user situation. They briefly defined the first-person perspective as ‘designing for oneself within society’. This means that designers are personally involved since they are part of and actors in the designed-for system. Designers design for themselves *within* the context and involve their own experiences. Later in this chapter we will extend these descriptions further with help of our case study.

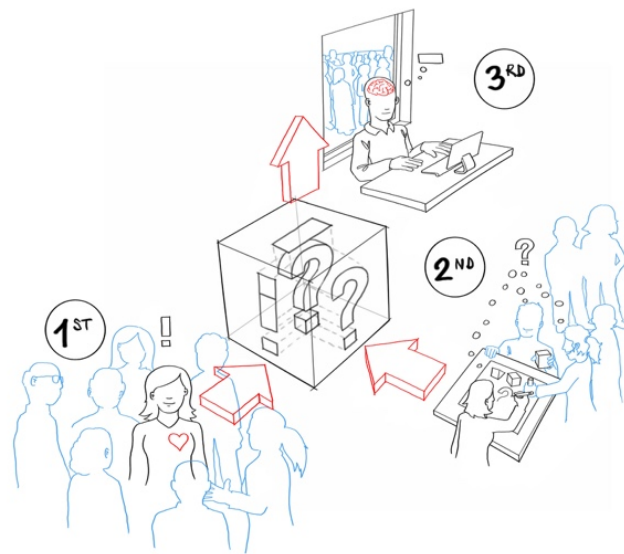


Figure 2. The three basic perspectives in design based on Tomico et al., 2012:

the first-person perspective (e.g., own experience in the context), the second-person perspective (e.g., co-design in the context) and the third-person perspective (e.g., desk research detached from the context).

Tomico et al. (2012) pointed out that each of these three basic perspectives can be important and bring different value(s) to design, and that combining them adds value. Perspectives are more fundamental than specific methods but perhaps unlike the meta-principles described earlier, they can be easily and unambiguously applied. We treat the three perspectives as

mutually exclusive and as such they could, in line with the approach taken by van Turnhout et al. (2014), be used as a basis for a practical Mixed Perspectives methodology. However, such an approach is very new. In this chapter, we will try to provide the basic building blocks that can form the basis for a Mixed Perspectives (MP) approach.

Although clearly not recognized as such, Kouprie and Sleeswijk Visser's (2009) prescriptive design framework on empathic design can be seen as a sequence through perspectives. Their empathic design framework presents gaining empathy with users in design as a chronological process of four phases: discovery, immersion, connection and detachment. They relate the *discovery* phase to the research and analysis a designer undertakes to get familiar with the user. This refers to applying a third-person perspective. In addition, they mention the designer making first contact with the user, which we see as a step into the second-person perspective. The *immersion* phase is dedicated to understanding the situation at stake and the people involved by working with them in context, referring to a second-person perspective. As soon as the empathic designer moves on and really *connects* to the situation and relates it to their own experiences and feelings, a first-person perspective comes in. When the designer then deliberately takes a distance and *detaches* from the situation at stake to analyze the outcomes of the discovery, immersion and connection phases, (s)he once again takes a third-person perspective. This framework uses all three perspectives in its four phases, switching three times (from third to second, from second to first, and from first to third). As such, it can be seen as a first Mixed Perspective cluster that gives designers the insight that 'the whole' is more than 'the sum' of the individual perspectives.

This section is summarized in Table 1, which fits all four of the discussed approaches into the three basic design perspectives. This table aims to enrich our notion of the perspectives. Our intention is not to reduce the work presented by these authors to the perspectives and we do not present perspectives as a theory of everything in design, but we

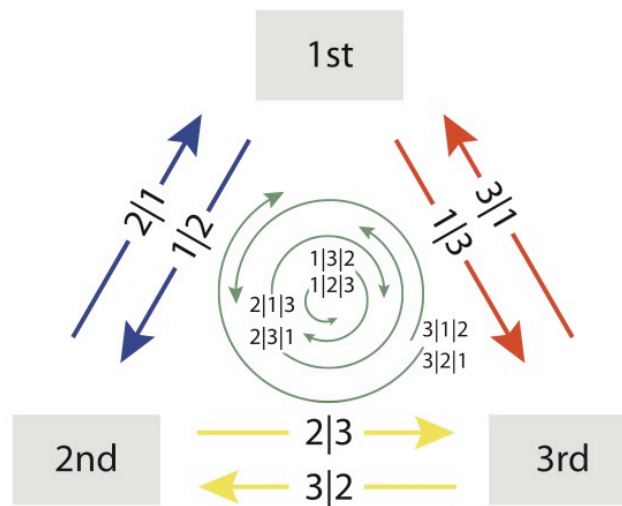
try to investigate its utility as a basic framework. As is visible in the table, there is a reasonably straightforward match between van Turnhout et al.'s (2014) research strategies, Kouprie and Sleeswijk Visser's (2009) framework and Tomico et al.'s (2012) points of view. Cockton's (2009) meta-principles are somewhat more difficult to match because of their flexible applicability. Nevertheless, some of them can be matched.

Table 1. Existing theories summarized with regard to the three basic perspectives in design

<i>First-Person Perspective</i>	<i>Second-Person Perspective</i>	<i>Third-Person Perspective</i>
Cockton (2009), Six Meta-Principles		
The designer is committed and includes informal autobiographical reflection in designing to bring inspiration to design.	The designer includes an adequate range and number of stakeholders in designing to understand the needs/values and improve design means and ends with stakeholders.	The designer is receptive to many alternatives in designing with regard to means for (e.g., methods, data, (re)sources) and ends of design (e.g., ideas, concepts).
Tomico et al. (2012), Points of View		
The designer is part of the system, an actor in the design context, and designs for him- or herself within this context, incorporating their own experiences.	The designer designs together with a small group of people that are part of the user situation (context, system, society).	The designer designs for people and society in general without involving users and having direct contact with experts.
van Turnhout et al. (2014), Mixed Methods		
The designer uses an inspiration-oriented workshop strategy to strengthen his or her personal experience and intuition.	The designer uses inspiration- or data-oriented field, workshop or laboratory strategies to involve the users in the design process.	The designer uses data-oriented library and showroom strategies to relate his or her work to extant knowledge.
Kouprie and Sleeswijk Visser (2009), Empathy Framework		
3) The designer feels what the user feels by allowing subjectivity. The designer connects his or her own emotions to the design context, leading to affective understanding.	2) The designer learns from the user(s) by immersing into the user(s) situation, leading to empathic and compassionate design directions.	1) The designer discovers the user's situation with the help of available knowledge. 4) The designer analyses the user(s)'s experiences by detaching from actual user situations and finding design directions based on his or her own creativity.

2.3 Case Study: Analyzing perspectives in design for mourning rituals

This chapter presents a systematic exploration of perspectives, perspective transitions and perspective clusters in a design case study targeting mourning rituals. All these Mixed Perspectives bring designers insight in how ‘the whole’ is more than ‘the sum’ of the individual perspectives and can bring guidance in empathic design. Figure 3 depicts the three single perspectives and all the possibilities of perspective transitions to structure our analysis of the case at hand. In the analysis to follow, we will give insights into the utilization and specific value of first-, second- and third-person perspectives.



<i>Terms</i>	<i>Definitions</i>
Perspective Combination Depicted as an arrow	A shift between two or three different perspectives within parallel design activities
Perspective Switch Depicted as an arrow	A shift between two or three different perspectives across sequential design activities
Perspective Transition Depicted as an arrow	A sequence of different perspectives: either a perspective combination or a switch
Perspective Cluster Not depicted	Sequential series of two or more perspective transitions
Mixed Perspectives	Sequences through several perspectives: either transition(s) or cluster(s), or both

Figure 3. Perspective options and definitions¹

¹ In the original article the Figure caption was: Perspective transition options and definitions

In addition, we will make a distinction between a shift in different perspectives across sequential design activities (which we will refer to as a perspective switch) and a shift within parallel design activities (which we will call a perspective combination). We will identify, specify and discuss the specific value of perspective transitions. Moreover, we will distinguish between perspective transitions and clusters. A perspective transition is a mix of different perspectives: either a combination or a switch, or a combination of both. Clusters are sequential series of two or more transitions. We will highlight how perspective clusters might give guidance to empathic design. Figure 3 summarizes the definitions we will use.

2.3.1 Project Introduction

The analysis presented in this chapter focuses on the Mourning Rituals Project. This project was set up in collaboration with a funeral service company. The brief of this Bachelor and Master project was to develop innovative products and services, much as those proposed in van den Hoven et al. (2008) that involve the fields of awareness systems and calm technology as sources of inspiration. Additional objectives were to be empathic to the lives and emotions of people experiencing grief by co-reflecting (Tomico & Garcia, 2011) on their situations and by co-defining meaning with mourners in grieving processes. The topic of rituals was introduced to inspire meaning and to give the junior designers without mourning experience the opportunity to relate to their own experiences.

The project was executed by four first-year student teams, three Bachelor students in their final year and two Master students. During the project, we discovered that only three of our young designers had experienced death closely: two on the first-year teams and one in the final Bachelor phase. Although we would have liked to recruit more designers who had personal experience with mourning, this was unfeasible within the scope of this study. We then decided not to include the first-year teams in the research, since their design experience

was limited and the group work made it hard to determine which perspective was taken when by whom.

We ultimately interviewed four junior designers: one Master student (A) and three Bachelor students in their final year (B, C, D) who represented different personal experiences with mourning. We conducted in-depth semi-structured interviews to capture their processes and activities. Junior designer D had personal mourning experience and junior designer C involved a close friend with mourning experience. Junior designers A and B had no experience with mourning whatsoever. All our junior designers started their project at the same time.

As a general way to structure the project, we chose to use the 1:10:100 approach (van Turnhout et al., 2013). The idea is to do the project three times with increasing timespans (in the textbook, 1, 10 and 100 days) to allow for early misconceptions and discovery. Within this approach, the junior designers employed the reflective transformative design process (RTDP) (Hummels & Frens, 2009). This process supports flexibility, individuality (personal and contextual) and reflection. In addition, it stimulates swapping between design action and analysis strategies, and between vision and validation drives. The process includes triggers for reflection on action. As a result, the students were also likely to be more capable of offering reflections about the project afterwards. We decided to run the project two times: in a complete pressure cooker design cycle in the first week and another complete cycle in the remaining project period time. At the end of the design pressure week, the junior designers demonstrated their first prototypes to the client and staff as if they were end results. This helped the client and staff discuss the concrete impact of the design on people in mourning situations. The junior designers, client and staff jointly discussed and constructively reflected on the directions and design focus for the next iteration, in which the junior designers chose their own processes.

2.3.2 Project Results

The final designs of junior designers A, B and C focused on concepts that send indirect (drawing, light and audio) messages to a specific mourning community. Junior designer A developed ‘Adumbro’, an interactive installation that leads the mourning community to co-create a piece of art. Designer B created ‘Mourning Jewels’, connected jewelry pieces that use light stars to show that a family member thinks about and misses the deceased. And designer C generated ‘Treasuring Words’ in which recorded audio messages about common group events are connected to jewelry pieces (charms, pendants, pins, and cufflinks) and are released by a central object. In contrast to these more abstract project outcomes, junior designer D created a concrete, explicit and direct communication tool to offer support after the death of a parent. The concept stimulates and helps the remaining parent and child to jointly become aware, discuss and redefine life changes through the help of tokens placed on a light-projecting calendar (see Figure 4). The end result of this design was well thought-out, more concrete and more layered than those of the other junior designers and was therefore selected for exhibition at the Dutch Design Week.



Figure 4. Three images of a child mourning support tool, project result of junior designer D:

(a) the calendar, and (b) projection of calendar, and (c) interaction with calendar

2.3.3 Case Study Interviews

In four individual semi-structured (qualitative) interviews of one-and-a-half to two hours, the principal researcher introduced the junior designers to the goal of the retrospective interviews and to the first-, second- and third-person perspectives. The junior designers were asked to reflect on their individual project processes and they each gave a chronological overview of their activities, how they executed them and why, including the perspectives they chose.

Finally, they gave hindsight opinions about the strengths and weaknesses of each activity and related perspective(s), and made suggestions for improving the approaches they took. During the interviews, the interview outcomes were documented in the form of a table (see Table 2 and Appendix A for an explanation of the interview process). At the end of the interview, remarks were noted down. The junior designers were able to assign the correct perspective(s) to each activity, except for two cases where they mixed up personal activity and personal experiences ('I decided'). After these minor corrections, the analyses continued.

Table 2. Example of the structure of the interview form to explain how our data was gathered. The English text is original from our non-native English student (junior designer C). We apologize for spelling mistakes.

Order	Activity	Description	P	Why	Strength	Improve Strength	Weakness	Improve Weakness
6.	idea generation	create ideas based on phases in life and mourning from 3 perspectives	1st 2nd 3rd	preparation should be an option, but if impossible there should be more options	exploration of multiple phases of life and needs	how to prepare and guide others to design with me?	less depth in each direction	spend more time on it, better preparation
7.	create context for design	interview with s, create abstraction of context needs and values	1st 2nd 3rd	to get a focus point, create user, real user for validation	direct feedback, switch from divergence to focus	better preparation and focus driving process	feedback of only one individual	get more feedback from similar individuals (in terms of context)
8.	read scientific papers	find and study relevant research, take what is relevant	1st 2nd 3rd	for validation and inspiration for ideas	interesting psychological insights, balance personal and scientific			
9.	idea generation and concept development	generate and develop ideas within context with feedback by s	1st 2nd 3rd	validation, keep concept relevant within context	constant review of ideas, adaptability, protect relevance, critical view on ideas	ideas from s, not just feedback	time	find expert with commitment, more time investment from s
10.	feedback from peers and expert	present concepts & receive feedback from peers and expert	1st 2nd 3rd	perspective before developing final concept	find overlooked weaknesses and new inspiration	do it earlier in process and make structural	be careful not to blindly accept all feedback, reflect!	reflect!

2.4 The Value of Single Perspectives

To better understand the application of the different individual perspectives, we analyzed all the participant interview reports for the number and types of perspectives taken (see Appendix B and Table 3). The junior designers sometimes took more than one perspective per activity. The number of perspectives taken related to the total number of activities done results in an overview in percentages.

Table 3. Individual perspectives reported per junior designer²

<i>Junior Designer:</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
<i>Total Activities:</i>	<i>15</i>	<i>16</i>	<i>12</i>	<i>19</i>
1st	7% 1/15	6% 1/16	33% 4/12	42% 8/19
2nd	53% 8/15	31% 5/16	67% 8/12	26% 5/19
3rd	73% 11/15	94% 15/16	58% 7/12	68% 13/19
Transitions	80% 12/15	44% 7/16	100% 12/12	79% 15/19

Note: Since the junior designers sometimes took more than one perspective per activity, the percentages can sum up to more than 100%.

We identified all perspectives at least once with each junior designer. Both junior designers A and B (with no mourning experience) scored high on third-person and low on first-person perspective. Junior designer C most often used the second-person perspective due to a closer and consistent collaboration with a grieving friend. Junior designer D could relate to her own experiences and feelings (e.g., grief, love, loss) and therefore used the first-person perspective more than the other junior designers. To obtain a detailed description of the value of each single perspective that went beyond counting their frequency, we analyzed the more extensive reports from the interviews containing perspective strengths, weaknesses and improvements (see Table 2). This helped us understand why the junior designers used specific perspectives. A detailed description of each individual perspective is presented below.

² In the original article the Table caption was: Individual perspectives and transitions reported per junior designer. The transitions are shown in tables 7, 9 and 11.

2.4.1 Third-Person Perspective

Tomico et al. (2012) defined the third-person perspective as designing for people and society in general without involving users or having direct contact with experts. In Table 1, we linked Cockton's (2009) meta-principle of receptiveness to this perspective. The designer is *receptive* to many alternatives in designing with regard to means for (e.g., methods, data, (re)sources) and ends of design (e.g., ideas, concepts). From the case study, we learned that this perspective is about what a designer knows, thinks, hypothesizes, assumes and speculates.

The junior designers reported using this perspective a lot: in 58%, 68%, 73% and 94% of all their activities, respectively. They all started the project from this perspective. They reported employing this perspective individually: no one else was involved. Interviewees mentioned distancing themselves from the real mourning situation by taking an analytical point of view. They informed themselves (e.g., with internet, papers, literature) and then expressed this information—with the help of their imaginations—in various forms (e.g., visions, ideas, concepts, prototypes, business cases).

The junior designers reported three strengths of this perspective. First, this perspective enabled them to discover and substantiate a design context. Second, they explicitly mentioned that this perspective was helpful in obtaining a (quick) holistic and even objective view of the situation and solution direction. ('Objective' was mentioned when junior designers took a distant approach; however, assumptions were also identified in this perspective. It is questionable whether a difference between objectivity and subjectivity can be made here, but the junior designers perceived it like this.) To illustrate this, junior designer D said this perspective gave her "*a scientific foundation to the project*". Third, this perspective expanded their frames of reference (e.g., not only did they study existing solutions, but they also used psychological insights as inspiration).

The junior designers also saw a few limitations to this perspective. Although they found it convenient to retrieve information, they remarked that the data gathered was too abstract. For example, junior designer B said: “*a literature study alone can be shallow since it misses real-life experience*”. All of them felt that they should have combined the third- and second-person perspectives earlier and should have iterated more, since this would have led to a more realistic view of the situation. To illustrate this, junior designer D said: “*I would involve more perspectives earlier for more real-life scenarios*”. Table 4 summarizes our findings.

Table 4. Perspective definition summary

Third-Person Perspective

For designers, employing this perspective means being receptive: they think about many alternatives with regard to means and ends in designing for the user. Based on third-party means (available knowledge and sources), the designer is able to set up a (future) hypothesis to imagine and develop new ends (e.g., vision, design directions, ideas, criteria, concepts, prototypes) and to construct theoretical framing.

2.4.2 Second-Person Perspective

Tomico et al. (2012) defined the second-person perspective as designing together *with* a small group of people that are part of the user situation. In Table 1, we linked Cockton’s (2009) meta-principle of inclusiveness to this perspective. The designer *includes* an adequate range and number of stakeholders in designing to understand their needs and values and to co-design ends with stakeholders. In addition, designers develop means that help stakeholders better express themselves. From the case study, we learned that this perspective is about what a designer sees, hears and empirically finds in contact and collaboration with users.

Our junior designers used this perspective in 26%, 31%, 53% and 67% of all activities, respectively. Junior designer C even employed this perspective more often than she used the first- and third-person perspectives. Nobody began design activities in this perspective. The junior designers mostly reported collaborating with one user with mourning experience and

only sometimes with more stakeholders. They then used expertise from professionals in the field (e.g., funeral suppliers and a psychologist). The interviewees informed themselves by conducting field research and using UCD, HCD, PD and Co-D techniques including co-reflection, scenarios, design probes, context mapping and re-enactment.

The junior designers mentioned several strengths of this perspective. For instance, exchanging information and experiences leads to detailed, nuanced and personal insights that give information about innovation necessity and acceptance. This helped them converge and brought a clear focus point and relevance to the project. It broadened their knowledge, completed design directions, increased validity and supported them in finding alternatives when they got stuck.

They also saw some limitations to this perspective. In hindsight, all of them wanted to involve more stakeholders (professional experts and users) earlier and more often. To illustrate this, junior designer B said: *“I would have liked to collaborate with a group of people instead of one”*. The junior designers involved experts earlier in the project than they involved mourners, because they found this easier to arrange. They found it difficult to actively search, find and get commitment from stakeholders. They attributed this inhibition to their fear of making contact, since they felt as if they were interfering and bothering vulnerable people. In addition, they had problems with recruiting a coherent group of users with the same type of mourning experience (e.g., losing a child versus losing a grandmother). Subsequently, working with mourners from different contexts caused confusion, since outcomes contradicted each other. For example, junior designer C said: *“I would have appreciated more feedback from individuals out of the same context”*. And junior designer B said: *“I should have focused more on people within the same context”*. Inexperience with PD and Co-D processes led to delays (both in user/expert recruitment and in selecting appropriate

design techniques). To illustrate this, junior designer C said: “*How to prepare and guide others to design with me?*”. Table 5 summarizes our findings.

Table 5. Perspective definition summary

Second-Person Perspective:

For designers, employing this perspective means being inclusive: they co-design with an adequate range and number of stakeholders. This collaboration with stakeholders (professional experts and users) allows the designer to be inspired, to build an empathic understanding and to construct an empirical framing of the user situation and the stakeholders’ (current and past) values within it.

2.4.3 First-Person Perspective

However, junior designer D, the only participant with first-hand experience with death and mourning, mentioned that the designer is part of the situation at stake: “*The designer experiences what mourners experience*”. This was enabled by relating to her own past experiences, and recalling her own pain, coping, solutions and current feelings. Apart from intuition fostered by personal experiences, she did not mention using a specific method. To her, the three advantages of this perspective are the ability to find inner motivation, to gain depth with the help of personal emotional cues and to intuitively feel acceptance for a design direction. To illustrate this, she said: “*The opportunity of exploring, deepening and gaining an overview of my personal experience in order to eventually design something that could have truly helped me and might be able to support others in similar situations intrigued, fascinated and above all evoked a feeling of challenge. An actual meaningful design for mourning.*”

Junior designer D also mentioned limitations related to the very intimate, emotional, personal and subjective approach of this perspective. She expressed a need for guidance and support in learning to trust her intuition. Zhang and Wakkary (2014) also argued for supporting designers. To illustrate this need, junior designer D was confused by this

perspective at the start of her project, which made her design process chaotic. At first, she was reluctant and afraid to go in-depth with her feelings and experiences. When she made a mind-map to retrieve an overview of her needs, coping behavior and problem-solving capacity, she experienced an emotional overload. She felt that she needed a “*more subtle, less direct and clear method*” and felt like a “*designer and user in one*”. Although she knew what would have worked for her, she felt insecure about trusting her intuition and needed a broader perspective. She was helped by combining the first-person perspective with reflection (third-person) in a less verbal re-enactment (Lego session) with her family and peers (second-person). In the end, the project accelerated once she trusted her intuition. Table 6 summarizes our findings.

Table 6. Perspective definition summary

First-Person Perspective:

For designers, employing this perspective means being committed: they are part of and within the design context and include informal autobiographical reflection. Based on his or her own (current and past) experiences within this context, the designer takes responsibility, finds intrinsic motivation, uses intuition and constructs an intuitive framing.

2.5 The Value of Perspective Transitions

Having established our descriptions of the specific value of each perspective, we now turn to perspective transitions. In this section, we will identify the specific role each possible perspective transition (labeled and defined in Figure 3) played in the junior designers’ projects.

To identify transitions, we reanalyzed the entire dataset, which resulted in an abstract visualization. Figure 5 places design activities on a vertical axis and perspectives on the horizontal axis. Each activity has been given one or more perspectives by the junior designers and these are plotted as black dots. The dots are plotted on an equally divided vertical distance; this distance has no specific meaning. Since the junior designers directed their own

processes in the project, their design activities were chosen differently and thus the number of activities/dots varied. However, the start (top of graph) and end (bottom of graph) presentations occurred at the same time. The black dots show the perspectives identified with our students. Horizontal lines show parallel perspective combinations executed within a single design activity. Diagonal lines show perspective switches: a transition of two different perspectives in sequential design activities. The green lines show that all three perspectives were considered. Red lines show a shift between first- and third-person, yellow a shift between second- and third-person, and blue a shift between first- and second-person perspectives.

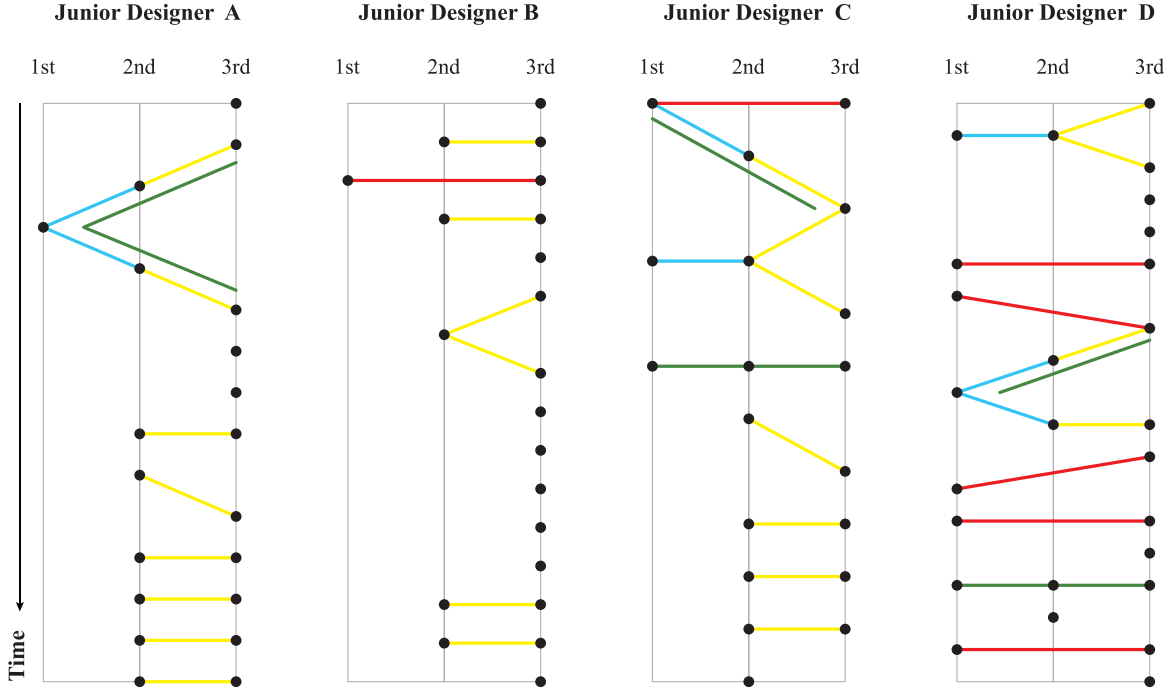


Figure 5. Perspective(s) Chosen per Activity over Time, Outcomes of Junior Designers A-D

The figure clearly shows that all the junior designers moved constantly between perspectives in more than half of all design activities. Junior designer D clearly had the widest-spread outcomes and perspectives transitions consisting of first- and third-person perspectives, something that was scarce with the other junior designers. We will describe the diverse transitions in the next sections.

2.5.1 Perspective Transitions: Combination 2|3, 3|2, 2|3|2, 3|2|3

Each perspective combination of and switch between the second- and third-person perspectives reported per junior designer is depicted in Table 7. These transitions were identified by all junior designers at least once. Junior designers A, B and C used them a lot (53%, 37%, and 58%, respectively). Especially toward the end of their projects, we saw many combinations, whereas switches were seen more at the start. Junior designer D used more switches and only one combination of the second- and third-person perspectives.

Table 7. Transitions reported per junior designer based on second- and third-person perspectives

<i>Junior Designer:</i> <i>Activities:</i>	<i>A</i> <i>15</i>	<i>B</i> <i>16</i>	<i>C</i> <i>12</i>	<i>D</i> <i>19</i>
Combination	33% 5/15	25% 4/16	25% 3/12	5% 1/19
Switches	20% 3/15	12% 2/16	33% 4/12	16% 3/19
Switch 2 3	13% 2/15	6% 1/16	25% 3/12	5% 1/19
Switch 3 2	7% 1/15	6% 1/16	8% 1/12	10% 2/19
Total Transitions	53% 8/15	37% 6/16	58% 7/12	21% 4/19

Note: In the junior designer’s reports, it is not clear from which perspective they started when perspective combinations were identified, depicted as 23. Perspective switches were identified and thus depicted as 2|3 or 3|2, depending on which perspective was used first.

In perspective transitions of the second- and third-person perspectives, designers collaborated with stakeholders (users and professional experts). We found that these transitions were often repeated after one another and seemed to form larger series (see Figure 5). These sequential series of transitions are illustrated in the next section as clusters, but we will first explore the single transitions. The junior designers mentioned that these transitions fostered the design process iteration by complementing the third-person perspective with context and stakeholders’ experiences and the second-person perspective with reflection and expression. To illustrate this, junior designer B said: *“Theoretical research was done due to a lack in personal experience. As a follow up of the in-depth theoretical research, a professional expert was consulted to broaden knowledge on topic”*. The third-person perspective alone seldom

suggested apt solutions directly and did not provide a ‘reality check’ as an antidote to the assumptions and speculations of the junior designers. Moreover, starting out with a single stakeholder carried the risk of idiosyncratic findings, which needed to be reviewed critically and placed in the third-person perspective (credible).

A transition from third- to second-person perspective differed from a transition from second- to third: a start from knowledge, hypothesis, assumptions and speculations of the designer’s own distant thinking and thus abstractness versus a start from stakeholders and thus context and concreteness. The junior designers mentioned using validation and co-design techniques: from co-analysis (second-person) leading to user criteria (third-person) via co-ideation (second-person) leading to interaction parameters and form and senses decisions (third-person). The advantage the junior designers mentioned is that these Mixed Perspectives moved design beyond hypothesis (assumptions and speculation): ideally by merging user experience and professional expertise to their own reason and generic data. However, most of the junior designers only collaborated with one participant. Another limitation they mentioned is that switches between and combinations of second- and third-person perspectives lacked their personal experiences, insights and intuition. Table 8 summarizes our findings.

Table 8. Transition Summary

Transitions of Second- and Third-Person Perspectives (see Figure 5)

For designers, employing this perspective transition means being receptive and inclusive. The designer works individually or with other designers and in contact and/or collaboration with stakeholders (users and professional experts).

2|3: The designer starts by collaborating and referring to the design context and stakeholders’ values. The resulting empirical framing is validated, fostered and improved by available third-party knowledge to construct a theoretically scaffolded empirical framing of the design context.

3|2: The designer starts by expressing a hypothesis based on available third-party knowledge. The resulting theoretical framing is validated, fostered and improved by referring to the design context and stakeholders’ values to construct an empirically enriched theoretical framing of the design situation.

2.5.2 Perspective Transitions: Combination 13 and Switches 1|3, 3|1, 1|3|1, 3|1|3

Each perspective combination and switch between the first- and third-person perspectives reported per junior designer is depicted in Table 9. In general, these perspective transitions were scarce, since the first-person perspective was little utilized by junior designers A, B and C. With junior designers A, B and C—who had no mourning experience—we only saw perspective combinations at the start of the design project and switches were not identified. Junior designer D clearly had a different design approach than the others.

Table 9. Transitions reported per junior designer based on first- and third-person perspectives

Junior Designer:	A	B	C	D
Activities:	15	16	12	19
Combination	0	6% 1/16	8% 1/12	16% 3/19
Switches	0	0	0	10% 2/19
Switch 1 3	0	0	0	5% 1/19
Switch 3 1	0	0	0	5% 1/19
Total Transitions	0	6% 1/16	8% 1/12	26% 5/19

Note: In the junior designers' reports, it is not clear from which perspective they started when perspective combinations were identified, depicted as 13. Perspective switches were identified and thus depicted as 1|3 or 3|1, depending on which perspective was used first.

In perspective transitions of the first- and third-person perspectives, designers worked alone and related to knowledge and their own experiences, feelings and intuition such as rituals, grief, love and loss. Junior designer D mentioned taking a deliberate personal and holistic perspective on the design situation and made a comparison: *“I employed this transition to validate personal experiences (soft) to literature, data (hard), as well as to be inspired by subjectivity and objectivity in the same iteration”*. The outcomes were dilemmas, opportunity spaces, design criteria and decisions. This was seen as useful, for example, for the preparation of a co-design session. A transition from third- to first-person perspective differed from a first- to third-person perspective transition. In the first, the designer started from knowledge, assumptions and speculations from their own distant thinking and thus abstractness. The latter transition started from personal experience and intuition, and thus context and concreteness.

The advantages mentioned were that these transitions acknowledged intuition, prevented assumptions and speculation, merged intuition and reason, and did not require direct access to mourners (since junior designer D started to build a design based on her own experiences). It also helped junior designer D to converge and focus the design process on personal meaning. To illustrate this, she reflected: *“While having experienced the loss of a loved one myself, my project approach came from both a designer and a user perspective. Something that wasn’t instantly achieved, but rather progressively developed throughout the project. It was a process of letting these two perspectives come together and eventually providing me with the possibility to design something that could have helped me back then”*. A disadvantage mentioned is that this transition builds on only one person’s personal experience and lacks the perspectives of multiple stakeholders. Table 10 summarizes our findings.

Table 10. Transition Summary

Transitions of First- and Third-Person Perspectives (see Figure 5)

For designers, employing this perspective transition means being receptive and committed. The designer works alone or possibly with other designers.

1|3: The designer starts relating to his or her own experiences and feelings within the design context. The resulting intuitive framing is validated, fostered and improved by available third-party knowledge to construct a theoretically scaffolded intuitive framing of the design context.

3|1: The designer starts expressing a hypothesis based on available third-party knowledge. The resulting theoretical framing is validated, fostered and improved by relating to his or her own experiences and feelings from within the context to construct an intuitively enriched theoretical framing of the design context.

2.5.3 Perspective Transitions: Combination 12 and Switches 1|2, 2|1, 1|2|1, 2|1|2

Each perspective combination and switch between first- and second-person perspectives reported per junior designer is depicted in Table 11. Again, there were few of these perspective transitions, since the first-person perspective was rarely utilized. Yet, junior designers A and D both showed a clear 2|1|2 switch: the blue arrow in Figure 5 at the start of the project. Junior designer B did not use this mix at all.

Table 11. Perspective transitions reported per junior designer based on first- and second-person perspectives

Junior Designer: Activities:	A 15	B 16	C 12	D 19
Combination	0	0	8% 1/12	5% 1/19
Switches	13% 2/15	0	8% 1/12	16% 3/19
Switch 1 2	7% 1/15	0	8% 1/12	5% 1/19
Switch 2 1	7% 1/15	0	0	5% 1/19
Total Transitions	13% 2/15	0	17% 2/12	21% 4/19

Note: In the junior designers’ reports, it is not clear from which perspective they started when perspective combinations were identified, depicted as 1|2. Perspective switches were identified and thus depicted as 1|2 or 2|1, depending on which perspective was used first.

In perspective transitions of the first- and second-person perspectives, designers collaborated with stakeholders (users or professional experts) by relating to their and designers’ own experiences. This transition fostered design with experiences from at least two perspectives (stakeholder and designer) and included intuition. Interviewees mentioned that combining their own personal experiences with those of other(s) “*completed the picture*”. They used the transitions to decide what is of value to whom and whether a proposition affected individuals or groups. The insights (differences and similarities in perspectives) could be translated into (mis)understandings and dilemmas that create design opportunity spaces. Junior designer D mentioned that these transitions also led to shared motivation, authorship and ownership. The other junior designers mentioned another advantage: these transitions prevented designing from one perspective. They broadened their knowledge by merging others’ experiences and expertise with their own intuition. To illustrate this, junior designer C said: “*This perspective combination helped to find alternative routes when I was in danger of getting stuck in my own ideas*”. Next, she said: “*This Mixed Perspective helped me to solve the question: is it about my experience or general reality?*”

They also mentioned several disadvantages. For instance, one junior designer mentioned a lack of reasoning and reflection in this transition. Further, junior designer D mentioned a confusing double role—especially in this perspective combination—where the

designer was both experience expert and design facilitator in one. Friction occurred since she could not take a neutral facilitator role because, as a content expert, she was part of the process/activity. Therefore, switches seemed easier to conduct than combinations, since then designers' own design activity is executed separately from stakeholder activities. Table 12 summarizes our findings.

Table 12. Transition Summary

<i>Transitions of First- and Second-Person Perspectives (see Figure 5)</i>
For designers, employing this perspective transition means being committed and inclusive. The designer works alone and in collaboration with stakeholders.
1 2: The designer starts by relating to his or her own experiences and feelings. The resulting intuitive framing is validated, fostered and improved by being committed to context and stakeholders' values to construct an empirically validated intuitive framing of the design context.
2 1: The designer starts by referring to the context and stakeholders' values. The resulting empirical framing is validated, fostered and improved by relating to his or her own experiences and feelings to construct an intuitively enriched empirical framing of the design context.

2.5.4 Perspective Transitions: Combination 123 and Switches 1|2|3, 3|2|1

Each transition between first-, second- and third-person perspectives reported by each junior designer is depicted in Table 13. It must be noted that perspective transitions 3|1|2, 2|3|1, 2|1|3 or 1|3|2 were not found and are therefore not mentioned in the table. Junior designer B did not use this transition at all. With the other three junior designers, three transitions seen were based on first- and second- and second- and third-person perspectives switches (Figure 5) and two were combinations. In perspective transitions of the first-, second- and third-person perspectives, our designers collaborated with stakeholders. They related to their own experiences and to those of the stakeholders, and to available knowledge in several iterations. Students compared this transition to doing design activities from a distance and in connection with others and oneself, including reflection in design action and on results.

Table 13. Transitions reported per junior designer based on first-, second- and third-person perspectives

<i>Junior Designer:</i>	<i>A</i>		<i>B</i>		<i>C</i>		<i>D</i>	
<i>Activities:</i>	<i>15</i>		<i>16</i>		<i>12</i>		<i>19</i>	
Combination	0		0		8%	1/12	5%	1/19
Switches	13%	2/15	0		8%	1/12	5%	1/19
Switch 1 2 3	7%	1/15	0		8%	1/12	0	
Switch 3 2 1	7%	1/15	0		0		5%	1/19
Total Transitions	13%	2/15	0		17%	2/12	10%	2/19

Note: In the junior designers’ reports, it is not clear from which perspective they started when perspective combinations were identified, depicted as 123. Perspective switches were identified and thus depicted as 1|2|3 or 3|2|1 depending on which sequence was followed. Perspective switches of 3|1|2, 2|3|1, 2|1|3 or 1|3|2 were not found.

We will use the following example to illustrate this transition. We saw that junior designer D’s intuition and inner passion led to meaningful and concrete design action. Her personal experiences and emotions about unclear and frustrating communication gave her relevant information about how to improve her mourning situation. Comparing her experiences with her family’s experiences and professionals’ expertise gave her high-quality options and compatible choices (credibility). This helped her complete the picture and motivated (committed) her to move in a specific direction that would lead to benefits for all stakeholders (inclusive). These multiple perspectives and iterations led to a social-driven and engaging design intervention. Combining her personal experiences and feelings with those of her family, peers and professional experts, and with reason, gave designer D choices to give direction to her design. This enabled her to connect what she thought and envisioned (third-person) with what she saw, heard (second-person) and felt (first-person). Table 14 summarizes our findings.

Table 14. Transition Summary

Transitions of First-, Second- and Third-Person Perspectives (see Figure 5)

For designers, employing this perspective transition means being committed, inclusive and receptive. The designer works alone or may collaborate with stakeholders or other designers.

1|2|3: The designer starts by relating to his or her own experiences and feelings within the design context. The resulting intuitive framing is validated, fostered and improved by referring to the context and stakeholders' values. The resulting empirically validated intuitive framing is confirmed, fostered and improved in turn by available knowledge to construct a theoretically and empirically grounded intuitive framing of the design context.

3|2|1: The designer starts by expressing a hypothesis based on available knowledge. The resulting theoretical framing is followed by referring to context and the stakeholders' values. The resulting empirically enriched theoretical framing is confirmed, fostered and improved in turn by relating to his or her own experiences and feelings within the context at stake to construct an intuitively and empirically enriched theoretical framing of the design context.

The above analysis enabled us to complement Figure 6; we summarized our findings by adding the value of each perspective transition in Figure 6. In addition, the case study analysis taught us that there are transition sequences with specific value. These Mixed Perspectives series of 'good practices' can inspire and guide future (junior) designers in their design processes. Therefore, we will introduce the concept of perspective clusters in the next section.

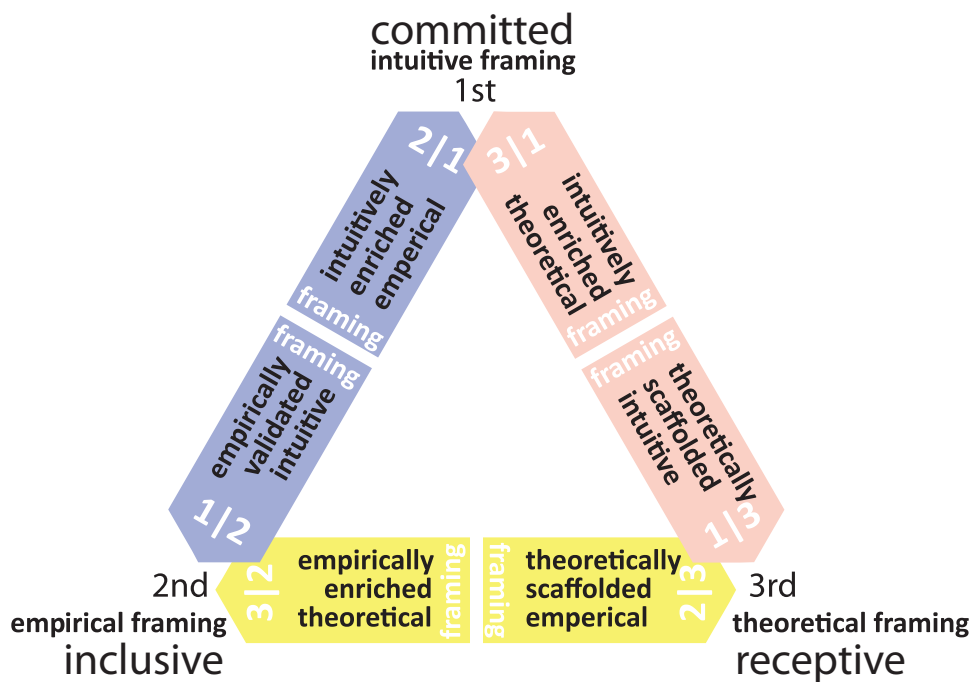


Figure 6. Perspective Transition Values

2.6 Perspective Clusters

Perspective clusters are sequential series of perspective transitions. They enable designers to include multiple perspectives consciously, including the designers' own experiences, encompassed in the first-person perspective. Several perspective clusters can be identified in our junior designers' projects. We realize that these cannot be seen as prescriptive rules or codes of conduct, since our research included few participants and this project was individually run, while design is usually done in teams. Therefore, we will be modest when formulating prescriptive advice about using perspective clusters at this point. However, these analyses can contribute to the academic discussions on empathic design started by Kouprie and Sleeswijk Visser (2009) and on designing principles started by Cockton (2009). We suggest that a perspective cluster is one of the many iterations that can be utilized anywhere between analysis and implementation. To ensure that a cluster is a comprehensive, coherent and closed iteration, we suggest that clusters always start and end with the third-person perspective. We suggest this because normally every design activity starts with some sort of 'hypothesis' (no matter how small) and is wrapped up with an evaluative and/or synthesizing 'answer' and because the case study project started with a third-person perspective.

The first perspective cluster we identified is 3|2|3|2|3. It builds on the transitions based on second- and third-person perspectives described in Table 8. This cluster allows a designer to be receptive and inclusive, and the several iterations make the design evolve over time (e.g., receptiveness to stakeholders is better dealt with through refinements of inclusiveness). In this cluster, designers have difficulty meeting the meta-principle of committedness since personal experiences are not consciously involved. This cluster can be recognized in most well-known UCD, HCD, PD and Co-D design techniques, where activities are alternated by reason and expression over several iterations. Junior designers A, B and C used this cluster a lot at the end of their projects (see Figure 5). These students -who had no personal mourning

experience- liked to increase the certainty with which they made their design decisions through continuous validation with stakeholders (users or professionals). In contrast, junior designer D did not use this cluster at all. This was probably because she was able to relate and build on her own experiences and feelings: the first-person perspective. Cluster 3|2|3|2|3 enables the designer to improve design directions and makes the designer's and stakeholders' assumptions more credible since they are validated with data and in prototypes.

The second perspective cluster we found is 3|1|3|1|3. It builds on the previously described transitions based on the first- and third-person perspectives described in Table 10. This cluster allows a designer to be committed and receptive, and the several iterations make the design evolve over time. In this cluster, designers have difficulty meeting the meta-principle of *inclusiveness* since stakeholders' experiences are not involved. This cluster gives designers a way to bring personal experiences and intuition together with reason and expression in several iterations. Junior designer D was the only participant to use this cluster. She used it twice (see Figure 5). This cluster guided her to increase the certainty with which she involved personal experiences and made design decisions through continuous validation with data and expressions (e.g., prototypes). The cluster enables designers to improve design directions and makes intuition more credible. As a by catch, we would like to mention that she used second-person perspectives techniques in this cluster (e.g., a Lego re-enactment) since no specific first-person perspectives' techniques seemed to be available.

Finally, we found two perspective clusters that build on all three perspectives. The first 3|2|1|3 perspective cluster is as prescribed in Koupric and Sleeswijk Visser's (2009) empathy framework. It was identified in junior designers C and D before the middle of the project. Next, we identified perspective cluster 3|2|1|2|3 more often, with all our junior designers. This cluster was used three times by junior designer D, twice by junior designer C and once each by junior designers A and B. Junior designers A and B reported this cluster at

the start of the project and junior designer C in the middle of the project. Junior designer D repeated this cluster three times: at the start, middle and end. This cluster guided her in the first pressure cooker week discovering the subject of mourning by reading literature, talking to her mother, memorize own feelings, talking to her brother and express first design directions. In the middle of the project, she complemented a fictive re-enactment with a re-enactment by her mother and a personal one. A meeting with her mother followed this. They together searched for differences in experiences and this led to overview. Finally, the cluster was used in idea generation. Several perspectives helped the junior designer to come to alternative and appropriate concepts and intuition helped to concretize them. Since these two clusters enforce coherent use of all three perspectives, they adhere or touch at least the following three attitude meta-principles from Cockton (2009): *receptiveness, inclusiveness and commitment*. These clusters can guide designers in bringing in all perspectives, which might bring us close to Cockton's principle on *credibility*, which concerns the quality of options and compatibility of choices.

2.7 Conclusions and Discussion

We began this chapter by first improving the current understanding of the three basic person perspectives. We provided a structured overview of existing literature that relates to these perspectives and put them in a research context. Building on Cockton's (2009) meta-principles, we then connected each perspective to a meta-design principle, which already enriched the original descriptions of the perspectives in Tomico et al. (2012). Our contribution was to connect these three meta-principles specifically to the designer's *attitude*, making the designer receptive, inclusive and committed. This helps the designer to understand and establish upfront the extent to which a certain meta-principle can be achieved within each perspective (and ultimately within transitions and clusters). Cockton's principles became less abstract and are guides to action within the Mixed Perspectives approaches. We were then

able to extend the three basic perspective descriptions by analyzing the utilization and specific value of each single perspective in designing with help of the case study on mourning rituals. The perspective descriptions derived enable designers to become aware of, to understand and to make a deliberate and explicit choice between the three. For designers, employing a third-person perspective means being receptive: they think about many alternatives with regard to means and ends in designing for the user. Based on third-party means, the designers are able to set up a hypothesis to imagine and develop new ends and to construct theoretical framing. Employing a second-person perspective means being inclusive: designers co-design with an adequate range and number of stakeholders. This collaboration with stakeholders allows designers to be inspired, to build an empathic understanding and to construct an empirical framing of the user situation and the stakeholders' values within. Employing a first-person perspective means being committed: designers are part of and within the design context and include informal autobiographical reflection. Based on their experiences within this context, the designers take responsibility, find intrinsic motivation, use intuition and construct an intuitive framing.

Second, we laid a foundation for Mixed Perspectives (MP-)methodology by identifying and describing the specific values of several perspective transitions, much in the way van Turnhout et al. (2014) compiled a short list of reasons to combine research strategies. The transition descriptions enable designers to become aware of them, to understand their value and to enable a thoughtful contextual choice for specific perspective transitions.

Third, we introduced perspective clusters and emphasized that they can guide designers by employing intentional perspective alternations in a specific order, just as Kouprie and Sleeswijk Visser (2009) implicitly suggested in their empathic framework. In this way, perspective clusters facilitate designers' abilities to utilize and integrate a first-person perspective in a legitimate and valid way, as proposed by Cross (2001) and Zhang and

Wakkary (2014). The clusters can be used as building blocks for a flexible design process, which is also the intention of other authors who have proposed methodologies that transcend the use of specific methods (van Turnhout et al., 2014; Johnson et al., 2014; Woolrych et al., 2011).

In conclusion, we suggest that this Mixed Perspectives (MP-)approach brings about a novel and deeper understanding of the commonalities in existing design methodologies such as UCD, PD and Co-D. We also suggest that it gives the designer more flexibility in thoughtfully applying elements of these methodologies. Mixed Perspectives can therefore be seen as a new code or rule of conduct for designing.

The main contribution of this chapter is that we propose Mixed Perspectives as a fundamental design framework and acknowledge the value of the designer's first-person perspective in designing. In the recent search for design methodologies that transcend the 'method' as its core unit of analysis (van Turnhout et al., 2014; Johnson et al., 2014; Woolrych et al., 2011), we showed that the Mixed Perspectives position enables designers to decouple methodology from methods. The Mixed Perspectives (MP-)approach forms a loosely coupled set of perspective transitions and clusters, which can be molded to local priorities and the specific context of a project regardless of specific methods. This enables designers to be supported in an unambiguous way in their own unique design process.

Although we showed that the Mixed Perspectives (MP) approach is promising, further research is necessary. We realize that the scope of our work is limited and has yet to be validated. This study emerged from retrospective interviews based on a small inquiry and only included one designer with mourning experience (a first-person perspective). In the remainder of this section, we will address limitations and give considerations for future research.

We would like to highlight four priorities for future research. First, within the second-person perspective, we see a continuum that needs further research. For example, there is a difference in the designers' distance or closeness toward the user(s) in the second-person perspective. This was observed in the difference in contact with the users in design activities (e.g., observation, interviews, collaboration and co-experiencing). Co-experiencing with users is still a second-person perspective, as it is not living the real experience. But the borders of the second- and first-person perspectives might be blurred when designers have experience within the context of design. For example, when junior designer D was facilitating co-design sessions with peers, she expressed difficulties with assuming a neutral position, since she was also still a person in mourning. We observed that this could confuse the designer with experience in the context of design. This type of dilemma may be alleviated by clearly identifying roles for each perspective and for Mixed Perspectives.

Second, we also saw how easy it is to confuse the first- and third-person perspectives. For example, two students mixed up personal activity (third-person) and personal experience (first-person). One could also imagine designers mixing up an educated guess with a personal opinion.

Third, we need to study the Mixed Perspective (MP) methodology as a guiding framework when it is used throughout the design process. When designers learn about the Mixed Perspective (MP) approach and its benefits before a design process starts and subsequently report and reflect on it in action, we can better evaluate the effectiveness of this approach. To validate it as a framework, the next step should be to properly use it to make decisions and switches during the design process in a reasoned manner rather than in an intuitive manner.

Finally, we need to create design situations and contexts in which we can observe differences in the Mixed Perspectives methodology. These include different design project

subjects, professional designers versus junior designers, and individual designers versus design teams. Ultimately, if designers employ Mixed Perspectives, they will gain more insights, a holistic overview, certainty and inspiration, and will improve the relevance and meaning of their designs and visions.



This following chapter resembles the publication: Smeenk, W., Sturm, J., & Eggen, B. (2017). Empathic handover: How would you feel? Handing over dementia experiences and feelings in empathic co-design. *CoDesign: International Journal of CoCreation in Design and the Arts*, 1-16. Taylor & Francis.

CHAPTER 3

EMPATHIC HANDOVER: HOW WOULD YOU FEEL? HANDING OVER DEMENTIA EXPERIENCES AND FEELINGS IN EMPATHIC CO-DESIGN

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Empathic handover: how would you feel? Handing over dementia experiences and feelings in empathic co-design

Wina Smeenk^{a,b}, Janienke Sturm^{b,c} and Berry Eggen^b

^aWien's Ontwerperschap, Broek in Waterland, CN Netherlands; ^bIndustrial Design, Technische Universiteit Eindhoven, Eindhoven, MB Netherlands; ^cHRM and Psychology Department, Fontys University of Applied Science, Eindhoven, MB Netherlands

ABSTRACT

It is difficult to inform design with experiences from people with dementia. When it comes to involving this vulnerable user group and connecting multidisciplinary design teams, current empathic co-design methods and tools are scarce, seem fragmented and lack a coherent and structured approach. In response, we provide guidance to design teams by proposing a novel, empathic co-design approach that enables a user researcher, who encounters people with dementia, to transfer insights to team members who do not. Our proposal addresses three sequential co-design activities facilitated by an empathic principal designer: (1) individual harvest meetings, (2) collective handover workshops and (3) empathic ideation workshops. Using a case study involving a dementia simulator, we illustrate how the approach contributes to understanding users, transferring insights and translating empathy into design. The positive evaluation of the simulator led us to conclude that the approach not only guided the design team by offering a practical and coherent process, but also enabled individual team members to be receptive, inclusive and committed to people with dementia.

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Chapter 3: Empathic Handover: How would you feel? Handing over dementia experiences and feelings in empathic co-design

It is difficult to inform design with experiences from people with dementia. When it comes to involving this vulnerable user group and connecting multidisciplinary design teams, current empathic co-design methods and tools are scarce, seem fragmented and lack a coherent and structured approach. In response, we provide guidance to design teams by proposing a novel, empathic co-design approach that enables an user researcher, who encounters people with dementia, to transfer insights to team members who do not. Our proposal addresses three sequential co-design activities facilitated by an empathic principal designer: 1) individual harvest meetings, 2) collective handover workshops and 3) empathic ideation workshops. Using a case study involving a dementia simulator, we illustrate how the approach contributes to understanding users, transferring insights and translating empathy into design. The positive evaluation of the simulator led us to conclude that the approach not only guided the design team by offering a practical and coherent process, but also enabled individual team members to be receptive, inclusive and committed to people with dementia.

3.1 Introduction

Imagine:

You come home from grocery shopping to an unfamiliar kitchen and search for the refrigerator. First, you open the wrong door, but after opening another two, you find the right one. The fridge is fully packed with grapes and milk. You open your bag and start to put the groceries in. That's strange: did you buy grapes and milk again? Mmmm... Let's sit down. Suddenly, your daughter comes in; she walks to the fridge while asking if you would like to have a drink. As she opens the fridge, she says: "Oh no, did you buy grapes and milk again?"

How would you feel?

The above anecdote is just one example of the confusing situations that people living with dementia experience every day. They find themselves in social situations where others point out what they have done wrong. They are confronted with memory loss and may not recall their purchases every time they open the refrigerator. They can also become disorientated in space and, for instance, be unable to find their own refrigerator. Being constantly confronted with these limitations can make them insecure, annoyed and frustrated. Design can help to reduce these limitations or make caregivers understand them better. It is thus vital that people with dementia inform and inspire design.

The work presented in this chapter involves empathic design and is focused on designing with people with dementia. The main aim is to provide multidisciplinary design and development teams (hereafter ‘design teams’) with an approach for empathically and effectively collecting, understanding and translating the experiences and perceptions of people with dementia and their caregivers. Involving people with dementia in the design process is difficult, due to the delicate context of the disease and their emotions, vulnerability and different perceptions of the world. The risk of ‘harming’ or confusing people even more with design activities is an ethical dilemma. Yet, to ensure authentic user insights and meaningful design outcomes, designers need to try to involve people living with dementia in designing and immerse themselves in their private contexts.

Despite the clear advantages that co-design offers in terms of involving users and engaging designers, co-designing with people with dementia is hindered by at least three factors. First, most research methods available in the design traditions of user-centered design, human-centered design, participatory design and co-design have been developed for designing with people who are cognitively and physically healthy. These methods are therefore neither directly applicable to nor ethically appropriate for designing with people with dementia. Many scholars (e.g., Bartlett, 2012; Hendriks, Slegers, and Duysburgh, 2015;

Lindsay et al., 2012). argue that there are few specific co-design approaches suitable for use with people with dementia. Moreover, practical limitations may hinder their participation in co-design activities, due to their mental, physical and/or social impairments.

Second, young and healthy design team members often find it difficult to collaborate with users who have different abilities from them and live in difficult situations (Lindsay et al. 2012). Many feel that they lack the necessary skills and experiences to co-design with older users (Hendriks, Truyen, and Duval, 2013).

Third, Friess (2012) and Postma et al. (2012) argue that, in practice, resources (budget and time) often do not allow *all* the team members to join co-design sessions, which means that some team members cannot encounter users and immerse themselves in user situations. In fact, both authors showed that there is a clear need for approaches that enable transfer of insights from user researchers, who had experience working with people with dementia, to members of the design team who did not.

These three limitations make it difficult for designers to be receptive, inclusive and committed to people with dementia (Cockton, 2009; Smeenk, Tomico, and Van Turnhout, 2016). Although having a connection and developing empathy with users are prerequisites for designers to be able to design meaningful products, services and businesses, there is currently no practical, coherent and structured handover approach to guide design teams in developing empathy with dementia.

In this chapter, we introduce a novel Empathic Handover (EH) approach for design teams. We explain, illustrate and evaluate this approach using a case study executed by a mid-sized interaction design company in the Netherlands, which resulted in a successful dementia simulator. Before we introduce the chapter's structure set-up, we will first describe the simulator case.

3.1.1 The design of a dementia simulator

The dementia simulator case originated from a collaboration between an independent designer (our first author Smeenk) and a renowned design firm. In the simulator, visitors experience daily life situations that a person with dementia encounters. It allows healthy visitors (e.g., caregivers, family) to familiarize themselves with what goes on in the minds of people with dementia and allows the visitors to get insight into the limitations they are confronted with. The empathy and compassion that visitors derive from this experience is intended to decrease patient and caregiver burdens and improve their shared quality of life.



Figure 7. The exterior and interior of the dementia simulator. Photography by Jacqueline Gielen.

The simulator, www.intodementia.nl, contains a lifelike experience created by a combination of virtual reality, interactive techniques, physical objects, sound effects and gaming technology (see Figure 7). A visit to the simulator consists of several steps: 1) an intake conversation to prepare visitors for the simulation, 2) the experience in the simulator, 3) a reflective conversation afterwards and 4) an empathic peer training. The experience in the simulator lasts approximately 25 minutes. The design firm's scope was to develop and build a lifelike experience about dementia in a physically representative mobile environment.

This chapter is organized into four main sections. First, we will provide an overview of related work on design for dementia and empathic design. Second, we will introduce a novel

design approach and illustrate it using the dementia simulator. Third, we will discuss our insights. Finally, we will conclude with our contribution and present an outlook for future research.

3.2 Related work

3.2.1 Design for dementia

It is estimated that the number of people with dementia worldwide will increase to approximately 135.5 million around 2050 (www.who.int). The lives of people with dementia slowly deteriorate as they lose cognitive, sensory, motoric and visual capacities over time, and experience behavioral changes. Due to this decline, they increasingly need attention and care from others. Dementia is becoming a social problem that not only affects the people with dementia themselves, but also the people surrounding them. The load on informal caregivers (family, friends) in terms of time, effort and flexibility increases immensely, which can cause both the caregiver and the person with dementia to have physical, mental, financial and social problems, often leading to institutionalization of the person with dementia (Schulz and Sherwood, 2008; Brodaty and Hadzi-Pavlovic, 1990). Well-designed products and services (e.g., day clocks, GPS trackers) can help to safeguard, support, reassure, stimulate and empower people with dementia and their caregivers. Furthermore, design can help improve people's quality of life by providing information (e.g., the dementia simulator).

According to Topo (2009), there is a large body of knowledge on dementia, but little literature that describes peoples' own and contextual experiences. Developing relevant products and services requires insights into the authentic contextual feelings of people with dementia. One approach to get to know such experiences is involving people living with dementia in designing. Since this is a delicate user group, caregivers are often used as a substitute, but their perspectives may be biased (Brereton et al., 2015). Moreover, Topo's (2009) study showed that most research on the experiences and needs of people with dementia

is aimed at *evaluating* solutions designed *for* them instead of making their experiences *inform* design.

According to many scholars (Bartlett, 2012; Hendriks, Slegers, and Duysburgh, 2015; Lindsay et al., 2012), there is still a limited range of methods and tools for involving and being inspired by people with dementia. The studies on design for dementia mainly provide insights into overcoming social and practical impairments that hinder these people from joining co-design sessions. To illustrate this, Hendriks, Truyen, and Duval (2013) supported designers in involving people with dementia by providing abstract design guidelines. Lindsay et al. (2012) offered tips for establishing empathic relationships with people with dementia. And others (Allan, 2001; Bartlett, 2012; Brereton et al., 2015) provided designers with suggestions for developing appropriate physical or visual tools. Despite a growing interest in designing with people with dementia, the current understanding is more a fragmented set of suggestions (largely about method) and lacks a more fundamental (practical, coherent and structured) co-design approach.

3.2.2 Empathic design

The work presented in this chapter involves empathic design (Mattelmäki and Battarbee, 2002; McDonagh, 2006; Wright and McCarthy, 2008; Koskinen and Battarbee, 2003). In empathic design, designers attempt to get closer to the users' experiences and circumstances. Users are seen as the experts regarding their own experiences and feelings and play a crucial role in both knowledge development and idea generation (Kouprie and Sleeswijk Visser, 2009; Sleeswijk Visser et al., 2005). In 2009, Kouprie and Sleeswijk Visser deepened the fundamental understanding of empathy in design by reviewing the term 'empathy' in the discipline of psychology. Both Kouprie and Sleeswijk Visser (2009) and Van Rijn et al. (2011) argue that by thoughtfully stepping into and out of the user's life, designers develop empathy. In chapter 2 on Mixed Perspectives (Smeenk et al., 2016), we argue for a more

systematic and fundamental understanding of these kinds of empathic co-design processes and the value of the designers' own experiences (first-person perspective) in designing.

In professional design practice, resource constraints make it difficult for *all* the design team members to encounter and empathize with users (Friess, 2012; Postma et al., 2012; Hess and Fila 2016b). Therefore, in many projects, this task is delegated to a research department or to one or two design team members. In the latter cases, the way to transfer the acquired user insights to the rest of the team becomes crucial. Postma et al. (2012) therefore propose a methodological change from *informing design teams of* to *engaging them in* user research. They argue that transferring insights from user research is not easy, and tools and techniques are missing. They propose a preparation kit for designers and a plenary insight session; the latter seemed promising, but became rather time consuming. According to them, this '*handover*' part of empathic design is new and largely unaddressed in the literature and is key to embedding empathic design within practice.

The study of chapter 2 (Smeenk, Tomico & van Turnhout, 2016) can also be used to understand and conceptualize an Empathic Handover (EH) approach. They showed that designers can be *engaged* with user insights (third-person findings) by explicitly connecting these findings to the designers' own (first-person) experiences. This transition between the first- and third-person perspectives allows designers to use relevant personal experiences and intuition in a credible and intentional way. This supports motivation and increases the designer's commitment to a design project (Cockton, 2009). Activating relevant personal experience that relates to the specific design situation might be key to a successful transfer of user insights, as it empowers designers to use their first-person perspective and intuition during designing.

3.3 Empathic Handover: a novel co-design approach for dementia

Since the aim of the dementia simulator was to provoke thought and emotional responses, and to encourage reflection, we believed the designed experience should involve both cognitive and psychosocial experiences, such as confusion, disappointment, frustration, anger, anxiety, alienation, fear, aggression and insecurity. To achieve this, the design team had to connect to and develop empathy for people living with dementia. However, budget and timing issues did not allow the entire team to directly interact with users. The team also doubted whether all the designers had the specific people skills needed to respectfully engage with people with dementia, so the team had to be empathically involved and engaged in another way.

We thus developed a practical, coherent and structured approach that enabled all the designers to develop empathy without direct user involvement. By making them walk in the shoes of people living with dementia, they could emulate the experience of living with dementia, a bit like the simulator was intended to do. In this section, we will explain how we developed and employed the Empathic Handover (EH) approach, which consists of three sequential design activities: individual harvest meetings, collective handover workshops and an empathic ideation workshop (see Figure 8).

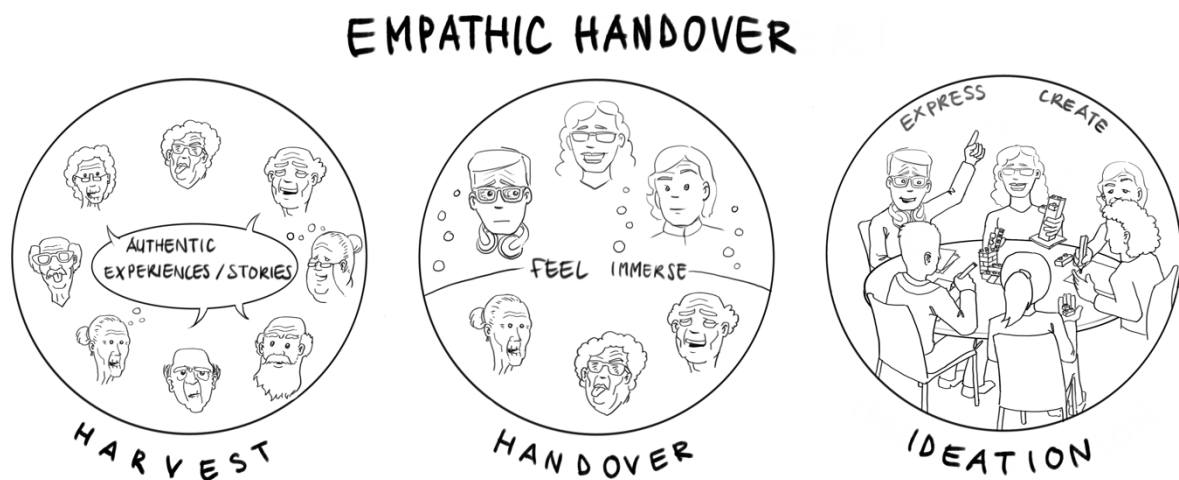


Figure 8. The Empathic Handover (EH) approach

3.3.1 Step 1: Individual harvest meetings

In this first activity of the Empathic Handover (EH) approach, the principal designer collects first-hand experiences from people living with dementia. The individual harvest meetings were intended to reveal essential feelings from several perspectives to inspire the development of storylines and the physical representation of the simulator.

Harvest meeting preparation

Principal Designer

To establish respectful contact with people with dementia and their caregivers, the design firm consciously appointed a consistent point of contact for both users and the design team. This principal designer (PD), who had first-person experience as an informal dementia caregiver, assisted the design team by preparing the user research and facilitating the harvest meetings.

Ethics

The Principal Designer followed a practical, situated approach to ethics. She could build on personal experiences, and embraced the vision on design ethics discussed by IDEO (2015). According to Robertson and Wagner (2012), ethical practice in design can be evaluated by reflecting on three issues: the inclusiveness of the design process, the choice of appropriate design tools, and the responsibilities and accountability of the participants. We will discuss each of these issues below. First, the participation of people living with dementia was limited to the harvest meetings due to design scope and medical concern. The simulator design did not demand design requirements, but a harvest of lifelike experiences. In addition, to prevent harm and confusion, people with dementia did not generate or evaluate simulator content. Thus, their participation was informative rather than collaborative in nature. In addition, the Principal Designer made sure that the participants understood that participation was

voluntary. Before the meeting started, the partner of the person with dementia was informed about the research aims and signed a consent form for the two of them.

Next, we considered the parameters of participant engagement. Dementia includes negative experiences that trigger grief and frustration, so we purposely not refrained from discussing these emotions. We aspired to treat participants as collaborators and hoped they would release tacit experiences with the help of engaging visual prompts. To prevent confusion and bring comfort, the harvest meetings were facilitated in a separate room in the support centre facilities, with caregivers close by.

Third, we recognized the impact of our engagement and that trust comes with responsibility. We gave the participants a clear and honest explanation about the goal of their participation and how we would use and share the harvested information. We also did not share partner outcomes for reasons of privacy or trust. In engagement, we were attuned to the situation and sensitive to participants.

Participants

A diverse and representative sample of participants was identified and recruited through support centres and care professionals. The Principal Designer attended existing ‘coffee and newspaper’ group meetings for people with dementia at two locations in the Netherlands. In addition, she attended a peer meeting for partners. The intention was to build trust and a relationship before conducting the actual harvest meetings. In addition, these meetings enabled the Principal Designer to be informed (through careful observation) about the diversity in personal traits, ways of coping and types of relationships. This ensured that the participants and couples in our sample represented a broad range of traits. In total, five couples were selected and invited. The five people with moderate dementia (three males, two females) lived independently with their partners but spent working days at the support centres.

Design tools

Storytelling is an effective method for identifying, understanding and coming to grips with factors that capture and influence people's experiences (Ozcelik Buskermolen, Terken, and Eggen, 2015; Denning, 2005) and for building empathy (van Rijn et al., 2011). Since language can be a barrier for people with dementia (Allan 2001), we used relatively simple, less lingual tools to reduce abstract thought and support our understanding of participants as a 'whole'. As Sanders and Stappers (2008) have shown, doing something together with the help of visual prompts increases trust and enables people to exchange stories. The Principal Designer developed and used two visual design tools: social maps and picture sets. The Principal Designer used two social drawing maps (Figure 9). The first drawing representing a couple inside their home, was aimed at understanding their physical health and emotions and perception of their partner's wellbeing. The second drawing aimed at understanding social discourse and support, and represented a couple and their social surroundings. The social maps enabled participants to express multiple perspectives (their own and others) on relationships and social contact.

The picture sets were aimed at facilitating a more in-depth conversation about the cognitive, psychosocial and emotional aspects of dementia. Because the design tools needed to be attentive to all these aspects, the Principal Designer developed four picture sets: 1) individual people and their personal emotions and body language (e.g., happy, sad, insecure); 2) social discourse between a couple, their emotions and body language (e.g., fighting, loving, supporting); 3) daily activities, actions and situations (e.g., brushing teeth, getting dressed, watching television); and 4) physical products (e.g., clock, pills, newspaper, refrigerator).

Harvest meeting procedure

Then, the Principal Designer conducted and facilitated ten individual harvest meetings. They were semi-structured, since people with dementia can easily drift off-topic and a rigidly scheduled meeting would not allow for that. In addition, this enabled the Principal Designer to spontaneously react to whatever happened (Kitwood, 1997; Span et al., 2013). She first met with the people with dementia, and then with their partners. This meeting sequence allowed her to focus on understanding single perspectives, and prevented the caregiver's voice from being dominant (Brereton et al., 2015). Moreover, meeting separately with the caregiver allowed the Principal Designer to additionally identify areas of conflict or inconsistencies between their accounts. This meeting sequence also enabled the Principal Designer to talk with the partners to verify and complete any unclear stories from people with dementia.

At the start of the meeting, we welcomed participants and offered them coffee. We explained that the goal of the meeting was to collect information that would help us to eventually explain to 'other' people what dementia is about, and that their input was extremely valuable to achieving that goal. Then, we explained that the session would take 1 to 1.5 hours and would entail a conversation with the help of visual aids.

In the first activity of each meeting, the Principal Designer showed the participant the first social map (Figure 9) and explained that the people in the drawing represented the participants and their partners. Each participant was asked to complete the drawing from his or her perspective. Open-ended questions were asked to stimulate storytelling, for example: *"What do you draw and why? How would you draw your faces?"* Then, the participants were shown the second drawing, which represents the participants' social discourse. We asked the participants to express their thoughts on the engagement and support of their social surroundings, for example: *"Who is helping you? In which way? Where are they living?"*

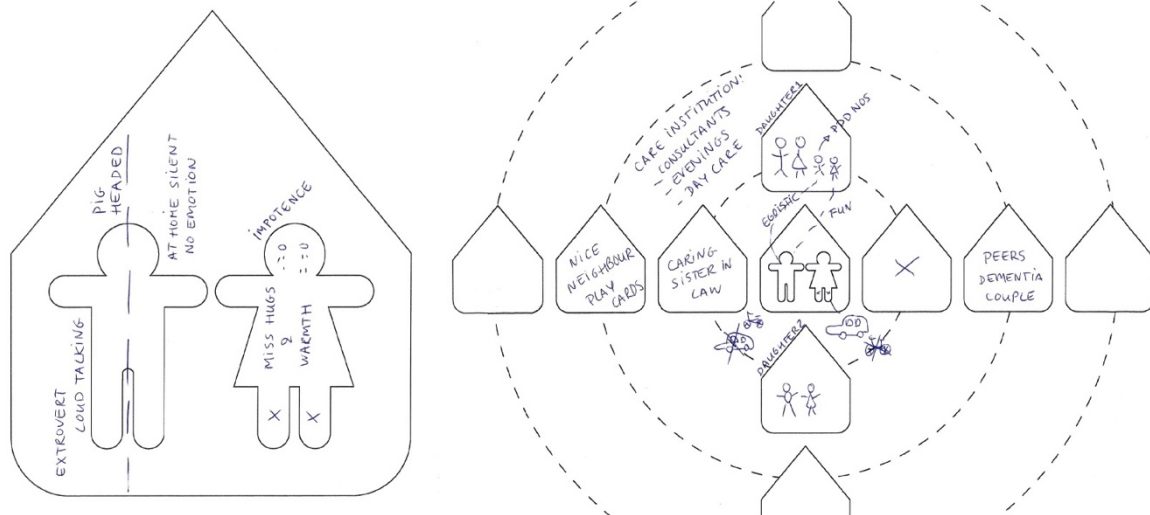


Figure 9. Example of social maps reported by a caregiver, translated to English.

In the second activity of the meeting, the Principal Designer invited the participant to respond spontaneously to each of the four picture sets (Figure 10) by asking “Which picture(s) fit(s) you best and why?” The participant selected one or more pictures per set and the Principal Designer circled them. Open questions were asked to stimulate storytelling, such as “Why do you feel this way? In which situation does this emotion occur?” The ‘why’ questions reveal needs and values, while the ‘situation’ questions reveal context and stories.

The harvest meetings were audio recorded. Notes were made together with participants in the drawings and pictures. The Principal Designer did not make separate notes, since her attention was focused on the joint activities.

Harvest meeting insights

When given the social maps, some participants with dementia started drawing right away. Others needed more guidance. In that case, short, open-ended questions supported the drawing process. For example: “How would you draw the two of you? Are you close or at distance? Are you happy or sad? And your partner?” All the caregivers completed the first map themselves. This was more difficult for the people with dementia: one person was unable

to complete the drawing, two were supported and two completed the drawing themselves. Since the second map required even more abstract thinking, it was only discussed with the caregivers and always filled in by the Principal Designer.

We concluded that drawing as a means seemed effective, but that drawing was not an appropriate individual action for people with dementia. Creating social maps together however provided the Principal Designer with suitable background information, which supported the facilitation of the second part of the harvest meetings.

The social maps brought up contextually sensitive topics. To illustrate this, Figure 9 shows an example of two maps drawn by a caregiver. The left map shows that the man with dementia is 'extraverted, stubborn, talkative and at ease' in contact with other people. However, at home with his wife, he is 'very introverted and detached'. These two sides to his personality made this caregiver feel powerless, impotent and very sad, which she showed in her drawing by drawing a dashed vertical line through him, splitting the side he shows to the world from the one he shows to her.

The picture sets proved to be very effective conversation starters for engaging with people with dementia. They resonated with and evoked feelings from participants, triggered immediate practical responses and allowed everyone to exchange experiences comfortably.

People with dementia were very direct in responding to the picture sets. To illustrate this, the two pictures selected most often from the personal set were a woman 'sticking out her tongue' and a man 'making a long nose'. All participants with dementia indicated that they often felt like this when people want something from them. One of them said: "*You figure it out*". Another picture referred to was an 'anxious face'. One participant was "*unsure about the future, for the children, partner and self*". From the social discourse set, participants selected couples 'having fun together' or 'supporting each other'. One person with dementia said: "*these two look like us: they fit and support each other*". One couple that

was having problems coping with the disease and each other chose the picture of a couple having words. The caregiver said she felt “*forced to do all the things in the house, while before we did everything together*”. The last two picture sets – showing daily activities and products – complemented the more emotional stories that were harvested through the earlier sets. For example, they triggered a story about a neighbor who wanted to help with ironing, but was afraid to speak directly to the person with dementia.

All the participants shared both negative and positive emotions and experiences. The main motivation for participating seemed to be a desire for others to benefit and learn from their serious experiences. The visual stimuli provided insights into how people with dementia and their partners perceive their lives and which themes and issues are important to them. The stories and insights we collected were used to inform the design team about the *emotional qualities of life* and allowed empathy to develop.

3.3.2 Step 2: Collective handover workshops

The second activity of our approach concerns transferring the *harvest meeting findings* to the design team. These collective handover workshops were aimed at gradually building empathy among team members for people living with dementia in order to prepare for empathic ideation.

Handover preparation

Harvest meeting analysis

First, the Principal Designer transcribed all the harvest meeting recordings and analyzed the narratives for each participant. The documents of the two individuals forming a couple were then compared and combined. For each narrative, we categorized the quotes into thoughts, feelings, actions or statements, leading to empathic story maps (based on empathy map items, e.g., Gray, Brown, and Macanuso, 2010). The Principal Designer assigned a theme to each narrative, with the help of models from Dröes (1991) for the people with dementia (e.g.,

coping with limitations, social contact, self-image) and Meerveld et al. (2004) for the caregivers (e.g., coping with loss, social contact, secure). This resulted in five couple maps which each contained one or more narratives per theme (Figure 10). These maps were used as input for the handover workshops.





Narratives triggered by picture:	Actions	Statements	Thoughts	Feelings	Meerveld et al. (2004) Dröes (1991)
	P: "The diagnose hit me hard. I was angry when diagnosed" C: "He thinks he has to do job interviews all the time"	P: "No one can take away my worries, although I hunt for information" C: "I do not want him to be under pressure"	P: "Why me? " C: "He puts his thoughts into strange sentences and words"	P: "I had to overcome my emotions. I hate having to do that. I'm not angry because of this, I'm just sad." C: "He is vigilant, apprehensive"	Coping
	P: "You should not blame me for not going to a birthday party" C: "He makes fun of his dementia at parties."	P: "I want to talk to people about meaningful things. I do not want to talk to people who have a big mouth" C: "He says: I am crazy"	P: "I do not feel the need to converse with people. I have no interest" C: "He talks to everybody"	P: "I am done with conversations. It has no use" C: "It hurts if he behaves silly"	Social contact
	P: "I am not swallowing these" C: "It took him two hours to fill the pillbox: he opened the pillbox, closed it again, read the prescription, started all over, etc."	P: "You (partner) can help if you do not get angry" C: "I leave it like this"	P: "I never had these pills before" C: "I do not understand the confusion. It is three pills per day only. He can not understand it"	P: "This is non sense" C: "It makes me crazy. I was really annoyed. I could not look at it. I could not handle it"	Self-image
					

Figure 10. Example of a part of a couple's empathy map. P means person with dementia, C means caregiver.

Ethics

Before the Principal Designer could share what was learned in the harvest with the design team, she took preparations to protect the information gathered. First, she anonymized the stories for privacy reasons. Furthermore, she only used the information needed for the simulator design. For instance, she consciously left out stories about nature, the outdoors and aesthetics, since we could not reproduce those in the simulator. Finally, she informed the design team about the confidentiality of the stories.

Participants

Since an empathic transfer of insights cannot be realized through a report alone, it was important that all team members took part in the handover workshops and that the design tools would enable them to immerse themselves in the harvest data. The Principal Designer facilitated a half-day workshop with the design team, which took place at the design firm.

Design tools

The design team was engaged by means of empathic discussion and role-play. The empathic discussion was prepared by translating the empathy maps to abstract questions that allowed participants to relate to their own anecdotes and similar emotions³. For example, we translated a birthday party narrative to the following abstract questions: “Can you recall a moment in which you were not willing to go to a birthday party where there would be a lot of people? Can you tell us about that moment? About what you felt? And thought? And why?” The Principal Designer prepared a discussion worksheet depicting those kinds of questions that addressed all the themes from Dröes (1991) and Meerveld et al. (2004).

For the role-play, we selected two different situations that involved people and problems: a one-on-one at-home situation concerning a practical problem, and a social situation that led to self-image problems. Role-play instructions described the roles that team members had to play (see Appendix D). The observers were asked to reflect on what the actors seemed to think, feel, say and do with the help of an observation form.

Handover workshop procedure

The collective handover workshops were arranged and facilitated by the Principal Designer. The Principal Designer welcomed the participants and briefly explained the goal of the workshop. The Principal Designer deliberately did not emphasize the dementia aspect nor

³ see Appendix C

explain how the workshops were designed, to prevent bias. In the discussion, participants were asked to first reflect on the discussion worksheet individually, since developing empathy is an individual process (Smeenk, Tomico, and Van Turnhout, 2016). After 30 minutes, the Principal Designer facilitated a plenary discussion where all questions were addressed by sharing each other's experiences.

In the role-play, empathy was enhanced through a re-enactment of two scenes. The design team was split into two groups. In each sub-team, two or three people received individual role instructions⁴. The others were asked to observe the role-play and to make notes on an observation form. To illustrate this, in the first role-play, one participant was assigned to play a person with dementia who tries to maintain their self-image. Another participant received the role of the partner and the instruction to involve the partner with dementia in the conversation. The third team member played a neighbor of the couple and was instructed to be supportive by offering to iron their clothes, but only to speak to the partner. In the handover workshops, participants made notes.

Handover workshop insights

Team members joined the handover workshop unprepared. Although this made them a bit insecure at first, when the workshop started everyone quickly became engaged.

All team members could relate to the discussion worksheet and it elicited sensitive memories as input for the discussion. To illustrate this, a programmer, who immigrated to the Netherlands, responded to the birthday questions raised earlier by saying that celebrating birthday parties in another country makes you feel awkward: *“At first people speak English to you, but as the drinks flow, you start to feel like people are laughing at you, since they speak Dutch and you do not understand what they are saying. You feel excluded”*.

⁴ See Appendix D

We observed team members relating to the feelings of exclusion experienced by people with dementia. Another question referred to control: *“In which situation have you felt controlled by others? Where and by whom? What did you do?”* One team member recalled a day that police officers treated him unreasonably: *“I became furious and aggressive, because I felt powerless. In the end, I gave up, since that seemed more sensible, although I was still so angry...”* Although this discussion seemed simple, we observed that it was an intense way of connecting to the feelings associated with dementia. The stories shared contained experiences from *all* team members that made an impact in their lives.

Participants received the role-play exercise in different ways. Some offered to play a role, while others stayed in the background and were happy to observe. When the improvisation started, all the actors quickly felt awkward as the reflections afterwards showed. A team member playing a person with dementia stated: *“My task is taken from me in a devious way. What are these two people doing? They conspire against me. I have little to say, and I feel annoyed and carped on. I feel the urge to use physical strength, but the way they handle me makes me feel apathetic...”* Another member playing the partner said the situation was: *“...bloody annoying. I tried to keep up, but I panicked. I tried to control the situation, but that also nauseated me; you drown in it. I was happy that the neighbor came to help; together we solved the situation as conspirators”.*

The team members’ embodiments of dementia, observations of others’ actions and body language during the role-plays, as well as the discussion facilitated afterwards, enabled them to better understand and empathize with dementia situations that they were previously unfamiliar with. Our observations and team members’ quotes showed that the team embodied the harvest findings and that they were really surprised by what happened to them.

The discussion was a relatively safe and well-known way for team members to connect to the harvest findings. The role-play challenged some of the participants’ comfort

zones more than others. Therefore, role-play needs to be preceded by a plenary empathic discussion, in which personal experiences already opened participants up to the dementia world. The workshops demonstrated that it is possible to handover essential dementia situations in an empathic way. Moreover, the handover not only sparked inspiration for design, but also created intrinsic motivation and commitment to support the situation with design.

3.3.3 Step 3: Empathic ideation workshop

The final activity in our empathic co-design approach was an ideation workshop. This workshop released the design team's initial thoughts, intuition and ideas, derived from the empathic mind-set created in the handover.

Empathic ideation workshop preparation

The ideation workshop took place immediately after the handover and needed far less preparation than the first two activities. The invitation for the handover workshops included the ideation session and thus participants were already present.

Empathic ideation workshop procedure

Team members were first asked to individually express their initial ideas for the simulator and to generate preliminary models inspired by the stories shared. Then, participants were asked to present their ideas and models to each other, which facilitated an exchange of ideas. Notes were taken by the design firm's internal lead designer rather than the Principal Designer, since the firm would be proceeding with the outcomes.

Empathic ideation workshop insights

In the ideation workshop, the empathy derived from the handover was put to use. Concepts that came up here related to personal, social, physical and practical situations that people with dementia encounter. By sharing ideas and models, participants could collectively build on

each other's insights. For instance, the refrigerator scene described above was thought to be a good first action for people entering the simulator, since it directly confronts visitors with confusing thoughts.

The combination of handover and ideation was seen as an efficient and empathic alternative project briefing for and by the design team. The designers reported that their embodied frame of reference enabled them to use their intuition credibly (Cockton, 2009; Smeenk, Tomico, and Van Turnhout, 2016). After this sensitization and ideation, the team ran the project as they normally do. Ideas were developed into an initial script for the overall simulator experience and in a physical representation (see Figure 7). Most of the ideas generated in the ideation workshop were implemented in the final dementia simulator.

In an evaluation of the final simulator's effect on empathy conducted by Hattink et al. (2015), visitors (among which dementia experts) said they were touched and found the simulator experience authentic and relevant for training and introducing people to dementia, as "*the experience lingers and resonates after the encounter*".

3.4 Conclusion and discussion

We proposed, illustrated and evaluated a new co-design approach: Empathic Handover. By suggesting three sequential design activities in a structured and coherent process facilitated by an empathic Principal Designer (Lindsay et al., 2012), we provided practical and engaging guidance to design teams in empathic co-design *processes* concerning dementia. The approach enables people living with dementia to *inform* the design process. Applying this approach enabled us to develop a dementia simulator *product* for healthy caregivers. Next, we will discuss our experiences with introducing and employing this approach, which was meant to support design teams in transferring and translating research insights from the Principal Designer (PD), who had experience working with people with dementia, to members of the design team who did not.

First, all the design team members appreciated being *engaged* in the handover and felt that they developed sensitivity and a shared understanding of dementia. Their own (first-person) experiences were crucial to understanding user research and thus third-person findings (user insights). This is in line with earlier work by Smeenk et al. (2016), who found that employing a first-person perspective enriches empathic co-design. The designers' relevant first-person experience with situations that resembled the authentic stories of the people with dementia helped them really understand the design situation and invoked intuition in designing. Their embodied understanding supported their receptiveness and inclusiveness, and enhanced their motivation and commitment to design for people living with dementia (Cockton, 2009). Second, caregivers and experts judged the resulting dementia simulator to be an accurate portrayal of the experience of dementia (Hattink et al., 2015). Third, the approach was effective. The Principal Designer assisted the team by conducting the user research and facilitating the empathic handover and ideation workshops. The handover workshops replaced the original design brief and led to relevant and directly applicable design directions. Our approach thus reduced the necessary resources, which Friess (2012) and Postma et al. (2012) assert to be essential for design practice. Yet, the approach has only been employed once and needs to be validated further.

In the next sections, we will discuss several challenges regarding the role of the Principal Designer, the design tools used and the scaling opportunities of the collective handover workshops of the approach. Finally, we will discuss future work.

3.4.1 Principal Designer

In the case study, the design firm consciously involved a senior principal designer who had first-person experience as a dementia caregiver. We found that this positively influenced the applicability of the novel approach in two ways. First, personal experience had already acquainted the Principal Designer with dementia and fostered her empathic ability. It also

made her committed to the project and aware of ethical dilemmas. Second, co-design seniority fostered the development of design tools and eased user and design team facilitation. This approach could not have been developed without both these experiences. However, the facilitation of the approach might deliver similar results with a Principal Designer who is skilled in empathic design and eliciting user insights, but who has no experience in the dementia field.

3.4.2 Design tools

During this study, we thought of expanding empirical research on alternative harvest and complementary handover tools. We could investigate alternatives for the social discourse drawings, which we found to be too abstract and an imperfect match for the capacities of people with dementia. Complementary tools might be needed in projects with other design scopes.

3.4.3 Scaling


The Empathic Handover (EH) approach can be applied to a broader set of design problems. The approach could be scaled to fit other dementia projects in which people with dementia are the main users. In this case, the current approach must be expanded to harvest design requirements and ideas in addition to experiences. In addition, the collective handover workshops combined with the empathic ideation workshop could be made more generally applicable to vulnerable users in contexts other than dementia (i.e., people with a much greater diversity of abilities and limitations). By analyzing the outcomes of limitation dedicated harvest meetings, compliant discussion sheets and role-play instructions can be developed and used in handover workshops.

3.5 Future work⁵

We are preparing a comparative study with teams of design students who are involved with different vulnerable user groups under two conditions. One group will follow the new Empathic Handover (EH) approach, while the other will follow a ‘traditional’⁶ user-centered design approach. This study will allow us to further explore the approach and the Principal Designers’ role, and to uncover opportunities for making this novel approach more generally applicable.

⁵ Chapter 4 will address this future work

⁶ ‘Traditional’ is meant as ‘present-day, widespread or common’ design approaches



This following chapter resembles the publication: Smeenk, W., Sturm, J., Terken, J., & Eggen, B. (2018). A systematic validation of the Empathic Handover approach guided by five factors that foster empathy in design. *CoDesign: International Journal of CoCreation in Design and the Arts*, 1-21. Taylor & Francis.

CHAPTER 4

A SYSTEMATIC VALIDATION OF THE EMPATHIC HANDOVER APPROACH GUIDED BY FIVE FACTORS THAT FOSTER EMPATHY IN DESIGN

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A systematic validation of the Empathic Handover approach guided by five factors that foster empathy in design

Wina Smeenk^{a,b}, Janienke Sturm^{b,c}, Jaques Terken^b and Berry Eggen^b

^aWien's ontwerperschap, Broek in Waterland, Netherlands; ^bIndustrial Design, Technische Universiteit Eindhoven, Eindhoven, Netherlands; ^cHRM and Psychology Department, Fontys University of Applied Science, Eindhoven, Netherlands

ABSTRACT

This study aims at validating the transferability of the Empathic Handover approach, which we originally developed for the co-design process of a dementia simulator. We argue that empathy in design is operationalised using five factors: emotional interest, sensitivity, self-awareness, personal experience, and mixed perspectives. This heuristic proved useful in systematically comparing the empathic capacity of design students using the Empathic Handover and traditional user research approaches. Our comparative study indicates that the Empathic Handover approach enables designers to develop empathy with vulnerable users they did not meet in person (both people with dementia and people who mourn). Additionally, the study enables us to develop an elaborate notion of the working mechanisms of empathy in design as well as practical improvements to the Empathic Handover approach.

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Chapter 4: A systematic validation of the Empathic Handover approach guided by five factors that foster empathy in design

This study aims at validating the transferability of the Empathic Handover (EH) approach, which we originally developed for the co-design process of a dementia simulator. We argue that empathy in design is operationalized using five factors: emotional interest, sensitivity, self-awareness, personal experience, and mixed perspectives. This heuristic proved useful in systematically comparing the empathic capacity of design students using the Empathic Handover and traditional⁷ user research approaches. Our comparative study indicates that the Empathic Handover approach enabled designers to develop empathy with vulnerable users they did not meet in person (both people with dementia and people who mourn). Additionally, the study enables us to develop an elaborate notion of the working mechanisms of empathy in design as well as practical improvements to the Empathic Handover approach.

4.1 Introduction

[The work in this chapter is set up in the context of empathic design (e.g., Fulton Suri, 2003; Koskinen & Battarbee, 2003; Kouprie & Sleeswijk Visser, 2009; Leonart & Rayport, 1997; Mattelmäki, Vaajakallio, & Koskinen, 2014). Empathy is people's intuitive ability to identify with others' lived experiences such as thoughts and feelings, motivations, emotional and mental models, values, priorities, preferences and inner conflicts (Fulton Suri, 2003). Empathy enables designers to gain relevant and intimate user insights and deep emotional understanding, leading to more meaningful designs for the people involved.]⁸ Empathy is a multidimensional and complex concept and has been labelled as a construct, process,

⁷ 'Traditional' is meant as 'present-day, widespread or common' design approaches

⁸ This text is a repetition of the text in chapter 1 and 2

individual ability, skill, internal disposition, intellectual virtue and more (Hess & Fila, 2016a).

Designers can find it challenging to empathize with users. This is especially true when only some of the designers on a team can meet, collaborate and connect with users in person. In design practice, this often occurs due to a lack of time or budget, the designers' capacity and willingness, and ethical considerations like burdening (vulnerable) users (Postma, Zwartkruis-Pelgrim, Daemen, & Du, 2012; Smeenk, Sturm, & Eggen, 2017; Van Rijn, Sleeswijk Visser, Stappers, & Özakar, 2011). For this reason, Smeenk et al., (2017) developed the Empathic Handover (EH) approach as described in chapter 3.

In the Empathic Handover (EH) approach, a Principal Designer (PD) collects user insights and empathically transfers these to design team members who did not meet the users in person. The Empathic Handover approach consists of three sequential co-design activities facilitated by the Principal Designer. The first activity is the individual harvest (e.g. user research). The second is a collective handover (i.e., an emphatical transfer of user insights to the design team). The third is empathic ideation (i.e., release first ideas with compassion).

In the single-case study about the Empathic Handover approach of chapter 3 (Smeenk et al., 2017), experts evaluated the design outcome, a dementia simulator, positively (Hattink et al., 2015). The practical and coherent empathic process guided the design team and enabled individual team members to be receptive, inclusive and committed towards users whom they did not meet in person. These design attitudes are important meta-principles in design (Cockton, 2009) and support empathy (Kouprie & Sleeswijk Visser, 2009; Smeenk, Tomico & Van Turnhout, 2016).

In this chapter, we investigate whether other design teams can use the Empathic Handover approach and effectively apply it to a broader set of design problems and contexts. To this end, we conducted a comparative study in which we compared the Empathic

Handover approach to other traditional⁹ user-centered design approaches in mourning and dementia contexts.

This chapter is organized in four sections. In the first section, we will discuss the theoretical framework around empathy in design. In the second section, we will describe the comparative research study and present its results. Then in the third section, we will discuss the strengths and limitations of the Empathic Handover approach. Finally, in the fourth section, we draw conclusions.

4.2 Theoretical framework

In this section, we present an overview of factors that foster empathy in design. Based on literature from social psychology and design, we propose a theoretical framework of factors that influence empathic growth with designers.

4.2.1 Empathy in psychology¹⁰

A rich variety of definitions of empathy exist in contemporary social psychology. However, most scholars see empathy as *a process* whereby ‘one individual comes to share another individual’s affective experience’ (e.g., Batson, Sager, Garst, Kang, Rubchinsky, & Dawson, 1997; Bluck, Barin, Ainsworth, Gesselman, & Gold, 2013; Davis, 1996; Tani, Peterson, & Smorti, 2014; Zahavi & RoCHAT, 2015). Moreover, leading psychology theorists tend to agree that the essential qualities of an empathic experience are the ability to share emotional experiences (*affective empathy*), the ability to understand these experiences (*cognitive empathy*) and the ability to attune to or distinguish between *self and other* (Baldner & McGinley, 2014).

⁹ ‘Traditional’ is meant as ‘present-day, widespread or common’ design approaches

¹⁰ In the original article the paragraph title was: Theoretical framework. This was similar to section 4.2

Based on a variety of frequently used empathy scales (e.g., Interpersonal Reactivity Index, Empathy Quotient), Baldner and McGinley (2014) identified and conceptualized six underlying factors that are currently used to measure empathy. The first is *'emotional interest'*: people's tendency to show interest in, and approach, others' emotions (e.g., being aware of your friend's feelings). The second is *'sensitivity'*: people's tact in social situations (e.g., being aware that somebody can be offended by a remark). The third is *'perceived other awareness'*: an individual's perceived ability to comprehend and predict another's emotional state, (e.g., is: being attentive of others' state and able to imagine how they feel). The fourth is *'personal distress'*: which concerns an individual's ability to avoid becoming emotionally over-stressed in negative situations (e.g., prevent losing control or going to pieces when someone needs help, or prevent feeling scared when you are with friends who do). The fifth factor is *'perspective taking'*: imagining how things look from another perspective (e.g., looking at everybody's side of a disagreement before making a decision). The sixth is *'emotion with fictitious characters'*: being emotionally involved with fictitious characters (i.e., in stories, movies and television shows).

4.2.2 Empathy in design

There is widespread agreement that the ability to create meaningful concepts largely depends on the level of understanding and empathy that a designer or design team can gain for the users (e.g., Fulton Suri, 2003; Koskinen & Battarbee, 2003; Kouprie & Sleeswijk Visser, 2009). Despite a growing recognition that empathy supports designers in projects that require great sensitivity (Smeenk, Tomico, and van Turnhout 2016; Smeenk, Sturm, and Eggen 2017; Van Rijn et al., 2011) there is a limited body of knowledge on how to measure empathic growth in design (Hess & Fila, 2016a, 2016b). Three recent attempts to better understand how empathy can be encouraged, developed and used are particularly relevant to the work described in this chapter.

First, the comparative design research study by Van Rijn, Sleswijk Visser, Stappers, and Özakar (2011) explored the influence of three modes of information (theoretical information, video and user contact) on the developed empathy in design for autism. They analyzed the discourse of three design teams using four indicators of empathy: *lingual empathic expression* (e.g., saying “*I think/feel/guess the users think/feel/want..*”); *own experience* (e.g., relating users’ needs and experiences to the designer’s personal experiences or comparing them to users they personally know); *question users’ needs and experiences versus making (false) assumptions* (e.g., realizing one’s lack of empathy); and *discussing user facts* (e.g., spending time on user facts). All four indicators relate to the importance of acknowledging ‘self and other’ in empathic design; one indicator even explicitly includes designers’ personal experiences. However, these indicators are not explicitly grounded in theory.

Second, Hess and Fila (2016b) proposed a theoretical overview that conceptualizes empathy and the interrelationship between different empathy types. They use these to support the empathic growth of engineering students (Figure 11). Drawing from various knowledge domains (e.g., engineering, human-centered design, counselling, social psychology, moral philosophy and neuropsychology), four quadrants distinguish affective experiences from cognitive processes, and self-orientation from other-orientation. These quadrants, also called empathy types, are: *empathic distress*, *empathic concern*, *imagine-self perspective taking* and *imagine-other perspective taking*. Hess and Fila characterize empathy development as navigating through these empathy types: affective experiences lead to (empathic) cognitive processes and vice versa. This is represented with arrows in Figure 11. The four empathy types approximate the factors defined by Baldner and McGinley (2014). Yet, with the exception of ‘empathic distress’, the overview does not incorporate designers’ own contextual experiences, which was introduced by Van Rijn et al. (2011).

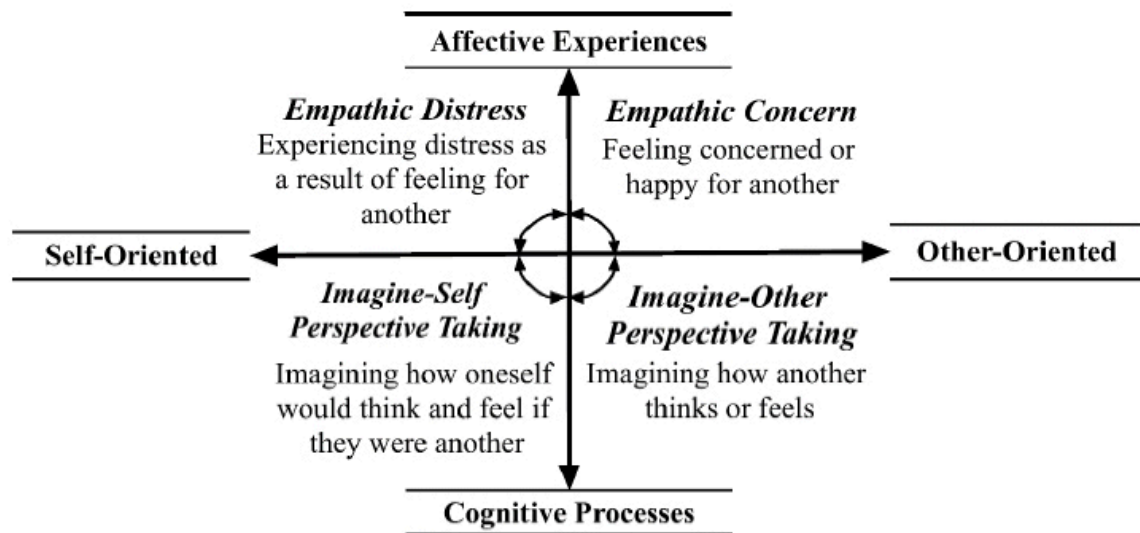


Figure 11: An overview conceptualizing empathy types and the interrelationships between them
(Hess & Fila, 2016b).

Finally, Smeenk, Tomico, and van Turnhout (2016) systematically analyzed a case study about mourning to better understand the empathic value of employing three basic perspectives in design. They explain how applying a first-, second- or third-person perspective enables designers to be receptive, inclusive and committed towards users, respectively. They argue that the designers' first-person perspective may be a major contributor in projects that require great sensitivity. For example, in the mourning case, personal experience made a designer very motivated and committed to the project context and the users, and enabled her to develop solutions based on intuition. Moreover, this study shows how perspective clusters (i.e., sequential series of two or more perspectives) credibly and legitimately incorporated these relevant personal experiences and intuition. Intentionally employing and comparing their own and others' experiences gives designers a conscious way to empathize and are indicators for designers' empathic growth.

4.2.3 Factors impacting designers' empathy

We propose using the model defined by Baldner & McGinley (2014) as a base, and complementing it with the insights from the aforementioned design theories to create a framework that supports our evaluation of designers' empathic development in the case study. Since we intend to measure and compare empathic capacity in real-life situations and with real users, we decided not to incorporate the factor 'identifying with fictitious users' in our study. We argue that 'identifying with fictitious users' is more an imaginative stance and design tool (e.g., personas, storyboards, empathy maps) than an empathic state or a behavioral response. Moreover, there is no psychological proof that assessing peoples' (and thus designers') responses to scenarios is an efficient way to measure empathy (Baldner and McGinley, 2014). Thus, in our framework for design, empathy is operationalized by five individual factors related to designers' behavioral responses: emotional interest, sensitivity, self-awareness, personal experience, and mixed perspectives. These will be explained in more detail below.

Emotional interest [EI]

'Emotional interest' in design emerges when designers attune and attend to users' emotions (and contexts) and is a deliberate cognitive choice. Van Rijn et al. (2011) argue that a designer's 'motivation' to learn about users is a crucial aspect in an effective empathic design process. In chapter 2, we describe this emotionally interested attitude as designers being receptive to users and context (Smeenk et al., 2016). By collecting existing user information (knowledge of others) through for instance multimedia research, designers imagine how others think or feel. Moreover, this factor can be recognized in the cognitive 'imagine-other perspective taking' empathy type of Hess and Fila (2016b). Designers study, interpret and imagine how users think or feel. Herewith, designers' emotional interest grows.

Sensitivity [SE]

‘Sensitivity’ in design emerges when designers are in contact with users. Van Rijn et al. (2011) did not explicitly identify this factor as an indication of empathy, but they mentioned the related concept of ‘willingness’. In Hess and Fila (2016b) the affective ‘empathic concern’ type is clearly related to sensitivity. Designers’ affect and tact in user encounters are important in two ways. First, designers think about ethical aspects in conducting and analyzing user research, and in ideation. They respect the people they design for and with, are honest about expectations and possible design outcomes, and consider what can serve users’ situations (IDEO, 2015; Robertson & Wagner, 2012). Second, designers anticipate to inclusiveness in user research preparation. They consciously consider collaboration with an adequate range and number of users and choose appropriate design tools. Herewith, designers avoid excluding people, experiences and even perceptions.

Self-awareness [SA]

When designers intend to understand and predict users’ emotional states in current or imaginative future situations, they build hypotheses. This means they have to be very aware of bias (preconceptions and assumptions) and possible projection. As previously mentioned, all Van Rijn et al.’s (2011) empathy indicators relate to the importance of acknowledging and distinguishing self and other. This cognitive process is also seen in Figure 11 of Hess and Fila (2016b), where designers imagine how they would think and feel if they were the user: ‘imagine self’. We argue in chapter 2 that designers should consciously take a neutral, receptive and open stance in approaching users, as well as a professional stance in developing tools and meaningful design outcomes (Smeenk et al., 2016). This requires self-awareness: both in design maturity and in personal traits. Designers interpret user facts and insights and translate these intuitively into ideas and concepts. Interpretation and intuition show the importance of ‘self’ in understanding and helping the ‘other’. This demonstrates that ‘self’

and ‘other’ can easily be intertwined in design processes. Therefore, it is important for designers to correctly distinguish between the representations of their own actions, perceptions, sensations and emotions, and those of users (e.g., Holan, 2012; e.g., one person’s bridge is another person’s boundary; Lamm, Bukowski, & Silani, 2016). Along these lines, we perceive the original term, ‘perceived other awareness’, as distant and static; therefore, we rename this factor in ‘self-awareness’.

Personal experience [PE]

‘Personal experience’ in design emerges when designers connect to and reflect on their own relevant (positive and negative) experiences and emotions. Hess and Fila (2016b) limit their self-oriented affective empathy type (‘empathic distress’) to an experience where designers struggle with distress as a result of feeling for another. Yet, design scholars (van Rijn et al. 2011; Smeenk et al., 2016; Smeenk et al., 2017) and psychologists (Bluck et al., 2013; Tani, Peterson, and Smorti, 2014) claim that similar autobiographical experiences are also important in empathizing. Consciously including and reflecting on their own experiences is meaningful for designers in two ways. First, designers’ co-experience with the user in conducting user research and emotional coping can become a problem. Since this distress focuses on the self, designers’ backgrounds (e.g., traits, gender, nationality) and design maturity (attitude, knowledge, skills, experience) can influence designing and empathizing. Second, when a designer is a person familiar *within* the design context his/her first-person perspective supports emotional user understanding, sharing affect and using intuition. Although sharing autobiographical memory can elicit empathy (Bluck et al., 2013) and foster a strong *commitment* to a design project, it can also cause distress (Smeenk et al., 2016); e.g. remembering a family member’s death. Even though this may motivate a designer to act and search for a solution, it may also frustrate the design process, since the sad memories can be overwhelming and prevent progress. Since researchers do not define empathy as only

occurring in negative situations or emotions (Baldner and McGinley, 2014), we consider the original term ‘personal distress’ to be too narrow and we propose the more neutral term ‘personal experience’.

Mixed Perspectives [MP]

‘Mixed Perspectives’ in design occur when designers take different point of views. In Figure 11, Hess and Fila (2016b) seem to limit perspective taking to a cognitive process where designers only *imagine* their own or others’ thoughts and feelings, although they also argue that navigating through the four individual empathy types (combining affect and cognition) is necessary for empathic growth. Van Rijn et al. (2011) also showed that involving combinations of affective resonance and cognitive reasoning enhances empathy. Additionally, pre-defined perspective clusters led to a more accurate understanding of and empathy with users in the study of chapter 2 (Smeenk et al., (2016). Since empathy is a multifaceted phenomenon that can be described as a set of distinct, but related affective and cognitive dimensions that all interact (Davis, 1996), we expand the original factor ‘perspective taking’ with affective aspects and rename it in ‘Mixed Perspectives’. Herewith, the Mixed Perspectives can be seen as the outcome of two or more empathy factors, but it can also be a distinct design strategy as we mentioned in chapter 2 (Smeenk et al., 2016).

Combining the five factors described with the two dimensions defined by Hess and Fila (2016b), we present an overview of factors that foster empathic capacity in design (see Figure 12). This theoretical framework will guide us in the comparative case study in the next section.

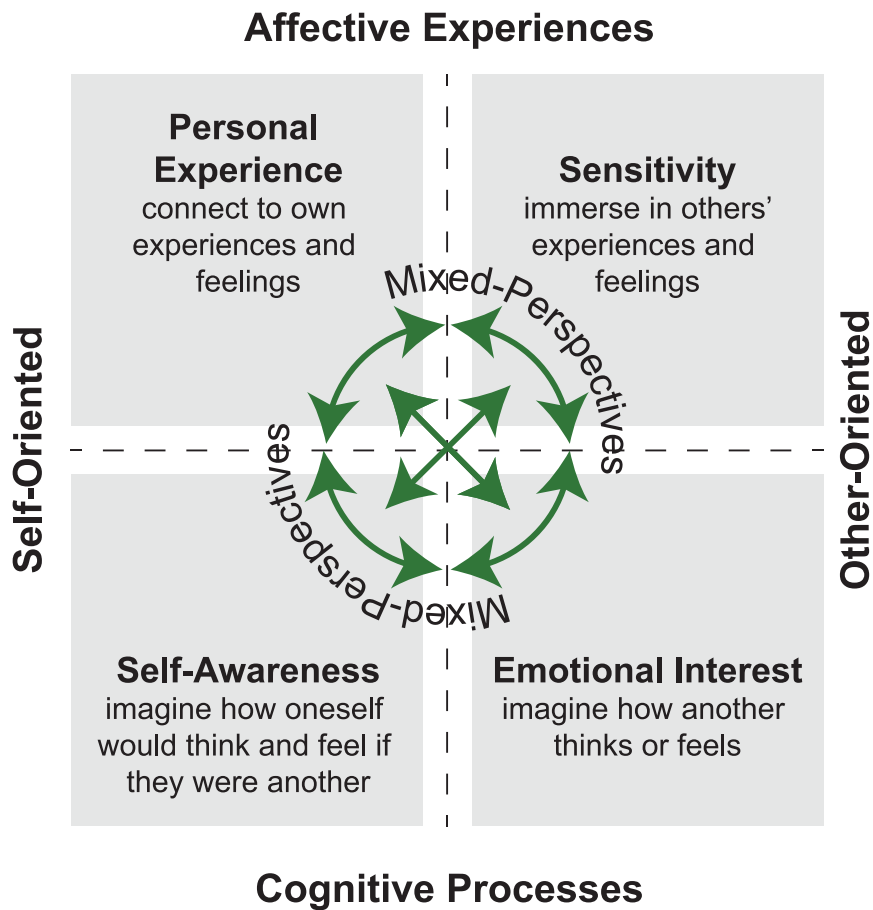


Figure 12: An overview of factors that foster empathic capacity in design, inspired by Hess and Fila's (2016b) overview and the empathy factors proposed by Baldner and McGinley (2014)

4.3 Comparative case study

In this section, we first describe the Empathic Handover (EH) approach. Then, we introduce the comparative case study, in which we compare this approach to traditional user-centered design¹¹ methods. We describe the research set-up, present its outcomes and discuss the main findings.

¹¹ 'Traditional' is meant as 'present-day, widespread or common' design approaches

4.3.1 The Empathic Handover approach

[The Empathic Handover (EH) approach -see chapter 3 for more details (Smeenk et al., 2017) - is distinct from other co-design approaches since it brings a solution for an empathic transfer of user insights to design teams who did not meet the users in person. In this Empathic Handover approach, a Principal Designer is appointed as the consistent point of contact for both users and the design team. This Principal Designer facilitates three sequential handover activities: individual harvest meetings, collective handover workshops and empathic ideation.

In the harvest meetings, the Principal Designer uses co-design methods to collect and understand users' first-hand experiences. In the collective handover workshops, the Principal Designer enables participants to gradually build empathy with users by letting them experience and emulate the harvested stories and insights. The handover activity consists of two workshops: a discussion and a role play. The empathic discussion addresses questions that are based on the qualitative research outcomes from the harvest meetings. The questions capture the mundane and trigger participants to relive a vivid emotional autobiographical memory. This helps them connect to users and understand what they value and why. In the discussion, participants first answer the questions individually, since developing empathy is an individual process. For each question, they write down a sentence or two about each memory before moving on to the next. All the responses are then shared in a plenary discussion. The Principal Designer concludes the workshop by comparing and coupling participants' experiences to the user insights. New insights are documented. The role play enhances empathy through a re-enactment of the most crucial daily life scenarios obtained in the harvest. Participants are given an individual role instruction that supports them in improvising a scenario with other participants. After the role play, the experiences are plenary discussed and new insights are documented. Finally, in the empathic ideation workshop, participants are asked to generate ideas individually, which supports them in translating

empathy into design: releasing personal thoughts and intuition. Then, they present their ideas to each other. This encourages more design iterations, leading to one or more team concepts. Figure 8 summarizes the three phases of the Empathic Handover approach.]¹²

4.3.2 Research set-up

The goals of our comparative study were to assess: a) the validity of the Empathic Handover (EH) approach for different design problems than a simulator and contexts than dementia; and b) the transferability to other design teams than the previous single case study team. To this end, we explored how this and other traditional¹³ user-centered approaches influence the quality and fit of design outcomes, and students' empathy with users. Even though Handover teams do not have direct contact with the users they design for, we expected that Handover teams would develop a similar amount of empathy as teams in which all the members were in contact with users, and develop more empathy than teams in which designs were based on a written paper.

Participants and conditions

The comparative case study was carried out in the context of an educational elective at the department of (left out for blind review). Forty-eight university Master students (56% female, 44% male) took part. They received course credits for their participation. We divided 16 teams over *three conditions*. For educational reasons all student teams conducted literature, multimedia and user research. Yet, the further process was based on three conditions, see Figure 13. In the first condition (Handover), six teams applied the Empathic Handover approach: the user research conducted by others (and the Principal Designer) was experienced in an Empathic Handover (EH) workshop facilitated by the Principal Designer. In the second

¹² This text is a repetition of the text in chapter 3

¹³ 'Traditional' is meant as 'present-day, widespread or common' design approaches

condition (User), six teams used their own user research insights. In the third condition (Paper), four teams used user research conducted by others disclosed by an (interim) design research paper.

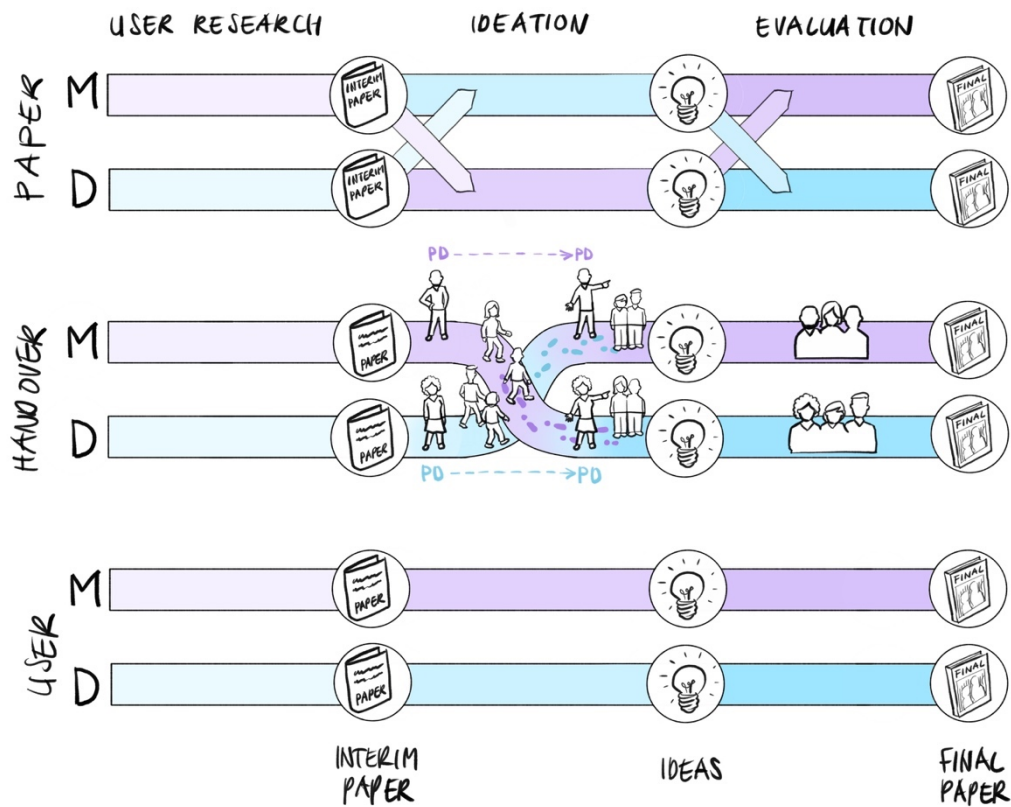


Figure 13: The three conditions: Paper, Handover and User. *Note:* M means mourning, D means Dementia.

Procedure

All students had to complete an educational design project with a total duration of 9 weeks in teams of three students. The design project comprised three phases: the research phase (5 weeks), the ideation phase (2 weeks) and the evaluation phase (2 weeks).

At the start of the research phase, each team received a design assignment (either mourning or dementia), after which all teams conducted literature, multimedia and user research related to their assignment. All teams reported about the results in an interim design research paper. To simulate a situation in which the designers did not have personal contact

with the user group they are designing for, the Handover and Paper teams changed assignments (and thus user groups) after the first phase: ‘mourning’ teams got ‘dementia’ and vice versa. For the Handover condition, one team member stayed committed to the initial user group as Principal Designer and two team members changed teams and user groups. The Paper team constellations remained the same. The User (control group) teams did not change assignment; they continued the process with the original assignment and user group in the same team constellation (Figure 13).

In the ideation phase, all teams generated ideas for their (new) user group. The Handover teams based their ideas on the Empathic Handover activities facilitated by their Principal Designer, the Paper teams used the interim paper of others, and the User teams used their own user research. The choice for an ideation method was left to the student teams and Principal Designer, and was not prescribed by the researchers.

In the evaluation phase, all teams evaluated the generated design ideas with users by applying the Co-Constructing Stories method (Ozcelik Buskermolen, Terken, & Eggen 2015). This approach uses storytelling to enable designers to evaluate their concept with users in a relatively early stage of the design process. The Handover and User teams evaluated their own ideas. The Paper teams changed back to their original users and evaluated the ideas generated by the other team.

Finally, all the teams wrote a final paper and gave a poster presentation. Then, two independent tutors assessed the quality of the teams’ design process and outcomes with the help of a rubric. Moreover, after this presentation, three semi-structured reflection sessions (see Appendix E) were held with all teams within each condition, enabling the researchers to evaluate the empathic capacity of the teams and conditions. We explain this in more detail in the analysis paragraph.

All participants were introduced to our study: we explained the goal of their participation and how we would use, compare and share the research outcomes. They each gave informed consent for audio recording of the plenary reflection session and using its anonymized transcriptions. For the Handover teams, we organized an additional training session morning in which the Empathic Handover approach and the role of the Principal Designer were introduced. Moreover, they experienced an exemplary empathic discussion and were involved in acting out two role play exercises about dementia (see Appendix C and D). Subsequently, these Handover teams prepared their handover workshops collectively and selected a Principal Designer to introduce the new team members in their user group. We divided the remaining Handover team members and prevented bias by ensuring that initial team members would not meet again in new team constellations. During the handover session (of a day), we observed the Handover Principal Designers and their new teams. After each handover activity (discussion, role play and ideation), we consulted each team individually, reflected on the activity and inquired about improvements.

Analysis¹⁴

To evaluate the empathic capacity of the teams and conditions, we analyzed the answers students gave to our semi-structured questionnaire in the three plenary reflection sessions (of similar duration) that were held with the teams within each condition. We asked open questions about the effect of the subsequent design activities on empathy: multimedia research, user research, (User, Paper or Handover) insights, ideation and evaluation. To evaluate these reflections objectively, two researchers first scanned the verbatim transcriptions independently to find quotes providing evidence related to the five factors (see

¹⁴ In the original article we did not include Appendix H showing the tutor assessment and user evaluation on the design outcomes of the teams indicating indirect evidence for empathic development

Appendix F for the protocol). The results of this analysis were discussed until agreement was reached. Moreover, we took along our observations, the individual definitions on empathy in design written down by all team members and the intermediate reflections during the handover workshops. We discuss the factor identification in the following paragraph.

4.3.3 Results: Empathic factor identification

The theoretical framework and the resulting Figure 12 enabled us to cluster the number and content of quotes, which provide direct evidence for one of the five empathy factors, within each User, Paper and Handover condition group. In Figure 14a, we show the resulting absolute representation. The figure demonstrates that teams in the Handover condition expressed the highest number of quotes. Moreover, the Handover condition shows a clear emphasis on affective experiences and other-orientation. In Figure 14b, we demonstrate the factors relatively, which makes it easier to compare the three conditions. For example, we see that quotes reflecting self-awareness were found the least in all conditions. Appendix G shows the factor identification per team. We discuss our qualitative insights below, describing each factor separately.

Emotional interest [EI]

‘Emotional interest’ (i.e., cognitively attending and attuning to users’ emotions), was very prominent¹⁵ in the Handover and User conditions, see the yellow dots in Figure 14. It was demonstrated by almost all the teams (except for one team in the Paper condition). Students stated that literature containing quotes and multimedia research such as documentaries set a knowledge basis that enabled them to see the relevance, become enthusiastic and get inspired about their initial user context: “*The research articles we read made me more aware and curious*”. They mentioned that hearing users’ personal experiences made them even more

¹⁵ In the absolute visualization of figure 14a

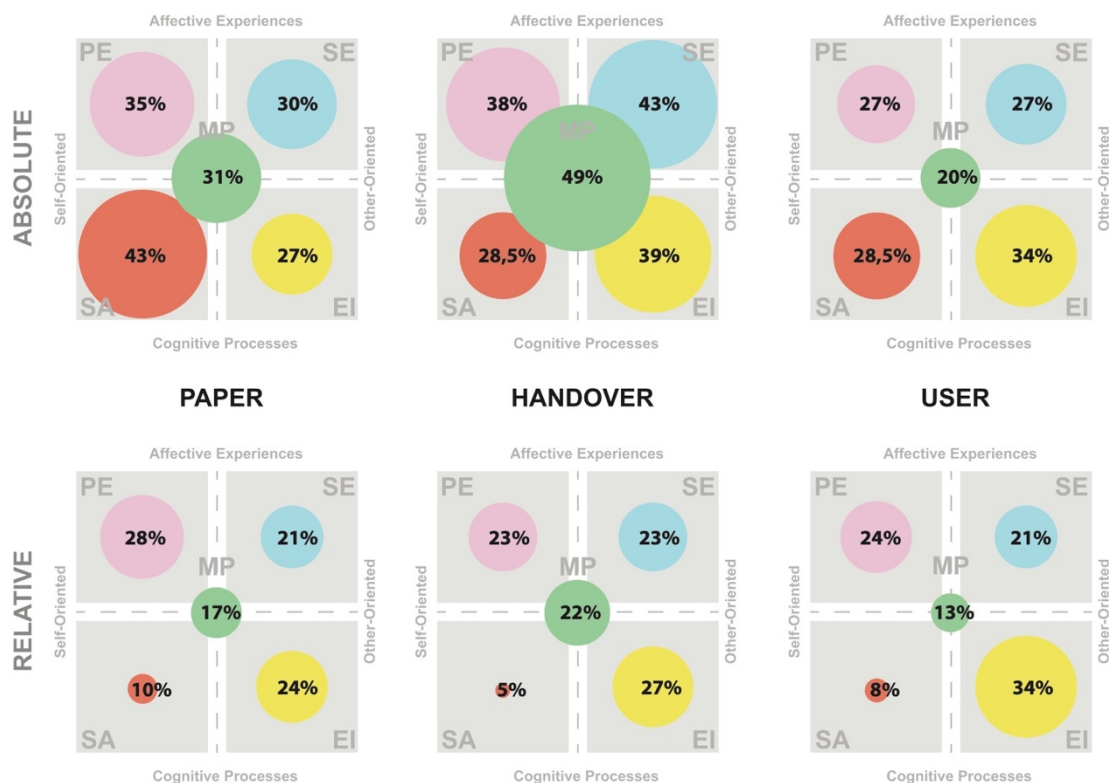


Figure 14a¹⁶: Absolute visualization of the five-factor identification per condition (number of quotes per factor per condition/ total number of quotes per factor of all conditions)

Figure 14b: Relative visualization of the five-factor identification per condition (number of quotes per factor per condition/ total number of quotes per factor per condition)

motivated and emotionally interested. These stories came from close relatives, strangers and experts. Some students learned new things from their near circle: *“I thought I knew my grandfather’s process, but now I realize I only knew some of his feelings. It motivated me”*. Others found motivation in the engagement with users they did not know beforehand: *“It confirms that we are designing relevant and helpful things”*; *“If I can make them smile, it motivates me a lot and makes my day”*; *“When visiting the care institution, we were in the middle of it, which motivated me a lot”* and *“The user encounters made dementia more*

¹⁶ The colors in this visualization refer to the perspective colors of chapter 2.

accessible".

According to User and Paper condition students, emotional interest especially grew in the contact with users and experts. Yet, a new Handover team member expressed: "*The handover way of connecting to the new design context motivated and engaged me*". During the empathic discussions, we indeed observed many animated conversations. Handover students said they were interested in and touched by each other's stories and by the Principal Designer's translation of these stories to the users' experiences. This factor played an important role in exploring the design context and understanding the users within.

Sensitivity [SE]

'Sensitivity' (i.e., affectively attuning to and being in contact with others), was most prominent in the Handover condition. It was neither the most nor the least mentioned factor, see the blue dots in Figure 14. When reading literature and gaining more depth in the design context, many students felt insecure about approaching the vulnerable user group: "*It felt scary*"; "*I felt bad approaching vulnerable people and bringing emotions out*". Moreover, they were reluctant to contact users: "*We could not promise to deliver a meaningful and real design solution*". Therefore, some teams asked professional experts for help with information and user contacts. Literature supported teams in preparing for contact with experts: "*You do not want to go empty handed to the caregivers*".

In the user research, we especially found sensitivity in students' quest to learn how to address and behave around others. Students said the literature taught them: "*How you should address mourning people and how you should act*"; "*How to handle the emotional flux of interviewees*" and "*It takes away your ignorance*". Ultimately, by encountering the users, students became relieved about the sensitive subject they were designing for: "*It was less hard than I thought from the literature*". The contact brought up feelings like: "*Optimism: it was not as hard as expected, and sometimes even fun*".

In our reflection meeting with the Handover teams, we found that it was equally important that the Principal Designer was sensitive towards the Handover participants. Ethical aspects like trust, mutual respect, tolerance and patience were mentioned. Students said the Principal Designer had to “*set the tone*” and make sure participants “*felt at ease*” and “*found a common goal*”. Moreover, in the discussion, Handover participants demonstrated sensitivity in how to respond to each other: “*I was aware of what to ask and not ask*”. In ideation, Handover students said it was important to “*design something advantageous, appropriate and meaningful for the diverse users*”. Sensitivity towards humans, designs, methods and collaboration played an important role in the user research, the handover and the user evaluation.

Self-awareness [SA]

‘Self-awareness’ (i.e., distinguish between the representations of own actions, perceptions, sensations and emotions, and those of users) was the least demonstrated factor and observed least in the Handover condition¹⁷, see the red dots in Figure 14. We must note that the Paper quotes identified mainly concern complaints of students being unable to utilize their personal experience. Students argued that literature was important, teaching them to be attentive to themselves and others: “*Good to read, because I had a lot of assumptions. Although I thought I had the full picture, I had not even a tiny clue*”. User research was conducted from an open and professional stance: “*When you interview users, you have to put your own experience aside*”.

The Paper teams seemed aware of ‘self’ when interpreting the paper and translating this input into ideas. However, one team stated: “*The paper was not convincing, had too obvious data: we doubted it*”. These teams -not in contact with users designing for-

¹⁷ In the relative visualization of figure 14b

mentioned difficulty in ideation: *“Making a personal attachment to the design context was hard”*. In contrast, an User team student defined empathy in design as: *“Truly understanding the user’s needs in a way that you can identify with the target group so much that you can almost design for your own needs”*.

In the Handover reflections, we observed that students preparing the handover workshop were attentive to themselves and the users when interpreting the user research: *“It was interesting to transfer our five-week user research findings as accurately and purely as possible without too much interpretation”*.

Although we did not identify many quotes in the reflection session with students, we did observe self-awareness during the Empathic Handover workshops. For example, in the Handover discussion workshop, students had consent and recognized one another (e.g., *“absolutely; that sounds familiar”*). Especially when a student was unfamiliar with the context of a question, they found it interesting to hook on to others’ stories. This led to sharp questions, deeper discussions and new insights: *“Quizzing gave insights into others’ perspectives and coping”*; *“The diversity in student’ characters and coping was found in our answers to questions and comparing these helped to benchmark”*. Self-awareness plays an important role in exploring what you share with others, but also in actively understanding what you do not share.

Personal Experience [PE]

‘Personal experience’ (i.e., connecting to and reflecting on one’s own relevant experiences), was prominent in all conditions, see the purple dots in Figure 14. Some students thought it would be easier to connect to their own relatives than to strangers in the research phase: *“If it is known you are more motivated”*; *“In my experience, we found things we could use”*.

However, this was not always the case: *“It seemed easier to start with my parents, but it was actually not, since it involved me”*. In addition, we found that students purposely used this

factor in their communication with users and experts. Mentioning their own experiences helped build trust: *“Users tend to trust me when they feel like I am having the same feeling”* and *“If you bring in your own experience, it is easier to talk to users or caregivers”*. Relating to their own experience also helped students interpreting what users and experts said: *“We got many abstract examples from caregivers and then my own experience helped me understand and put what they said into perspective”* and *“It is easier to relate and read between the lines”*.

The Paper teams became demotivated because they could not generate ideas for the users they originally met with: *“Switching to a new user group meant that we could not use our personal experience”*; *“It is very hard not to use your own experiences in the design”*; *“Normally, personal experiences make it strong”*.

Since the handover workshop challenged students to comprehend users by immersing themselves in and experiencing similar situations, these students’ own experiences and feelings were explicitly used. This resulted in emotional statements like: *“It made me feel really awkward”*; *“I was so happy”*; *“I turned bright red”* and *“I was as limp as a rag doll”*. Students mentioned that it was easier *“to draw on own experiences to relate to others than to imagine what people with dementia need”*. However, openly sharing emotional details with the new team members also lead to personal distress: *“I felt uncomfortable, because not everybody needs to know everything”*. Despite this, most students appreciated the autobiographical exchange: *“Many interesting things were brought up”*; *“You go really quickly from a distant abstract feeling towards OK, this is how it actually feels”*; and *“If I were in that situation, what would I like?”* Most of them even liked to take along elements of own personal experience. All the Principal Designers mentioned that the design space was enlarged and enriched by the personal stories in the discussion. New team members’ interpretations of the user research findings led to interesting new design opportunities:

“Extensive, more positive and meaningful opportunities for design not thought of by the initial team”.

The role play was considered to be a good way of personally experiencing the diverse perspectives of users. Participants found it alienating and were surprised about what happened to them: *“The way you are encountered affects your state”*; *“The body language: you cannot imagine”*; *“There is a difference between hearing a story and getting the associated feelings of the stories by experiencing it”*; and *“You can really get angry or feel sad”*. One student said: *“the role play instruction itself already evoked some quivers and vibrations before acting it out”*. This factor played an important role in really immersing and connecting to the users and finding new design opportunities.

Mixed Perspectives [MP]

Handover teams demonstrated more evidence for taking different perspectives and combining affect and cognition than teams in the other conditions, see the green dots in Figure 14. In the research phase, students mentioned that mixing perspectives supported their understanding of one another: *“Personal feelings and thoughts around mourning were difficult for me to explain, but when I connected them to literature it became easier for me to explain what mourning is”*. In user research analysis, all teams mentioned comparing the user insights with literature and vice versa. This enabled them to relate findings and draw conclusions to ideate from: *“You can’t run fully on emotions”*.

In the handover discussion workshop, students investigated many diverse perspectives: *“You normally only know how you respond yourself. You now are mirroring your own experiences with the experiences of others and the users”*; *“We are seeing more perspectives, not thinking in black and white”* and *“Being able to switch between a close perspective and a bird’s view perspective”*. Students even mentioned that: *“The handover activities prepared us properly for understanding and recognizing the insights in the interim*

paper”. In ideation, one team said that coupling the autobiographical insights of the handover discussion to the user insights evoked ideas: “*We could directly drill down to a concept*”.

Mixed Perspectives appeared to be used most in converging and synthesizing activities such as user research analysis, concept development and evaluation.

4.4 Discussion

Aforementioned qualitative results, correspond to our expectation that the Handover and User conditions would lead to more empathy than the Paper condition. Moreover, we consider the tutor and user feedback on the design outcomes of the teams to indicate indirect evidence for empathic development¹⁸. Both these judgements showed how well a concept fit the experiential world of the users.

In comparing these, we found that two Handover ‘mourning’ teams and two User ‘dementia’ teams had the best results of all teams in both the user evaluations and tutor assessments. Surprisingly, the Handover mourning teams delivered designs that were more appreciated, according to tutors and users. We expected the opposite result, because of the dementia examples in our handover training and because five of the team members had designed for dementia in earlier projects, whereas design for mourning was unfamiliar to all. The fact that some students personally experienced the emotions of mourning in their lives, which is impossible with dementia from a first-person perspective, could explain the difference in results. However, a few students experience dementia personally as a caregiver.

Only one team -an User team- delivered a concept of insufficient quality according to the tutors. The other designs were of sufficient quality, but got mixed responses from users.

¹⁸ See Appendix H

The Paper teams' concepts were not recognized or appreciated by users¹⁹: "*the concept did not fit; it did not connect*".

To sum up, the quality and fit of the design outcomes in the Handover condition was similar to the design outcomes in the User condition, and better than the design outcomes in the Paper condition according to users and tutors. The Empathic Handover approach seems an effective way to transfer user insights empathically to design team members that cannot encounter the users they are designing for.

In the remainder of this section, we will discuss the strengths and limitations of the research and we will give several suggestions for improving and further developing the Empathic Handover approach.

4.4.1 Research strengths

Our heuristic of five individual factors that foster empathy in design was useful in comparing the empathic capacity of teams and conditions. In connecting the quotes to the factors located on the two intersecting dimensions -self versus other orientation and affective experiences versus cognitive processes- we developed a more elaborate notion on how empathic capacity can be built (Hess & Fila 2016b) and what the working mechanisms of each of the empathy factors based on Baldner & McGinley (2014) can entail in design.

Connecting *personal experiences* to user insights allowed Handover students constructing sensitive models to emotionally understand the users' inner worlds and their diversity in perspectives as already been argued by Bluck et al., 2013; Smeenk et al., 2016; Smeenk et al., 2017; Tani et al., 2014; Van Rijn et al., 2011). It seemed hard to describe user insights in and convey user insights from a research paper, as we saw with the Paper teams.

¹⁹ The concepts of the student teams that were informed by a paper were not recognized by the users in the co-constructing stories evaluation.

Most of these students made false assumptions in the ideation phase, resulting in concepts that users neither recognized nor appreciated, which is in line with the research outcomes of van Rijn et al. (2011). Except for one team, these students seemed to be less *emotionally interested* in and less *sensitive* to their users in the plenary reflection meeting.

At first sight, it seemed remarkable that the *self-awareness* factor was low in all conditions, and especially in the Handover condition, since the Handover approach – unlike Paper and User conditions– explicitly involves personal experiences related to users’ experiences. Yet, in the Handover condition, the high number of quotes related to the *Mixed Perspectives* as well as the way Handover teams connected to users might explain the low score in self- awareness. Self-awareness is a more implicit, imaginative, personal and cognitive process in which you interpret and hypothesize. Mixed Perspectives (MP) and the Empathic Handover (EH) approach on the other hand are also affective and likewise about understanding own and others’ *real* experiences.

To conclude, building and measuring empathic capacity included reflection on self-other dichotomy and navigating through affective experiences and cognitive processes, which is in line with Hess & Fila (2016b) and Smeenk et al. (2016) .This requires a holistic view on all five individual factors that foster empathy in design, as has already been argued by Baldner & McGinley (2014).

4.4.2 Practical improvements and recommendations

We found that the Empathic Handover approach was not always understood properly. From the reflection meetings, we found not all the students grasped that the two handover activities (discussion and role play) purposely have different goals. The discussion is a divergent activity aimed at expanding user insights by connecting them to the designers’ own experiences. In contrast, role play is a convergent activity focused on connecting to the most crucial and relevant user scenarios to design for, giving focus to ideation. The first relates to

personal experience and the latter to Mixed Perspectives. Moreover, the discussion activity raised ethical questions from some students: to what extent one needs personal exposure for empathy to arise? This question begs more research. At least, it is important for handover participants to be prepared for the personal approach. Participants should know that they do not need to answer all the questions and can consciously decide what to share or not and in what detail. This relates to sensitivity.

In role play, some students regretted that only two or three specific scenarios were relived and that some situations could not be acted out. The choice and definition of an authentic role play scenario, the amount and content of the role play instructions and the division of roles are crucial for empathy to develop. This is not easy to develop and probably requires more design maturity and expertise than we could expect from students. Moreover, it would be interesting to investigate alternatives or supplementary design tools to role play.

During the handover activities, we observed that Principal Designers were searching for their role. Some Principal Designers joined the handover discussions by bringing in personal stories, none of them joined the role play and all of them joined ideation as participants. Moreover, the Empathic Handover approach purposely does not prescribe a specific ideation method for the Principal Designer to use. It does so to give the Principal Designer freedom in tool selection (for the context at stake). However, the handover approach does recommend stimulating participants to start with individual ideation, giving space to (release empathy by) intuition. Yet, not all Principal Designers facilitated this individual action. In addition, they did not take sole responsibility for documenting findings. Four Principal Designers mentioned that it was hard to facilitate the workshops *and* make notes. To conclude, our Master students and especially the ones who took the role of Principal Designers lacked experience with the handover method and seniority in co-design.

Another issue raised by Paper teams, who evaluated the ideas of another team, was that it was easier to evaluate a concept that they were not emotionally connected with, since this delivered an objective view of others' concepts and evoked more design suggestions than conducting your own concept evaluation.

The issues raised here lead to several suggestions for improving and further developing the Empathic Handover approach. First, we suggest developing a practical and accessible Empathic Handover instruction canvas to clarify the approach and the role of the Principal Designer (in all its facets), and to support designers (and researchers) in applying it. Second, we suggest searching for more Empathic Handover methods and developing a toolbox. These (extra) activities should prevent the loss of ideas in the discussion activity and the loss of important user insights that cannot be relived through role play, and/or support co-defining a clear design challenge before ideation. Third, we propose a fourth activity to the current Empathic Handover approach. The Principal Designer conducts this co-reflective evaluation, where users give tips and tops concerning first ideas (e.g., the Co-Constructing Stories approach introduced in the procedure paragraph described at page 83). See Figure 15 for the expanded Empathic Handover approach.

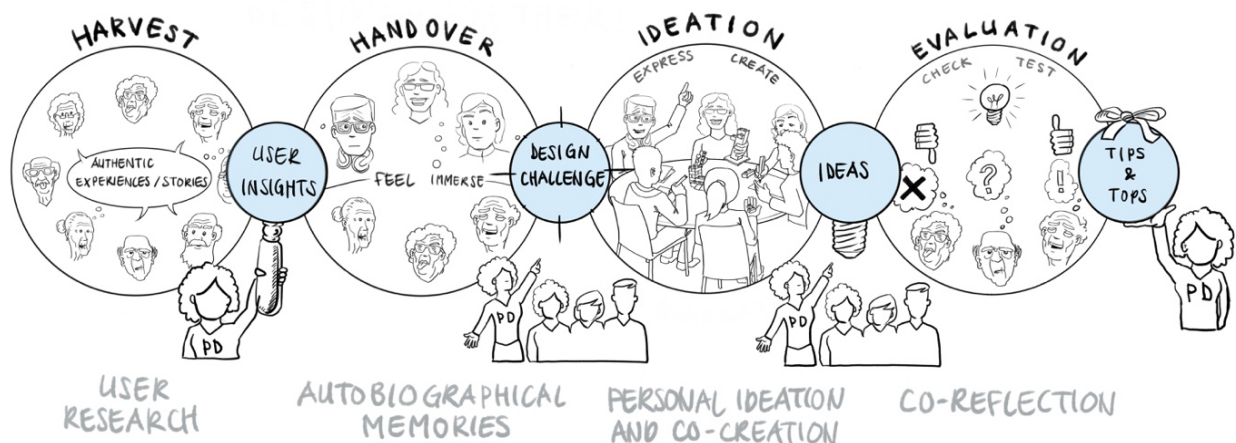


Figure 15: The expanded Empathic Handover (EH) approach

4.4.3 Research limitations

Our comparative study had several limitations related to the analysis and execution. Our new way of ‘measuring’ empathy in design with the five individual empathy factors mainly depends on soft data (quotes) and an exploratory small-scale study. Therefore, it is difficult to demonstrate the extent to which our qualitative analysis method – counting quotes and clustering them to empathic factors for each team and condition – was a credible way of measuring empathy. Our results demonstrated trends, but are an indication only; we could not demonstrate significance with any non-parametric test due to the small-scale sample.

However, we did try to be as reliable as possible. We used a similar semi-structured format per condition to trigger empathic factor quotes in the reflection meetings and two researchers discussed their individual cluster findings until consensus was reached. Although considered important to empathy, the factor self-awareness in understanding others was relatively low in all conditions. Clustering quotes to this factor was considered difficult by our researchers. Even so in psychology, the current empathy measurement scales lack self-other distinction assessment items. It seems more difficult to capture this -probably more implicit and- reflective factor.

Another disadvantage was our educational context: we conducted the research within the scope of an elective course. We used a convenience sample of enrolled university Masters students, which is not a representative sample of the professional context we are aiming for. The quality of the teams’ work may have been influenced by the students’ (and users’) backgrounds and social abilities. However, we thought it was important to compare the empathic development of teams under several conditions, a research setting impossible to achieve in practice. Moreover, for educational reasons, all students were expected to conduct user research. They all encountered vulnerable users, but the Handover and Paper teams did not encounter the users they would ultimately design for. This first contact with users in the

context of this course could have positively influenced the empathic growth of all students. A potential risk is that the initial user encounters may have triggered general empathy and thus influenced our research. However, since most Paper concepts did not match the users' needs, this effect seems small.

In hindsight, it might have been better to compare the Handover and Paper conditions by giving the Paper students the interim papers written by the Handover teams. We decided not to do so because the initial work of the Paper designers then would not have been proceeded with and students (and users) might have felt disappointed (ethics).

Finally, the course did not give students enough time to iterate much on their first ideas, and for the Paper and Handover teams to incubate the new user group information.

4.5 Conclusion

Although empathy is a complex multifaceted construct, we argued that empathy in design can be operationalized by five factors: emotional interest, sensitivity, self-awareness, personal experience and mixed perspectives (Baldner & McGinley, 2014). Based on the overview of Hess and Fila (2016b), we proposed a theoretical framework that uses these five individual factors to foster empathic capacity in design. This heuristic proved useful in systematically comparing the empathic capacity of teams and conditions. Subsequently, we could validate the transferability of the novel Empathic Handover approach of chapter 3 (Smeenk et al., 2017). Our study indicates that the Empathic Handover approach is transferable to other design teams and to other problems and contexts. Compared with a traditional user-centered design approach, in which a design research paper informs teams for ideation, the Handover approach seemed to lead to more indirect and direct empathy. Compared with a traditional user-centered approach, in which design teams have direct contact with users, the Handover approach can lead to equal indirect empathy and direct empathy. However, the factor identification differed between these two conditions. The Handover condition showed more

mixed perspectives and sensitivity, the User condition more emotional interest.

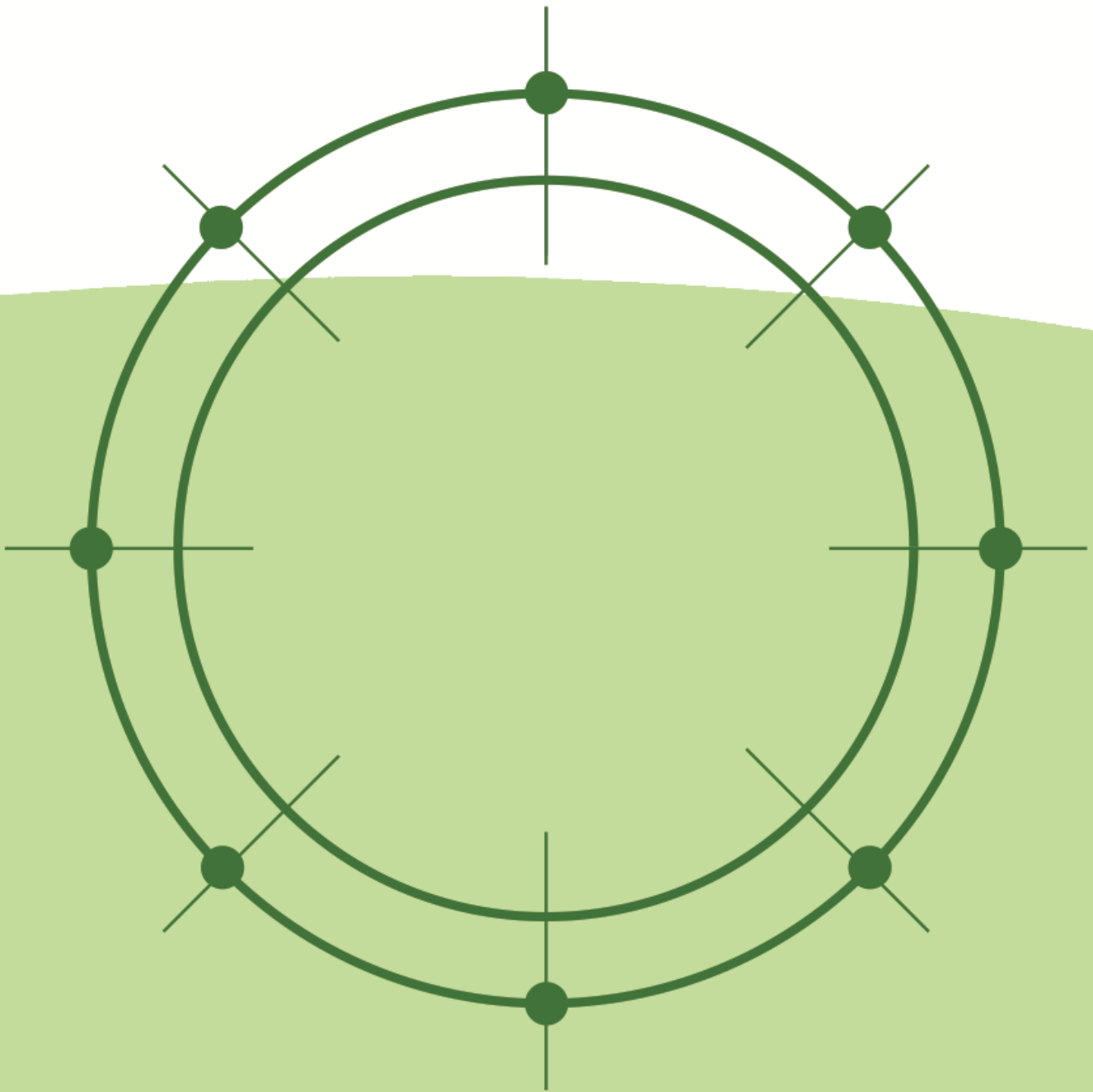
Moreover, the theoretical framework and the content of quotes delivered an elaborate notion of the working mechanisms of empathy in design. One puzzling finding was that the Handover approach delivered better results when the young participants personally experienced situations (mourning) than in non-experienced situations (dementia). This confirms to the idea that using similar autobiographical experiences and feelings allows designers constructing sensitive models to understand the users' inner worlds (Van Rijn et al., 2011; Bluck et al., 2013; Tani et al., 2014; Smeenk et al., 2016; Smeenk et al., 2017).


Based on the insights from our study, we invite others to use and reflect on our framework and improve, expand and further develop the Empathic Handover (EH) approach, both for professional as educational settings. Our novel framework might support tutors in educational settings to explain the factors that foster empathy in design and might support them in comparing empathic process. Our practical recommendations involve 1) developing an Empathic Handover instruction canvas, 2) investigating an Empathic Handover toolbox, and 3) expanding the approach with an Empathic Handover co-reflective evaluation with users conducted by the Principal Designer. To conclude, we hope this chapter paves the way for the use of a new approach to foster empathy in design.



PART 2

CONCLUSIONS





This following chapter resembles the publication: Smeenk, W., Sturm, J., & Eggen, B. (2019). Empathic Formation in Design: a comparison of existing models leading to an Empathic Formation compass (EF) for co-design. International Journal of Design.

CHAPTER 5

A COMPARISON OF EXISTING FRAMEWORKS LEADING TO AN EMPATHIC FORMATION (EF) COMPASS FOR CO-DESIGN

ORIGINAL ARTICLE



A comparison of existing frameworks leading to an Empathic Formation (EF) compass for co-design

Wina Smeenk^{1, 2, *}, Janienke Sturm², and Berry Eggen³

¹ *WiEN'S ontwerperschap, Broek in Waterland, The Netherlands*

² *Department of Industrial Design, Eindhoven University of Technology, the Netherlands*

³ *Department of People and Technology at Fontys University of Applied Sciences, Eindhoven, The Netherlands*

Although empathy is an essential aspect of co-design, the design community lacks a systematic overview of the key dimensions and elements that foster empathy in design. This paper introduces an Empathic Formation (EF) compass, based on a comparison of existing relevant frameworks. Empathic formation is defined here as the formative process of becoming an empathic design professional who knows which attitude, skills and knowledge are applicable in a co-design process. The EF compass provides designers with a vocabulary that helps them understand what kind of key dimensions and elements influence empathic formation in co-design and how that informs designers' role and design decisions. In addition, the Empathic Formation compass aims to support reflection and to evaluate co-design projects beyond the mere reliance on methods. In this way, empathic design can be made into a conscious activity in which designers regulate and include their own feelings and experiences (first-person perspective), and decrease empathic bias. We identify four important intersecting dimensions that empathy is comprised of in design and describe their dynamic relations. The first two opposing dimensions are denoted by empathy and differentiate between cognitive design processes and affective design experiences, and between self- and other orientation. The other two dimensions are defined by design research and differentiate between an expert and a participatory mindset, and research- and design-led techniques. The Empathic Formation compass strengthens and enriches our earlier work on Mixed Perspectives with these specific dimensions and describes the factors that foster empathy in design from a more contextual position. We expect the Empathic Formation compass -combined with the Mixed Perspectives framework- to enhance future research by bringing about a deeper understanding of designers' empathic and collaborative design practice.

Keywords – Empathy, Empathic Design, User-Centered Design, Co-Design, First-Person Perspective, Mixed-Perspectives

Relevance to Design Practice – The Empathic Formation compass can support designers' awareness of the influence of their role during a co-design process. In addition, the Empathic Formation compass gives insight into empathic formation in design research, stimulates reflection in design education and contributes to the application of empathy in design practice.

Chapter 5: A comparison of existing frameworks leading to an Empathic Formation (EF) compass for co-design

Although empathy is an essential aspect of co-design, the design community lacks a systematic overview of the key dimensions and elements that foster empathy in design. This paper introduces an Empathic Formation (EF) compass, based on a comparison of existing relevant frameworks. Empathic formation is defined here as the formative process of becoming an empathic design professional who knows which attitude, skills and knowledge are applicable in a co-design process. The Empathic Formation compass provides designers with a vocabulary that helps them understand what kind of key dimensions and elements influence empathic formation in co-design and how that informs designers' role and design decisions. In addition, the Empathic Formation compass aims to support reflection and to evaluate co-design projects beyond the mere reliance on methods. In this way, empathic design can be made into a conscious activity in which designers regulate and include their own feelings and experiences (first-person perspective), and decrease empathic bias. We identify four important intersecting dimensions that empathy is comprised of in design and describe their dynamic relations. The first two opposing dimensions are denoted by empathy and differentiate between cognitive design processes and affective design experiences, and between self- and other orientation. The other two dimensions are defined by design research and differentiate between an expert and a participatory mindset, and research- and design-led techniques. The Empathic Formation compass strengthens and enriches our earlier work on Mixed Perspectives with these specific dimensions and describes the factors that foster empathy in design from a more contextual position. We expect the Empathic Formation compass -combined with the Mixed Perspectives framework- to enhance future research by bringing about a deeper understanding of designers' empathic and collaborative design practice.

5.1 Introduction

The work presented in this chapter is set up in the context of empathic and collaborative design. In sectors as diverse as business, education, government and health, design methodology is increasingly used in addressing the wicked problems that our society faces (Brown, 2008; Manzini, 2015). This trend has created a demand for more knowledge about design as a moderator of social change (Dorst, 2010). Further, societal changes and new technologies have broadened the challenges and problems that designers address and changed the way they work (Chen, Cheng, Hummels and Koskinen, 2015). In addition to functional and aesthetic products, designers now develop user friendly services, interactive learning experiences, and even organizational and social innovation processes, in collaboration with a diversity of stakeholders and within various public and private domains. Due to stakeholders' different interests, experiences and expertise, it can be hard for them to collaborate.

Reciprocal empathy can connect these stakeholders on a deeper level and, as such, play an important role in recognizing each other's positions as well as in encouraging closer internal and external collaborations, delivering greater impact. Moreover, a better understanding of each other's positions, motivations and aspirations can enhance shared decision making and benefits mutual solutions for shared problems. This requires a different role, competencies and expertise from designers as well as distinctive relationships between designers, users and other stakeholders. The methodology used by designers, including the way they approach and respond to others, influences how much impact is created. To understand the context and the diverse and sometimes contradicting viewpoints of all people involved, designers need to be interested and empathic towards all stakeholders, other design team members and aware of the influence of their own positive or negative role on empathy in these processes.

Empathic co-design

[The first to describe ‘empathic design’ were Leonard and Rayport (1997). To address more emotional, social and complex design challenges for and *with* vulnerable people (e.g., people living with dementia), they suggested design approaches that consciously combine and balance objective and subjective mindsets. Since then, many scholars have developed empathic design research practices, methods and topics for empathizing with users (Fulton Suri, 2003; Kouprie & Sleeswijk Visser, 2009; Postma, Zwartkruis-Pelgrim, Daemen, & Du, 2012; Koskinen & Battarbee, 2003). All these studies focus on designers’ understanding of users’ experiences, emotions and everyday practices. Yet, the understanding of designers’ empathic formation is limited since it is only occasionally regarded as a more holistic psychological concept that can be consciously developed by designers (Hess & Fila, 2016).]²⁰

Empathic design aims at understanding what is meaningful to people and why, and use that understanding in making design decisions, developing products, services, systems or imagining new meaningful and alternative futures. Therefore, empathic researchers and co-designers (from here on called designers) actively interact with people, engage in reciprocal dialogues (Mattelmäki, Vaajakallio, & Koskinen, 2014) and develop and use convivial tools (Sanders & Stappers, 2008). In this way, they provoke people’s tacit emotions, intuition, latent aspirations and feelings, and create shared experiences and common reference points among designers, users and other stakeholders (Mattelmäki, Vaajakallio, & Koskinen, 2014). Moreover, empathic designers try to live and experience users’ emotions themselves and use autobiographical memories to better understand the design situation (Sanders & Dandavate, 1999; Kouprie & Sleeswijk Visser, 2009). Still, the specific utility, legitimacy and validity of

²⁰ This text is a repetition of the text in chapter 1

this first-person perspective in design is currently not sufficiently understood and recognized (Zhang & Wakkary, 2014).

In collaborative design projects with multiple stakeholders, designers take a specific role, which requires a distinct participatory mindset, behavior, skills and knowledge (Light & Akama, 2012). Psychologists assert that empathy, defined as recognizing and sharing others' emotional states, is complex and concerns a difficult interpersonal and intrapersonal experience (Preston, 2007). Interpersonal experiences are verbal, non-verbal and physical actions or expressions, and call on designers' empathic behavior and sensitivity in collaboration with others, such as extreme users and other stakeholders (from here on called users). But also towards fellow design team members when sharing experiences or transferring insights (Postma et al., 2012). In collaborative projects, designers are often the facilitators (Light & Akama, 2012) rather than the design experts, as the boundaries between the designers, the users and the stakeholders blur. This requires designers to have an open, engaging and curious mindset, good observational abilities and collaborative skills (Mattelmäki et al., 2014), but also requires moment-by-moment shifts in position, focus and delivery (Light & Akama, 2012). According to Light & Akama (2012) in research little has been shared so far of the micro-dynamics of participation at its most intense, when designers as facilitators are challenged by a range of social contingencies. Intrapersonal experiences concern the conversation going on in your own mind and refers to the ability of designers to self-reflect in and on designing. It not only concerns the design decisions to be made, but also designers' willingness to disclose personal experiences in the interest of the project and the ability to regulate one's own emotions in interactions with users (Kouprie & Sleeswijk Visser, 2008). In recalling autobiographical memories (Kouprie & Sleeswijk Visser, 2009) or in contact with users, designers should consciously sense their own feelings, such as a state of empathic joy, concern or distress (Davis, 1996; Singer & Lamm, 2009; Mattelmäki et al.,

2014). This can be inspirational (Zhang & Wakkary, 2014; Kouprie & Sleeswijk Visser, 2009), but also counter-productive. Distress, such as fear when co-experiencing an extreme user situation, pity when others share their emotional experiences, and shame in disclosing own experiences, can overwhelm designers, block their empathy and even cause withdrawal (Singer & Lamm, 2009). This ultimately limits designers' ability to facilitate and understand users.

In empathic co-design processes, designers share the control of the design process with users. Still, often they also elicit and interpret the empathic research outcomes. Moreover, they make sense of others by gaining personal insights into users' experiences (Sanders & Dandavate, 1999; Kouprie & Sleeswijk Visser, 2009). This all imposes challenges related to bias (Mattelmäki et al., 2014). Empathic bias can lead designers to misinterpret users' needs and design inappropriate tools and outcomes. Designers' personalities, social and cultural backgrounds, design maturity and own life experiences can color the design process and design decisions, and can (mis)lead the interpretation of users' experiences (Mattelmäki et al., 2014). Likewise, designers' varying traits, skills, knowledge and personal experiences influence their state of mind, behavior and design choices in situ towards users, which influences empathizing with users positively and negatively.

In conclusion, designers need to become more aware of the influence of their subjective, objective and reflective roles towards the people and the context they design for and with(in). The design community lacks an overview that brings insight into the key dimensions and elements that foster empathy in co-design. Therefore, our research objective is to provide the design community with such an overview which explains empathic formation as a meta-level concept that can be consciously developed and that guides designers in their facilitative role in co-design.

This chapter is organized in three sections. First, we describe and compare relevant studies and related frameworks on empathy and its relation to design, uncovering dimensions and elements that empathy is comprised of in design. Then, we introduce the Empathic Formation compass, illustrate its potential utility -with the help of a real-life case study- and discuss how its dimensions and elements may support designers' empathic formation in design research, practice and education. Finally, we present our conclusions and identify opportunities for future research.

5.2 Theoretical Perspectives

5.2.1 Empathy

Recent research on empathy and the empathic brain has added to our understanding of empathy (Krznaric, 2014). Evolution biologists have demonstrated that we are social animals, empathic and cooperative by nature like other primates (de Waal, 2010). Child psychologists have discovered that small children can and do take others' perspectives (Bowlby, 2012) and that empathy can develop and grow throughout our lives (Singer & Lamm, 2009).

Neurologists have discovered mirror neurons, which are triggered in our own brain when we see others' emotions. They help us feel what we would experience if we were the other (Keysers, 2011). Yet, psychological and social aspects can also influence empathy. Both nature and nurture are thus important for empathy to arise, grow and develop.

[Social psychologists usually divide empathy into *cognitive* processes, *affective* experiences (Batson et al., 1997; Davis, 1996; Baron-Cohen & Wheelwright, 2004) and the ability to attune to or distinguish between *self and other* (Baldner & McGinley, 2014; Decety & Jackson, 2004). Affective empathy is the ability to share emotional experiences, whereas

cognitive empathy concerns the ability to understand those experiences. Self-other distinction is important to maintain the source of the emotion (Decety & Jackson, 2004).]²¹

Preston and de Waal (2002) define empathy as a shared emotional experience occurring when one person (the subject) consciously and deliberately attends to the state of the other (the object) and comes to feel a similar emotion. They argue that much behavioral evidence in empathy research points to the fact that empathizers use their ‘representations’ to predict, feel, understand and respond to the state of others. This means empathy grows with shared past experiences, similarity to, and familiarity with others.

In the context of design, Fulton Suri (2003) understands empathy as “our intuitive ability to identify with other people’s thoughts and feelings – their motivations, emotional and mental models, values, priorities, preferences and inner conflicts”. There is widespread agreement that the ability to create meaningful concepts largely depends on the level of understanding and empathy that a designer or design team can gain with the users (Fulton Suri, 2003; Koskinen & Battarbee, 2003; Kouprie & Sleeswijk Visser, 2009). In a paper recapitulating what happened to empathic design, Mattelmäki et al. (2014) argues that empathic design currently focuses on sensitivities in four layers. First is the sensitivity towards *techniques* in applying generative, prototyping and visualizing tools to communicate and explore issues. Second is the sensitivity towards *design* outcomes in seeking potential design directions and solutions. Third is the sensitivity towards *people* in gathering inspiration and information about and making sense of people and their experiences and the design context. Fourth is the sensitivity towards *context* and collaborations: tuning the process and tools according to the co-designers, decision makers and organizations involved. We will discuss these sensitivities below, paired in design techniques and design outcomes -which

²¹ This text is a repetition of the text in chapter 1

represent design process elements- and in people and context -which represent designers' role and behavior.

Sensitivity towards techniques and design

Product design has roots in engineering design and user-centered design and, as a consequence, many formal product design methodologies advocate a research-driven design approach leading to design directions and solutions (Cockton, 2009; Sanders & Stappers, 2008). Traditional product development or user-centered design projects have been formalized and executed on types of methods that are used in different phases (Laurel, 2003). This paradigm is widening. In current co-design practices, designers are sensitive towards techniques that are more imagination-oriented, co-creative, participatory and design-led (Cockton, 2009; Sanders & Stappers, 2008; Wolf, Rode, Sussman, & Kellogg, 2006). As a response to this shift in focus and the subsequent expansion of the designer's toolkit, we observe an emerging body of work calling on design methodology to move beyond 'the method' as its main unit of analysis (Woolrych, Hornbæk, Frøkjær, & Cockton, 2011; Lee, 2012). In a programmatic paper, Woolrych et al. (2011), for example, urged us not to see methods as 'indivisible wholes', but rather as a loosely coupled set of resources that can be molded to the local priorities and the project's context. Still, in many current design discussions, empathy is seen as a utility and thus mainly concerns developing and utilizing techniques to find insights and develop design outcomes (Lee, 2012). Less often empathy is considered a more holistic psychological concept (Hess & Fila, 2016). Lee (2012) responds to this in her thesis 'Against methods' by proposing to frame innovative empathic methods as evolving processes and constitutive stages rather than tools. We embrace this shift from a focus on and sensitivity towards empathic techniques to a focus on and sensitivity towards empathic awareness, learning and growth in designing. This ultimately leads to a sensitivity towards empathic and appropriate design directions and solutions.

Sensitivity towards people and context

In current co-design projects, we see that designers are confronted with two challenges as projects involve more stakeholders and more complex contexts. First, designers need to understand the context and the diverse and contradicting viewpoints of the people involved. This means being interested and empathic towards all stakeholders: for instance, towards the person with dementia *and* the family involved *and* the professional caretakers *and* government. Ideally, empathic designers also enhance empathy between the co-design participants in the process they facilitate: both stakeholders and users towards each other - since this can be the beginning of the solution- and design team members towards other team members. The second challenge is that designers should not neglect their own viewpoints and experiences, and how these might influence others and their own empathy in a positive or negative way (Sleeswijk Visser and Kouprie, 2008 and 2009). Empathy can definitely benefit from first-person perspectives (Zhang & Wakkary, 2014; Kouprie & Sleeswijk Visser, 2009) as we discussed earlier. Yet, it can also be clouded by the designers' identity, experiences and role (Vink & Oertzen, 2018). Moreover, empathic people can run into the 'empathy trap' (i.e., too much empathy blinds them to their own needs; Mattelmäki et al., 2014), 'hot-cold empathy gaps' (i.e., underestimating the influence of one's own current state when empathizing; Loewenstein, 2005) or 'projecting' (i.e., mapping one's own emotions to the other; Batson et al., 1997). Designers can end up projecting their own assumptions on to the experiences of others and falsely rationalize design directions. This may lead to single mindedness, a present-day orientation, reinforce otherness, enhancing exclusion and ironically to designing for people like themselves (Holt, 2011). Subsequently, the scope and value of design outcomes may be biased towards the designer as the designer often takes the dominant role in a co-design process (Takeyama, Tsukui, Yamaguchi & Motai, 2012). Consequently, designers need to be aware of this possible empathic bias. Self-reflection in action (Schon,

1987) is needed to prevent misinterpretation. Designers need to become more aware of the influence of their subjective, objective and reflective roles and state towards the people and the context they design for and with(in).

5.2.2 Design research objective

[The construct of empathy is thus complex. Moreover, above paragraphs call on two issues with respect to Mattelmäki's sensitivities in empathic design. First, there is too much focus on *method orientation* in design (Woolrych, Hornbæk, Frøkjær, & Cockton, 2011; Lee, 2012) and we see a shift towards a focus on empathic formation processes (Fila Hess 2016; Lee 2018). Second, there is unclarity on the influence of designers' first-person perspective on their objective or subjective *role* towards people and context (Zhang & Wakkary, 2014). We conclude that the design community lacks a meta-level overview of empathic formation that not only brings insight into the construct and the evolving process of empathy, but also initiates reflection in and on design action (Hess & Fila, 2016; Kouprie & Sleeswijk Visser, 2009). More specifically, reflection on the designers' role and design decisions.]²²

Our research objective is to provide the design community with such a metal-level overview for reflection, presented in the form of an Empathic Formation (EF) compass.

We expect that on the basis of this overview and better knowledge of empathic formation, designers can also legitimately utilize personal experiences (the first-person perspective) and prevent personal distress, withdrawal and empathic bias in relating to others and in designing outcomes. Moreover, we argue that the Empathic Formation compass can support the evaluation of empathic formation in co-design projects.

In two previous studies (chapter 2 and chapter 4), we already elaborated on building empathic capacity and we expect this work of value to the development of an Empathic

²² This text is a repetition of the text in chapters 2 and 4

Formation compass. [First, we proposed an empathic design framework: Mixed Perspectives (Smeenk, Tomico & van Turnhout, 2016). This fundamental framework decouples methodology from methods and provides a more holistic view of designers' objective, subjective and reflective roles and how to legitimately use personal experiences, the first-person perspective. We will explain this approach in the following section in more detail. Yet, it is important to note that in this empirical case study discussion, we found two issues. First, it seemed hard for some junior designers to understand the continuum within the second-person perspective: from a more distant observation of others to close immersion between others. Second, it seemed hard for some of them to understand the differences and relations between designers' first-person experiences and designers' third-person assumptions. Our explanations of the perspectives still seemed too abstract. In hindsight, this could have been caused by not positioning the perspectives along dimensions. In another study (Smeenk, Sturm, Terken & Eggen, 2018), we proposed that empathy in design can be operationalized by five distinct factors: emotional interest, sensitivity, self-awareness, personal experience and mixed perspectives. These factors refer to the designers' role in empathic design projects, the value of personal experiences and design maturity. These factors will also be explained in more detail in the next section. Still, these factors miss contextualization regarding methodology. Moreover, the factors that foster empathy in design are not yet connected to the Mixed Perspectives study.]²³ To sum up, we aim to provide the design community with an overview which explains the complex construct of empathy as a meta-level concept that can be consciously developed and that guides designers in their facilitative role.

²³ This text is a repetition of the text in chapters 2 and 4

5.2.3 Existing Studies and Models

In this section, we describe and compare seven relevant studies on empathy and design, which can contribute to the conceptualization of an Empathic Formation (EF) compass in design.

These studies were found by using the snowball method, a non-random reference tracking method, and form the basis for our final Empathic Formation compass.

Perception action model

The first inspiration comes from Preston (2007), who discusses empathy from a behavioral psychology perspective. Based on the Perception Action Model (PAM), which she developed with de Waal (2002), she aims to explain how people come to feel the states of others. The model points out that an empathizer must be motivated to and capable of behaving and responding empathically in three ways: attune, experience and respond. Translated to the design context, this means that designers should consciously attend and attune to the state of the users. Second, they must be willing to open themselves up to experiencing a similar emotional state as the user and/or to activating similar autobiographical experiences. Finally, designers should generate a suitable and sensitive emotional response to users. All this must occur while inhibiting contagious and empathic distress and maintaining focus on the users. Preston argues that when the integrity of any of these state processes is undermined, so is the designer's ability to empathize, and empathic bias towards users' experiences can occur. They state that bias can be decreased with awareness of designers' mindset and behavior.

Empathic design framework

[Kouprie and Sleeswijk Visser (2009) looked at empathy from a design approach point of view. In their search for a framework for empathy in design, they propose a dynamical four-phase process: discover, immerse, connect and detach. Each phase explains what role the designers' own experiences (first-person perspective) can play when having empathy with the

users. In the ‘discover’ phase, the designers approach the users (by desk research or in the real world) and enter their world. Designers’ curiosity makes them willing to really understand the users. In the ‘immersion’ phase, the designers take a more active role and are surprised by the aspects that influence the user’s experiences. Subsequently, the designers take the user’s point of reference and absorb it without judging. In this ‘connect’ phase, the designers resonate with the users and connect on an emotional level by recalling their own personal experiences and feelings to find meaning. In the ‘detach’ phase, the designers leave the user’s world and try to make sense of all the insights on the user’s perspective as design experts and translate these into design deliverables.]²⁴ These design phases clearly are in line with Preston’s (2007) state processes discussed above: attune, experience and respond. Yet, Kouprie and Sleeswijk Visser contextualize these specifically to design.

Empathy types

Hess and Fila (2016) studied empathic growth and development in the context of engineering. In a single paper (2016), they developed three different concepts of empathy. First, they distinguish between the terms empathic development, empathic growth and empathic formation. They define ‘empathic formation’ as understanding the formative process of becoming empathic towards users, including understanding required skills. This resembles our overall goal of understanding empathy at a meta-level and inspired the name of our compass. They relate empathic ‘growth’ to designers’ thriving ability to apply pre-existing skills or dispositions. Finally, they relate empathic ‘development’ to designers’ growing understanding of users’ experiences. In addition, Hess & Fila mention five important ‘guidelines’ for developing empathy. The first three are in line with the behavioral aspects (state processes) discussed by Preston (2007): 1) empathy must be consciously experienced,

²⁴ This text is a repetition of the text in chapter 2

2) empathizing is contingent upon the ability to regulate one's own emotions, and 3) empathy does not manifest in every interaction with others, since humans tend to be biased. They also mention two other aspects: 4) empathy will only be internalized when a designer reflects on and finds purpose in incorporating empathy into their mode of being and 5) reflecting on how empathy operates throughout first-person experiences with real-world users makes empathy training more effective. These last two 'guidelines' are in line with respectively Sleeswijk Visser and Kouprie's work on self-reflection (2008) and their process of stepping into and out of users' lives (2009). Reflection and first-hand experiences are important in order to internalize and train empathic growth. [At last, overcoming the absence of an ideal means for understanding empathic development, Hess & Fila (2016) conceptualize empathy in an overview defined by two intersecting dimensions distinguishing between self- or other-orientation, and affective experiences or cognitive processes. This results in four empathy types: empathic distress, empathic concern or joy, imagine-self perspective taking and imagine-other perspective taking (see Figure 11).]²⁵ 'Empathic concern' and 'empathic distress' are outcomes of a person's state process, which is in line with Preston (2007). In contrast, 'imagine-self' and 'imagine-other' perspective taking concern design activities and techniques. The latter can be seen as steps in a design approach, just like the example of Kouprie and Sleeswijk Visser (2009). Although not developed specifically for design, this overview of empathy types and especially their cyclical relationships may enable designers to understand how empathic capacity can or cannot be built and that building empathic capacity is a dynamic process. This refers to mixing perspectives.

²⁵ This text is a repetition of the text in chapter 4

Design research landscape

Sanders and Stappers (2008) describe design research and practice in a model defined by two intersecting dimensions: one dimension denotes design research techniques and the other denotes designers' mindset, see Figure 16. The mindset dimension is divided in an expert and participatory mindset. The technique dimension is divided in a research-led and design-led dimension. Research-led approaches are based on traditional design and are mostly fact and data driven. They refer to cognitive processes. While design-led approaches are more recently developed and more experimental and inspiration-oriented (Sanders & Stappers, 2008), and use physical artefacts as thinking tools. The expert mindset involves designing *for* people: designers are the design experts and the co-design participants are reactive informers. In contrast, the participatory mindset involves designers working *with* people. The people are seen as the true experts of their own experiences. They are active co-design partners and share control over the process and outcome, while designers facilitate. This mindset refers to the

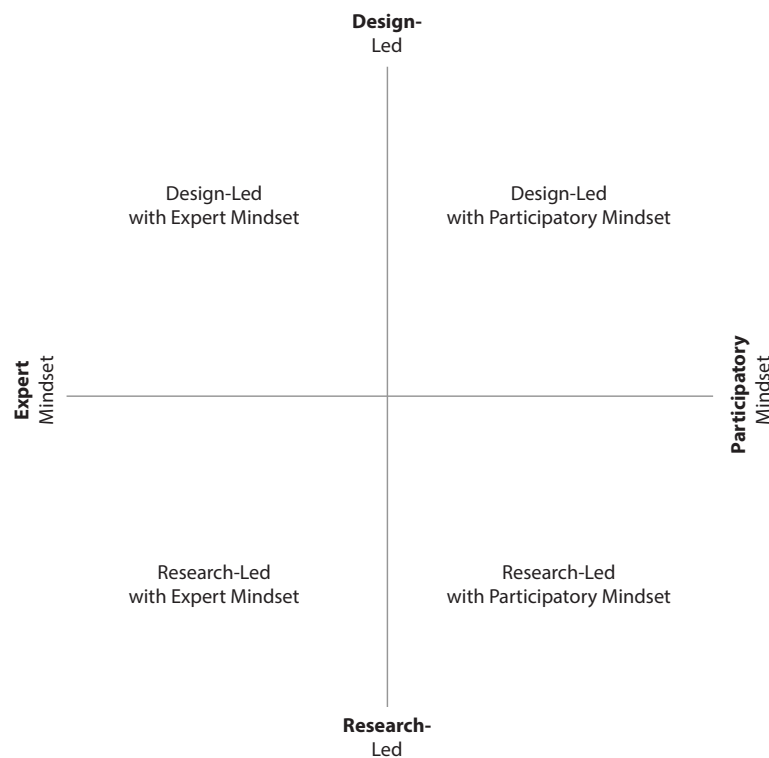


Figure 16. The landscape of design research (Sanders & Stappers, 2008)

second-person perspective. Sanders and Stappers (2008) argue that designers' traits influence their perceptions of user experiences and that it might be difficult for some designers to move from the expert mindset to the participatory mindset or vice versa. This entails a significant cultural change.

System of coordinates

Recently, Dong, Dong and Yuan (2017) examined empathy in design from a historical and cross-disciplinary perspective. They seem to be the first to introduce a three-dimensional overview on empathy, see Figure 17. Two dimensions in their model refer to empathy and have already been discussed since they resemble the framework of Hess and Fila (2016) depicted in Figure 1. These denote affection versus cognition and subject orientation versus object orientation. The new third design process dimension denotes attitude versus technique. They refer 'attitude' to designers' behavioral responses and mindsets that contribute to empathy with users. And 'technique' to designers' professional abilities that contribute to empathy, e.g., mastering design methods. Figure 3 shows that techniques and attitudes are seen in the light of both other dimensions: self versus other orientation and cognition versus affection, which makes this model rather complicated. Moreover, their work is missing an explicit and contextual explanation of the technique versus attitude dimension. In comparing the studies from Dong et al. (2017) and Sanders and Stappers (2008), we see a commonality and deficiency regarding the mindset and technique dimension(s). Unlike Dong et al. (2017), who divided technique from mindset, Sanders and Stappers (2008) showed two separate opposing dimensions. They divide one dimension in an expert versus a participatory mindset, and another in design-led versus research-led techniques. We argue that Sanders and Stappers' two dimensions are more complete with regard to the design process, but since they are not explicitly focused on empathy, they can be complemented with the empathic dimensions of Figure 11 and 17: cognitive-affective and self-other.

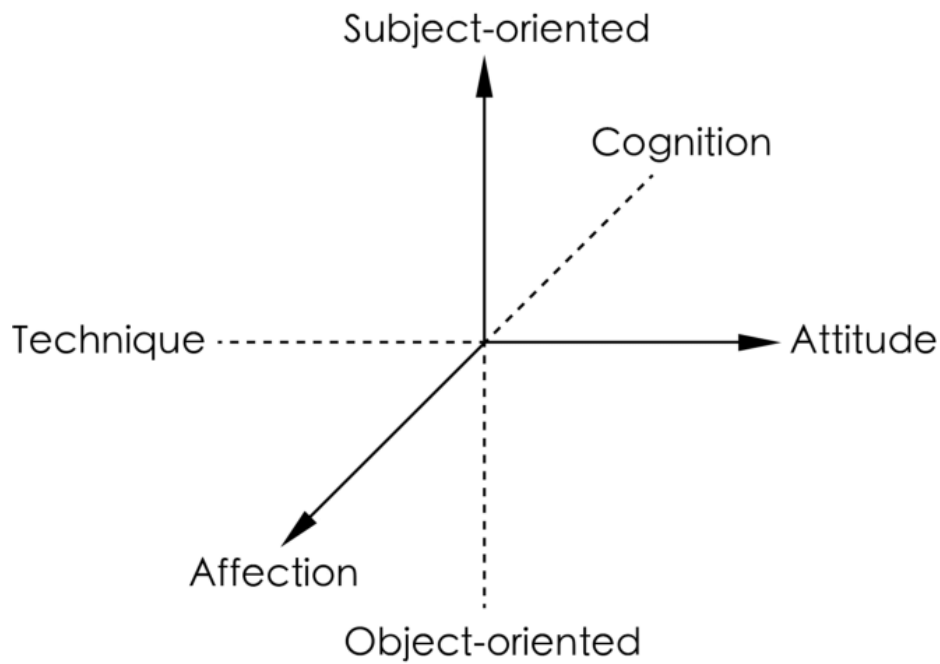


Figure 17. A system of coordinates on empathy (Dong et al., 2017)

Mixed Perspectives

We will now refer in more detail to the two studies we conducted ourselves in order to expand the dimensions with other key elements which we consider important in empathic formation.

In our search to give flexible guidance to design in emotional settings, we proposed an empathic design framework: Mixed Perspectives (Smeenk et al., 2016), see Figure 18. [Based on earlier work of Tomico, Heist, and Winthagen (2012) and a real-life case study concerning mourning, we improved the understanding of the three basic perspectives that a designer can take and identified their specific values. The first-person perspective involves designers' own experiences *within* the design context, which enables to use intuition. This perspective leads to an intuitive framing, based on designers' past or current lived experiences. The second-person perspective concerns users' or stakeholders' experiences. Designers learn *with* users in the design context and this leads to an empirical framing, obtained in situ. Last, the third-person perspective concerns designers studying existing knowledge and work produced by

others *or* designers developing new work *for* users. This leads to a theoretical framing.]²⁶ The second-person perspective and third-person perspective are consistent with Sanders & Stappers' (2008) participatory mindset and design expert mindset, respectively. It is important to note that the three perspectives in Figure 18 are dynamic and related: they complement and reinforce each other when combined or altered, creating 'perspective clusters'. This mixing refers to the cyclical relations that Hess and Fila (2016) also identified in their model. Moreover, the perspective clusters—as building blocks—can be seen as a new code or rule of conduct for empathic designing. They do not focus on methods but on perspectives switches. Our study also uncovered the value of these perspective clusters, and indicated how a specific 'approach path' can influence the resulting framing. For instance, a shift from the third-person perspective to the second-person perspective brings designers an empirically enriched theoretical framing, whereas a shift from the second-person perspective to the third-person perspective delivers a theoretically scaffolded empirical framing (Smeenk et al., 2016). One approach path relates to Kouprie and Sleeswijk Visser's (2009) description of 'stepping into and out of the users' life' activities: this cluster starts in the third-person perspective and moves via the second- and first-person perspective back to the third-person perspective. This example shows that perspectives cannot be seen as single or separate units -just as methods-, but are related to each other, overlap and are combined in design processes. These dynamic relations -which the Mixed Perspectives approach uncovers- makes designers aware of the value of changing mindsets and thus techniques. It inspires designers to consciously take, alter and mix three basic perspectives to credibly empathize with users (Smeenk et al., 2016). Moreover, this MP approach supports designers in employing relevant personal experiences and intuition in projects that require great sensitivity in a more credible and intentional way, which may enhance design outcomes. As such, a better understanding of the relative value of

²⁶ This text is a repetition of the text in chapter 3

the first-person perspective compared to—and combined with—other fundamental perspectives can contribute to enriching and developing design methodologies. Yet, how the individual perspectives and the perspective clusters are characterized with regard to empathic dimensions (such as orientation, process, mindset, technique) is not explicitly shown in the Mixed perspectives framework of Figure 18 as the studies in Figures 11, 16 and 17 do demonstrate.

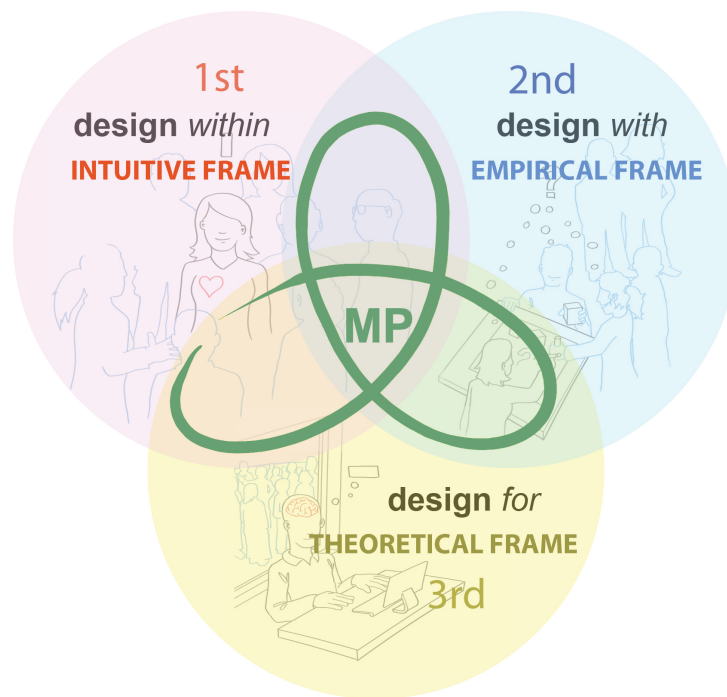


Figure 18. A visual representation of the Mixed Perspectives (MP) approach in empathic design
(Smeenk et al., 2016)

Empathy factors

In our second study, where we searched for factors that support measuring empathic growth and evaluating empathy in co-design projects, we propose -based on Baldner and McGinley (2014)- that empathy in design is operationalized by five individual factors (Smeenk et al., 2018). Inspired by the overview made by Hess and Fila (2016), we mapped these factors to the two psychology dimensions: self- versus other-orientation and affective experiences

versus cognitive processes (see Figure 12). Three factors refer to designers' mindsets in empathic design: these are emotional interest in and sensitivity to users, and self-awareness in understanding users. The fourth factor, personal experiences, can be seen as an information source and the fifth factor, mixed perspectives, as a design approach. The latter navigates through the other four factors, as represented with arrows in Figure 12. The figure shows how empathizing is a dynamic and relational process and that the construct of empathy is based on both affective design experiences and cognitive design processes, and orientation on self (the designer) and others (experts, stakeholders and users).

5.2.4 Insights

The studies described in the previous section, summarized in table 1, provide two starting points for our Empathic Formation compass. First, Hess and Fila (2016), Sanders and Stappers (2008), Dong et al. (2017), and Smeenk et al. (2018) provide insightful dimensions. The two dimensions of Hess and Fila (2016), and Smeenk et al. (2018) are based on the psychology construct of empathy: cognition versus affection, and self versus other distinction. Sanders and Stappers' dimensions do not specifically focus on understanding empathy, but do on understanding designers' role: in terms of their mindsets and the techniques they use. Whereas Dong et al. (2017) focus on all: mindsets, techniques, behavioral process and orientation. Yet, Dong's et al. (2017) three-dimensional visualization is rather complex. Therefore, the starting point of our compass' dimensions for empathic formation in design are the two empathy dimensions we first found in Hess and Fila's (2016) model and the two design dimensions in Sanders and Stappers' (2008) model, which were depicted in Figures 11 and 16 respectively. By including these dimensions, the dimensions of Dongs' et al. (2017) model are also included, be it with a slight adaptation. In addition, we will include the empathy factors described by Smeenk et al. (2018) in Figure 12 as behavioral elements.

Second, we found that Preston (2007), Kouprie and Sleeswijk Visser (2009), and Smeenk et al. (2016) approach empathy as a *dynamic process*, where designers’ consciously take several points of view towards people and context in order to understand them and respond appropriately. These points of view practically *guide* designers as they define their role without being too explicit about specific techniques. Kouprie and Sleeswijk Visser (2009), and Preston (2007) both define one specific process sequence, whereas Smeenk et al. (2016) leave this more open. To demonstrate that empathy is a dynamic and relational process, we will plot the Mixed Perspectives approach from Smeenk et al. (2016) to the compass dimensions. We expect that the Empathic Formation compass -its four dimensions, mixed perspectives elements and empathy factors- informs and explains designers how empathy can be obtained during a design project. In the next section, we will explain and visualize the Empathic Formation compass that serves to conceptualize *empathic formation in design* by integrating above insights.

Table 15: Seven existing studies and models that contribute to the conceptualization of empathy in design

<i>Model</i>	<i>Domain</i>	<i>Description</i>	<i>Approach</i>	<i>Elements</i>
1. Perception Action Model	Psychology Preston & de Waal, 2002	Empathic state process	Take several points of view in a sequence	Attune Experience Respond
2. Empathic Design Framework	Design Kouprie & Sleeswijk Visser, 2009	Dynamic design phases	Take several points of view in a sequence	Discover Immerse Connect Detach
3. Empathy Types	Engineering Hess & Fila, 2016b	Conceptualize empathy	Understand Orientation Understand Process	Self - Other Affective - Cognitive
4. Design Research landscape	Design Sanders & Stappers, 2008	Conceptualize design research	Understand Technique Understand Mindset	Design-Research led Expert –Participatory
5. System of Coordinates	Design Dong et al., 2017		Understand Orientation Understand Process Understand Mindset/Technique	Subject - Object Affection - Cognition Attitude - Technique
6. Mixed Perspectives	Design Smeenk et al., 2016	Empathic Perspectives	Take several Perspectives in a flexible sequence	First-person Second-person Third-person
7. Empathy Factors	Design Smeenk et al., 2018	Factors	Understand Mindset Take several Mindsets in a flexible sequence	Emotional interest Sensitivity Self-awareness Personal Experience Mixed Perspectives

5.3 The Empathic Formation compass

In the previous section, we described and compared seven different studies which all have specific value for understanding and guiding empathy in design. In this section, we introduce the Empathic Formation compass, see Figure 19. Empathic formation concerns the understanding of the formative process of becoming an empathic design professional who knows which attitude, skills and knowledge are applicable in an empathic design process.

A two-dimensional compass is a simple and useful way, and relevant metaphor for explaining the complex construct of empathy. A compass is a practical instrument for orientation and navigation during an empathic co-design project. It supports conscious activity, behavior and reflection: the compass shows designers where they might go and how. The four dimensions and eight compass points show the feasible directions, and the perspectives and perspective combinations explain possible process steps. Depending on the contextual complexity of and social contingencies in a co-design project, the compass supports designers in making these design decisions.

We will now first introduce and outline the dimensions of the Empathic Formation (EF) compass. Then, we will show how the individual perspectives and perspective combinations are characterized with regard to the empathic formation dimensions. Finally, we will use the case study about mourning from our prior research²⁷ (Smeenk et al., 2016) to illustrate how designers can navigate through the Empathic Formation compass in a co-design project context involving vulnerable users.

5.3.1 Dimensions

In Figure 19, we introduce the Empathic Formation (EF) compass for design. Four intersecting dimensions define the compass. The dimensions of the Empathic Formation

²⁷ Refers to the case study of chapter 2

compass each represent a continuum and not one extreme or the other, e.g., not just cognitive or affective, but more cognitive than affective. The first two dimensions are related to empathy (solid lines) and denote cognitive design processes versus affective design experiences, and self-orientation versus other-orientation. The other two dimensions are related to design research (dashed lines) and denote an expert versus participatory mindset, and research-led versus design-led techniques.

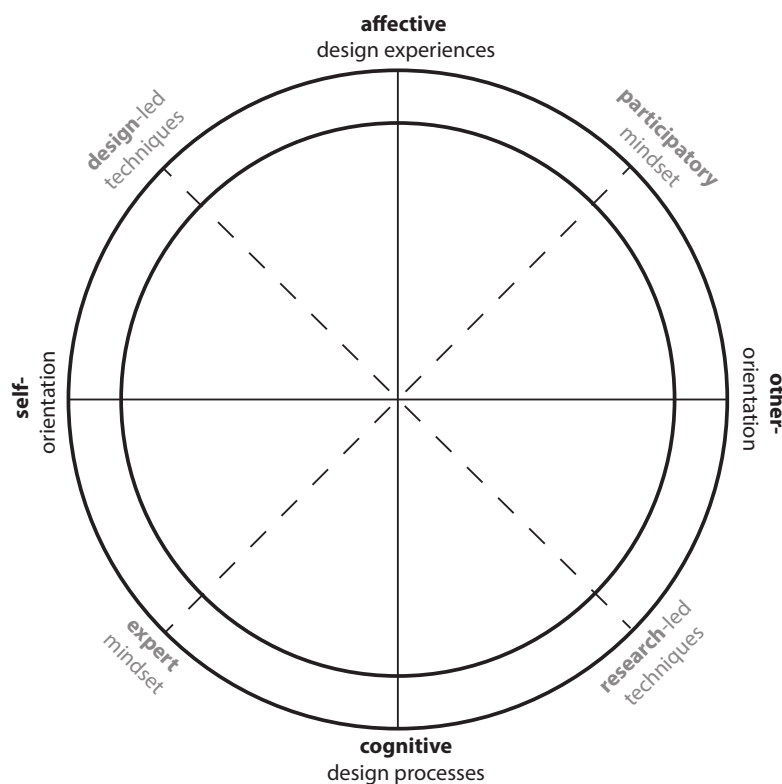


Figure 19. The Empathic Formation (EF) compass for co-design

Figure 20 shows how the Empathic Formation compass incorporates the three basic perspectives that a designer can take: the first-, second- and third-person perspective. Further, this figure shows the information sources and the factors that foster empathy in design per quadrant. The two empathy dimensions demonstrate that each perspective taps into a specific source of information: designers' lived experiences or work, or others' lived experiences or

work. Each information source stimulates a distinct mindset: personal experience, sensitive, self-aware or emotional interest. To represent the perspective combinations, we show the different perspectives as three overlapping circles. We will explain each dimension in detail below.

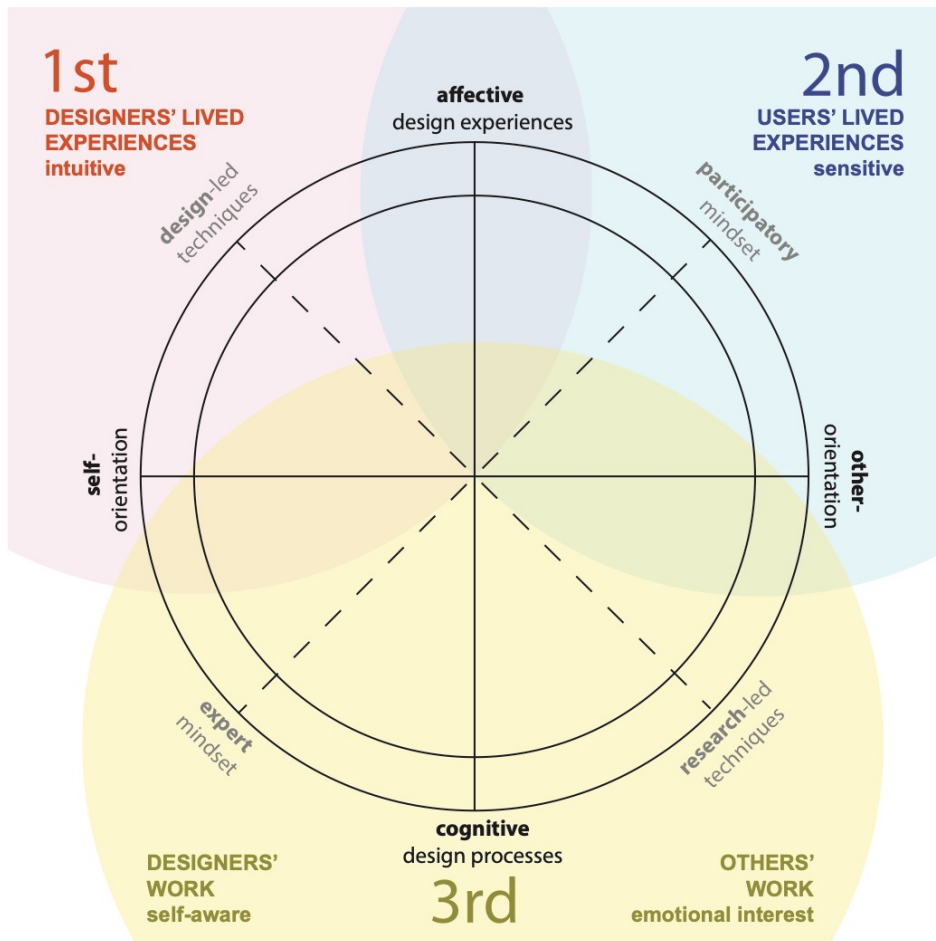


Figure 20. The Empathic Formation (EF) compass incorporating the Mixed Perspectives (MP) framework

Empathy dimensions

The first opposing empathy dimension differentiates between *cognitive design processes* and reasoning at the bottom of the compass and *affective design experiences* and resonance at the top of the compass, see Figure 19. Affective empathy is the ability to share emotional experiences, and cognitive empathy concerns the ability to understand those experiences. By this division, designers can differentiate between experiences and feelings of people in the

real world and theoretical knowledge. This dimension separates the third-person perspective from the first- and second-person perspectives, see Figure 20. Third-person perspectives are mainly cognitive and employed from a distance; they involve studying the work or knowledge of others (e.g., literature, documentaries, data, or design work such as products or services) or designers creating new work. In contrast, second- and first-person perspectives are positioned in the real world; they involve experiences of others or self. The second opposing empathy dimension distinguishes between *self* on the left side of the compass and *other* on the right side of the compass, see Figure 19. Self-other distinction is important for maintaining the source of emotion. A focus on the ‘other’ means the designer is informed by the expressions (work or experiences) of others. ‘Others’ in design can involve experienced others (e.g., stakeholders, clients, users) or knowledgeable others (e.g., context experts, design peers). A focus on ‘self’ means that designers use their own relevant experiences -personally or professionally- to understand users or develop visions, hypotheses and ideas to help them. Consequently, this dimension divides the third-person perspective into developing one’s own work or knowledge versus using others’ work or knowledge, see Figure 20. Moreover, this dimension separates the first-person perspective from the second- person perspective.

Design dimensions

The first opposing design dimension divides *design-led techniques* on the top left side of the compass from *research-led techniques* on the bottom right side of the compass, see Figure 19. This distinction supports designers in deliberately choosing a more subjective or objective approach. This dimension divides the second-person perspective, see Figure 20. To illustrate this, co-experiencing and generative techniques are seen in the design-led segment of the second-person perspective, whereas more observational techniques are found in the research-led segment of the second-person perspective.

The second opposing design dimension distinguishes between an *expert mindset* on the bottom left side of the compass and a *participatory mindset* on the top right side, see Figure 19. The expert mindset involves designing *for* people: designers are the experts and the people are reactive informers. The participatory mindset involves designers interacting *with* people. This distinction enables designers to deliberately choose between designing *for* or *with* users. Moreover, this dimension divides the first-person perspective in designers using personal experiences currently attained *within* the exact same user situation or using one's own memories from a similar design situation. This distinction helps designers deliberately focus on their current experiences in situ or on past experiences in similar situations other than the specific design context. An example of the latter is found in the Empathic Handover (EH) approach (see Smeenk, Sturm & Eggen, 2017)²⁸, where designers -in an empathic discussion- connect to own experiences to understand others' feelings.

5.3.2 Perspectives

With the help of the Empathic Formation compass, we can now also conclude how the individual perspectives and the perspective combinations are characterized with regard to empathy. The third-person perspective is defined as a mainly cognitive design phase that leads to a theoretical framing. Yet, it is important to note that this perspective can be oriented towards the designer self or towards others. When oriented towards others, this perspective includes research-led techniques and is more objective. The designers' emotional interest in the people being designed for is stimulated by studying existing theoretical information resources (e.g., the work or knowledge of others such as literature, documentaries, data, or design work such as products, services or systems). When oriented towards the self, this perspective entails a more design expert mindset. When developing new knowledge about or

²⁸ Refers to chapter 3

new work for others (e.g., finding theoretical opportunities or solutions for a design problem in hypothesis, visions, design directions, criteria, ideas, concepts or prototypes), designers need to be self-aware and avoid preconceptions and bias.

The second-person perspective is characterized as a mainly affective design experience with a focus on others. This entails a participatory mindset and leads to an empirical framing. The users' experiences and expressions are the information source, and the designers are sensitive when observing or interacting with users in situ. This perspective is divided into design-led or research-led techniques. In research-led techniques, designers observe and interview users. In design-led techniques, both designers and users are actively involved: they co-experience and co-create. Designers facilitate and use convivial tools.

The first-person perspective is also characterized as a mainly affective design experience with a self-oriented focus. Designers' lived experiences are the source of information and the approach is design-led. This perspective is divided into expert and participatory mindsets. In the expert mindset segment, designers use their own relevant memories and personal experiences although non-situational. In the participatory mindset segment, they call on personal experiences of current interactions with users and within the design context.

The combination of the first- and second-person perspectives is characterized as an affective design experience. The sources of information are both the users' experiences and designers' lived experiences in situ. The combination requires a participatory mindset and a design-led approach. For instance, designers may co-experience a day in the life of a person and engage with users, think also of embodied interaction.

The combination of the first- and third-person perspectives is characterized by self-orientation. The sources of information are designers' similar (although non-situational) experiences and their own work. The combination requires an expert mindset and a design-led

approach. Affective experiences and cognitive processes alter and balance each other. For example, designers may develop concepts based on their own experiences, intuition and imagination (i.e., critical design) and provoke opinions in a following phase with users.

Last, the combination of the third- and second-person perspectives is characterized by an orientation towards others. The sources of information are both the work of others and users' lived experiences and expressions. The combination requires a research-led approach and a participatory mindset. Affective experiences and cognitive processes alter and balance each other. For example, designers may compare existing research data with their own empirical data and improve design requirements.

5.3.3 Illustration of the compass

To illustrate the Empathic Formation compass and its components, we revisit the real-life case study concerning mourning, which we discussed in detail in our previous chapter 2 (Smeenk et al., 2016). This study was conducted in the context of design education, where we analyzed the design process of four individual junior designers' projects. These designers reported on and explained their design activities and indicated when and how they employed the first-, second- and third-person perspectives or combinations. One junior designer had first-person experience with mourning, because her father died. Because her design process showed the highest number of perspective alternations, we chose to use her case to illustrate the Empathic Formation compass. In the following paragraph, we describe the deliberately abstracted design process and each of her design activities combined with the associated position on the Empathic Formation compass' dimensions. The numbers plotted in the Empathic Formation compass in Figure 21 correspond to her design activities in chronological order and can also be found in the table of Appendix A explaining how the design activities were plotted onto the Empathic Formation compass.

The junior designer started her design process with a design pressure cooker in which she reviewed literature on mourning (1a) and generated first ideas (1b). This was followed by a gathering with her mother in which they both attended to their own mourning experiences (2). By analyzing her own and mother's experiences, she retrieved two clear design opportunities (3), which she checked with literature available (4). In turn, she searched for existing solutions (benchmark) and existing rituals to expand her solution space (5). Then, she evaluated her design opportunities and the benchmark solutions with her own experiences (6). Next, she generated new ideas (7). Followed by a fictive re-enactment with Lego (8), a re-enactment with her mother (9) and on her own (10). This brought her clarity and insight on the differences in experiences of her and her mother in the same situation. Then, she co-reflected with her mother on the situation and found prior non-visible issues (11). Conclusively, she created a design concept (12). She then evaluated if this design concept could have worked for her when she was mourning (13). Deep personal emotions came up. Then she co-evaluated the concept with her mother (14) and she drew conclusions supported by psychology literature on child-parent relationships (15). Subsequently, she developed new concepts by herself, with her mother and other designers followed by a synthesis and prototype development (16). Moreover, she evaluated the experience prototype with children of the same age she was when she lost her father (17). Finally, she used this feedback, and own intuition in optimizing the concept (18, 19) and detailing the prototype (20). Her approach path can be retained in Figure 21.

By plotting this real-life case study onto the Empathic Formation compass, we can draw up the following insights. First, we can conclude that most of the design activities plus accompanying perspectives, mentioned by the junior designer in our study of 2016²⁹ (Smeenk et al., 2016), could be positioned quite easily in the Empathic Formation compass. To exactly

²⁹ Refers to the case study of chapter 2

position the activity numbers in the compass, we had to choose between four different parameters, which can be translated into the following four questions: is a design activity more focused on self or other; more affective or more cognitive; taken with a more participatory or expert mindset; and more design or research-led?

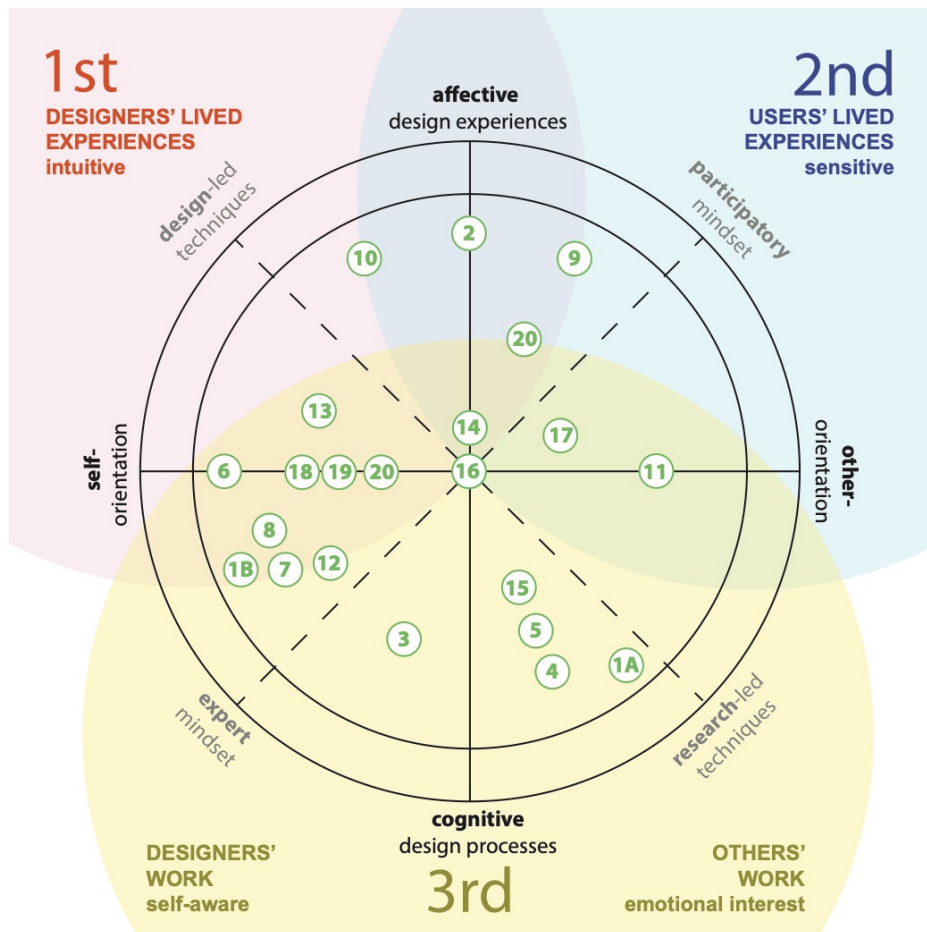


Figure 21. An example of the Empathic Formation compass in use: the mourning case study of chapter 2

Most of the design activities fit one of the eight parts of the compass or are on a dimension line. For example, activity 2 is on a dimension line as it considers first- and second-person perspectives according to the junior designer. Moreover, the overview demonstrates that most activities are positioned in the self-orientated and expert mindset part, which can be explained by the fact that the junior designer is an experience expert in mourning and will be a designer

in profession. Although the resulting overview gives insight into the dynamic process taken by the junior designer, the illustration of this case study has also its limitations. First, it only employs one junior student project sample. At the same time, we encountered some difficulty in positioning design activity 14, where the designer co-reflected with her mother and analyzed the different experiences in their common mourning situation. This was reported as a combination of the first- and third-person perspective by the junior designer. In hindsight, this activity also included a second-person perspective. Moreover, a new question arose concerning the exact positioning of the three overlapping circles representing the three basic perspectives on the y-axes of the Empathic Formation compass. In future research, when the Empathic Formation compass is used as a reflection tool in action instead of on action, this can be further explored and validated.

5.4 Discussion

In this chapter, we compared existing frameworks in empathy and design to provide the design community with a new overview which explains the complex construct of empathy as a meta-level concept that can be consciously developed (Fila & Hess, 2016). We proposed the Empathic Formation (EF) compass and its accompanying key dimensions and elements. Although we realize that the Empathic Formation compass presented needs to be developed further and validated by empirical research, we argue that our illustration shows that the Empathic Formation compass is promising as a navigating tool in co-design. It can support designers in their facilitative role towards people, collaborations and context, and in making design decisions regarding techniques and outcomes (Mattelmäki et al., 2014). In addition, the compass can support designers' reflective, objective and subjective roles. We will discuss the prospective value of the Empathic Formation compass for design research, practice and education in detail below.

5.4.1 Value for design research

The Empathic Formation compass provides design researchers with a meta-level concept (Fila & Hess, 2016) and a vocabulary that helps them to understand and study empathic formation in co-design. The complexity of the construct of empathy in design is expressed in the Empathic Formation compass' four intersecting and opposing dimensions. Whereas the perspectives and behavioral factors provide for its elements.

The compass – as an analyzing tool- can be used to assess co-designs' evolving processes beyond the mere reliance on methods (Lee, 2012; Woolrych et al., 2011): that is by plotting the design activities onto the compass' dimensions. Just as the illustrative case study in Figure 21 demonstrated. Such a potential comparative analysis of several processes can lead to a deeper understanding of the characteristics (i.e., commonalities, differences, gaps) in existing design methodologies, e.g., user-centered design, participatory design, generative design, empathic design, co-design. Moreover, the compass can offer inspiration in developing new approach paths of Mixed Perspectives, so called perspective clusters (Smeenk et al, 2016). We especially foresee future research possibilities for perspective clusters including the first-person perspective. The compass' dimensions and elements can then be used as guidelines.

5.4.2 Value for design practice

In the Empathic Formation compass, empathy is approached as a meta-level concept that can be consciously developed (Preston, 2007) and that can guide designers in their facilitative role in co-design processes. The compass is a practical instrument for navigation which supports conscious empathic design activity, empathic behavior, sensibility in collaborations and reflection in and on action. The compass does not prescribe a specific empathic design process, nor one approach path or method, but moves beyond the method (Lee, 2012; Woolrych et al., 2011) by focusing on the process of empathic formation and the value of

perspectives within specific emotional and local design contexts. Moreover, the Empathic Formation compass acknowledges the first-person perspective in developing empathy with others (Zhang & Wakkary, 2014).

The Empathic Formation compass -as a process tool- can enhance reflection on designers' objective and subjective role by being explicit about an orientation towards self or others and taking an expert or participatory mindset towards stakeholders, the collaboration and the context. As a project unfolds, the Empathic Formation compass can guide designers and provides alternative approach paths when a process needs to be adapted to sudden changes and contingencies, such as (im)possibilities involving users and stakeholders (Lee et al., 2018). Although it is difficult to change from the expert towards the participatory mindset (Sanders & Stappers 2008), these moment by moment shifts in position, focus and delivery are crucial in co-design settings (Light & Akama, 2012). The Empathic Formation compass combined with the Mixed Perspectives approach give guidance. The four dimensions show the feasible directions, and the perspectives and perspective combinations explain possible process steps. Depending on the contextual complexity of and social contingencies in a co-design project, the compass flexibly supports designers in making alternative design decisions.

On the basis of the Empathic Formation compass designers can also legitimately utilize relevant personal experiences (Preston & de Waal 2002; Kouprie & Sleeswijk Visser, 2009) and prevent personal distress, withdrawal and empathic bias in relating to others and in professionally designing outcomes (Vink & Oertzen, 2018). Moreover, by consciously considering an affective or cognitive design process step and using design- or research-led techniques designers deliberately head to different preliminary design outcomes: theoretical, empirical, and intuitive frames (Smeenk et al, 2016). Both information and process guidance - with respect to the four layers of sensitivities in empathic design- are then provided

(Mattelmäki et al., 2014). In addition, the factors that foster empathy in design (emotional interest, sensitivity, personal experience, self-awareness, Smeenk et al., 2018) explain the act of engaging others and engaging towards others and might help to overcome some of the micro-dynamics that go on in co-design processes (Light & Akama, 2012).

5.4.3 Value for design education

The Empathic Formation compass can offer a good starting point in education for the explanation of and the reflection on empathic awareness, learning and growth. Empathy can be taught and internalized (Preston, 2007; Singer & Lamm, 2009) when a designer consciously reflects and finds purpose in incorporating empathy in their mode of being (Hess & Fila, 2016; Sleeswijk Visser & Kouprie, 2008). Since designers' private learning is often intuitive, left tacit and not shared with others (Stappers & Giaccardi, 2017), the Empathic Formation compass – used as a reflection tool – can be helpful. As a practical instrument for orientation, it can stimulate junior designers, peers and their coaches to discuss their knowledge, thriving empathic skills and empathic growth as a professional empathic designer and make the learning more explicit by reflection in action (Schon, 1987). The Empathic Formation compass can support students in reflecting on and learning how state of minds and behavioral responses influence empathy, meaningful design action and design outcomes. More specifically, students can discuss and learn how to use and regulate their own experiences and feelings in the affective parts of the design process just as Hess & Fila (2016) mentioned in one of their guidelines for developing empathy. By explicitly discussing the self-oriented side and the accompanying intrapersonal skills, designers can learn how to incorporate relevant personal experiences in designing (Zhang & Wakkary, 2014) and prevent empathic bias (Vink & Oertzen, 2018) and contagious distress (Lamm & Singer, 2009). The dimensions of the Empathic Formation compass represent each perspective as a continuum. This solves the few problems we found in our case study (2016): the compass dimension

design- versus research-led now distinguishes between designers' observation of others and designers' immersion among others in the second-person perspective, and the compass dimension affective experience versus cognitive process distinguishes between designers' first-person experiences and designers' third-person assumptions. Moreover, the mindset and technique dimensions can be seen as empathic design maturity or performance 'indicators' in education (Hess & Fila, 2016).

5.5 Conclusion and future research

In this chapter, we contributed to a meta-level concept of empathic formation in design that not only brings insight into the construct -the key dimensions and elements- and the dynamic process of empathy, but also initiates reflection in and on empathic design action. Our Empathic Formation (EF) compass provides researchers, designers and students with an overview and a vocabulary that helps them to reflect on what influences empathic formation in design. The compass expresses the complex construct of empathy in design using four intersecting and opposing dimensions. Whereas three basic perspectives and behavioral factors provide for its elements. In addition, the position of the perspectives and the perspective combinations within the Empathic Formation compass clarify designers' objective, subjective and reflective roles towards people, collaborations, context, and design decisions: technique and outcomes. Finally, the Empathic Formation compass aims to evaluate co-design projects beyond the mere reliance on methods by assessing Mixed Perspectives approach paths. With the compass, we shed light on the complex construct of empathy, empathy as an evolving process in design and designers' roles in dynamic empathic design processes, and herewith we widen the design community's current focus on method orientation.

Although we did not validate the Empathic Formation compass with design researchers, design professionals or design students in action, we argue that this chapter

serves as a starting point for discussing the Empathic Formation compass as a backbone for empathic design. We look forward to see how the Empathic Formation compass evolves in future research, practice and education. The Empathic Formation compass can enhance future research by bringing about a deeper understanding of the designers' empathic co-design practice. In addition, we expect our work to offer inspiration for developing new approach paths, perspective clusters. We especially foresee future research possibilities for perspective clusters including the first-person perspective, since the specific utility legitimacy and validity of the first-person perspective in design is currently not sufficiently acknowledged. Finally, we intend to conduct more research on how to define and predict designers' empathic design maturity based on the Empathic Formation compass as a theoretical model.



CHAPTER 6

CONTRIBUTIONS TO
EMPATHY IN CO-DESIGN

Chapter 6: Contributions to empathy in co-design

This chapter recapitulates the contributions of the research presented in this thesis followed by methodological insights gained. This chapter ends with future research directions and concluding remarks.

This thesis starts with an introduction into the complex notion, benefits, and challenges of empathy in co-design and its relevance for social design challenges. In chapter 1, it is argued that the design community lacks an informative overview of and practical guidance on what fosters empathy in co-design. The main research question is to develop a deeper understanding of and support for designers' empathic formation in co-design.

The results of this thesis include:

- 1) An Empathic Formation (EF) compass in which the key components of empathy, design, and their interrelations are specified;
- 2) A Mixed Perspectives (MP) framework enabling a valid empathic co-design process in which personal experiences, feelings, and intuition are credibly embedded;
- 3) An Empathic Handover (EH) approach enabling design team members to develop empathy with others they did not meet in person.

6.1 Contributions

This thesis set out to explore, create, and formalize new intermediate knowledge (Höök & Löwgren, 2012) for design practitioners, students, tutors and researchers in order to better understand the complex construct of empathy and empathic formation in co-design, and to guide designers in practice. The main research question is to understand and support designers' empathic formation in co-design. The three sub-questions respectively focus on the key components influencing designers' empathic formation in co-design, on guidance and

evaluation of designers' empathic formation, and on knowing how to act and respond empathically. These questions are discussed below.

6.1.1 Understanding Empathic Formation (main research question)

First, the Empathic Formation compass introduced in chapter 5, contributes to an overview of what empathic formation is comprised of in co-design, which answers our main research question. Nuances of the Empathic Formation compass were developed on the basis of the main theoretical and empirical findings of the Mixed Perspectives framework described in chapter 2 and by the factors that foster empathy in design described in the Empathic Handover validation study of chapter 4. The Empathic Formation compass helps designers and researchers to better understand empathic formation in co-design and can also form the basis of supportive tools, methods, and education such as the Empathic Handover approach. More specifically, the compass gives insight into the key dimensions and elements associated with empathic formation, by combining them in a single overview. In this way, the main research question and the first sub-question are answered. The Empathic Formation compass provides a vocabulary and an instrument for analyzing, discussing and promoting the dynamic process of empathic formation. The research provides design researchers, practitioners, students and tutors with knowledge explaining empathic formation as a meta-level concept and an evolving process, as suggested by Hess and Fila (2016b). The compass is relevant for understanding and studying empathic formation in design research and can stimulate awareness, learning, growth and reflection in design education, as well as it can contribute to the credible application of empathy in co-design practice.

6.1.2 The key components influencing Empathic Formation (sub research question 1)

The first sub research question is addressed in multiple ways. First, from the psychological construct of empathy the dimensions of self versus other orientation, and of affective experiences versus cognitive processes became evident components of empathic formation

from the thesis introduction in chapter 1 onwards. Moreover, the findings in the validation study of the Empathic Handover approach of chapter 4 provided the attitudinal factors that foster empathy in design: emotional interest, sensitivity, personal experience, self-awareness, and mixed perspectives. By coupling these findings with existing academic work on empathy and/or design, the dimensions were expanded in the Empathic Formation compass study of chapter 5. Although most dimensions and elements used in the Empathic Formation compass were emphasized in earlier empathy and design literature (Hess & Fila, 2016b; Kouprie & Sleeswijk Visser, 2009; Sanders & Stappers, 2008), they were neither connected to each other nor to the relatively new concept of perspectives (Tomico et al., 2012) and related empathic behavior (Baldner & McGinley, 2014).

6.1.3 Guidance in and evaluation of Empathic Formation (sub research question 2)

Together with the Mixed Perspectives framework of chapter 2, the Empathic Formation compass described in chapter 5 provides designers with a navigating tool for empathic formation. It demonstrates that empathic design is not about being emotional all of the time, but it is about creating a balance between empathizing with an experience and analyzing its nature and components, just as Battarbee et al. (2014) stated. It supports a mental habit of switching modes: to rigorously think and feel deeply. The compass overview can inform designers of 1) the different roles and perspectives that designers can take in co-design settings towards people, collaborations and context, and 2) the different design decisions they can make regarding design techniques and outcomes (Mattelmäki et al., 2014). This addresses our second sub research question. The contributions the Mixed Perspectives framework makes to design are significant due to three main aspects: 1) bringing out the actual employment and utilization of the three perspectives in design practice, 2) conceptualizing each perspective's value and the benefit of the transitions between them in empathic design, and 3) proposing a Mixed Perspectives design approach which expands the view on what

could guide design practice. The Mixed Perspectives framework can not only support designers and researchers to plan, understand and evaluate a project, but can also help to respond flexibly to the dynamic context of the project. It aims to provide a flexible situated strategy to cope with ambiguous design challenges, which refers to the transformation economy context discussed in chapter 1. Moreover, it can allow designers to thoughtfully configure, adapt and complement elements of different existing and emerging design approaches such as participatory design, user centered design, service design, social innovation and transformation design.

The Empathic Formation compass does not suggest which methods to choose in a certain phase, but sets out which variables and alternatives are to be considered when choosing and applying perspectives, the roles, activities and behavior within. For example, the compass can inform designers about *with* and *by* whom (which perspectives) and how (which dimensions) they can approach a challenge and for what reason. However, it does not specifically prescribe where, when and how exactly. The specificities depend on the situation and the designers' knowledge, skills, attitude and initiative.

With help of the Mixed Perspectives framework, empathy in co-design is developed, understood and assessed within its situated nature. In particular, the framework provides for perspective clusters which, as building blocks, can give flexible guidance to empathy in co-design and can be molded to specific local priorities and contingencies of a project, regardless of specific methods. A perspective cluster gives designers the insight that 'the whole' is more than 'the sum' of the individual perspectives. Perspectives are thus more fundamental than specific methods. The Mixed Perspectives framework enables designers and researchers to decouple methodology from methods as suggested by, among others, Woolrych et al. (2011). This enables designers to be unambiguously supported in a unique and adaptive design process.

To summarize, the Empathic Formation compass and the Mixed Perspectives framework provide designers with a new, meta-level empathic and situated strategy to plan and conduct ambiguous processes. Moreover, it provides a new way of evaluating, analyzing, and reporting on empathic formation in co-design for design researchers, as was suggested by Lee et al. (2018).

6.1.4 Knowing how to act and respond empathically (sub research question 3)

This thesis provides explicit insights regarding (junior) designers' professional consciousness, reflection and first-person perspective taking which is required in empathic co-design (Hummels & Frens, 2011; Zhang & Wakkary, 2014; Xue & Desmet, 2019). This addresses the third sub research question of this thesis: How can junior designers be taught to act and respond empathically towards others in co-design? Reflection on professional consciousness and relevant first-person experiences are important to consider when developing unbiased empathy in co-design. This is in line with researchers' observations that empathic formation requires specific pro-social behavior, and design qualities of designers beyond the mere reliance on methods (Woolrych et al., 2011; Lee et al., 2018; Akama & Light, 2014). Chapter 2 provides relevant insights related to the role that designers take when applying the three different basic perspectives, and how the disclosure of designers' own relevant experiences and intuition can be put to use by mixing perspectives supporting Zhang and Wakkary's argument (2014) that designers' first-person perspective can be a major contributor to design outcomes. Moreover, the position of the three basic perspectives and clusters within the dimensions of the Empathic Formation compass' (chapter 5) clarify and inform designers' objective and subjective roles towards the four sensitivities in empathic design mentioned by Mattelmäki et al. (2014): people, context, design techniques and outcomes. The Empathic Formation compass illustrates that designers can choose for an orientation on self or others (people), situated or non-situated (context), design or research led (techniques) and design

outcomes developed by the designer as an expert or in participation. Empathic formation might even benefit from designers' awareness and acknowledgement of personal weaknesses, bad habits or sad experiences. Moreover, the Empathic Formation compass can facilitate reflection in and on empathic design action *and* behavior. The compass' overview (chapter 5) and the individual perspectives' explanations (chapter 2), allow the roles of, for example, designers as experts or designers as facilitators and the dual role of designers as users to be better differentiated and discussed (Xue & Desmet, 2019).

Whereas chapter 2 discussed how designers can use their first-person perspectives intentionally and credibly to design meaningful design outcomes in emotional settings, chapters 3 and 4 demonstrate -with the Empathic Handover approach- how designers who do not have the opportunity to encounter others can be empathized through affective resonance workshops in which they deliberately use own personal experiences. This Empathic Handover approach overcomes the resource constraints discussed in chapter 1 (Postma et al., 2012) and focusses on situations with sensitive user groups where a lot of researchers might be an undesirable presence. Although it is certainly not novel to transfer user research with analogous experiences (Battarbee et al., 2014), the broad coalition setting of chapter 3 might be. With the Empathic Handover approach, a valid and applicable perspective cluster approach of third-, second- and first-person perspectives is developed that can produce rigorous empathic insights and relevant designs, without all designers and stakeholders having to meet the user group directly.

To summarize, all the studies in this thesis increase our knowledge on how to use personal experiences and feelings in design, and demonstrate that an intentional and conscious first-person perspective taken within Mixed Perspectives clusters can cultivate empathy and can contribute to legitimate and valid emotional understanding, better cooperations, and relevant design outcomes. This is in line with Xue and Desmets' (2019)

recent work on introspection. Still, designers need to prevent empathic bias, withdrawal, and contagious and personal distress by being reflective, ethical, and conscious of their traits, state of mind, role and behavior, and how these may color empathy, the design process, and design decisions as stated by Vink and Oertzen (2018).

6.2 Methodological insights

This thesis also contributes to the field of design research at the methodological level. This section critically discusses several insights regarding the research context, the research approach and analysis, and ethics.

6.2.1 The research context

Studying the critical contexts of mourning and dementia, areas where personal experiences and relations are highly influenceable, helped to understand empathic formation better than it could have been in less emotional and delicate circumstances. Moreover, the design practice setting at a design agency (chapter 3) increased the relevancy of the empirical research of this thesis, thanks to the results being grounded in an authentic design project context. The other studies (chapter 2 and 4) were conducted in the context of design education with students at Bachelor and Master level. In contrast, these educational settings allowed for a better control of the research conditions and for more systematic investigations in the emotional contexts of dementia and mourning. Since the aim of this thesis was to better understand empathic formation, both the educational and practice-based research setting contributed to the ecological validity of the research.

The empirical studies all involve relatively small samples of individual design students, professional design team members and multiple student teams. Studying individual designers gave us more detailed insights into designer attitudes, skills, knowledge, processes and behavior in terms of empathy and co-design; studying multiple teams was helpful in comparing common and new design approaches. Finally, empathy was a relatively new

concept for the design professionals and design students involved in the studies. Only the principal designer facilitating the design professionals in practice (in chapter 3) was experienced in empathy and co-design. In this sense, the involvement of students was a limitation in this research, because differences between novices and experts are known to impact designing (Dorst & Reymen, 2004). We tried to stabilize these limitations by triangulating the insights of the different studies: we systematically combined various theoretical studies and empirical work. This mixed method approach (van Turnhout et al., 2014) allowed qualitative findings to provide explanations and meaning for quantitative findings and vice versa and this improved the usefulness and credibility of our findings.

In future research addressing the empathic formation of designers, it is important to consider selecting individuals with varying levels of experience, empathic traits and maturity in co-design to participate in the research. Moreover, it is important to create design situations and contexts in which differences can be observed. These could include different design project subjects, professional designers versus junior designers, individual designers versus design teams, participants with differences in personal experiences regarding the emotional subject and even other change makers and/or stakeholders.

In the abovementioned educational and practice-based research settings, the main design researcher of this thesis took multiple roles and perspectives throughout the thesis. First, she was a design researcher observing, interviewing and working with design professionals in practice and design students at the university. Then she acted as the principal designer conducting the user research with formal caretakers, people with dementia and their partners. Subsequently, she was the facilitator informing, engaging and empathizing professional design peers in practice about these research insights. This was followed by co-designing first design directions. Finally, she is also an experienced expert in dementia and mourning as an informal caregiver. Therefore, the preparation of the empathic harvest

meetings and handover workshop in chapter 3 drew also on her own experiences as an insider researcher. Introspection, enabled her for instance, to define the appropriate convivial tools and role play instructions.

These different roles may have influenced the research in this thesis. For example, the design student participants (in chapter 2 and 4) may have felt ‘dominated’ by her (teacher-like) role. In addition, the design professionals (in chapter 3) were dependent on receiving her insights on the user research to kick off their project. By alternating professional, facilitative, and observer stances while conducting the research, and by not being involved in the assessment of the students, the main researcher tried to minimize these effects. In addition, effects were reduced by including other researchers in documenting and analyzing the data using semi-structured procedures that can be replicated (see Appendices).

6.2.2 The research approach and analysis

The research in this thesis aimed at discovering what empathic formation is about. The research questions of chapter 1 were mainly addressed through the case studies of chapter 2, 3, and 4. In the case studies, participants were observed and took part in semi-structured interviews and co-reflection sessions. This brought a rich account of why and how perspective-taking happens and how empathy evolves and what can be encountered in co-design practices and education. However, the retrospective interviewing technique used in chapter 2 has its inherent limitations: the recollection of memory is reconstructive, distortive in nature, and degrades over time. Chapter 5 proposed the Empathic Formation compass, based on an analysis of our findings in the earlier chapters coupled with other relevant academic studies concerning design and/or empathy. These studies were found by using the snowball method, a non-random reference tracking method. Although we think this sampling method delivered enough ground and inspiration, the validity and usefulness of the Empathic Formation compass still needs to be proven.

Finally, the research approach of this thesis necessitated the development of new ways to capture, document and analyze the qualitative research findings in the studies. In particular the visualizations of chapter 2 (analyzing the perspectives and transitions students took) and chapter 4 (comparing the factors that foster empathy of student teams) are valuable methodological contributions. In addition, both the design professionals and students found the empathic discussion and the role-play activities in the handover workshops very useful in helping them empathically understand the user research insights. However, as concluded in chapter 4, not all the students who took the role of principal designer understood our hands-on explanatory workshop and related theoretical article about the Empathic Handover approach (chapter 3). This can have several reasons: students' lack of own experiences and seniority in co-design, inexperience with the Empathic Handover approach, or inadequacies in the information design and our communication.

6.2.3 Ethics

In this thesis a practical and situated approach was followed regarding design ethics, derived from IDEO (2015). In the study of chapter 3 the ethical practice of the design research was also evaluated by reflecting on: the inclusiveness of the research participants, the choice of appropriate design research means, and the responsibilities and accountability of the participants (Robertson and Wagner, 2012). This is in line with Mattelmäki et al. (2014) arguing that the design researcher's role towards people, context, techniques and outcomes needs to be carefully considered in empathic design practices. Even so, these four layers of sensitivities need to be considered in research about empathy in co-design. Particularly in this thesis, ethical limitations are related to the very intimate, emotional and personal approach of the first-person perspective in emotional settings. For example, junior designer D of chapter 2 and the design students of chapter 4 sometimes found it hard to disclose personal experience between one another and/or to discuss this with us. There is a need for guidance and support

just as Zhang and Wakkary (2014) suggested. Designers and research participants need to be prepared for the personal approach. For example, designers using the first person-perspective in the Empathic Handover approach should know they can decide for themselves which personal experiences they want to share and at what level of detail.

In hindsight, we could have been more sensitive towards the possible (dis)comforts of students using their first-person perspectives for design, as IDEO's principles (2015) already indicated. Although it had been clearly communicated that the data collected during the research would be anonymized and only used for this study, during and at the end of the project some students were worried about what would happen with the collected data, which they felt to be very personal. This is in line with the concept of contextual integrity of Nissenbaum (2004) which explains that conceptions of privacy are based on ethical concerns that evolve over time. Students probably could not oversee what they would share. Empathic formation -as a design research method- might require a customized research ethic going beyond how to seek and share insight about others' lives in an ethical way. It now also concerns designers sharing own live experiences.

Finally, empathic formation 'results' cannot be scientifically replicated. Therefore, designers should find their own and new ways of approaching the industrial economy qualities of reliability, repeatability, generalisability and validity in ways that are trustworthy while remaining true to the personal nature of empathic formation and the situated nature of co-design. We expect the transformative economy research ethic to be personal, not distant, inside looking, less neutral (Lee et al., 2018), more committed and about differences between people just as Myerson (2016) discusses, and more about the inclusive process than about the method (Woolrych et al., 2011). This is in line with the thinking of the vsnu³⁰ and Xue and

³⁰<http://www.vsnunl.nl/files/documenten/Nederlandse%20gedragscode%20wetenschappelijke%20integriteit%202018.pdf>

Desmet (2019), who already consider aspects as transparency, confirmability, transferability, responsibility, honesty, credibility to name a few.

6.3 Future research

The research presented in this thesis provides valuable insights into the construct of empathy and empathic formation in co-design. In addition to providing answers to the research questions, the findings also raised new questions. Therefore, four priorities are highlighted for future research directions concerning empathic formation in collaborative settings:

1. Validation of the Empathic Formation compass and Mixed Perspectives framework in practice;
2. Transferring the Empathic Formation compass, the Mixed Perspectives framework and the Empathic Handover approach to other professions;
3. Developing tools that support design practitioners to employ the first-person perspective;
4. Evaluation of empathic formation in co-design.

6.3.1 Validation of the contributions

It is advisable to test and evaluate the Empathic Formation compass combined with the Mixed Perspectives framework in practice and in education as a guiding model throughout the design process. More examples are needed where the intentional use of the Empathic Formation compass and the conscious choice of Mixed Perspectives as a methodology is both described and critically examined. Constructive critique will not only make the approach more robust and stable, but also make it better accepted and recognized. Although experienced empathic co-designers might implicitly implement the approach as described, this assumption should be first verified by working with highly experienced empathic designers. Moreover, the Empathic Formation compass and Mixed Perspectives descriptions can make their working

processes more explicit. Less experienced empathic designers or accomplished change makers -new to empathy and co-design- may benefit from this explicit discussion on the mutually reinforcing relationships of the dimensions and elements that promote empathy. If designers learn about the Empathic Formation compass and the Mixed Perspectives approach and their benefits before they start a design project, and subsequently report and reflect on their conscious perspective switches and design decisions in action in a reasoned manner rather than in an intuitive manner, their effectiveness can be evaluated better.

To validate the Empathic Formation compass as a model and the Mixed Perspectives framework as a methodology, the following step would be to further investigate the key dimensions and behavioral elements of the Empathic Formation compass. The design community needs to understand whether the contributions are appropriate in different domains, practices and educational contexts. Besides, future research needs to create design situations and contexts in which differences in the approach can be observed. These include different design subjects, user or other stakeholder groups, experienced designers versus junior designers, individual designers versus teams, and design facilitators versus other change makers. This may provide more definite answers about the Empathic Formation compass and Mixed Perspectives methodology purpose and about the kinds of problems they can best address compared to other methodologies, thereby increasing their validity and usefulness. Moreover, validation of the Empathic Formation compass and Mixed Perspectives methodology is needed as to whether they can support a rethink of design research frameworks towards co-design facilitation and its micro dynamics, as proposed by Akama & Light (2014).

In chapter 2, this thesis described how the first study helped to make three of Cockton's (2009) meta-principles on design less abstract: receptiveness, inclusiveness and commitment. These are now used as attitudinal guides to action within the Mixed

Perspectives methodology and the Empathic Formation compass. Although, Cockton's other three meta-principles (expressive, credible, and improvable) could not be applied to the Mixed Perspectives framework at the time, these principles might refer to design activities and decisions made in perspective transitions and clusters. For example, improvability might be empathic formation itself; it is then positioned in the middle of the Empathic Formation compass and employs first, second, and third-person perspective clusters (see Figure 22).

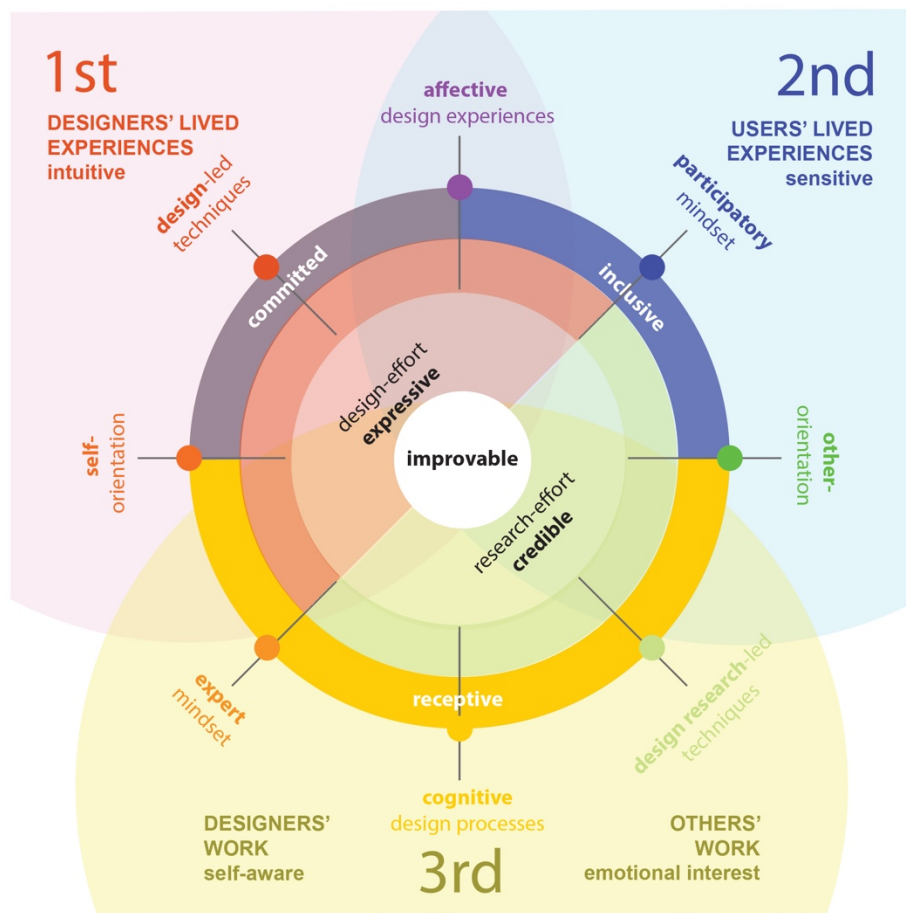


Figure 22: Cockton's (2009) meta-principles in design might be all plotted in the Empathic Formation compass

By combining all of Cockton's design principles with the Empathic Formation compass, the abstract character of his design principle set may be made more practical, in addition to complementing and maybe even validating the Empathic Formation compass.

Finally, this thesis provides a more consistent and shared understanding and clear conceptualization of empathy in co-design. Both research and practice will be enhanced and better connected as practitioners and researchers will be working with shared understanding of this complex construct. This will allow greater comparability between research findings, and enhance theoretical grounding for design practice approaches.

6.3.2 Transferring the contributions

The Empathic Formation compass, the Mixed Perspectives methodology and the Empathic Handover approach were specifically developed for designers, however it is possible to transfer the contributions of this thesis to other professions, aims, contexts and related challenges. The studies reported on in this thesis demonstrate that the Mixed-Perspectives methodology is an adequate way to collaborate. For example, the Empathic Handover approach -as a Mixed Perspectives approach path- guided the participant teams (both design practitioners and students) to discuss the emotional settings of users and other stakeholders by relating to similar autobiographical experiences and individual differences. Subsequently, this exchange supported their collaborations and design effectiveness. Therefore, this thesis is expected to inspire researchers to study whether the Empathic Formation compass can be applied broader in other collaborations such as between quadruple helix stakeholders (business, science, government, and users) and at different levels of aggregation: between individuals, teams, organizations, and in the eco-system (Avelino & Wittmayer, 2016). For example, it could be used to explain their different viewpoints: ‘my view’, ‘your view’ and/or the ‘expert view’. ‘My view’ can be personal or plural: it can concern an organization or team. ‘Your view’ is the view of other stakeholders in the same situation, i.e., users, clients, colleagues, other departments, other organizations etc. The ‘expert view’ can be the view of knowledge institutions or specialists that are not included in the exact same design situation as the stakeholders are. Yet, with regard to ill-structured or wicked problems -in which not only

the solution, but also the problem itself has not been agreed upon- it might be unclear which of the coalition partners is expert or non-expert. Gardien et al. (2014) use the term 'symmetry of ignorance' to denote that all partners are equally expert or equally ignorant. For the compass, this means that each stakeholder may use the compass as a reflection or introspection tool themselves and make clear how they relate to the context at stake and which others they need and which expertise and experience they themselves bring to the table. The Empathic Formation compass might thus be used by a change maker (facilitator and/or project leader) in the transformation economy (Brand & Rocchi, 2011; Gardien et al., 2014). They can use the compass to compare these different points of view and use the compass as a conversation starter and a process tool. Eventually the compass might enable a multi-stakeholder team to better understand each other's positions, to integrate and use the expertise of their various domains, and to join forces in implementation, and in achieving impact. Also, Chen et al. (2016) view multi stakeholder collaborations as a future design research direction, but at the same time they warn applying it too fast or too far in the direction of a larger, society-wide scale due to complicated conceptual, theoretical and methodological issues, which they argue design is not equipped for yet. In contrast, Myerson (2016) states that scaling down, which he defines as learning a great deal about relatively small numbers of people, might be a better approach for the design community, because it allows for more control when addressing complex sociotechnical problems.

6.3.3 Tools to employ the first-person perspective

The studies in this thesis focus on understanding empathic formation and the role of perspectives in design. The third- and second-person perspectives were found to be more familiar to the Industrial Design students who took part in this study, than employing the first-person perspective. Also, methods and means for using personal experiences and intuition more intentionally throughout the design process are scarce in the design literature as is also

recently mentioned by Xue and Desmet (2019). They do however mention autoethnography explicitly as a first-person perspective means.

In practice, employing first-person perspectives can evoke strong emotions. Since these strong emotions can hinder empathy, it is important that designers are prepared for or protected from these strong emotions, in order to prevent empathic distress (Davis, 1996). Therefore, it should be investigated how and by which means designers can disclose, utilize and make sense of their own experiences and feelings in co-design processes without causing personal distress. This can be achieved by developing new tools to employ the first-person perspective or by developing new approach paths for perspective clusters that include the first-person perspective. These new tools in turn will enrich design insights, make design outcomes more meaningful, and design processes more ethical, thereby improving both the relevance and rigor of the research.

The first-person perspective means can benefit from the research field named insider research, which is concerned with the study of qualitative research of one's own social group or society (Greene, 2014). Greene (2014) states that as qualitative researchers, what stories we are told, how they are relayed to us, and the narratives that we form and share with others are inevitably influenced by our position and experiences as a researcher in relation to our participants. Moreover, it can benefit from the fields of sociology, anthropology and consumer research as Xue and Desmet (2019) recently argue. It is valuable to explore the relations between perspectives, the compass, introspection and insider research further. Moreover, it would be valuable to describe more explicitly the ideal virtues empathic designers in co-design need to possess since it seems to be a gap in literature.

6.3.4 Evaluation of empathy in co-design

As previously stated, this thesis focuses on understanding designers' empathic formation in co-design practices and use this to co-develop relevant designs. In chapter 4, it became clear

that there is a need to understand what constitutes relevant and high-quality design results and how to measure empathic success. In other words: how to evaluate the effect of empathy in co-design processes? Empathic results cannot be scientifically replicated; designers and researchers should find new ways of approaching the traditional qualities of reliability, repeatability, and validity through ways that are trustworthy while true to the situated nature of co-design. The contributions in this thesis help to make a small first step in this direction as they provide different components (dimensions and elements) that enable the design community to compare designers' roles and empathic states. This is similar to the approach used to evaluate the student processes described in chapter 2. However, it should be now combined with the knowledge from the Empathic Formation compass: its dimensions and behavioral elements. Future research should describe if and how experienced empathic co-designers navigate the compass and how they contextualize the behavioral elements of empathy in co-design results: both in co-design outputs (deliverables) and in co-design outcomes (impact: mindset, process, culture, etc.). For example, using cross-case study analysis can help here.

6.4 Conclusion

To conclude, the chapters of this thesis provide empirical evidence based on a series of case studies, benefiting design researchers, practitioners, tutors and students. The main contributions of this thesis in the context of empathic co-design are the Empathic Formation compass, the Mixed Perspectives methodology and the Empathic Handover approach. All these contributions bring more depth to the construct of empathy in co-design: in how to understand, develop, use and teach empathy intentionally in co-design. With the Empathic Formation compass, this thesis sheds light on the complex construct of empathy in design, designers' roles, moral and behavior in dynamic empathic co-design processes. The Empathic Formation compass improves designers' understanding of empathic formation in design

research, their reflection in design education and it contributes to the application of empathy in co-design practice. Moreover, the Mixed Perspectives methodology broadens the design community's current focus on method orientation. The Empathic Formation compass combined with the Mixed Perspectives framework guides design practitioners by explaining how empathy can be developed through navigating the three basic perspectives. Moreover, the thesis points out that, while mixing perspectives consciously, designers can use their personal experiences and intuition legitimately when empathizing with others. Using this knowledge, designers are better equipped to navigate empathy in co-design settings, and can be more confident that the design effect is based on empathy and not on an incident.



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APPENDICES



Appendices ³¹

Appendix A: Extensive example of the structure of the interview form of chapter 2

The English text is original from our non-native English student (junior designer C). We apologize for spelling mistakes.

Order	Activity	Description	P	Why	Strength	Improve Strength	Weakness	Improve Weakness
1.	recall rituals that made personal impact	own memory and internet validation	1st 2nd 3rd	get personal bearing of the topic	point of reference for myself within context	deeper investigation of personal side	personal memories differ from general reality	distinction: is it about my experience or 'general' reality?
2.	ask others to share rituals that made personal impact	interview and internet validation	1st 2nd 3rd	not designing for myself, so need for other perspectives	adds a lot to frame of reference	deeper investigation of personal values	verification came in too early	make the distinction between personal value and info clear
3.	search for other, general rituals on the internet	research	1st 2nd 3rd	see what else is out there and what it stems from	expansion of frame of reference, role of rituals	better analysis of values associated	may have investigated time into 2nd perspective, which was main focus	better consideration of what is truly necessary
4.	idea generation	create ideas for different perspectives	1st 2nd 3rd	celebrating loved one and individual wellbeing are both valuable	open to multiple directions, not stuck	more ideas per direction	within perspectives not much variation	more idea generation
5.	benchmark	search for products that help with administrative and emotional matters	1st 2nd 3rd	no point in designing something that already exists	time efficiency and inspiration (what is good or bad and why?)	contact with suppliers about the products	may limit creativity, push in a direction	have creative idea generation sessions with absurd ideas to break free
6.	idea generation	create ideas based on phases in life and mourning from 3 perspectives	1st 2nd 3rd	there should be more options	exploration of multiple needs	how to prepare and guide others to design with me?	less depth in each direction	spend more time on it, better preparation
7.	create context for design	interview with user, create abstraction of context needs and values	1st 2nd 3rd	to get a focus point, real user for validation	direct feedback, switch from divergence to focus	better preparation and focus driving process	feedback of only one individual	get more feedback from similar individuals (in terms of context)
8.	read scientific papers	find and study relevant research, take what is relevant	1st 2nd 3rd	for validation and inspiration for ideas	interesting psychological insights, balance personal and scientific			
9.	idea generation and concept development	generate and develop ideas within context with feedback by user	1st 2nd 3rd	validation, keep concept relevant within context	constant review of ideas, adaptability, protect relevance, critical view on ideas	ideas from user, not just feedback	time	find expert with commitment, more time investment from user
10.	feedback from peers and expert	present concepts & receive feedback from peers and expert	1st 2nd 3rd	perspective before developing final concept	find overlooked weaknesses and new inspiration	do it earlier in process and make structural	be careful not to blindly accept all feedback, reflect!	reflect!
11.	develop final concept and prototype	refine and validate concept and build form model and technical model with user	1st 2nd 3rd	create something to get validated				
12.	feedback by business expert and user	interview each expert individually	1st 2nd 3rd	validation	different perspectives on final concept	more experts	too personalised solution	more abstractions

³¹ Raw research data can be found at www.wien-s.nl/onderzoek

Appendix B: Analysis outcomes of chapter 2

Perspective transitions reported per junior designer

Junior Designer:	A		B		C		D	
Total Activities:	15		16		12		19	
1st	7%	1/15	6%	1/16	33%	4/12	42%	8/19
2nd	53%	8/15	31%	5/16	67%	8/12	26%	5/19
3rd	73%	11/15	94%	15/16	58%	7/12	68%	13/19
Total Transitions	80%	12/15	44%	7/16	100%	12/12	79%	15/19
2&3 Combinations	33%	5/15	25%	4/16	25%	3/12	5%	1/19
2&3 Switches	20%	3/15	12%	2/16	33%	4/12	16%	3/19
Switch 2 3	13%	2/15	6%	1/16	25%	3/12	5%	1/19
Switch 3 2	7%	1/15	6%	1/16	8%	1/12	10%	2/19
2&3 Transitions	53%	8/15	37%	6/16	58%	7/12	21%	4/19
1&3 Combinations	0		6%	1/16	8%	1/12	16%	3/19
1&3 Switches	0		0		0		10%	2/19
Switch 1 3	0		0		0		5%	1/19
Switch 3 1	0		0		0		5%	1/19
1&3 Transitions	0		6%	1/16	8%	1/12	26%	5/19
1&2 Combinations	0		0		8%	1/12	5%	1/19
1&2 Switches	13%	2/15	0		8%	1/12	16%	3/19
Switch 1 2	7%	1/15	0		8%	1/12	5%	1/19
Switch 2 1	7%	1/15	0		0		5%	1/19
1&2 Transitions	13%	2/15	0		17%	2/12	21%	4/19
1&2&3 Combinations	0		0		8%	1/12	5%	1/19
1&2&3 Switches	13%	2/15	0		8%	1/12	5%	1/19
Switch 1 2 3	7%	1/15	0		8%	1/12	0	
Switch 3 2 1	7%	1/15	0		0		5%	1/19
1&2&3 Transitions	13%	2/15	0		17%	2/12	10%	2/19

Note. Since the junior designers sometimes took more than one perspective per activity, the percentages can sum up to more than 100%. In the junior designers' reports, it is not clear from which perspective they started when perspective combinations were identified, depicted as 12, 23, 13, 123. Perspective switches were identified and thus depicted as 1|2, 2|1, 1|3, 3|1, 2|3, 3|2, 1|2|3 or 3|2|1, depending on which sequence was followed. Perspective switches of 3|1|2, 2|3|1, 2|1|3 or 1|3|2 were not found.

Appendix C: Empathic Handover discussion format of chapter 3

Instruction:

Please read the questions individually and write down your first thoughts relating to the questions. What did you do in that situation, what did you think, feel, say and how did you act, and respond to the situation? When everybody is ready, share your stories and personal experiences. Are there similarities in your stories? And how do they relate to the research about dementia?

The abstract questions of the Empathic Handover discussion relating to dementia

- Can you recall a moment in which you were not willing to go to a birthday party where there would be a lot of people? Can you tell us about that moment? About what you felt? And thought? And why? What was the exact situation? Why did not you want to go?
- Have you ever surprised yourself to such an extent that you were worried about your own functioning? What surprised you and in what situation were you? What did you think and do?
- Name a situation in which you have disappointed people? Why?
- In what situation did you feel controlled by others? Where and by whom? What did you do?
- When do you feel minimized in your independence? Why? How do/did you express that?
- When is someone allowed to help you? What do you feel and think? Why?
- When do you lose your patience? In what situation? Why?
- Have you ever been unable to find a place? In what situation? How did you feel? What did you do?
- Has anyone ever forbidden you to do something? What and why? How did it make you feel?
- Have you ever been in a situation where someone else behaved differently with you than with others? What situation was that? What did you think and feel and do?
- Has your environment ever doubted your statements? When and Why? How did it feel? Why? What did you think and do?
- Have you ever had to or wanted to keep something quiet (secret)? In what situation and why? Did you still want to talk about it? How did it feel? What did you do?
- Have you ever been ashamed of someone or of yourself? In what situation and why?

Appendix D: Empathic Handover role play instructions of chapter 3

Role play exercise 1: The pill assignment

For the role-play, we selected two different situations of the user research: a one-on-one at-home situation concerning a practical problem, and a social situation that led to self-image problems. Below role-play instructions describe the roles that team members had to play.

General instruction:

We need two actors for the play. The other participants observe the actors while playing and reflect during the play with the help of a checklist. The checklist encourages observers to write down how actors act, what they say, what they seem to think and feel. The two actors can each pick an envelope with a personal instruction. They are not allowed to let other actors nor observers read the instruction. If everybody is ready the two actors can start at the stage. The others observe and make notes with help of the checklist. When the play is finished, the observers and actors will reflect on their experiences, feelings and observations during the play.

Personal instruction for actor 1: person suffering from dementia

You will be acting out the role of a person suffering from dementia. You will get earplugs and an I-phone. An audio file tells you what to do with the pillbox and the pills you will receive. Follow the instructions of the audio carefully. Imagine the voice you hear is your inner voice. When the caregiver will get into contact with you, try to feel what this person does or says, and improvise from there. From that moment the I-phone can be neglected.

Personal instruction for actor 2: caregiver/spouse

You will be acting out the role of the caregiver/spouse of a person suffering from dementia. Your spouse is suffering from dementia and is preparing his/her pillbox for the upcoming week at the kitchen table. You are reading a book at the couch and watch him/her 'at work'. When will you react, and help him/her out? You want to respect your partner and so you let him/her in peace for at least 5 minutes. Feel what his/her actions do to you and respond naturally to the situation. When your spouse starts talking out loud, you are allowed to approach him/her...Improvise from here. The recipe from the doctor is attached, but you are not allowed to show it to your husband, you can only use it yourself.

Role play exercise 2: The visit assignment

General instruction:

We need three actors for the play. The other participants observe the actors while playing and reflect during the play with the help of a checklist. The checklist encourages observers to write down how actors act, what they say, what they seem to think and feel. The three actors can each pick an envelope with a personal instruction. They are not allowed to let other actors nor observers read the instruction. If everybody is ready the three actors can start at the stage. The others observe and make notes with help of the checklist. When the play is finished, the observers and actors will reflect on their experiences, feelings and observations during the play.

Personal instruction for actor 1: person suffering from dementia

You will be acting out the role of a person suffering from dementia, but that does not mean that you cannot do anything anymore! You even doubt if you are really having Alzheimer's disease at times, because you are convinced you are still capable of managing your life yourself. You for instance rather iron all the shirts from your spouse yourself.

Personal instruction for actor 2: caregiver/spouse

You will be acting out the role of a caregiver. You are very anxious about your spouse that suffers from dementia and you try to prevent her/him being involved in difficult situations and discussions. This means that your spouse does not get a chance to do something by him/herself, because you already did it. You exonerate her (with all good intentions and love) and take over everything. Then a neighbor comes by..

Personal instruction for actor 3: neighbor

You will be acting out the role of the neighbor. You are visiting your neighbors. One of your neighbors seems to suffer from Alzheimers' disease and you try to help her/him and the spouse with all sorts of home activities. Today you want to help with ironing shirts. You do not talk directly with your neighbor suffering from Alzheimer, but only through her/his spouse. You kind of ignore the person with dementia. You do not understand what the illness entails and you ask yourself if it cannot be anything else, because she/he can still do stuff and even cycles to the supermarket alone..

Appendix E: Semi-structured interview format of chapter 4

Protocol:

- We invite all three conditions (Paper, User, Handover) teams for a reflective discussion of 1 to 1,5 hour(s)
- We first conduct a reflective discussion with teams under condition A (both topics: dementia and mourning)
- Second, we conduct a reflective discussion with teams under condition B (both topics: dementia and mourning)
- Third, we conduct a reflective discussion with teams under condition C (both topics: dementia and mourning)
- We will audio record all discussions for analysis
- We will use the semi-structured interview format below for all teams

0. Individual

- Describe and write what empathy in design means for you personally?
- What (mind-set, process, method (tool, situation) did lead you to empathize with users?

1. Empathic Motivation

- (1) Did the multimedia (literature) research contribute to your motivation for the project?
 - (a) Yes, no, why?
 - (b) How: In what way, to what extend?
 - (c) Can you give an example?
- (2) Did the user encounters and -interviews contribute to your motivation for the project?
 - (a) Yes, no, why?
 - (b) How, in what way, to what extend?
 - (c) Can you give an example?
- (3) Did your own experience in the design context contribute to your motivation for the project?
 - (a) Yes, no, why?
 - (b) How, in what way, to what extend? Positive, Negative, suggestions for improvement?
 - (c) Can you give an example?

2. Empathic Understanding:

- (4) Did the multimedia (literature) research contribute to understanding users and context?
 - (a) Did it make you relate to the context and users?
 - (b) Yes, no, why?
 - (c) How? In what way, to what extend?
 - (d) Can you give an example?
 - (e) Did the research lead to assumptions, hypothesis? In what way and to what extend?
- (5) Did the user encounters and interviews contribute to understanding users and context?
 - (a) Yes, no, why?
 - (b) How: In what way, to what extend?
 - (c) Can you give an example?
 - (d) Did the encounters lead to new insights? In what way and to what extend?
- (6) Did your own experience in the design context contribute to understanding users and context? (empathy game, own experience)?
 - (a) Yes, no, why?
 - (b) How? In what way, to what extend?
 - (c) Can you give an example?
 - (d) Did your own experience lead to new insights? In what way and to what extend?
- (7) Was it easy to separate user experience and own experience?
 - (a) Yes, no to what extend?
 - (b) How?
 - (c) Can you give an example?

3. Empathic ideation and evaluation:

- (8) Did the multimedia (literature) research contribute to (generating and evaluating) solutions?
 - (a) Did you imagine solutions for the context and users already based on research? Yes, no, why?
How? Did the research lead to assumptions, hypothesis? In what way and to what extend?
 - (b) Did you evaluate solutions with help of research? Yes, no, why? How?
 - (c) Can you give an example?
- (9) Did the user encounters and interviews contribute to generating and evaluating solutions?
 - (a) Did you find, heard solutions from the context and users? Yes, no, why? How?

- (b) Did you notice that there were certain moments in the interaction with users, which can be very emotional, that affect your final design solution that you come up with? Do you think there might be a case like this in your situation that steered your solution?
 - (c) Did you evaluate solutions with help of users? Yes, no, why? How?
 - (d) Can you give an example?
- (10) Did your own experience, personal life or intuition contribute to solutions?
- (a) Could and did you imagine solutions from own experience, feelings, thoughts?
 - (b) Yes, no, why? How?
 - (c) Did you evaluate solutions with help of own experience/assumptions/combinations?
 - (d) Yes, no, why? How?
 - (e) Can you give an example?

4. Attitude, process, methods

- (11) What does empathy in design mean for the design team and individual designers' attitude?
(behavior/tact/trust/ethics, consent in contacting/inviting/discourse with users)
- (12) Who in the group took the lead and why?
- (13) What (mind-set, process, method (tool, situation) did lead you to empathize with users?

5. Other remarks and reflection?

Appendix F: Protocol list for analysis of semi-structured interviews of chapter 4

Protocol Research

- There are 16 teams: 2 Paper mourning teams, 2 Paper dementia teams, 3 Handover mourning teams, 3 Handover dementia teams, 3 User mourning teams, and 3 User dementia teams.
- In each transcription of the three separate sessions with Paper, User and Handover teams you will have to search for quotes that bring evidence to the 5 factors: emotional interest (EI), sensitivity (S), self-awareness (SA), personal experience (PE) and mixed-perspectives (MP). The factors are described in detail in the terminology paragraph (see chapter 4).
- You analyze each transcription separately, following the steps below.
- You label a quote with e.g., the mnemonic [EI] and attach the number of the quote.
- When the first transcription is completed you start with the second and then the third.

Search for quotes in the transcriptions that clearly resemble factors that foster empathy in design:

- Sign(s) of factors with design team (members) in the individual descriptions, see Appendix E
- Signs of factors with design team (members) in the preparing and conducting the multi-media research, own experience in context, in preparing and conducting user encounters and expert interviews, and in interpreting the outcomes in design directions and in the evaluation (co-constructing story activity) with users and experts.

Protocol Pilot

- For each paper you will have to search for quotes that bring evidence to the 5 factors: emotional interest (EI), sensitivity (S), self-awareness (SA), personal experience (PE) and mixed-perspectives (MP). The factors are described in detail in the terminology paragraph (see chapter 4).
- You analyze each paper separately, following the steps below.
- You label a quote with e.g., the mnemonic [EI] and attach the number of the quote.
- When the first article is completed you start with the second article, etc.

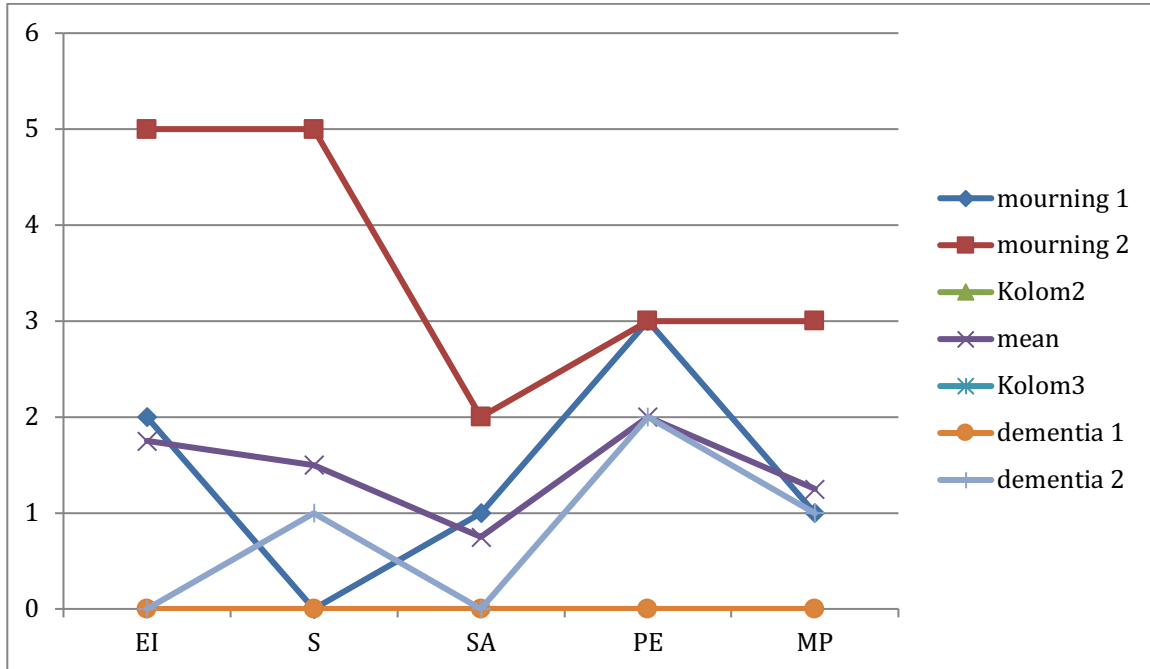
Search for quotes in the team paper that clearly resemble or explicitly do not resemble:

- Sign(s) of emotional interest (EI) with design team (members) in the preparation and execution of the user research: related work (amount and kind of references), the determination of focus (the design scope, hypothesis or research question(s)) and the user research set-up.
- Signs of sensitivity (SE) with design team (members) in expert consultations and the execution of the user research: their observations in context (visits), expert meetings, user meetings, and in the co-constructing story activity with others
- Signs of design team (members') self-awareness (SA) and thus a distinction between self and other (designer and user/expert/other designer) in the user research analysis and in concept evaluation: in the co-constructing story set up, in questioning user needs, discussing user facts, making own assumptions versus others' experiences/knowledge.
- Signs of design team (members) obtaining or reminding personal experience (PE) and connecting to personal experience to understand other(s)
- Signs of the design teams' effort to mix perspectives (MP) and incorporate and integrate user experiences, user needs, user insights, and design team members' personal experiences in idea generation and concept development and evaluation? Signs of a mixed-perspectives view in the research process and design outcomes in the conclusions and discussion of the paper?

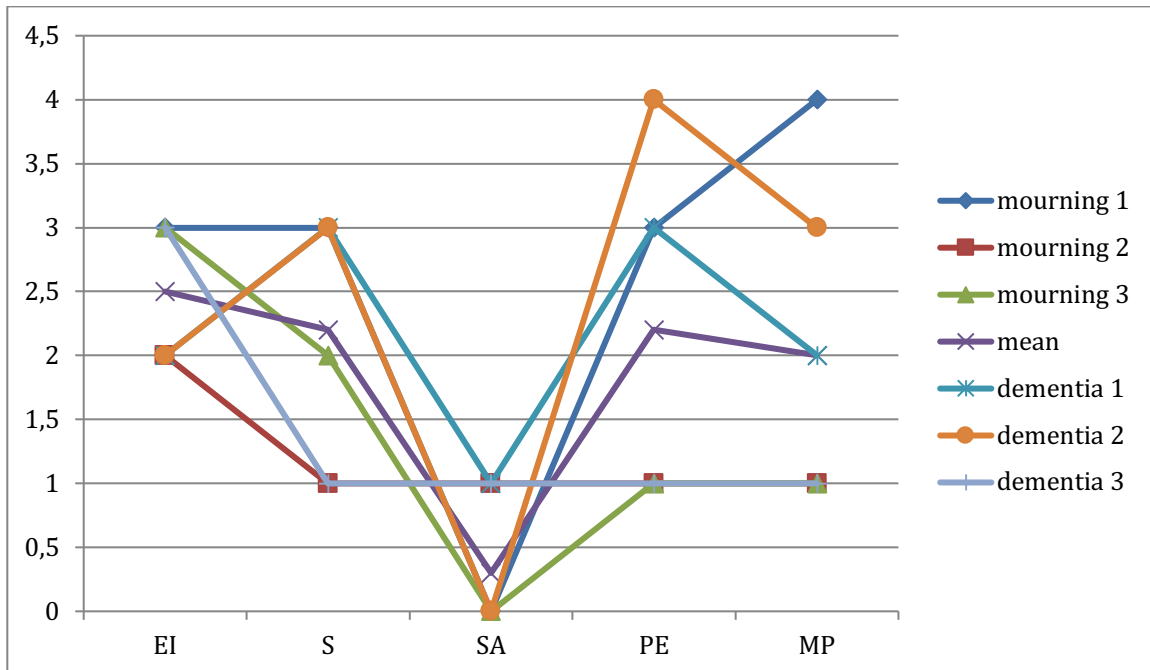
Appendix G: Analysis outcomes of chapter 4

The factor identification per team

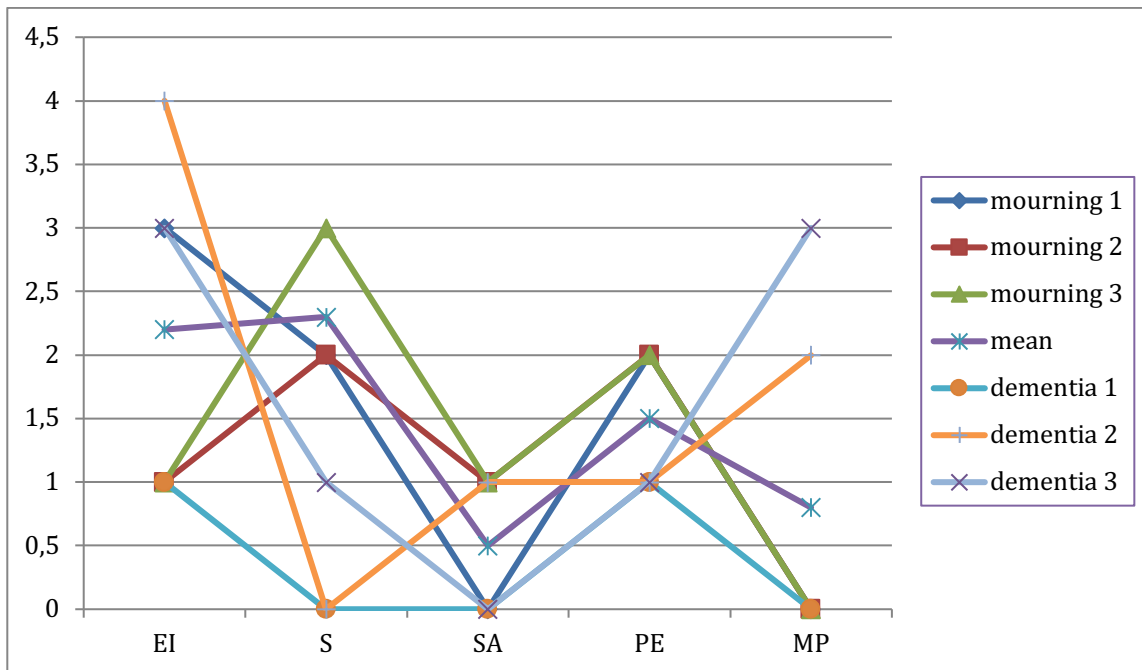
PAPER teams



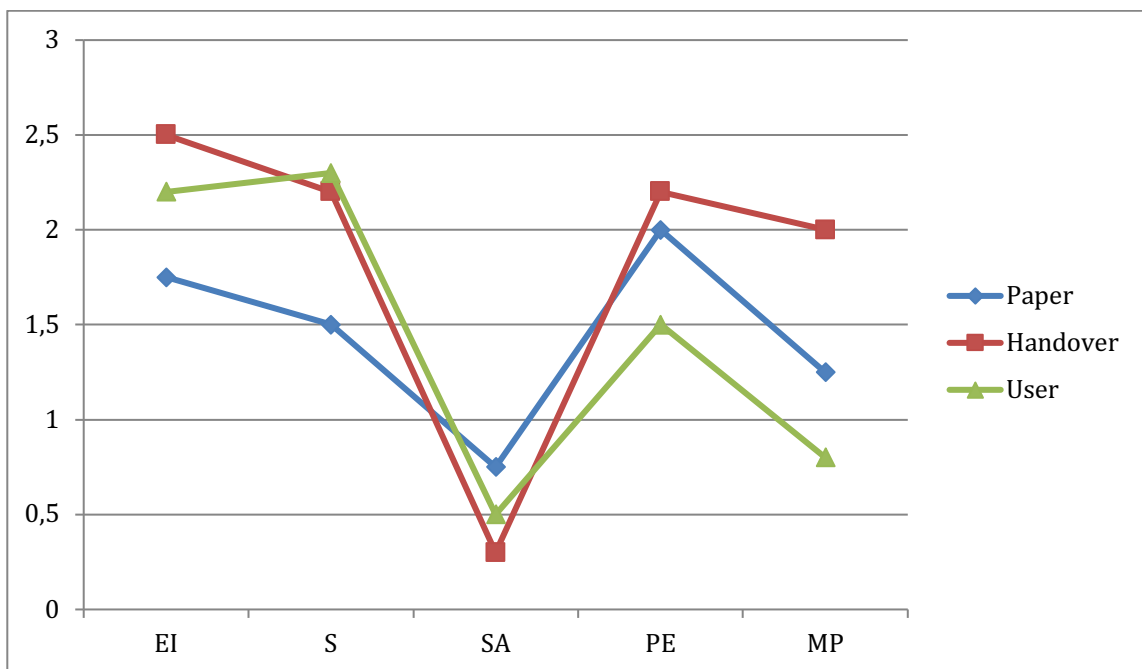
HANDOVER teams



USER teams

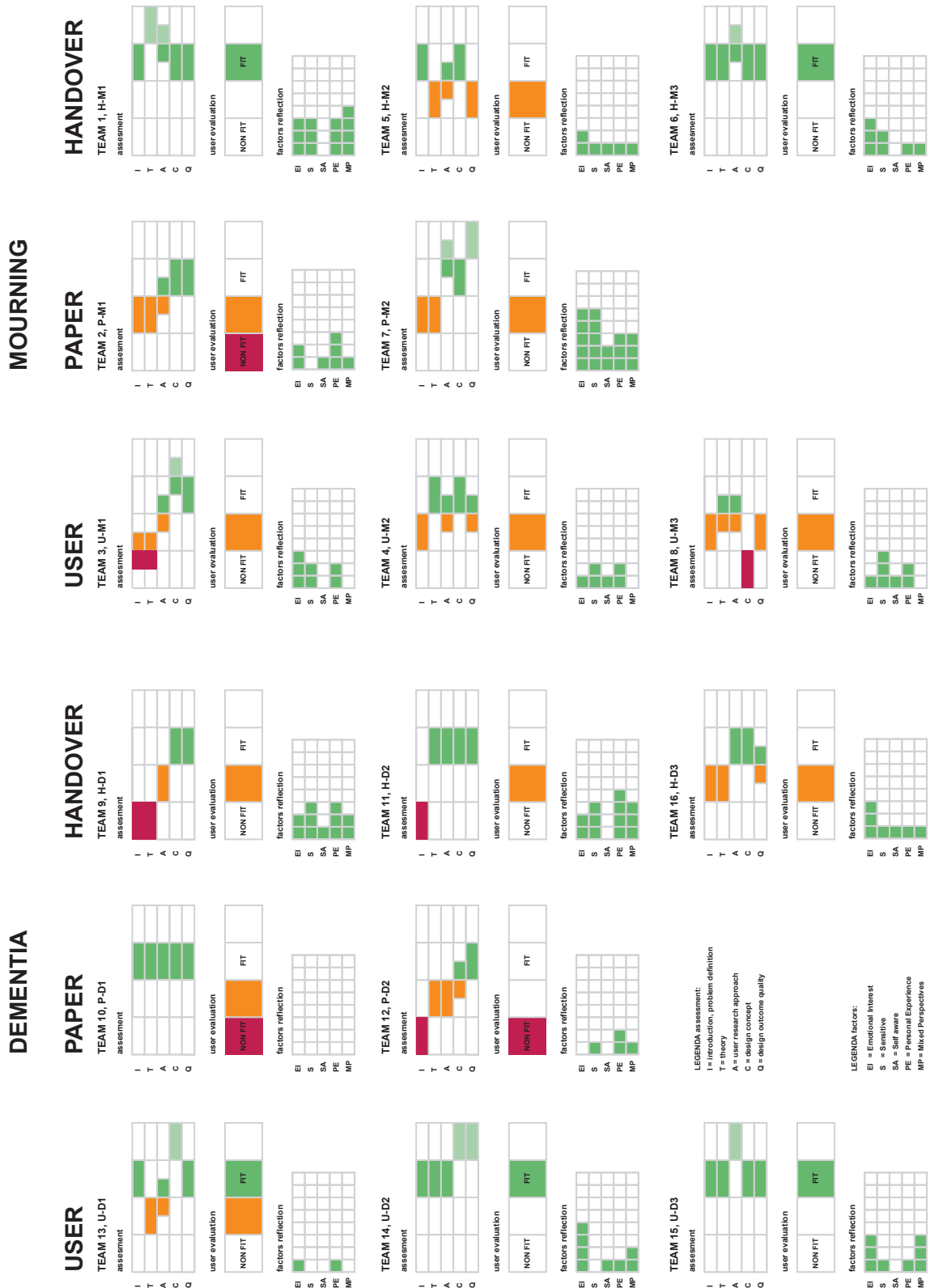


All Conditions



Appendix H: Analysis outcomes of chapter 4

The assessment, user evaluation and factor identification per team



Appendix I: Analysis outcomes of chapter 5

Table of the approach path of junior designer D

<i>Nr</i>	<i>Design activity</i>	<i>Perspective</i>	<i>People Orientation</i>	<i>Design Process</i>	<i>Design Mindset</i>	<i>Design Techniques</i>
1A	Literature search	3	Other	Cognitive	Expert	Research
1B	Brainstorm	3	Self	Cognitive	Expert	Design
2	Compare experiences	1&2	Self & Other	Affective	Participatory	Design
3	Define design opportunities	3	Self	Cognitive	Expert	Design
4	Evaluate design directions with literature	3	Other	Cognitive	Expert	Research
5	Benchmark search	3	Other	Cognitive	Expert	Research
6	Compare benchmark with own experiences	1&3	Self	Cognitive & Affective	Expert	Design
7	Create ideas	3	Self	Cognitive	Expert	Design
8	Fictive re-enactment	3	Self	Cognitive	Expert	Design
9	Re-enactment with mother	2	Other	Affective	Participatory	Design
10	Re-enactment by herself	1	Self	Affective	Expert	Design
11	Co-reflect	2&3	Other	Affective & Cognitive	Participatory	Research
12	Create concept	3	Self	Cognitive	Expert	Design
13	Evaluate concept based on own experiences	1	Self	Affective	Expert	Design
14	Co-evaluate concept	1&2&3	Self & Other	Affective & Cognitive	Expert & Participatory	Design & Research
15	Conclusion	3	Other	Cognitive	Expert	Research
16	Create and analyze prototypes	1&2&3	Self & Other	Cognitive	Expert	Design
17	Co-evaluate prototypes	2	Other	Affective	Participatory	Design
18 19	Detail prototype	1&3	Self	Affective & Cognitive	Expert & Participatory	Design
20	Final prototype	3	Self	Cognitive	Expert	Research

Curriculum Vitae

Personalia

ir. Wina Smeenk

Zuideinde 17, 1151CN, Broek in Waterland

06-27031274

wina@wien-s.nl

Publiek profiel: <http://www.linkedin.com/in/winasmeeenk>

Geboren op 30 januari 1973 te Utrecht, heeft de Nederlandse nationaliteit, is getrouwd met Jochem Galama en heeft 2 dochters (Lieve 13 & Smilla 10 jaar)

Opleidingen:

2016-heden	Technische Universiteit, Eindhoven PhD kandidaat Promotieonderzoek: Empathic Formation in co-design Referenties: Prof. Berry Eggen, TUE & Lector Janienke Sturm, Fontys
2007	De Baak, Noordwijk Leidinggeven aan eigenwijze Professionals
1991-1997	Technische Universiteit, Delft MSc. Industrieel Ontwerpen
1983-1991	Gymnasium, Apeldoorn Wiskunde A & B, Natuurkunde, Geschiedenis, Grieks, Nederlands, Frans, Engels

Werkervaring:

2010-heden	WiEN's ontwerperschap, Amsterdam Co-designer
September 2019-heden	Hogeschool inHolland Diemen Urban Leisure & Tourism LAB Adviseur ULT LAB
Juni 2018-heden	Brainport Smart District Gemeente Helmond Programma manager co-design participatie
Januari 2018-Augustus 2019	Hogeschool Arnhem Nijmegen Communicatie, Media & Design (CMD) Ad-interim coördinator leerwegaafhankelijke deeltijd
2015-2016	Hogeschool van Amsterdam Productontwikkeling, elektrotechniek, werktuigbouw en bedrijfskunde Adviseur brede bachelor techniek

2011-2012	THNK, The Amsterdam School of creative leadership Programma manager
2004-2009	Technische Universiteit, Eindhoven Faculteit Industrial Design
2008-2009	Theme manager Emotions & Experiences
2005-2008	Programma manager Home domain
2004-2005	Coach
2000-2005	Giant Bicycles Europe, Lelystad Industrial Designer
1999-2000	Alrec Sign & Display, Mijdrecht Industrieel Ontwerper
1998-1999	Pollyflame, Roelofarendsveen Industrieel Ontwerper

Publications by Wina Smeenk

Journal Articles

Related to this thesis:

Smeenk, W., Sturm, J., & Eggen, B. (2017). Empathic Handover: How would you feel? Handing over dementia experiences and feelings in empathic co-design. *CoDesign: International Journal of CoCreation in Design and the Arts*, 1–16. Taylor & Francis.

doi: [10.1080/15710882.2017.1301960](https://doi.org/10.1080/15710882.2017.1301960)

Smeenk, W., Sturm, J., & Eggen, B. (2019). Empathic Formation in design: a comparison of existing models leading to a compass for co-design. *International Journal of Design*.

Smeenk, W., Sturm, J., Terken, J. & Eggen, B. (2018). A systematic validation of the Empathic Handover approach guided by five factors that foster empathy in design. *CoDesign: International Journal of CoCreation in Design and the Arts*, 1–21. Taylor & Francis.

doi: [10.1080/15710882.2018.1484490](https://doi.org/10.1080/15710882.2018.1484490)

Smeenk, W., Tomico, O., & van Turnhout, K. (2016). A systematic analysis of mixed perspectives in empathic design: Not one perspective encompasses all. *International Journal of Design*, 10(2).

Retrieved from <http://www.ijdesign.org/ojs/index.php/IJDesign/article/view/2543>

Peer reviewed conference articles

Related to this thesis:

Van den Hoven, E., Smeenk, W., Bilsen, H., Zimmermann, R., Waart, S. de, & van Turnhout, K. (2008). Communicating Commemoration. In proceedings of SIMTech'08, November 20-21, Cambridge, UK.

Van Turnhout, K. V., Hoppenbrouwers, S., Jacobs, P., Jeurens, J., Smeenk, W., & Bakker, R. (2013). Requirements from the Void: Experiences with 1: 10: 100. *Proceedings of CreaRe*, 13.

Other

Smeenk, Willenborg (2017). Shake it ! Een design Thinking game voor innovatie en transformatie. Boom, Amsterdam.

I. Wouters, W. Chen, B. van Oorschot, and W. Smeenk, “Green Street Design for Bennekel District in Eindhoven”, Proceedings of IADIS International Conference ICT, Society and Human Beings 2008, Amsterdam, the Netherlands, 22 - 24 July, 2008, pp. 202-205.

I. Wouters, W. Chen, B. van Oorschot, and W. Smeenk, “Interactive Green Street Enhancement Using Light Dependent Sensors and Actuators”, Proceedings of IEEE International Symposium on Consumer Electronics 2008 (ISCE 2008), Vilamoura, Portugal, 14 -16 April, 2008.

Acknowledgements

Fifteen years ago, when the Industrial Design department in Eindhoven was just starting, I took off as a part-time design coach next to my industrial design job. One year later, I was heading the educational Home domain and building a team of researchers, psychologists, designers and architects. It is in that period, that I discovered that our design discipline was changing and I got to know my promotor Berry Eggen. In that same period, my mother Coby died, I became a mother of Lieve and me and my husband Jochem were taking care of my mother in law Marieke who was suffering from dementia. When, my second child Smilla came four years later, I decided to pay my attention to my co-design studio in Amsterdam and on my family. Next, I was asked -on a late notice- to support a design agency pitch for the design of a dementia simulator. At that moment, my own experience and intuition guided me and I experience-prototyped the refrigerator scene as explained in the introduction of chapter 3. Now, it is one of the first scenes in the simulator to experience. In hindsight, this moment was the start of my PhD.

Writing this thesis was possible thanks to the support of many people. I would like to thank first and foremost my promotor Berry Eggen, who gave me his trust, enthusiasm and was always there to support me when needed. Next, I like to show my appreciation to my co-promotor Janienke Sturm, whose eye for detail helped me to structure and write better. Then, I would like to acknowledge the members of my doctorate committee, for reading my thesis and helping me to improve its quality through their constructive feedback.

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³² ‘Pepper (paper) is nice, but spicy’