INFORMED EMPATHY IN DESIGN PRACTICE: EXPLORING DESIGNERS' EMPATHY IN REFERENCE TO UNFAMILIAR USER GROUPS

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ABSTRACT

INFORMED EMPATHY IN DESIGN PRACTICE: EXPLORING DESIGNERS' EMPATHY IN REFERENCE TO UNFAMILIAR USER GROUPS

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Empathy is increasingly recognized as a crucial yet complex concept in design, especially for fostering a deep understanding of unfamiliar user groups shaped by socio-economic, cultural, bodily, or professional differences between designers and users. Despite its importance, the term 'empathy' in design remains ambiguous, often broadly used to describe exploratory user research. While much attention has been given to methods for cultivating empathy, limited research exists on what truly defines *designer empathy* in design practice.

This thesis addresses the gap in understanding designer empathy by investigating the experiences of professional designers working on various projects involving unfamiliar user groups. Through 20 semi-structured interviews, the study explores the attitudinal, behavioral, and evaluative dimensions of designer empathy, revealing how these perspectives shape designers' empathic design processes. Key findings show that the *empathy mindset*, shaped by attitudinal dimensions such as personal values and professional responsibility, plays a significant role in guiding designers' motivations and values for empathy. *Empathy in action*, characterized by behavioral dimensions, extends beyond mere user understanding and is strongly affected by organizational, cultural, and contextual factors. *Empathy in reflection*, tied to the evaluative dimensions, encourages designers to evaluate and adapt their mindset and actions throughout the design process. The thesis introduces the concept of *informed empathy* and develops *the ABE Framework of Informed Designer Empathy* which helps designers embed empathy as a defining quality in practice, supports educators in cultivating it as a core competency for students, and provides academia with a practice-based foundation for expanding empathy research in design.

Keywords: Informed Empathy, Designer Empathy, Empathy in Design, User Research in Design, Unfamiliar User Groups

ÖZ

TASARIM PRATİĞİNDE BİLGİLENMEYE DAYALI EMPATİ: TASARIMCI EMPATİSİNİN AŞİNA OLUNMAYAN KULLANICI GRUPLARI ÜZERİNDEN KEŞFEDİLMESİ

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Tasarım alanında giderek daha kritik bir kavram haline gelen empati, tasarımcıların sosyo-ekonomik, kültürel, fiziksel veya mesleki farklılıklar nedeniyle aşina olmadıkları kullanıcı gruplarını derinlemesine anlamalarını sağladığı için değerli bulunmaktadır. Ancak, ‘empati’ terimi tasarımda hala belirsizliğini korumakta ve çoğunlukla keşif amaçlı kullanıcı araştırmalarını tanımlamak için muğlak bir biçimde kullanılmaktadır. Kullanıcılarla empati kurmaya yönelik yöntemlere dair pek çok çalışma bulunmasına rağmen, *tasarımcı empatisi* kavramının ne olduğu ve nasıl tanımlanacağı konusundaki araştırmalar sınırlıdır.

Bu tez, tasarımcı empatisini derinlemesine anlamak amacıyla, çeşitli aşina olunmayan kullanıcı gruplarıyla çalışan profesyonel tasarımcıların deneyimlerini incelemektedir. 20 yarı yapılandırılmış mülakata dayanan bu alan çalışması, empatiyi üç temel boyutta ele almaktadır: tutumsal, davranışsal ve değerlendirici. Çalışma, bu boyutların tasarım sürecinde tasarımcı empatisini nasıl şekillendirdiğini ortaya koymaktadır. Temel bulgular, kişisel değerler ve mesleki sorumluluklar gibi tutumsal boyutların şekillendirdiği *empati zihniyetinin*, tasarımcıların empatiye yönelik motivasyonlarını ve değerlerini etkilediğini göstermektedir. Davranışsal boyutların tanımladığı *eylemde empati*, kullanıcıları anlamanın ötesine geçerek tasarımcı empatisinin organizasyonel, kültürel ve bağlamsal faktörlerden etkilendiğini ortaya koymaktadır. *Düşünümde empati* ise, değerlendirici boyutlar aracılığıyla tasarımcıların süreç boyunca empati zihniyetlerini ve eylemlerini sürekli gözden geçirip güncellemeleri gerektiğini vurgulamaktadır. Tez kapsamında literatüre *bilgilenmeye dayalı empati* kavramı tanıtılmış ve bu kavrama dayalı olarak *ABE Bilgilenmeye Dayalı Tasarımcı Empatisi Çerçevesi* geliştirilmiştir. Bu çerçeve, profesyonel tasarımcıların empatiyi pratikte nasıl tanımlayıp uygulayabileceklerine dair yol gösterici bir rehber niteliğindedir. Ayrıca, tasarım eğitmenlerine, empatiyi tasarım öğrencileri için temel bir yetkinlik haline getirme yollarını destekleyecek içgörüler sunmaktadır. Son olarak, bu çerçeve akademik alanda tasarımda empati üzerine yapılan çalışmalara yön verebilecek, uygulamaya dayalı kavramsal bir temel sunmaktadır.

Anahtar Kelimeler: Bilgilenmeye Dayalı Empati, Tasarımda Empati, Tasarımcı Empatisi, Tasarımda Kullanıcı Araştırması, Aşina Olunmayan Kullanıcı Grupları

To KuşKuş & Auspex

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INTRODUCTION

1.1 Problem Background

In the current design landscape, *empathy* has emerged as a key concept. Over the last two decades, it has played a central role in both academic and professional discussions. While some form of empathy has historically been present in design, it was not always explicitly labeled as such. The concept gained momentum with the adoption of user-centered approaches, becoming integral to practices like human-centered design, participatory design, co-design, and design thinking, particularly through methods and tools (Devecchi & Guerrini, 2017).

Identifying specific design activities directly related to empathy remains challenging (Kouprie & Visser, 2009). Much of the discourse on empathy takes place during early-stage design research, commonly referred to as the “fuzzy front end” due to its inherent complexity (Sanders & Stappers, 2012). Professional designers and scholars often highlight empathy as a means to better understand users from their own perspectives, translating these insights into improved user experiences. Empathy is believed to enable designers to form deeper emotional connections with users, often revealing latent needs and desires that users themselves may be unaware of (Sanders & Dandavate, 1999; Norman, 2003; Kouprie & Visser, 2009; McDonagh, 2006; Sanders & Stappers, 2008; IDEO, 2011; Postma et al., 2012; Microsoft, 2016).

Although empathy is frequently celebrated as a highly valued concept, ambiguities remain regarding its use in the design field. Many discussions about the relationship between empathy and design fail to provide a clear conceptual foundation or theoretical explanation of what is meant by empathy, with some making no effort at all (Siegel & Dray, 2019). Consequently, some scholars argue that there is an increasing need for a more precise conceptualization of empathy within the design field (Kouprie & Visser, 2009; Dong, Dong & Yuan, 2018; Smeenk, Sturm & Eggen, 2019; Surma-Aho et al., 2019).

Ambiguities surrounding empathy are not exclusive to design. Scholars across various fields, particularly psychology, frequently highlight the absence of a universally accepted definition and a clear, cohesive conceptual framework for empathy (Coplan, 2011; Engelen & Röttger-Rössler, 2012; Cuff, Brown, Taylor & Howat, 2014). For some scholars, the diversity of definitions ascribed to empathy is not necessarily an issue to be resolved or eliminated (Duan & Hill, 1996; Coplan, 2011; Cuff et al., 2014). However, Coplan (2011) emphasizes the importance of refining the conceptual framework of empathy to establish clearer distinctions among the various elements often labeled as empathy, which are frequently "confused, conflated, or ignored" (p. 44). Achieving this conceptual clarity is believed to propel empathy-related research forward, enabling more effective tracking of advancements in the field (Decety & Jackson, 2004; Levine, 2007; Coplan, 2011; Cuff et al., 2014).

Similarly, there is a need to address empathy's theoretical and conceptual foundations within the design context, specifically to highlight how empathy differs from other user understanding activities. Clarifying these distinctions and identifying what makes empathy unique in design is important not only for advancing research on empathy in design but also for elevating the academic rigor of the discipline itself. This clarity is essential to improve the perceived reputation of design in academia and its standing in relation to other disciplines (Driver et al., 2011). Cash (2018) argues that design research must take significant action to elevate its "scientific, theoretical, and methodological rigor," warning that, without such efforts, design risks "being superseded and becoming obsolete through lack of impact" (p. 84). He notes that highly ranked marketing and management journals have already begun to incorporate empathy-oriented design practices, such as design thinking and human-centered design, into their portfolios. Cash calls for a new paradigm of theory-driven design research to ensure the continued relevance and impact of design as a discipline.

Cash (2018) emphasizes the need for design research to elevate its "scientific, theoretical and methodological rigor"; otherwise, it risks becoming obsolete due to a lack of impact (p. 84). He notes that high-ranking marketing and management journals have already begun including empathy-favoring design practices, such as design thinking and human-centered design, into their portfolios and calls for a new paradigm of theory-driven design research. Therefore, it is crucial that the design discipline takes ownership of advancing these practices to ensure its continued relevance.

This thesis suggests that the greatest barrier to achieving a comprehensive conceptualization of empathy in design is the limited number of studies reporting how empathy is actually performed by designers. Although there is an increasing focus on how to 'empathetically' understand users, Surma-aho et al. (2019) state that very little empirical work has been done on what influences and results from a designer's empathy. Cash (2018), citing Blessing & Chakrabarti (2009), suggests that design research ranges from descriptive examinations of design in context to prescriptive propositions for how design should be. However, the literature on empathy in design is mostly prescriptive, focusing on methods and tools for building empathy with target user groups (Lee, 2012; Woolrych et al., 2011; Smeenk et al., 2019). What designers' empathy for and with target user groups in real-life contexts looks like in a descriptive way has not been thoroughly explored.

An in-depth understanding of designers' empathy cannot be achieved without a critical look at the characteristics of the users designers aim to empathize with. One commonly accepted aspect of empathy in psychology is the self-other distinction (Cuff et al., 2014). In design, attempting to understand and resonate with people other than themselves is at the core of designers' motivation for empathy. The 'user' is an imaginary construct created by designers to represent these people within the prevailing design context (Redström, 2006). Hasdoğan defines the concept of a user model as "any representation of the potential user, created by or available to the designer to assist them in making predictions about the actual user" (1996, p.20). When designers consider themselves in creating a user model, the activity is called self-modeling (Hasdoğan, 1996). A review of studies focusing on empathy in design reveals that self-modeling of target user groups by designers is unlikely due to the unfamiliar and somewhat vulnerable nature of the user groups in designers' minds. These groups are usually less privileged and underrepresented, with fewer products and services addressing their needs than more frequently represented groups. An exemplary exploratory review conducted by Galleguillos & Coşkun (2020) identified the following groups: children (individuals under 15 years old); refugees, immigrants, and asylum seekers; older adults; people with cognitive and psychological impairments; ethnic and aboriginal tribes; and individuals in critical neighborhoods.

To become more familiar with such user groups, designers use techniques within the context of design and empathy. Heylighen and Dong (2019) summarize empathic techniques in design, inspired by Kouprie & Visser's classification, as follows: (i) research techniques such as interviews and video ethnography requiring direct contact between users and designers to gain empathy for and insights into users' experiences, needs, and desires; (ii) communication techniques of a narrative nature, such as personas, scenarios, and storyboards, to deliver user study findings to design teams and evoke empathy for users' perspectives; (iii) and ideation techniques that stimulate investigated user experiences by limiting designers' physiological and mental capabilities with wearables such as gloves, goggles, or full-body suits.

Stephan (2023) states that empathy is predominantly framed as a methodological tool in design, focusing on intentional and reflective aspects of empathy, often overlooking its automatic and inchoate foundations. While intentional efforts involving reflection, imagination, and simulation can supplement empathy, they are insufficient on their own, as these processes rely on a foundation of passive empathy (Stephan, 2023). Stephan argues that understanding the passive side of empathy reveals how empathy is essential in the fundamental tasks of design and how it differs from other user research and concept development techniques that rely on reflection and imagination (2023).

While empathy is perceived as a powerful tool for deeply understanding users, designers frequently use it to justify their decisions on behalf of user groups they do not belong to. However, the extent to which this reflects reality is debatable, given the limited discussions in the literature that reflect designers’ perspectives from a professional context in a descriptive manner. The issues mentioned above highlight a gap in the literature concerning the conceptualization of designers’ empathy, specifically regarding what designers really mean by the empathy they build and employ to connect with unfamiliar user groups. Filling this gap seems crucial and timely; otherwise, empathy risks becoming a ‘buzzword,’ superficially indicating any knowing-the-user activity designers perform in the design field.

1.2 Aim and Research Questions

The aim of this study is to investigate designers’ empathy from their perspective by consulting their experiences with unfamiliar user groups within the design context. As empathy is often mentioned in design when addressing the needs of unfamiliar user groups, exploring designers' experiences with these groups can offer valuable insights into how empathy is understood and applied in practice.

Through this investigation, the goal of the study is to provide a framework for designer empathy to better inform our understanding and application of empathy within design practice and academia. The following research questions are proposed in line with the aim and the goals of the study:

1. How do designers empathize with unfamiliar user groups within the design practice?

- What are designers' motivations and values for empathy with unfamiliar user groups?
- What methods and strategies do designers apply to empathize in the design process?
- Whether and in which ways do designers reflect on the empathic processes they experience during the design process?

2. What is empathy for designers?

- How do designers conceptualize their empathy within the design context?
- What are the qualities of an empathic designer?
- What are the characteristics of unfamiliar user groups that designers aim to empathize with?
- What might be the evaluation criteria for empathic design processes?

1.3 Structure of the Thesis

This thesis is composed of five chapters. The first chapter introduces the topic of the thesis, outlines the aim of the study, and presents the research questions guiding the investigation. Additionally, it provides an overview of the structure of the thesis.

Chapter 2 reviews the relevant literature across various scholarly fields, including design, psychology, and empathy studies. It covers theoretical frameworks such as attitudinal approaches, methodological applications, and evaluative perspectives on empathy in design.

Chapter 3 details the research design and methodology. It begins by outlining the research approach and continues with describing the data collection methods, and reflections on the study participants. The chapter also elaborates on the data analysis strategy employed in this study.

Chapter 4 presents the findings from the field study, focusing on how designers engage with unfamiliar user groups and the role of empathy in their design processes with respect to the broader project context.

Chapter 5 concludes the thesis by summarizing the key findings and implications of the research by revisiting research questions. Following this, the chapter introduces *the ABE Framework of Informed Designer Empathy*. It also offers recommendations for design practice, design education, and approaches to engaging with unfamiliar user groups. The chapter concludes with a discussion of the study's limitations and suggestions for future research.

CHAPTER 2

LITERATURE REVIEW

The chapter begins with a brief reflection on the roots of empathy in general and continues with a particular focus on its conceptualization in the psychology discipline. It then traces the emergence of the concept in the design field and reflects on the integration of empathy into design practices through various attitudinal, behavioral, and evaluative perspectives.

2.1 The Roots of the Concept of Empathy

The roots of the phenomenon that we today commonly refer to as ‘empathy’ trace back to the eighteenth century, when it was interpreted under the term ‘sympathy’ (Coplan, 2011). Two prominent scholars of that time, David Hume and Adam Smith, especially contributed to the exploration of the topic as the main psychological mechanism of human social and moral nature (Stueber, 2018). Hume’s dictum that “the minds of men are mirrors to one another” clearly represents the common understanding of this phenomenon. (Hume, as cited in Steuber, 2018, para. 2). Introduction of the term “empathy” into the English language dates back to 1909, as the translation of the German term “Einfühlung” (Hunsdahl, 1967). Einfühlung was first used in 1873 by philosopher Robert Vischer within philosophical aesthetics to describe how people as observers experience feelings elicited by works of arts and inanimate objects. The domain of philosophy, from aesthetic aspects, investigated empathy in relation to art pieces (mainly paintings) and the emotions evoked by the observer of these paintings (Assman & Detmers, 2016; Hunsdahl, 1967).

25 years after its first occurrence, philosopher Theodor Lipss used the term to describe today's common conceptualization of empathy, in relation to how people understand other people's mental states. (Assman & Detmers, 2016). Later, psychology became highly interested in theories regarding empathy between individuals (Coplan, 2011). In the design discipline, the notion of empathy is a trending topic in relation to understanding users of design outcomes to translate acquired understanding into insights that would support the design process (Kouprie & Visser, 2009; McDonagh, 2006). Regarding the limited number of conceptualizations of empathy in design, writers in the area predominantly benefit from the psychology domain.

2.2 Empathy as Conceptualized in Psychology

As noted in the introduction, conceptualizations of empathy abound through definitions, but it is hard to point to a single agreed-upon definition. Hall, Swartz, and Duong (2020) note that some definitions from the psychology disciplines emphasize empathy's affective versus cognitive aspects, while others focus on different elements such as *perspective-taking*, *sympathy*, or *prosocial motives*. They also remark on the tension between different approaches to understanding empathy, with some focusing on the process of empathy, others on empathy as a social or moral outcome, and still others viewing it as a personality trait or capacity. While it is quite often that some scholars attempt to bring order to this conceptual chaos by proposing uniform definitions, others argue for "bypassing the term empathy" altogether and using clearer, lower-order concepts (Hall, Swartz & Duong, 2020, p. 6). Their reflection suggests that the field lacks a consensus on what empathy truly encompasses, leading to challenges in consistently defining, measuring, and applying the concept across different contexts.

Transitioning from this complexity, Coplan (2011) argues that the diversity of perspectives on empathy should not be seen as a hindrance, but rather as an opportunity to explore the different motivations that underlie it. Coplan outlines several distinct ways empathy can be understood (2011, p. 4), including:

> "(A) Feeling what another person feels,
> (B) Caring about another person,
> (C) Being emotionally affected by someone else's emotions and experiences, even without sharing the same emotions,
> (D) Imagining oneself in another person's situation,
> (E) Imagining being the other person in their situation,
> (F) Making inferences about another person's mental states, or
> (G) Some combination of these processes (A)–(F)."

Building on Coplan's conceptualization of empathy, which explores the different motivations behind this complex construct, Cuff et al. (2014) offer a comprehensive review of 43 distinct definitions and conceptual summaries from the psychology domain. Their analysis identifies several key dimensions encapsulating the diverse ways empathy is understood. These dimensions question: Is empathy cognitive or affective? Is it congruent or incongruent? Do external stimuli influence it? How does empathy distinguish between self and others? Does it lead to behavioral outcomes? Is empathy a stable trait or situational? Is it automatic or controlled?

Cognitive - Affective: Whether empathy is a cognitive or affective concept is probably its most discussed aspect. Results from review of Cuff et al. (2014) suggest that most definitions consider both but there are also some definitions solely built upon affective or cognitive elements. "Cognitive empathy is the ability to understand another's feelings, related closely to theory of mind. Affective empathy is concerned with the experience of emotion, elicited by an emotional stimulus." (Coplan, 2011, p. 6). Decety (2007) suggests that while affective empathy is automatically elicited, manipulating cognitive elements can inflect affective elements. Strayer (1987) emphasizes that the affective component is the content of empathy, whereas the cognitive component is the process by which this content is formed. According to Cuff et al. (2014), the emotion-oriented affective component of empathy is fundamental for social interactions and cooperation for a shared aim by enabling a quick and automatic match between different persons. Cognition also plays a prominent place in this match; however, it occurs as a secondary development.

Congruent - Incongruent: Hein and Singer (2008) suggested that congruence is what separates empathy (congruent) from sympathy (incongruent). This is consistent with the idea that empathy is related to the other's feelings, while sympathy is a reflection of one's own. Nevertheless, the degree of congruence depends upon factors such as personal experience, imagination, simulation (Coplan, 2011), and the resources available for verbally sharing emotions. Empathic accuracy, which is the ability to correctly identify another person's emotions, can depend on how accurately the target recognizes their own emotional state (Batson, 2011). If the target struggles to interpret their emotions, it becomes harder for the observer to achieve empathic accuracy (Cuff et al., 2014).

Being Subject to Other Stimuli: Empathy is often triggered by the direct perception of an emotional other. However, some scholars argue that direct perception is not always necessary; empathy can also be elicited by other emotional stimuli (Cuff et al., 2014). There are three commonly discussed scenarios: First, empathy can be triggered through perspective-taking, imagination, or the retrieval of relevant memories from one's own experience. Second, empathy may arise when the observer infers emotionality through indirect means, such as interpreting non-verbal cues or contextual information. Third, empathy can be evoked by stimuli related to a fictional or imaginary person, with research suggesting that there is little functional difference between empathy for a real person and empathy for a fictional or absent individual (Cuff et al., 2014).

Self/other Distinction - Merging: The argument for a self/other distinction is crucial to distinguishing empathy from related concepts like emotional contagion. In empathy, the observer is aware that the emotion they feel originates from perceiving another's emotions. In emotional contagion, however, the observer experiences the emotion without this awareness, believing the feeling to be their own (Cuff et al., 2014). According to Levine (2007), the separation between self and the other is also what distinguishes empathy from projection. Projection happens when we do not know the other; however, we feel certain feelings and experience particular states that belong to the other. On the contrary, Levine (2007) highlights that empathy occurs when we receive communicated feelings originating outside. Also, Bolognini argues that projection "constitutes an obstacle to knowledge, a malfunctioning of the ego, and an intrusion that is completely disruptive of the possibility of attainment of empathic situations" (2004, p. 153).

Having a Behavioural Outcome: Cuff et al. suggest that although empathy often leads to behavioral outcomes, this is not always the case, and such behavioral outcomes may be mediated through other factors. Therefore, they propose that it is more appropriate to acknowledge this element as being a behavioral motivation rather than having a direct behavioral component due to those examples of nonaction presented before. A further point to note is that empathy is not necessarily accompanied by a prosocial or helpful behavioral response (Cuff et al., 2014).

Trait - Influences: For a considerable amount of time, empathy was discussed as an "ability" or "capacity," implying a stable trait concept. However, others suggest that empathic responses may be context-specific. The trait view implies that some individuals are more empathic than others, with this ability being stable over time. Anatomical differences, as well as genetic and developmental factors, account for some variability in empathic abilities. Thus, there is little doubt that empathic responding is subject to trait and individual-difference factors. Nevertheless, considerable evidence supports the importance of situational, "state" factors (Cuff et al., 2014).

Automatic - Controlled: Although empathy can be produced by variables that are beyond human beings' control, it is a state of mind that we can reflect upon, control, and modify. Thus, the evidence suggests the influence of both automatic and controlled processes on empathy (Cuff et al., 2014).

Based on the aspects identified for empathy, Cuff et al. (2014) comes with an encompassing definition of empathy:

> "Empathy is an emotional response (affective), dependent upon the interaction between trait capacities and state influences. Empathic processes are automatically elicited but are also shaped by top-down control processes. The resulting emotion is similar to one's perception (directly experienced or imagined) and understanding (cognitive empathy) of the stimulus emotion, with recognition that the source of the emotion is not one's own" (2014, p. 150).

There are also conceptualizations of empathy in relation to ethics and morality. By distinguishing empathy into three types, Zaluski (2016) aims to facilitate the development of empathy ethics and the evaluation of its ethical value. *Perfect empathy* refers to "ethically grounded cognitive empathy, ethically grounded affective empathy, and the tendency to undertake morally adequate actions as a result of affective empathy" (p. 12). *Truncated empathy* occurs "if one of the elements of perfect empathy is missing, or if at least one of its elements is not supported by clear knowledge of moral rules" (Zaluski, 2017, p. 12). For instance, truncated empathy may not be ethically grounded or might lack sufficient understanding of moral values to guide action. *Contaminated empathy*, by contrast, combines perfect empathy with one of four self-regarding motives: "the feeling of relief that the other, not oneself, is the victim of suffering; anxiety about one's own future; feelings of superiority (pity); or personal distress" (Zaluski, 2017, p. 12).

Batson's (2011) empathy-altruism hypothesis posits that empathic concern generates altruistic motivation. In this context, empathic concern is defined as "other-oriented emotion elicited by and congruent with the perceived welfare of someone in need" (Batson et al., 2016, p. 443), while altruism is described as "a motivational state with the ultimate goal of increasing another's welfare" (Batson et al., 2016, p. 444). Batson et al. (2016) further attribute three meanings to the concept of altruism: Helping behavior rather than motivation, acting morally, and helping to gain internal rewards rather than external ones. In relation to the empathy-altruism hypothesis, Batson et al. (2016) highlight both the benefits and potential liabilities of empathy-induced altruism. Among the benefits, they suggest that empathizers become more sensitive and inclined to make greater efforts toward those perceived as in need, exhibit reduced aggression, display more cooperative motivation in conflict situations, and improve their attitudes toward and actions on behalf of stigmatized groups.

In summary, empathy in psychology is recognized as a complex, multi-dimensional construct, encompassing both cognitive and affective components, as well as distinctions between self and others, congruence, and behavioral outcomes. These perspectives emphasize empathy's influence on human interactions, ethical considerations, and decision-making. Despite the range of approaches, empathy remains integral to understanding interpersonal relationships and actions despite the range of approaches.

With this psychological foundation established, the following section addresses how empathy is conceptualized and integrated within the design field, particularly its role in shaping human-centered approaches.

2.3 Empathy as Conceptualized in Design

This section focuses on the conceptualization of empathy within the design field. It begins by tracing the historical emergence of the empathy concept in design, particularly in relation to the shift from mass production to more human-centered approaches. The section then explores how empathy has been increasingly integrated into design practice, outlining various theoretical frameworks and techniques developed to cultivate and apply empathy in design processes.

2.3.1 The Emergence of the Empathy Concept in Design

The roots of the empathy phenomenon in design date back to the beginning of the mass production era. Prior to the Industrial Revolution, there was an intimate feedback loop between designers (makers) and users, as most products were created in one-man shops. However, this loop was interrupted when the industry introduced intermediary links between production and consumption (Jones, 1970; Hyysalo et al., 2016; Heylighen & Dong, 2019). Since then, strategies for involving users in design and bringing their needs and desires closer to designers have been sought as part of the design activity to fill the so-called gap between designers and users. Initial strategies considered users as passive sources of information. These strategies systematically explored user characteristics to be reflected in design decisions, with the hope of developing products that would be well received by users (Hyysalo et al., 2016). For this purpose, consumer and marketing research focused on user preferences through polls and focus group studies to create more marketable products. On the other hand, ergonomics and human-factors research predominantly consulted usability testing to develop products better suited to users' physical and cognitive abilities identified before these tests (Bayazit, 2014; Hyysalo et al., 2016; Cooper, 2019).

The emergence of the human-computer interaction (HCI) field —which gained momentum with the prevalence of personal computers— and the rise of human-centricity in design shifted how designers approach user involvement, moving from a focus on usability to user experience. Bødker (2006) identifies three waves of change that led to this transition. In the First Wave, designers continued the tradition of studying human beings as rational actors by using formal guidelines to enhance performance and reduce errors during interactions with products (Bødker, 2006; Baumer & Brubaker, 2017). It was in the Second Wave that designers began exploring additional layers of human experience, with a shift in mindset “from human factors to human actors” (Bødker, 2006, p. 4). Designers started to perceive human beings as situated actors engaging with other humans and system components within a specific use context. This era also coincides with the anthropological turn within design, highlighting “the transformative potential of design's social agenda, promising to lead humankind into a future beyond the bare-faced technocracy of Modernism” (Clarke, 2016, p. 45). In the Third Wave, principles of Human-Centered Design (HCD) became the dominant view, considering users within a broader context as they engaged in socio-culturally situated activities in everyday life —such as commerce, leisure, and artistic performance— and embraced the experience and meaning-making aspects of user engagement with products (Bødker, 2006; Baumer & Brubaker, 2017).

In the late 1990s, designers' interest in people's feelings and moods and their potential contribution to design solutions led to the emergence of new approaches to design that dealt with more ambiguous topics, such as experiences and meaningful everyday practices (Mattelmäki et al., 2014). The concept of empathy and the term 'empathic design' were introduced to the design discipline as one of the strongest of these new approaches (Leonard & Rayport, 1997).

2.3.2 The Culmination of Conceptualising Empathy in Design

In design literature, the importance of empathy is initially emphasized through *attitudinal approaches* rather than causal explanations. These approaches include motivations, values, meanings, and desirable actions, such as: understanding users within their emotional context to create more suitable and marketable products; adopting an 'empathic' mindset, which makes designers more receptive to information; stepping out of the office to observe users in their context and participate in their activities; and, through empathy, becoming user advocates (Norman, 2003; Kouprie & Visser, 2009; McDonagh, 2006; Sanders & Stappers, 2008; Postma et al., 2012). Empathy has been utilized as a trope and gradually evolved into an umbrella construct encompassing various loosely related user-knowing activities.

Following these attitudinal approaches, more structured *behavioral applications* have emerged, aiming to cultivate and apply empathy in design through tools, techniques, and methods. These approaches, predominantly focusing on the 'fuzzy front end' of user research (Sanders & Stappers, 2012), have been tailored to particular user groups traditionally characterized by their vulnerability or perceived distance from designers, such as people with disabilities, the elderly, children, and disadvantaged groups like refugees. Heylighen & Dong (2019) summarize empathic techniques in design, building on Kouprie & Visser's (2009) classification, which includes: research techniques, communication techniques, and ideation techniques. Based on their work, the following definitions describe the aims of each of these techniques:

- Formative empathy: A skill that involves gaining and refining empathy by applying an empathic mindset to user-designer interactions.
- Representative empathy: The projection and reflection of user perspectives through mediated research findings conducted by others.
- Simulative empathy: Temporarily experiencing what it is like to be a specific user and then evaluating the experience through a design lens.

The academic community has increasingly developed more formalized frameworks to clarify the concept of empathy in design and provide a stronger theoretical basis, as will be elaborated in the following section.

2.3.3 Models and Frameworks for Empathy in Design

Although empathy has been the focus of numerous design-related studies, systematic explorations of the concept for its formal conceptualization are scarce. For this reason, the selection criteria for the included examples are not based on their quality but rather on their availability. Specifically, the selected examples are design-oriented works that problematize the ambiguous usage of the term ‘empathy’ in the field. In response, these works aim to develop some form of conceptualization of the term as it relates to design.

Frameworks such as the Empathic Design Framework (Kouprie & Visser, 2009), System of Coordinates on Empathy (Dong et al., 2018), Empathy Types in Design (Hess & Fila, 2016), and Empathic Formation Compass (Smeenk et al., 2019). These frameworks predominantly inform their theory from the psychology field. They aim to identify key dimensions and elements and their relationships to each other that would foster the formation and application of empathy within the design context (Smeenk et al., 2019). More recent discussions on empathy in design appear to have evaluative perspectives relevant to the conceptualization of empathy, such as: identifying core concepts for the operationalization of empathy in design (Surma-aho & Hölltä-Otto, 2021); creating a typology of empathy as an umbrella construct (Chang-Arana et al., 2022); and developing an empathy scale as a measurement instrument for service design (Drouet et al., 2022).

2.3.3.1 Empathic Design Framework

Kouprie and Visser's (2009) framework is widely regarded as a seminal contribution to the conceptualization of empathy in design. Their approach is grounded in a review of empathy concepts from a psychological perspective, with particular emphasis on the affective and cognitive dimensions of empathy, as shown in Figure 2-1.

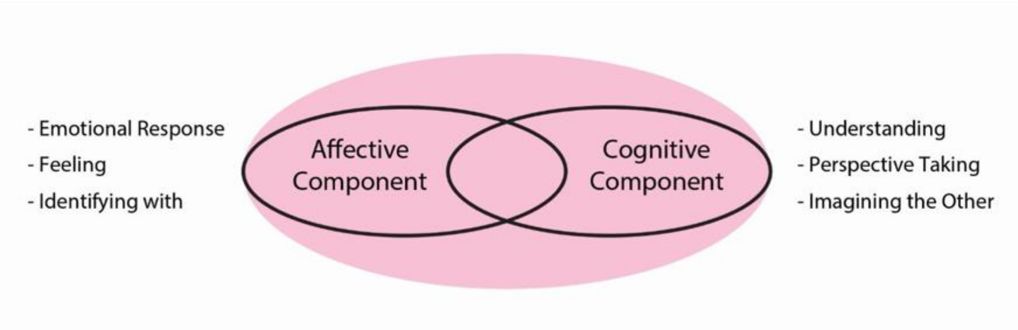

Figure 2-1 Affective and cognitive aspects of empathy (adapted from Kouprie & Visser, 2009)

As a result of their review, Kouprie and Visser (2009) describe the empathic process as "the movement of an empathizer stepping into and stepping out of the empathee's life; and in between, the empathizer wanders around in this other person's life" (p. 444). They combine insights from psychological research, particularly focusing on factors such as empathic ability, affective resonance, and cognitive reasoning, to create a framework applicable to design practice.

According to Kouprie and Visser (2009), the framework is based on the principle that a designer enters the user's world, spends time exploring and engaging with it, and then exits with a deeper and more comprehensive understanding of the user. The framework outlines four key phases of empathy in the design process: (1) discovery, (2) immersion, (3) connection, and (4) detachment.

Discovery: In this initial phase, the designer enters the user's world —either directly through interaction or by studying secondary sources and materials. The primary goal of this phase is for the designer to develop a willingness to explore and understand the user.

Immersion: During immersion, the designer spends time in the user's world, attempting to see from the user's perspective and understand their point of reference.

Connection: In this phase, the designer seeks to establish an emotional connection with the user by reflecting on their own experiences and memories, creating a meaningful and empathetic understanding.

Detachment: Finally, in the detachment phase, the designer steps back from the user's world and re-enters the role of the designer, synthesizing the insights gained and preparing to apply them in the design process.

2.3.3.2 A System of Coordinates on Empathy

Dong et al. (2018) conducted a literature review on empathy across various fields, including philosophical aesthetics, sociology, and psychotherapy, and identified three ambiguous aspects of empathy, as visualized in Figure 2-2: (1) affection versus cognition, (2) subject-oriented versus object-oriented perspectives, and (3) attitude versus ability. Their discussion of the first two aspects closely mirrors themes covered earlier (see Section 2.1). In terms of affection and cognition, Dong et al. highlight a notable tendency to focus on negative emotions when discussing empathy (2018).

The third aspect, technique versus attitude, draws more heavily on design literature. In this context, technique refers to the methods and tools that facilitate empathy in design, while attitude relates to the mindset designers adopt when developing empathy. This aspect introduces a practical dimension to empathy, distinguishing it from more abstract or theoretical interpretations.

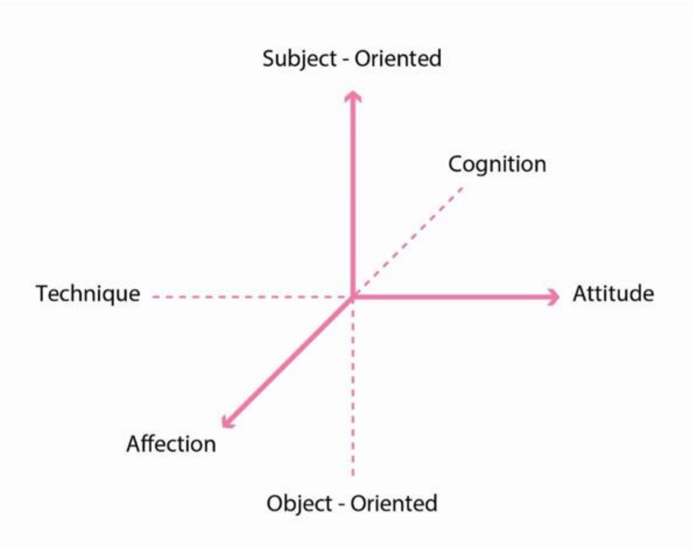

Figure 2-2 A system of Coordinates on Empathy (adapted from Dong et al., 2018)

Although Dong et al. (2018) do not explicitly explain why they used a system of coordinates to represent these aspects or how they positioned them, their work contributes valuable insights to the relatively underexplored area of empathy in design, particularly in its conceptualization and application.

2.3.3.3 Empathic Formation Compass

Smeenk et al (2019), by evaluating the previous accounts of empathy building within design context, proposes the empathic formation compass (Figure 2-3): "The compass—as an analyzing tool—can be used to assess co-designs' evolving processes beyond the mere reliance on methods by plotting the design activities onto the compass'" (p. 61).

Smenk et al. (2019) claims that majority of design activities together with taken perspectives could be positioned on the compass through the guidance of following questions: "[I]s 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? Most of the design activities fit one of the eight parts of the compass or are on a dimension line" (p. 64).

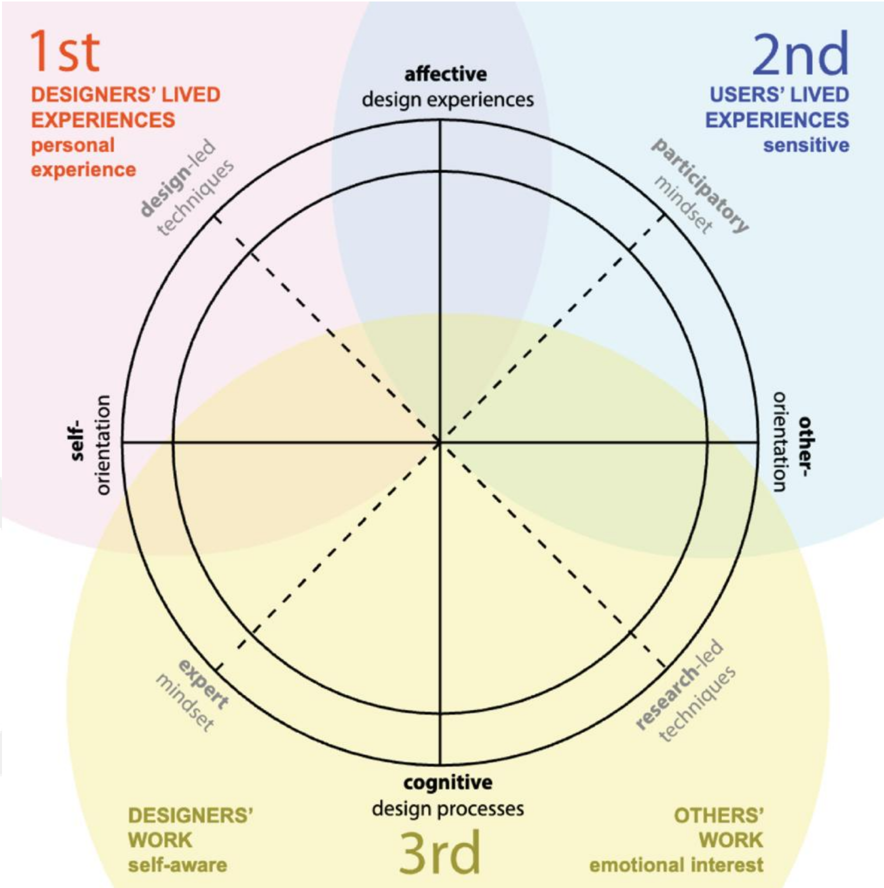

Figure 2-3 Empathic Formation Compass (Smeenk et al., 2019, p.64)

As a tool for design research, the authors value the compass for its ability to assess co-design processes by situating design activities along its dimensions. They suggest that this comparative assessment allows for a deeper understanding of the characteristics inherent in various design methodologies, highlighting their commonalities, differences, and potential gaps. However, they do not provide specific guidance on how to use these insights or what actions to take based on the results.

2.3.3.4 Compassionate Design Framework

Compassionate Design (CD) is an approach that orients around and invites designers to consider three main user needs: *dignity*, *empowerment*, and *security* (Seshadri, Hynes & Reid, 2019). These needs were identified in 12 distinct cases that were analyzed for their remarkably sensitive contexts in which the users expressed their vulnerability, were emotionally engaged and affected by the situation negatively.

According to Seshadri et al. (2019), human dignity stands for accepting the end-users as individuals and their capability to set and achieve their own goals in their pursuit of self-actualization. Empowerment stands for providing the necessary means for the end users to be in control of their own decisions and destinies and letting them be motivated and competent along this way of self-actualization. Security stands for ensuring the end users' short- and long-term well-being, which encompasses their health, finances, physical security, etc.

In brief, since the three sensitive needs of users are basically the three aspects of human experience and closely related to Maslow's hierarchy of needs, designers should be looking for the ways in which they could provide users with assistance with self-actualization (Seshadri et al. 2019). Considering that Compassionate Design prioritizes the dignity, empowerment, and security of the end-users over the functionality of the solution in terms of solving the problem at hand so that the whole product use experience elevates. According to the authors, what could follow this study may be the categorization of the design problems along with the stages of the design process that would be the most promising for using the CD framework. Also, they suggest that considering the intrinsic motivations of the designers and their altruistic predisposition may contribute to the following studies.

2.3.4 Future Direction for Evaluation of Empathy in Design

Section *2.3, Empathy as Conceptualized in Design,* examined the evolution and integration of empathy within the design field, offering a brief overview of its historical roots, current applications, and theoretical frameworks.

The emergence of empathy in design is contextualized within the broader historical movement toward human-centricity, marked by an increasing emphasis on user experience over mere usability. This transition is mirrored in the development of tools and techniques designed to cultivate empathy, particularly in relation to unfamiliar user groups mostly characterized by their perceived vulnerability. The discussion highlighted that while early approaches to empathy in design were largely attitudinal —characterized by sole motivations and allocentric values assigned to empathy— there has been a significant shift toward more structured behavioral applications that integrate empathy systematically into the design process.

A limited number of frameworks, such as the Empathic Design Framework, System of Coordinates on Empathy, and Compassionate Design Framework, reveal a recent concerted effort within the design community to operationalize empathy in a way that is both theoretically sound and practically applicable. These models aim to codify empathy as a multifaceted construct, balancing predominantly the cognitive and affective dimensions, and guiding designers in their efforts to understand and meet the needs of diverse user groups.

Looking forward, the concept of empathy in design is likely to evolve further, especially from a more critical perspective. While empathy remains a foundational concept in human-centered design, its future development will likely involve a more critical and expansive examination of its applications, limitations, and ethical dimensions. Additionally, the growing interest in post-humanist perspectives suggests that empathy in design could expand to include non-human actors and broader ecological systems, challenging designers to consider empathy beyond the human-centric framework.

2.4 Components of Designer Empathy

This section explores the key dimensions influencing how designers cultivate, practice, and reflect on empathy as professionals. It emphasizes empathy as a multifaceted practice, focusing on the potential ways designers internalize empathy and translate it into actionable decisions throughout the process. The discussion begins with *Attitudinal Approaches*, highlighting the mindsets and motivations that frame a designer's orientation toward user understanding. It then moves to *Behavioral Applications*, examining methods and strategies that aim to transform empathy from an abstract concept into concrete insights. The section also reflects on *Evaluative Perspectives*, addressing potential biases, ethical considerations, and limitations in the practice of designer empathy. The rest of the section explores additional notions, including the potential of *Repositioning the Designer* and *Designer Introspection*, which emphasize having a more reflective stance in the empathic processes.

2.4.1 Attitudinal Approaches

Attitudinal approaches from a designer's perspective emphasize the mindset, motivations, and sensitivities designers bring to their work. These approaches involve the deliberate combination of cognitive and affective processes to achieve a deeper understanding of users.

Kouprie & Visser (2009) highlight three key elements of designers' empathy in design: (i) the designer's motivation regarding the advantages of empathy being crucial as the lack of may cause 'unsatisfying' results; (ii) designers' flexibility and deliberately combining affective resonance and cognitive reasoning; and (3) designers' structured investment of time.

Mattelmäki et al. (2014) state that empathic designers are the ones building bridges between design and user research through specific sensitivities they hold (p. 76):

- "Sensitivity toward humans: gathering inspiration and information about and making sense of people and their experiences and contexts;
- Sensitivity toward design: seeking potential design directions and solutions and posing "what if" questions;
- Sensitivity toward techniques: application of generative, prototyping, and visualizing tools to communicate and explore the issues, and;
- Sensitivity toward collaboration: tuning the process and tools according to co-designers, decision-makers, and organizations alike. (This layer is particularly meaningful beyond the traditional design realm, such as when design is acting as a moderator of change)."

In addition to these sensitivities, Mattelmäki et al. warn designers about a potential problem that they call an "empathy trap" because "[i]f designers are not vigilant, the attempt to be empathic might articulate popular reflections instead of innovating more radical futures" (2019, p. 73). In other words, they suggest that designers should be willing to emotionally resonate with the users without losing their cognitive evaluative side.

Töre Yargın (2013) found that practicing designers value empathy greatly for effective communication of user research findings while translating these findings into design requirements. When empathy with users is maintained during the communication of research findings, this would enable designers to come up with innovative ideas based on a deeper understanding of user needs and guide designers to specify additional design criteria that might not be present in the design briefs they are working with. She proposes understanding users' emotions and intangible needs, which are hard to communicate verbally, as an initial condition for designers aiming to achieve empathy.

Although an increasing number of studies celebrate empathically understanding users in literature, Surma-aho et al. (2019) state that very little empirical work has been carried out on what influences designers' empathy. With this motivation, they conducted an interview study with 10 designers having different levels of expertise to understand antecedent designer’s empathy and categorized designers’ accounts on methods and techniques they employed to understand users and cases where they felt concerns and/or distress on behalf of users (Table 2-1).

Table 2-1 Antecedent themes and their categorization by empathy component (adapted from Surma-aho et al., 2019, p. 6)

	Categories		Themes
Cognitive	Evidence-based perspective taking	Self-oriented methods	Be blank slate
			Read between the lines
			Relate to user
			Self-replication
		Other-oriented methods	Ask directly
			Be exhaustive
			Gauge designer perception
			Make user comfortable
			Prepare for interaction
			Reflect back
			Uninterrupted observation
Affective	Anticipatory perspective taking		Imagine user end use
			Imagine user scenarios
	Empathic concern		Concern for user’s past
			Unsafe design
			Unsatisfactory design
	Personal distress		Unsatisfactory design
			Inability to change design

<u>*Cognitive component of antecedents of designers’ empathy:*</u> *Evidence-based perspective taking* results from direct interaction between the designers and the users and concentrates on designer’s deliberate efforts to gather and interpret user information. This antecedent is further divided into two categories based on the self-other distinction aspect of empathy: *self-oriented methods* and *other-oriented methods*. In self-oriented methods, designers deliberately adopt specific mindsets and engage in activities to position themselves for better user interaction, applying mental effort to grasp the user’s viewpoint. In other-oriented methods, designers take

intentional actions before and during user interactions to create an environment that fosters a deeper and more accurate understanding of users.

Self-oriented methods involve designers' deliberate mindsets and activities orienting themselves for user interaction along with the mental efforts given to grasp users' perspectives. *Other-oriented methods* include deliberate actions designers take before and during the user interaction with the aim of creating a suitable environment for a more accurate understanding of users.

<u>*Affective component of antecedents of designers' empathy:*</u> *Anticipatory perspective taking* refers to circumstances where designers "foresee users' characteristics, reactions, and/or behavior related to either the designed product (imagine user and use) or an adjacent situation (imagine user scenario)" (Surma-aho et al, 2019, p. 6). *Empathic concern* refers to the concern felt by designers when they encounter negative previous experiences as they communicated or somehow presented by users, when designers realize safety issues in relation to their prototypes, and when their design proposals are found unsatisfactory. *Personal distress* related to designer-oriented uncomfortable and anxious feelings evoked as a result of not being capable of changes to mitigate the negative experiences of users identified.

In Table 2-2, based on their literature review, Surma-aho & Hölttä-Otto (2022) presents a categorization for core concepts of empathy as a follow-up study. These core concepts of empathy that can be seen as cognitive and affective components influencing how designers internalize and operationalize empathy in their work.

Table 2-2 Core concepts of empathy in design research (Surma-aho & Hölttä-Otto, 2022, p. 301)

Concept	Definition	Analytical Focus
Empathic design research	The intentional methods used to understand others, often discussed with "empathic design."	Emphasizes the use of structured, conscious approaches to gather insights about users. Focuses on user experiences as the basis for design research.
Empathic design action	User-centered and generative activities carried out by designers.	Highlights the active role of designers in applying empathy through user-centered practices, driving practical design outcomes.
Empathic orientation	A designer's preference for human-centered evidence, appreciating others' experiences.	Suggests a strategic choice in design to prioritize user experiences. Emphasizes empathy as a conscious, guiding principle.
Empathic mental processes	Cognitive processes (both automatic and controlled) involved in empathic understanding.	Identifies the mental activities that support the transformation of user data into empathy-driven insights. Acknowledges psychological underpinnings of design empathy.
Combined: Empathic Orientation & Mental Processes	Internal, individual activities supporting the development of information into empathic understanding.	Together, these elements highlight how internal cognitive activities (orientation and processes) shape designers' ability to empathize and apply insights effectively.

Kunrath, Cash, and Kleinsmann explore the concept of Professional Identity (PI) as it applies to designers (2020). PI is a self- and social-perceptive construct crucial for professional development, shaping professionalism, roles, responsibilities, values, and behavior (Kunrath et al., 2020). This concept aligns well with the discussion on attitudinal approaches by highlighting the role of empathy as a personal attribute within the broader framework of Designers' Professional Identity (DPI) (Table 2-3).

Table 2-3 Personal attributes (PA) for Designer Professional Identity (Kunrath et al., 2020, p.306)

Element	Description
Confidence	Certitude of own personal abilities and professional competencies, being able to embrace innovative ideas and to start challenging projects, justifying own beliefs and (ethical) work.
Creativity	Spontaneous impulse to solve problems originated from an interaction with individual psyche and manifest as behaviour.
Emotions	Sensitivity to external inputs, self-awareness, and management of personal feelings, also related to moral and empathetic aspects.
Empathy	Psychological capacity to identify with other's feelings and thinking, which enables helpful and supportive behaviour.
Ethics	Awareness and positioning of possible environmental, social, health or design life performative consequences, or lack of compliance with legislation.
Leadership	Sense of autonomy and managerial attitude, searching and promoting ideas together with strategy and business, providing peers guidance and inspiration.
Motivation	Engagement in an activity due to an inner perception of enjoyability and inherent interest (intrinsic motivation), as well as because of its association with a value outcome (extrinsic motivation). Also, refers to one's curiosity and impetus for exploring and searching.
Openness	Acceptance and embracing of new and unusual ideas or methods, being able to deal with uncertainty and to make changes in a work plan by relying on ability to improvise and remake. Also refers to capacity to deal with different topics and to work with people from different cultures, ideologies or beliefs.
Responsibility	Willingness to learn and to assume responsibilities from mistakes, conscientiously assuming risks, taking care of project details, deadlines, and working within own beliefs.
Social Abilities	Perceived facility on the exchange of tacit knowledge via joint activities: being together, living in the same environment, sharing experiences, and transferring ideas to other people.

Kunrath et al (2020) also argue that empathy and other personal attributes such as emotions, openness, and social abilities are crucial in shaping a designer's professional identity and influencing their cognitive abilities and strategies (Table 2-

4). This insight may support the notion that a designer's attitudinal approach, including their capacity for empathy, is deeply intertwined with their professional development and how they perform their role.

Table 2-4 Design skills (DS) for designer professional identity (Kunrath et al., 2020)

Element	Description
Cognitive Abilities	Capacity of think 'designerly'; understanding the nature of the problem to be solved; developing a distinct way of thinking about the problem and solution spaces; demonstrating high level of abstraction for idea generation and evaluation rounds.
Cognitive Strategies	Ability to set strategies of learning, problem framing, solution development, and problem-solving that allows the flow of cognitive abilities.
Personal Communication	Capacity to communicate clearly and directly, attending to details and empathising with an audience.
Interpersonal Communication	Awareness of communication ability in order to make public presentations, set collaborations, establishing rapport, and to communicate among a team.
Education-based Knowledge	Awareness of basic and specialised technical knowledge in design that compounds the formal education, and domain of technical and design language.
Practice-based Knowledge	Abilities based and developed through practice, expertise and know-how gain. Such as good imagination/representation, IT competencies, use of software, negotiation capacity, and appliance of previous knowledge.

2.4.2 Behavioral Applications

Behavioral applications in design focus on the methods, techniques, and approaches that enable designers to engage with users in a meaningful way. These applications emphasize the practical aspects of user involvement, guiding how designers can cultivate empathy through direct interaction, mediated communication, and simulation of user experiences.

In their recent article (2024), Hyysalo and Johnson suggest a new way of organizing aspects of user involvement in relation to design context (2024). The article identifies several shortcomings in current mappings, listing, and categorization of user involvement methods. Key issues include conceptual muddling due to undifferentiated treatment of techniques, methods, methodologies, and approaches, leading to confusion; many mappings rely on fixed assumptions about the design process that don't match actual practices; they often suffer from arbitrary disciplinary boundaries; lack clarity in naming and structuring; and fail to reflect the dynamic roles of professional designers, resulting in biased categorizations (Hyysalo & Johnson, 2024).

Authors' exploration of user involvement offers valuable insights into organizing the various aspects of user engagement within the professional design context. Their below typology, which distinguishes between techniques, methods, methodologies, and approaches, provides a structured framework that can enhance the application of behavioral techniques in design (Hyysalo & Johnson, 2024)

Techniques: As being the most specific layer: These are the most incremental and specific layers. Techniques include individual tools or actions used in the design process, such as use cases, rich pictures, and action sequence diagrams. They are the elemental tasks needed to realize methods.

Methods: Methods consist of the application of techniques. They are structured ways of carrying out a part of the design process, such as contextual inquiry or cognitive walkthrough. Methods often include a combination of techniques and provide a detailed development process for specific tasks within the design.

Methodologies: Methodologies are instances that combine various methods. They establish the relations between different methods and techniques to form a coherent approach to the design process. For example, contextual design is a methodology that combines methods like contextual inquiry.

Approaches: Approaches are the broadest category and encompass methodologies. They hold overarching goals, guiding principles, fundamental concepts, and principles for the development process. Approaches include the overall strategies for how designer–user relations are organized in design, such as Human-Centered Design (HCD), Participatory Design (PD), and extended design-in-use.

Kouprie and Sleeswijk Visser (2009) report three main classes of techniques to enhance empathy in design. First, designers can obtain empathy through direct contact with users (e.g. observation, interviews, participation in their activities). The designers see through their own eyes the users' situation, condition, behaviors, feelings, emotions and needs. Second, designers can obtain empathy through communication mediated by user researchers. These researchers use special communication tools to convey the stories of users to the designers (e.g. personas, literature and videos). Third, designers can obtain empathy through imagination. The designer steps into parts of the users' experience by simulating the users' condition (e.g. performing role-playing, experience prototyping). In the present study, the first two techniques were used as sources of information for the design teams. The last one was left out because simulating autism with such techniques is not easily done.

In design literature and practice, employing certain items to facilitate empathy is a common approach. The noun 'prop' is used to represent these elements in literature (see Ramírez Galleguillos, Eskenazi & Coskun, 2019), and this usage quite fitting considering the match between the use context and aim of these elements and the noun 'prop's following dictionary definitions (Cambridge University Press, n.d.):

- "(theater/movies) an object used by the actors performing in a play or film"
- "(support) an object used to support something or hold it in position"

Props are used to support the ones who would like to empathize with others mostly in a performative manner, especially for representative and simulative kinds of empathy-building exercises. I identify two categories of props based on their nature: *physical props* and *cognitive props.*

Physical props can be further categorized into three based on their characteristics: *professional physical props* and *make-do physical props*. It is also possible to assign specific application areas and anticipated output as a result of built empathy to each of these sub-categories. Professional Physical Props are predominantly proprietary products purposefully designed to understand users, especially the elderly and those with disabilities. By restricting movement, sight, or hearing (Torrens, 2011), these props aim to emulate researched disability for a person who does not have it.

The use of professional props has its origin in ergonomics studies held in the automotive industry with an initial commercial motive to serve the target customer group better. The use of the term empathy is not prevalent in these initial studies. However, later, the literature extends itself to studies involving professional physical props with the hopes of capturing empathy with users. Both kinds of studies are characterized by a dominant need-finding aim and accompanying scientific data to support the discovered needs (Torrens, 2011). Studies revolving around universal and inclusive design areas can be claimed to be the main application area of professional physical props. For example, an aging suit (Carr et al., 2013), which restricts certain movements of the person who wears it, aims to empathize with the older adults' driving experience. There is also a product called Pregnancy Bell to imitate the pregnancy experience when driving.

Make-do physical props show themselves in the literature mainly in two forms. First, to represent a disability by creating mock-ups. Second, making use of an object out of its intended use. For the second one, wearing hockey gloves to restrict hand mobility could be given as an example (Torrens, 2011).

Cognitive props are well-known user representation techniques such as empathy maps, personas, and storyboards. Recently, the use of virtual augmentation technologies for more cognitive experiences is also on the rise.

2.4.3 Evaluative Perspectives

The concept of empathy in design is often perceived as inherently positive, but this section reflects on the evaluative aspects, highlighting potential limitations, ethical considerations, and challenges associated with its application. As designers attempt to understand users' experiences, they interpret observed or communicated information through various cognitive processes, which can sometimes lead to biases or misinterpretations. Without devaluing what empathy brings to design, understanding and addressing such limitations are quite critical for understanding designers' empathy as they highlight missing or erroneous aspects of their execution of empathy within design. Understanding certain roadblocks and critically assessing the methods employed to foster empathy is essential for improving the quality and sensitivity of empathy-driven design. Daniel Gilbert identifies four roadblocks to empathy during the inferential process (as cited in Mitchem, 2015, p. 19):

- Idealism: people see things as they expect them to be
- Egotism: people see things as they want them to be
- Realism: people think they see things as they are
- Circumstantialism: people think about only the things they see

Empathic Horizon: In 1999, McDonagh-Philp & Denton introduce the *empathic horizon* concept to the design, referring to the range or scope of empathy that a designer can naturally access based on their own experiences, background, and training. Therefore, it is essential for designers to use various techniques and tools, such as focus groups, questionnaires, surveys, observations, interviews, and product testing, to explore and understand the broader culture beyond their immediate empathic horizon.

Reductionism of Other's Experiences: Bennett & Rosner (2019) analyze popular empathy activities performed to understand people with disabilities and conclude that empathy "works to both powerfully and problematically align designers with the values of people who may use their products." (p.1). They warn designers that empathy may work opposite of its intended aim and distance designers from the lives and experiences of those that they want to hope to get closer. To illustrate, simulation techniques such as blindfolds would make designers concentrate on their own experience of wearing blinds and may not require considering users with disabilities. By means of simulating disability or using personas with disabilities, designers are stuck with practical and achievable steps of a task and they may overlook "a wider history of disability, activism, affective understanding, and personal capacity that they could meaningfully draw upon." (Bennett & Rosner, 2019p. 10). In their toolkit prepared for inclusivity in design, Microsoft Design (2016) also raises concern over traditional ways of building empathy for exclusion and disability. They highlight the misleading role of simulating different abilities through blindfolds and earplugs and encourage such an empathic learning based on time spent with people to grasp their own perspective regarding their adapting to diversity. When empathy is employed with this mindset, designers can go beyond identifying existing barriers (Microsoft, 2016).

Imbalanced Power Dynamics between Designers and Empathized Others: Heyligen and Dong (2019) argue designers overlook ethical decisions with regard to the use of methods and approaches to accomplish empathy with end-users. The degree to which designers will empathize with end-users and their contexts specifies the solutions the designer will consider useful or not valuable on their behalf (Lloyd, 2009). During acquiring empathy, the existence or lack of the designers' ideals and values determines trade-offs and the designers' social influence (Le Dantec & Do, 2009). Bennett & Rosner's (2019) comments on empathy in design conducted around disability highlights: "Attending to the work done to narrate disabled perspectives, we examine three modes of displacement threaded through the accounts: (1) denying the authority of disabled experience, (2) differentiating disabled and designing bodies, and (3) treating the empathized as spectacle. With these thematic threads, we show how empathy's gaps work as sites for reckoning with wider configurations of power in design." They further align these respectively with (1) "denying the authority of disabled experience"; (2) "rendering designers as non-disabled people and people with disabilities as non-designers"; and (3) "treating the disabled users as a spectacle".

Building on the understanding of the limitations and challenges in empathy application, the following section shifts focus to repositioning the designer's role. By reconsidering the designer's position in relation to users, especially in terms of power dynamics and ethical considerations, we can explore more inclusive and dialogical approaches to empathy in design.

2.4.4 Repositioning Designer in Reference to Empathy

Repositioning the designer in the context of empathy involves critically examining how designers relate to users and the implications of this relationship. This section explores the concept of 'positioning,' not only as a spatial or organizational strategy but also as a reflection of power dynamics and moral considerations in design. By adopting a more dialogical approach, designers can move from merely representing user experiences to actively engaging with them in a more collaborative and empathetic manner.

The term 'empathy' in design often communicates, whether explicitly or implicitly, the reasoning behind how designers and users are positioned relative to one another. This positioning extends beyond design methods to encompass broader power dynamics and interaction considerations. The verb "positioning" itself provides a valuable framework for examining these issues. According to Oxford Languages (n.d.), "positioning" can mean:

- put or arrange (someone or something) in a particular place or way,
- promote (a product, service, or business) within a particular sector of a market, or as the fulfilment of that sector's specific requirements,

- portray or regard (someone) as a particular type of person (Oxford Languages, n.d.).

In addition to that, ‘positioning’ as a concept from Positioning Theory “deals with “the power dynamics that shape interactions and positioning processes through the concept of moral orders.” (Andreouli, 2010, p. 14.5). To evaluate this positioning, first, the importance of dialogical approaches between user and designer is highlighted; following that, the designer’s introspection is evaluated that would enhance this desired dialogical approach.

Cipolla and Bartholo (2014) argue that designers should strive for inclusion in their design process rather than empathy to achieve dialogue with end-users. They argue that in enacting empathy, the designer excludes their own experience and assumes (or presumes) what the other feels or experiences, rather than listening and entering dialogue. They produce these arguments when discussing the designer’s responsibility, for which they advocate designers to transform their current position to build dialogic relationships with the users. According to them, the possibility of genuine dialogue motivated by designers’ personal intention goes beyond supporting others by involving empathically, for the sake of socially responsible design (Cipolla and Bartholo, 2014).

For improving dialogical approaches of designers toward users, Bennett & Rosner (2019) suggest the reexamination of empathy in design and how designers build empathy with targeted, mostly vulnerable user groups, and propose a shift from “being like” to “being with” users with the following commitments (p. 298):

- Instead of seeking to represent another’s experience, partnerships should be formed to imagine the design encounter collaboratively.
- Rather than striving for a definitive understanding, the focus should be placed on engaging in the process of ongoing attunement.
- Instead of attempting to create symmetry, it is important to recognize and work with asymmetry.

While designers position themselves towards users and employing empathy to understand them, introspectively evaluating their position and reflecting upon identified elements might lead to better dialogical approaches and genuine user engagements.

2.4.5 Designer Introspection

Kohut (1997) briefly defined empathy as “vicarious introspection” (p. 306) and Levine (2007) adds that “[e]mpathy depends on our capacity for introspection.” Gould (1995, p. 719) defines introspection as “an ongoing process of tracking, experiencing, and reflecting on one’s own thoughts, mental images, feelings, sensations, and behaviors.” Xue and Desmet (2019) explain introspection as “experiential and reflective beings, we all introspect in everyday life to understand our internal states and interactions with the external world. When actively reflecting on an experience and exploring questions such as, 'What is causing me to feel this way?', 'How can I articulate this?', or 'How can I either maintain or stop this unwanted or wanted experience?', a person is practicing introspection, even though this process frequently happens automatically and without a structured approach (Xue and Desmet, 2019, p. 27).

Xue and Desmet (2019) argue that experiencing and understanding what users experience half of the story is only and suggest that designer’s introspection is the completing half which refers to “examining and interpreting empathized experiences in order to generate design insights and envision new experiences” (p. 30). Traditionally, and because of the taboos imposed on introspection, design researchers are not quite willing to acknowledge self-introspections have any role in their understanding of the experiences.

Tables 2-5 summarize Xue and Desmet's work on designer's introspection, with key features assigned to them. *Interactive introspection* is quite fitting for comprehending how empathy is employed within design circles with respect to the position of designers toward users. There are three features that characterize an interactive introspection activity. Apart from its core feature that necessitates both researcher and subjects to introspect, interactive introspection requires active sharing of data and insights generated among research participants, and the whole process appears emotionally engaging and empathic for both parties. Xue and Desment (2019) suggest that there is a desire to build an equal partnership between researchers and subjects.

Another potential contribution of the designer's introspection is the temporal aspect of empathy in design. Regarding the conceptualization of empathy, while appropriating theories and concepts from psychology, authors oftentimes do not consider the temporal aspect, which differs considerably during the empathy formation process in design. The process that requires a certain amount of time for the researcher to follow designated steps with an alert mind (that is fueled predominantly by cognitive empathy) necessitates designers to pay attention not just to empathize with the target, but also to going through the list of tasks and conditions to be experienced as the target (since researchers are the main data collection instrument). However, the referent processes in psychology describe the almost momentarily formation of empathy.

Table 2-5 Five categories of introspective methods (Adapted from Xue and Desmet, 2019)

Category	Features	Focus	Epistemic Perspectives
Researcher Introspection	No subjects other than the researcher are involved as the introspector.	The researcher themselves	Researcher/Subject (R/S): first-person
Interactive Introspection	The researcher and subjects form a collaborative and mutually emphatic introspecting group.	Both the researcher and subjects	Researcher/Subject (R/S): first-person & second-person Subject/Researcher (S/R): first-person & second-person
Syncretic Forms of Introspection	The researcher includes their own introspections as part of the date.	Both the researcher and subjects	Researcher/Subject (R/S): third-person & first-person Subject (S): first-person
Reflexivity within Research	The researcher uses their introspections to enable contrasting comparisons.	The subjects	Researcher/Subject (R/S): third-person & first-person Subject (S): first-person
Guided Introspection	The researcher does not introspect, but only guides the subjects to.	The subjects	Researcher (R): third-person Subject (S): first-person

Besides how designers might position themselves and engage with users, introspection might contribute to addressing the temporal aspect of empathy-building activities in design. Wallendorf and Brucks (1993) identified three different temporal manners through which researcher introspection can be applied: retrospectively, contemporaneously, and as a projection into a hypothetical future. Xue and Desmet (2019) take these temporal manners as a basis and explore their potential for a designer's introspection as follows (p. 54-56):

Retrospective Introspection: This approach involves the researcher reflecting on significant past life events. Although it may not fully capture the essence of an experience as it unfolds, it provides valuable insights into how memories shape and influence a designer’s current empathic abilities and overall design experience.

Concurrent introspection: In this approach, the introspector records and sometimes analyzes their experiences either immediately or shortly after they occur. This method relies on the "experiencing self," the self that describes how one feels in the present moment, to report, evaluate, and thoroughly examine the lived experience.

Imaginary introspection: Beyond reflecting on past or present experiences, design researchers also explore potential future possibilities. They assess how changes in technology, society, politics, economy, culture, or psychology might influence and transform future experiences, values, and concerns.

2.4.6 A Summative Framework Towards Methodology

The literature reveals that empathy is frequently defined by the challenge of understanding users who are not only different from designers but are also situated in contexts far removed from the designers' everyday experiences. This distance necessitates a deeper, more sustained form of engagement with the notion of user that goes beyond momentary encounters and superficial engagements.

While existing theoretical frameworks and behavioral applications provide valuable insights into how empathy can be cultivated and applied in design, they often fall short of capturing the complexities involved in real-world design practice. Specifically, there is a need for a broader understanding of empathy that considers the ongoing, dynamic relationship between designers and these user groups they aim to get know and represent better through projects in practice which involves additional stakeholders. This study seeks to fill this gap by moving beyond theoretical constructs to explore how empathy is performed by designers in practice, particularly in project contexts where user groups are unfamiliar to the designer. To facilitate this exploration, the following tentative framework, which I have termed the *ABE Framework of Designer Empathy*, humbly synthesizes key concepts from the literature and their interrelated dynamics (Figure 2-4).

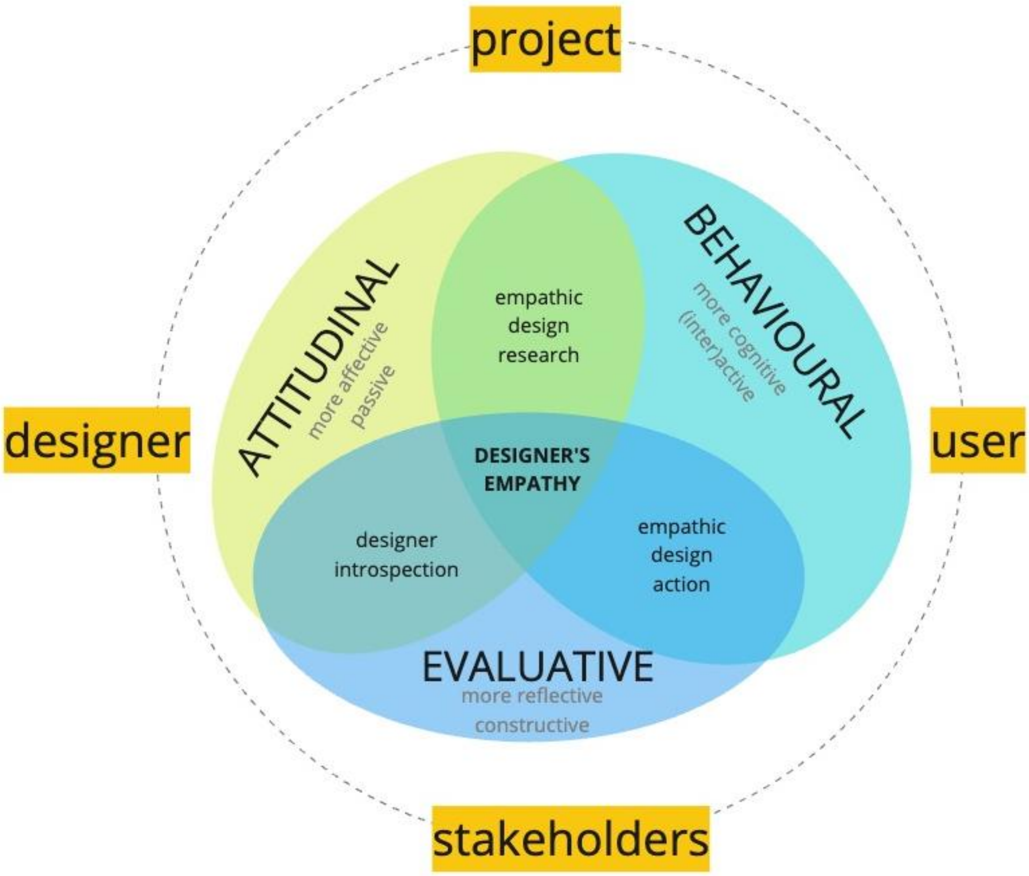

Figure 2-4 The ABE Framework of Designer Empathy

The framework integrates three core components: *Attitudinal*, *Behavioral*, and *Evaluative*, each contributing to the broader concept of *Designer Empathy*.

Attitudinal approaches emphasize the designer's mindset, values, motivations and sensitivity towards users and broader project context, centralizing around affective and passive dimensions. This component underlines the importance of empathic design research and designer introspection, where the designer’s personal engagement with the notion of user and notion of the designer-self build a foundation of empathy that informs the design process.

Behavioral applications are more interactive and cognitive, involving designers' direct actions to understand and connect with users. This includes the active use of methods, techniques, and strategies that facilitate a deeper, experiential understanding of the user, often through tangible ways during empathic design research and empathic design action and directly influencing design decisions and outcomes.

Evaluative perspectives involve reflective and constructive practices, where designers critically assess their own experiences and ongoing empathy towards users within the broader project context. This involves considering the impact of their attitudes and behaviors on the users, on themselves, and on other involved stakeholders and refining their approaches based on introspection and feedback.

CHAPTER 3

METHODOLOGY

The aim of this study is to understand designers' empathy from their own perspective, particularly as they engage with user groups that are unfamiliar to them. This thesis's problem background (Section 1.1) highlights the significant gap in the current literature regarding the actual practice of empathy in design. While there is a growing body of research on how to understand users empathetically, there is limited empirical work that examines the influences and outcomes of designers' empathy (Surma-aho et al., 2019). Cash (2018) suggests that design research encompasses both descriptive examinations of design in context and prescriptive propositions for how design should be conducted.

Recognizing that empathy is often mentioned in design processes when addressing the needs of unfamiliar user groups, then studying designers' experiences in a qualitative manner would provide valuable insights into how empathy is understood and applied in practice. The methodology centers on semi-structured interviews, which provide the flexibility to explore designers' attitudes, behaviors, and evaluative reflections —implicitly connected to empathy— through their real-life project experiences.

The chapter begins with an overview of the research design, highlighting the qualitative nature of the study and the suitability of semi-structured interviews for exploring the lived experiences of designers. Following this, the interview protocol is detailed, explaining how interviews were structured to elicit insights into the designers' indirect and direct engagement with unfamiliar user groups. The section continues by discussing the conduct of interviews. Finally, the participant selection and recruitment process is outlined, followed by an explanation of the data analysis approach, which utilized thematic analysis to uncover key themes related to empathy in design.

3.1 Semi-Structured Interviews

Research is a systematic approach to investigating phenomena with the goal of generating knowledge and understanding (Archer, 1995; Gillham, 2000; Merriam, 2009). Research approaches can be broadly categorized as qualitative, quantitative, or mixed methods, each employing different methods to varying degrees (Creswell, 2013). Qualitative methods focus on collecting and interpreting data about people, their lived experiences, and the meanings they attribute to those experiences when making sense of the phenomenon being studied. On the other hand, quantitative methods primarily involve gathering numerical data through counting, measuring, and analyzing statistical patterns related to the studied phenomenon (Crouch & Pearce, 2012; Gillham, 2000; Merriam, 2009).

Descriptive phenomenology is a qualitative research approach that aims to understand and describe the lived experiences of individuals within a particular phenomenon or topic of interest. It involves exploring and capturing the essential qualities and structures of these experiences as described by the participants themselves. In relation to this study, descriptive phenomenology is a suitable approach to gain insights into designers' experiences in relation to design empathy and their interactions with special user groups.

Jennings (2005) explains that semistructured interviews, which are less formal than structured interviews, revolve around generic foci or a set of predetermined themes. The order in which these themes are discussed can vary across interviews, depending on responses to initial questions that guide the conversation. According to Jennings, establishing rapport in semis-structured interviews is crucial to ensure that rich, in-depth information is obtained during the interview process, along with addressing issues of reciprocity —where there is a mutual exchange of information (2005).

Jennings notes that the advantages of semistructured interviews are based on interactive and conversational exchanges between the participant and the researcher, closely mimicking real-world dialogue. However, the drawbacks include the extended time required to conduct them and the large amount of data generated for analysis (Jennings, 2005).

By conducting semi-structured interviews and analyzing the participants' descriptions, the researcher can uncover the meaning, essence, and underlying themes related to empathy in design from the perspective of designers. In the context of descriptive phenomenology, such interviewing is a qualitative data collection method that allows participants to articulate the meaning they attribute to their lived experiences in their own words (Marshall & Rossman, 2016; Seidman, 2013).

3.1.1 Interview Protocol

The primary aim of this research is to explore the concept of empathy from the designers' perspective, focusing on how it manifests within design practice. To achieve this, the semi-structured interviews follow a methodical approach, where the term ‘empathy’ is initially avoided. Rather than directly addressing empathy, the interview protocol is designed to explore attitudes, behaviors, and evaluative perspectives that indirectly relate to empathy. The goal is to allow insights related to empathy to emerge naturally from the participants' discussions about their actual experiences.

The interview questions (see Appendix D) are structured to investigate multiple facets of the participants' design experiences, particularly their involvement with projects related to unfamiliar user groups. The questions are divided into four key stages:

1. *Introduction and Background:* Participants are first introduced to the purpose of the research, with assurances of confidentiality and anonymity. A brief overview

of the interview structure is provided, setting expectations for the conversation. Following this, information is gathered about participants' professional backgrounds, including their educational history and career trajectory. This part establishes the participant’s connection to the design discipline and serves as a foundation for understanding how their professional experiences may inform their approach to unfamiliar user groups.

2. *Project Experiences:* The second stage, which is the longest in terms of content, focuses on participants' design projects, particularly those involving unfamiliar user groups. These projects are either predetermined before the interview or mentioned in the discussion's first stage. In this part, participants are encouraged to reflect in-depth on their experiences working with these user groups and other stakeholders during the design process. This stage is further structured around the following sub-stages derived from the ABE Framework for Designer Empathy developed based on the literature review (Section 2.4.6) with reference to the framework’s dimensions:

    Attitudinal Approaches: To explore the participants' attitudes toward empathy in design, the interviews probe into their beliefs and values regarding the understanding of unfamiliar user groups. Participants are encouraged to reflect on their personal experiences and describe their level of familiarity with these user groups. This part aims to uncover the motivations behind designers’ familiarization approaches in reference to empathy.

    Behavioral Applications: This part of the interview focuses on the practical methods and strategies designers use to familiarize themselves with unfamiliar user groups. Participants are asked about the specific tools, techniques, and processes they employ to gather insights and understand the needs of these groups. This part highlights the behavioral aspects of familiarization in reference to empathy, identifying how empathy is translated into actions in design practices.

Evaluative Perspectives: To gain a critical view of the whole familiarization with the user group process, participants are asked to critically reflect on their experiences throughout the project lifecycle. This part explores how designers make sense of the insights they gather and how they translate them into design decisions. Participants are prompted to discuss any challenges or limitations they face when familiarizing themselves with user groups. Additionally, they reflect on user engagement's overall value and impact in the design process. This evaluative perspective aims to uncover how designers assess the success of their empathetic practices and the extent to which user engagement informs design outcomes.

3. *Direct Questions on Empathy:* The third stage of the interview directly addresses the concept of empathy. After discussing their projects, participants are asked to reflect on their experiences through guiding questions encouraging them to share their views on empathy in design. This section is designed to allow participants to provide their own definitions of empathy, how they perceive its role within their design practice, and how empathy manifests in the design outcomes. The questions in this part are deliberately structured to invite participants to think critically about empathy independently of their previous project discussions.

4. *Closing and Final Reflections:* In the final stage, the decision to introduce empathy-related questions only toward the end of the interview is explained to participants. Following to that, the interviews conclude with an open segment, allowing participants to share any additional thoughts or insights on empathy in design. This final opportunity for reflection ensures that participants can contribute ideas that may not have been covered during the structured portions of the interview. The session ends with expressions of gratitude for their time and willingness to participate in the research.

3.1.2 Interview Conduct

The interviews are conducted via videoconferencing. The COVID-19 pandemic[1] and the concerns and restrictions that came along with it transitioned in-person qualitative research interviews to online platforms (Oliffe et al., 2021). Zoom, a leading video conferencing tool, is selected for this research due to its comprehensive features, such as online meetings, messaging services, session recording, secure storage, screen sharing, and on-screen annotation (Archibald et al., 2019; Zoom Video Communications Inc., 2016).

According to Gray (2020), Zoom video conferencing reduces research costs and enables researchers to reach larger and more diverse participant groups, potentially leading to an increase in the number of studies. Archibald et al. (2019) recommend Zoom as being a competent platform for conducting qualitative interviews and collecting related data compared to similar platforms. As a result of their study, they identified Zoom's positive attributes from the researcher's and participants' perspective, which are convenience, ease of use, security (in terms of data record and storage), interactivity, and unique features such as screen sharing and video recording. The authors highlight technical difficulties encountered during the interviews as the dominant issue, especially while establishing the call. However, such issues did not greatly affect the perceived quality of the interview and the experience.

Before interviews, interview questions are tailored using the background documents and research reviewed for each participant. At the beginning of the interviews, participants are reassured that, while the primary language of the conversation is standardized for uniformity across all interviews, they are encouraged to use English

[1] The term "pandemic" refers to the global outbreak of COVID-19, caused by the novel coronavirus SARS-CoV-2 (World Health Organization, n.d.). This health crisis led to unprecedented public health responses, including widespread lockdowns, social distancing, and the rapid adoption of remote work, education, and communication technologies.

terminology if they find it more comfortable or accurate. This consideration is particularly relevant for participants educated or residing in English-speaking environments.

During the Zoom interviews, two screens are used: one for displaying questions and relevant documents collected about participants and their projects, and the other for the video conferencing platform. Initially, efforts to maintain eye contact by typing notes on the same screen where the questions are displayed, positioned near the camera, felt unnatural and awkward for both the interviewer and the participants. To resolve this, note-taking is switched to paper. At the beginning of each interview, participants are informed that notes will be taken on paper, so they are assured that this will not affect the interviewer's attention or engagement during the conversation. This adjustment enhances the flow of the interviews, making them feel more natural and comfortable. Additionally, taking notes on paper facilitates a smoother use of the laddering approach, allowing for further questioning of participants' responses in-depth.

Each interview, lasting approximately two hours, follows a semi-structured protocol as described in the previous section providing a flexible framework that allows for in-depth exploration. While a set of predetermined questions is used, they are dynamically adapted and expanded upon based on the flow of the conversation, ensuring a more engaging and responsive dialogue.

Participants were encouraged to share any relevant documents or project-related materials through screen sharing when they deemed it necessary. The process is recorded digitally, with both the audio and visual content captured for thorough documentation. Screenshots are also taken during these sessions to ensure key information is preserved and can be referenced later for analysis.

Since the interviews are conducted post-pandemic, a time when most people have become accustomed to videoconferencing, there were no significant challenges observed in engaging participants or ensuring effective communication. This may suggest that the normalization of virtual interviews during the pandemic helps participants adapt to and feel comfortable with this format. Yet, participants sometimes appear underwhelmed, which likely stems from their perception of their expertise relative to the academic rigor they associate with the researcher's background. Despite being professionals in their field, some participants may feel that their knowledge or experiences are insufficient to meet the perceived expectations of an academic inquiry. This situation may resulted in lack confidence in particpant responses, not due to traditional power dynamics in interviews, but rather their self-assessment in relation to perceived academic standards or the complexity of the questions posed.

3.2 Participants and Projects

In qualitative studies that aim for a comprehensive and in-depth understanding of the phenomenon under investigation, participant sampling is often purposeful, nonrandom, and involves few participants (Crouch & Pearce, 2012; Merriam, 2009). Following this approach, the sampling strategy for this qualitative study is purposeful, allowing for the deliberate selection of participants who possess relevant experiences and insights related to the research questions.

3.2.1 Participant Selection Criteria

The targeted approach to participant selection enhances the likelihood of obtaining rich and meaningful data that can illuminate various aspects of empathy in design — attitudinal approaches, behavioral applications, and evaluative perspectives. The following sampling criteria have been identified:

- *Engagement with Unfamiliar User Groups:* A crucial criterion for participant selection is their involvement in design projects aimed at user groups that they are not a part of. As highlighted earlier, an overview of studies on empathy in design reveals that self-modeling of targeted user groups by designers is often not possible due to the unfamiliar nature of these groups from the designers' perspectives. In this study, these groups are categorized as:

  - *Vulnerable User Groups:* Individuals or communities who experience heightened levels of sensitivity, marginalization, or fragility due to various socio-economic, emotional, or physical factors, such as children, refugees, people with disabilities, low-income families, and elderly individuals.
  - *Specialist User Groups:* Professionals such as doctors, soldiers, and other specialists whose roles demand specific knowledge and context for effectively using designed products.

- *Educational Background:* Participants must have an educational background in a design profession at the graduate and/or undergraduate level. This ensures that selected participants possess the theoretical knowledge and practical skills necessary for design.
- *Willingness to Share Information:* Participants must be willing to share information about their finalized or ongoing design projects. This criterion ensures that participants are open to discussing their work, sharing their experiences, and providing insights into their design processes.
- *Language Preference:* To mitigate challenges associated with conducting interviews in multiple languages, this study focuses on proficient Turkish-speaking participants.
- *Sample Size:* The sample size for qualitative studies is typically smaller than quantitative studies. The specific number of participants will depend on data saturation, which is reached when new information or themes cease to emerge from additional interviews.

3.2.2 Recruitment Process

Initial participants were identified through professional networks, with input from thesis supervisors who provided suggestions for potential candidates. Three participants were initially selected, one of whom took part in a pilot study to test the interview structure. The pilot did not require major adjustments, so the participant was included in the final sample. The early recruitment phase was expedited by familiarity with these initial participants and their work with unfamiliar user groups.

As the study progressed, the participant pool was expanded through a snowball sampling method. Participants were asked to recommend other designers with relevant experience, which helped broaden the sample while maintaining the study's focus on unfamiliar user groups. Early recruitment remained flexible, accommodating a variety of participants with diverse backgrounds and project experiences. However, as the study evolved, a more targeted strategy was implemented to ensure diversity in both projects and user groups. For instance, once a sufficient number of child-related projects had been covered, additional designers with similar project backgrounds were excluded to prevent over-representation.

The interview process lasted approximately one year, with most interviews conducted consecutively. Following the initial set of interviews, a data review indicated potential gaps in the sample, leading to two additional interviews conducted later in the process. Although gender was not a primary focus of the study, two male participants were included later to achieve a more balanced gender distribution. While gender diversity was not explicitly analyzed, including a range of perspectives likely shaped by gender added depth to the findings.

Participants were contacted through two primary methods: direct email and LinkedIn messaging. For those whose contact information was available, personalized emails were sent outlining the research context and inviting participation. In cases where direct contact information was unavailable, LinkedIn was used as an alternative platform for outreach. The messages, both via email and LinkedIn, provided an introduction to the research, including its focus on unfamiliar user groups, and invited participants to take part. If participants agreed, they were asked to share relevant documents or background information related to their work, facilitating a more focused discussion during the interviews.

In addition to the materials provided by participants, publicly available resources such as articles, presentations, or podcasts were reviewed whenever possible. For instance, in one case, a podcast featuring one participant discussing their design strategies was used to tailor interview questions more precisely. This preparatory work ensured a deeper understanding of each participant's design process, leading to more productive and insightful interviews.

Balancing the diversity of participants posed challenges, particularly due to the limited number of designers with specialized experience, such as those working with individuals with visual impairments. Nonetheless, efforts were made to ensure that a broad spectrum of unfamiliar user groups was represented in the final sample.

3.2.3 Characteristics of the Participants

The sample size for this study is 20 participants. Table 3-1 outlines the characteristics of these participants. The participants in this study come from various professional backgrounds in design, holding positions across the industry, entrepreneurial ventures, and partially in academia. With educational qualifications ranging from bachelor's to doctoral degrees, the group brings a wide range of expertise and experience, which reflects their engagement in different aspects of design and research. The participants have experience levels spanning from 3 to 29 years, with several occupying senior positions such as lead designers and managers. There are other participants with relatively fewer years of experience, such as P4, who has three years of experience and holds a bachelor's degree.

Table 3-1 Characteristics of participants

ID	Gender	Highest Degree	Years of Experience
P1	F	Doctoral	10
P2	F	Masters	13
P3	F	Doctoral	9
P4	F	Bachelor's	3
P5	M	Masters	6
P6	M	Masters	17
P7	F	Masters	9
P8	F	Masters	8
P9	F	Masters	10
P10	F	Bachelor's	15
P11	M	Masters	6
P12	M	Doctoral	16
P13	M	Bachelor's	21
P14	M	Masters	19
P15	F	Bachelor's	6
P16	M	Masters	25
P17	F	Bachelor's	6
P18	F	Bachelor's	11
P19	M	Bachelor's	29
P20	M	Masters	8

Many of the participants hold advanced degrees —11 out of 20 have earned either a master's or doctoral degree— which emphasizes the strong academic foundation within the group. Several participants have combined academic achievements with experience in design practice. For example, participants with a doctoral background, such as P1 and P3, have combined their research expertise with applied work in UX and industrial design, leading them to engage with both the theoretical and practical dimensions of their topic of interest. Also, several participants have worked in global companies and across different cultural contexts.

In summary, participants in this study collectively represent a blend of practical industry experience, a commitment to innovation and social impact, and academic interest. Their diverse level of working experience, ranging from early-career professionals to seasoned experts, along with their involvement in global and cross-disciplinary projects, make them well-equipped to offer nuanced perspectives on the role of empathy in design and for designers.

3.2.4 Characteristics of Discussed Projects

Table 3-2 highlights the characteristics of the projects identified during the interviews. The ID column uniquely identifies each project with a combination of letters and numbers. The initial part, such as “P1” or “P2,” denotes the participant number, while the letter suffix (e.g., A, B) indicates multiple projects discussed with the corresponding participant where applicable. Projects with a green-toned background indicate a focus predominantly on vulnerable user groups, while those with a blue-toned background emphasize a focus predominantly on specialist user groups. Additionally, projects highlighted in a darker tone within both color categories represent the main project discussed during the interviews. This table categorizes projects by illustrating the intersection between industries, products, user groups, company types, and the roles of designers.

- *Industry:* In the industry column, each project is classified by the field or sector it belongs to. The industry categorization for the project is based on LinkedIn industry codes, which offer a tailored framework specifically for LinkedIn's platform (Microsoft, n.d.). The industries represented include medical equipment, robotics, consumer electronics, household appliances, social enterprise, and non-profit organizations, among others.

- *Product/Service:* The product/service column describes the specific offering or solution being designed or developed within each project. These range from healthcare devices (such as prosthetics and respiratory machines) to interactive robotic companions and wearable technology for monitoring pet animals. Sometimes, the focus is on software solutions, such as mobile applications for medical condition management, or social services, including empowerment programs for vulnerable communities. This column captures both physical products and digital or service-oriented solutions.
- *User Groups:* The user groups column outlines the primary audiences or beneficiaries targeted by each project. The user groups are diverse and include children with chronic illnesses, older adults with Alzheimer's disease, caregivers, medical professionals, and underserved communities, such as refugees and racially oppressed groups. Some projects focus on specific needs within particular demographics, such as people with disabilities or pet caregivers. This column identifies the end users who directly benefit from the products or services.
- *Company:* The company column identifies the type of organization involved in developing the product or service. The organizations vary in type, including start-ups, non-profit organizations, corporate/in-house teams, university-community collaborations, and self-initiated projects. This column provides context about the institutional framework behind each project, showing a mix of commercial ventures, academic collaborations, and social enterprises.
- *Role:* The role column describes the position or responsibility of the designer within the project. Roles such as design researcher, industrial designer, social designer, and UX/UI designer are listed, with many designers holding leadership roles such as founder, co-founder, or coordinator. This column highlights the designer's specific involvement in the project's development,

showing both creative and managerial responsibilities in fields like industrial design and user experience.

Table 3-2 Characteristics of the discussed projects

ID	Industry	Product / Service	User Groups	Company	Role
P1-A	Household appliances	New product development for emerging markets	Underserved communities	Corporate / In-house	Design researcher
P1-B	Robotics	Interactive robot companion	Older adults with Alzheimer's disease & their caregivers	Start-up	Design researcher
P2-A	Consumer electronics	Wearable tracking and monitoring device for pet animals	Pet animals, caregivers, & veterinarians	Start-up	Industrial designer (Founder)
P3-A	Robotics	Creating and distributing prosthetics for economically disadvantaged	Children with physical disabilities, their caregivers, volunteers	Non-profit organization	Communication designer (Coordinator)
P4-A	Medical equipment	Healthcare solution for children with Type 1 diabetes	Children with chronic illnesses, their caregivers & medical professionals	Start-up	Industrial designer (Founder)
P4-B	Medical equipment	Concept design solution for children with Type 1 diabetes	Children with chronic illnesses, their caregivers & medical professionals	Uni-company collaboration	Industrial designer
P5-A	Medical equipment	Healthcare solution for respiratory diseases	Children and adults with chronic illnesses, their caregivers & medical professionals	Start-up	Industrial designer (Founder)
P5-B	Medical equipment	Concept design solution for children with respiratory diseases	Children with chronic illnesses, their caregivers & medical professionals	Uni-company collaboration	Industrial designer
P6-A	Design services	Miscellaneous game and toy design	Children in general	Design consultancy	Industrial designer (Founder)
P7-A	Social enterprise	Social inclusion and support services for refugees	Refugees	Start-up	Social designer (Co-founder)
P7-B	Social enterprise	Empowerment programs for women	Women in vulnerable communities	Start-up	Social designer (Co-founder)
P7-C	Non-profit	Co-design products and activities	Children with cerebral palsy & their caregivers	Non-profit organization	Social designer (Co-founder)
P7-D	Non-profit	Support for racially oppressed groups	Diverse racially oppressed groups	Uni-NGO collaboration	Social designer
P8-A	Medical equipment	New product development using advanced imaging technologies	Medical professionals	Corporate / In-house	Industrial designer
P8-B	Non-profit	Service and mobile app design helping user groups navigate healthcare services	Refugee women	Self-initiated	Social designer
P9-A	Social enterprise	Connect local & refugee cultures through design	Local and refugee teenagers from lower socio-economic backgrounds	Self-initiated	Social designer (Founder)
P9-B	E-commerce	Inclusivity in clothing design	People with various body sizes	Corporate / In-house	Product designer
P10-A	Non-profit	Support for children and caregivers	Children & women caregivers	Non-profit organization	Social designer (Founder)

Table 3-2 (cont'd)

ID	Industry	Product / Service	User Groups	Company	Role
P11-A	Medical equipment	Healthcare solutions for medical professionals	Medical professionals	Corporate / In-house	Industrial & UX/UI designer
P11-B	Community services	Concept development for refugee shelters	Refugees	Uni-company collaboration	Industrial designer
P12-A	Non-profit	Co-design projects with multiple NGOs and universities	Multiple groups with phsycial disability	Uni-NGO collaboration	Design educator & coordinator
P12-B	Consumer goods	Educational materials for visually impaired children	Visually impaired children and their educators	Design consultancy	Industrial designer
P13-A	Defense & aerospace	User interfaces for military products and software systems	Military personnel	Corporate / In-house	Industrial & UX/UI designer
P14-A	Medical equipment	Anesthesia delivery machines	Medical professionals	Corporate / In-house	Industrial & interaction designer & UX designer
P14-B	Consumer electronics	Personal care products	Culturally distinct groups	Corporate / In-house	Industrial designer
P14-C	Home appliances	Kitchen product family	People with sight, hearing, and physical disabilities	Design consultancy	Industrial designer
P15-A	Consumer electronics	Screen-free educational platform for learning and skill development	Children with autism spectrum disorders, caregivers, and teachers	Start-up	Co-founder / industrial designer
P15-B	Social enterprise	Exhibition telling the stories of refugees	Refugees	Start-up	Social designer
P16-A	Medical equipment	Healthcare solutions for children	Children	Corporate / In-house	Industrial designer
P17-A	Software	Mobile application for managing medical conditions	Patients with chronic illnesses & medical professionals	Corporate / In-house	UX/UI designer
P18-A	Aviation & aerospace	Cockpit design for military aircraft	Air force pilots	Corporate / In-house	Industrial designer
P19-A	Non-profit	Project bringing people with visual impairments and designers together, and exhibition	Visually impaired	Non-profit organization	Design coordinator
P19-B	Textile	Carpet design and manufacturing projects	Culturally distinct groups	Corporate / In-house	Designer & manager
P20-A	Medical equipment	Heart-lung machine	Medical professionals including doctors, nurses, and technicians	Corporate / In-house	Industrial & UX/UI designer
P20-B	Comm. technologies	Concept development for security and communication systems	Coal miners (occupational health and safety)	Uni-company collaboration	Industrial designer

3.3 Thematic Data Analysis

Thematic data analysis is widely utilized in qualitative research as a fundamental approach for analyzing data. Thematic analysis is the process of identifying themes in the data that capture meaning relevant to the research question and potentially establishing links between these themes (Archer, 2018; Krippendorf, 2007). This approach involves identifying common concepts, ideas, and patterns by initially breaking down a large volume of data into smaller meaningful units called codes. These codes are then reorganized and grouped into units and categories referred to as themes (Archer, 2018).

The thematic analysis utilized both deductive and inductive approaches, with the guidance of the *ABE Framework of Designer Empathy* (Section 2.4.6). The deductive approach involved using the framework to categorize the data into predefined themes such as attitudinal, behavioral, and evaluative aspects of designer empathy, ensuring alignment with existing literature (Azungah, 2018). Simultaneously, the inductive approach allowed for themes to emerge from the data without being constrained by the framework, providing space for new insights, such as the impact of organizational constraints and cultural influences (Azungah, 2018). By adopting a combined approach, the analysis benefited from the structure of deductive reasoning while retaining the flexibility of inductive exploration, enabling a comprehensive understanding of both expected and emergent themes within the data.

The transcription process began with using *Condens.io*, an AI-supported transcription tool, to convert the interviews into text. After the program generated the initial transcription, the text was reviewed and edited for accuracy. During this phase, segments of the interviews were loosely coded within the same application to facilitate the organization of key themes and insights (Figure 3-1). As the researcher's understanding of the interviews deepened over time, the transcriptions were revisited and refined to ensure clarity and consistency before being imported into *MaxQDA* (Figure 3-2), a qualitative analysis software. This transition occurred because the Condens.io interface proved insufficient for conducting in-depth analysis, particularly when working within the framework used for the study.

Figure 3-1 Initial coding with Condens.io Application

Coding interview transcripts in MAXQDA by identifying recurring themes and structuring insights from the participants' responses enabled a systematic exploration of the connections between different themes and sub-themes, allowing for deeper analysis and more nuanced interpretations. After completing the primary coding in MAXQDA through several iterations, the relevant segments were transferred to an Excel spreadsheet (Figure 3-3), facilitating a more structured, section-by-section writing process. This strategy enabled a more focused progression, allowing different connections to be established while writing the related sections.

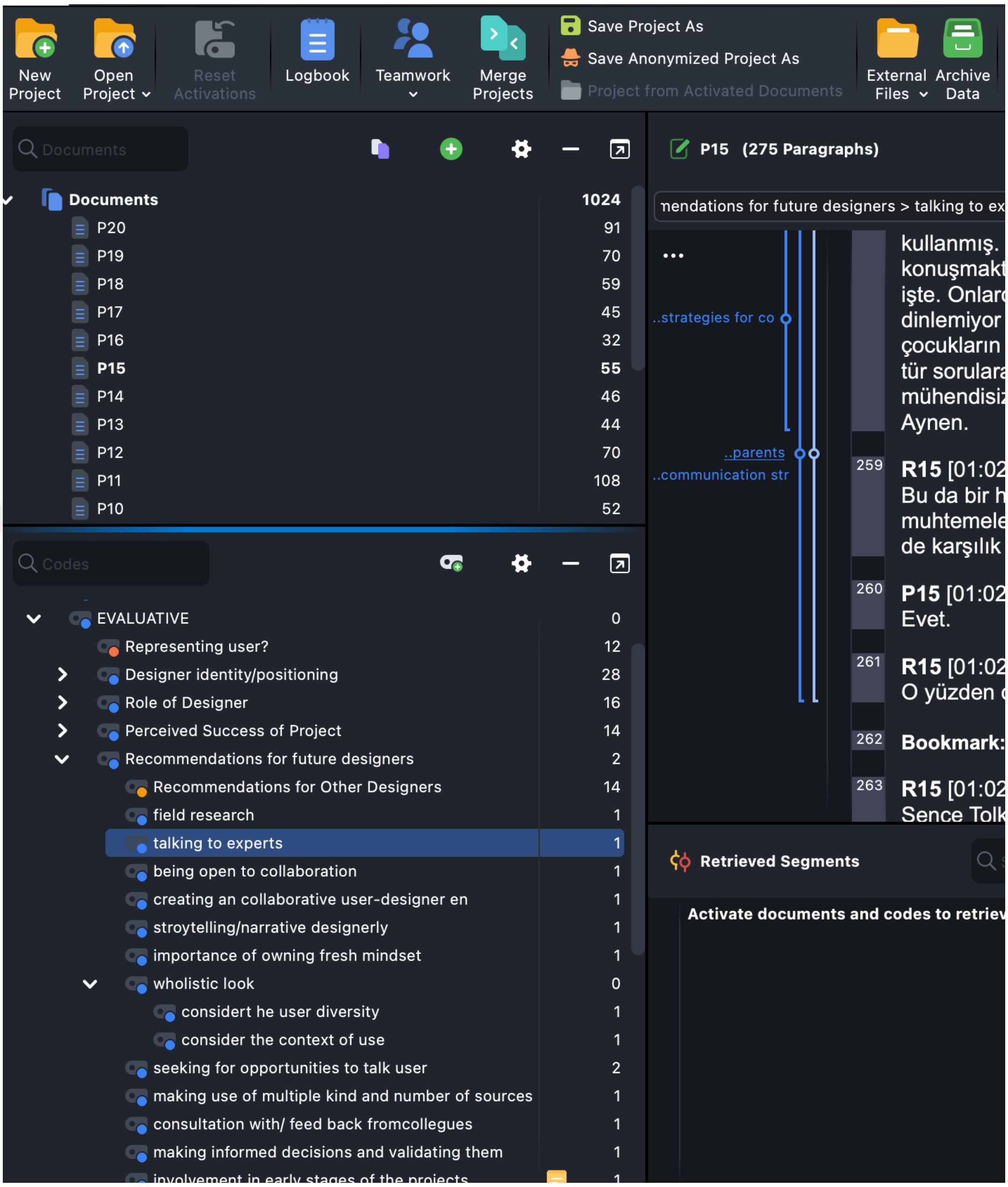

Figure 3-2 Snapshot from thematic analysis and coding with MAXQDA

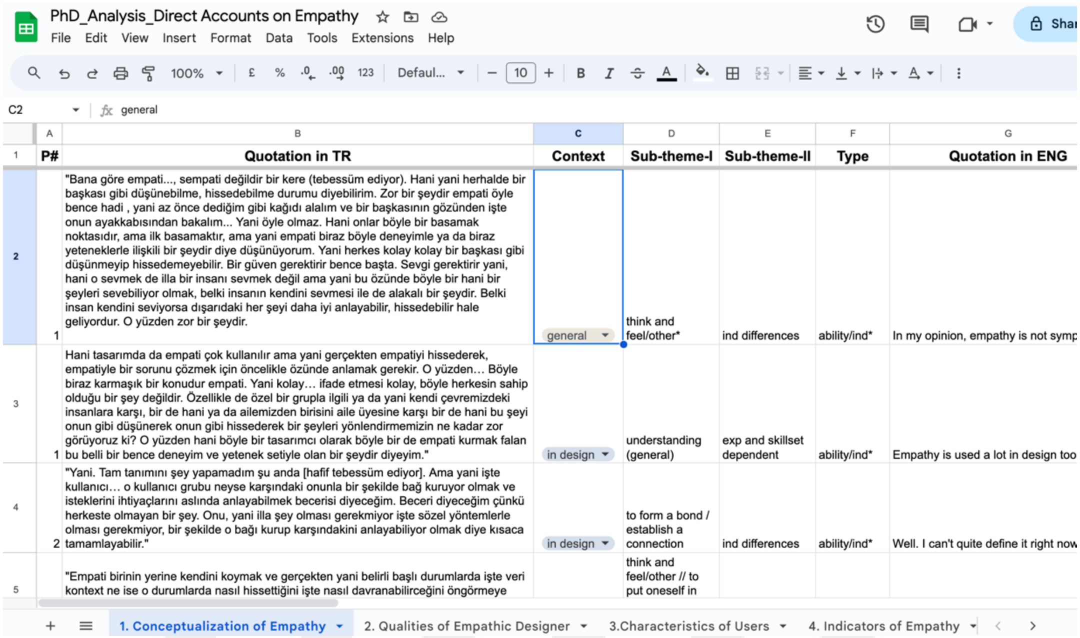

Figure 3-3 Snapshot of using Excel spreadsheets for writing the findings

In the following chapter on findings, the identified themes and subthemes are reported and structured to provide an overview of the key insights that emerged from the data analysis.

CHAPTER 4

FINDINGS

As outlined in the methodology chapter, the interview protocol was designed to gather designers' experiences with projects involving unfamiliar user groups without explicitly mentioning the term ‘empathy’. The first stage of the interview introduced the participants, focusing on their connection to the design discipline through excerpts from their education and professional careers. The second and most content-heavy stage explored the designers' experiences on projects involving unfamiliar user groups, allowing for in-depth discussions about their interactions with both users and other professional stakeholders. The aim was to indirectly collect relevant information on empathy and allow insights into empathy to emerge organically from the designers’ reflections on their actual experiences. The third stage directly addressed the concept of empathy, asking participants to reflect on their relevant project experiences, while the final part provided participants the opportunity to offer concluding remarks and clarify their thoughts on the role of empathy in design.

This chapter will present the general findings from the sample group, providing an overview of the insights collected. These will be followed by detailed accounts of the participants’ experiences and reflections, particularly from the second stage of the interviews. Lastly, direct reflections on empathy in design, as explored in the third stage of the interviews, will be provided to deepen the discussion and contextualize the findings.

4.1 Key Observations from the Sample Group

Before advancing to attitudinal approaches, behavioral applications, and evaluative perspectives with respect to the familiarization with user groups, the following section summarizes key observations that highlight prominent insights. These observations facilitate a better understanding of the proceeding sections by providing a foundational context for comprehending the commonalities in the projects discussed.

4.1.1 Primary User Groups in Projects

The design projects discussed in this study focus on two key categories of unfamiliar user groups: *vulnerable user groups* and *specialist user groups*.

Vulnerable user groups refer to populations with specific needs due to factors such as age, disability, or socioeconomic status. These groups are often marginalized and at risk of exclusion in mainstream design processes. Their distinct experiences present challenges vastly different from those designers face, including issues such as accessibility or social stigma. Furthermore, these groups have limited representation in traditional design, which constrains the existing knowledge about their needs and how best to serve them. Their complex needs demand a deep sense of empathy and specialized design methods that go beyond basic usability considerations.

In the projects included in the sample, the primary user groups regarding vulnerability are those frequently discussed in the literature on empathy and are commonly associated with empathetic design. Children are the most targeted user group in these projects, often seen as a vulnerable population requiring special consideration. The intersectional nature of vulnerability is crucial in understanding and designing for these groups. For instance, within the broader category of children, specific subgroups intersect with other vulnerabilities, such as those with chronic illnesses, who require specialized solutions to improve their quality of life. Similarly, children with physical disabilities need tailored approaches that address their mobility or other physical challenges.

Additionally, some projects focus on children from refugee families, who face unique difficulties due to displacement. Other projects are centered on individuals with physical or mental disabilities, with an emphasis on creating solutions that aid in mobility, accessibility, and other functional needs for those with physical impairments. There is also a focus on developing inclusive and supportive environments for individuals with cognitive or psychological disabilities.

Refugee communities form another important area of focus in these projects. The aim is to address the specific challenges that displaced individuals and families face, promote their inclusion in the host country, and work to reduce social stigma. These projects provide critical insights into how design can create solutions that cater to the complex needs of marginalized and specialized user groups, highlighting the role of empathy in crafting meaningful and effective design outcomes.

Specialist user groups, on the other hand, consist of individuals with advanced skills or knowledge in specific domains, such as professionals or experts. There is often a significant expertise gap between the specialist knowledge possessed by these users and the generalist understanding held by designers. These groups work within unique contexts that involve complex workflows or specialized equipment unfamiliar to designers, and they have precision needs that require high accuracy and performance-critical solutions, necessitating a deep domain understanding. Additionally, the number of users for these products is often limited, creating challenges for broader applicability.

4.1.2 Designers in Startups

In the sample group, common patterns emerge among designers working in startups. Generally, a project idea often originates from a problem area identified by the participant. This initial idea is then developed through channels that provide support, typically state-sponsored entrepreneurship programs like *TÜBİTAK* or other private entrepreneurship programs. Once participants establish their companies, they utilize these support programs to formalize their firms, shape their projects, and eventually seek investment.

A key step in this process involves transforming the project idea into a viable business concept. The next crucial step is assembling a team after deciding to pursue the idea as a business. Typically, this team starts small and includes individuals with expertise in areas the designer may lack, such as engineering or software development. Participants either bring these individuals on board as team members or form partnerships to leverage their skills and knowledge.

The problem areas that startups focus on often stem from a need observed by newly graduated designers within a specific user group. Many of these ideas originate from graduation projects. For example, P4 and P5, two participants in the sample, both carried forward ideas developed during their graduation projects into their professional lives. University-industry collaboration projects also play a key role in shaping student designers' professional skills and perspectives. Even though these projects are not directly tied to a company, they serve as the initial professional experiences for designers. After graduating, while working in other jobs, P4 and P5 began taking the first steps toward their own entrepreneurial ventures.

In another case, P7, after graduation, wanted to pursue social design, an area of personal interest. P7 discovered a related competition, conducted field research in Turkey, and sought to develop solutions for a specific user group identified in the competition. P7 eventually formed a team and turned the project into a social enterprise. Through this enterprise, P7 continues to engage in projects targeting vulnerable user groups.

P2's journey also shows a merging of interests. P2 wanted to enter the entrepreneurial environment and closely followed various TÜBİTAK funds while simultaneously nurturing a lifelong passion for creating something for animals. By merging these two interests, P2 founded a startup focused on a tracking and monitoring device for animals.

In these startup projects, another commonality is the need for designers to continuously adapt their solutions, especially when targeting vulnerable user groups. This adaptability is essential to finding a place in the market and transforming the project into a sustainable business.

4.1.3 In-house Designers in Corporate Firms

Another common type of work setting for designers in the sample group involves those working in-house within corporate firms. These designers typically hold titles such as industrial designer, product designer, UX designer, or UI designer, and in some cases, the roles of product designer and UX designer are combined.

In-house designers usually have different responsibilities compared to those in startups. A key difference is that in-house designers are generally less involved in the initial creation of the project brief. The decision on which user group to target and what kind of product to design is often made by another department within the company. However, once the project brief is set, in-house designers play a significant role in shaping and refining it through their design expertise and perspectives.

In the sample, in-house designers often target specialist user groups —professionals with needs that are highly specific to their domains. These groups are unfamiliar to the designers due to the specialized nature of their professions. The solutions developed, whether products, services, or interfaces, are highly context-specific and are typically used within professional environments, making them less common in everyday consumer markets.

To meet the needs of these unfamiliar user groups, in-house designers engage in extensive research and collaborate closely with domain experts. This collaboration ensures that the solutions are practical and meet the professional standards expected by the target users. Continuous user testing and feedback are crucial to refine these solutions and ensure their effectiveness.

In corporate settings, in-house designers are often the sole designers responsible for their projects. Although they may belong to a larger design team, the individual designer typically consults intermittently with their team for advice and updates.

Finally, in-house designers in corporate firms often begin their careers with university-industry collaboration projects, representing their first professional experiences. These projects, often undertaken as final-year undergraduate or master's projects, involve partnerships between universities and companies and include multiple stakeholders, such as the student designer, the university, and the company. These early projects play an observable role in shaping the professional capabilities and perspectives of the designers as they transition into the corporate world.

4.2 Attitudinal Approaches

This section reflects on meanings and values attributed to familiarizing with unfamiliar user groups within design practice, along with the motivations for such familiarization within the design's broader project context.

4.2.1 Meanings Attributed to Familiarization

The process of familiarizing oneself with user groups reveals not only a shift in design approach but also a deeper understanding of the complexities and emotional landscapes surrounding the user experience. Before engaging with unfamiliar groups, designers may often feel a distance, whether it's due to a lack of exposure or preconceived notions. As the process unfolds, however, it becomes evident that this distance can evolve into a more nuanced and empathetic connection, transforming the designer's perspective and approach.

Before Familiarization: At the beginning of the process, designers frequently describe an initial detachment or unfamiliarity with the user groups they are tasked to design for. For example, P19 acknowledges that his work with visually impaired individuals was pivotal for his career but began from a position of minimal direct interaction with such users. Similarly, P15 shares that before her work with refugees, they were only aware of these individuals through media portrayals, with no direct engagement or understanding of their personal experiences. This initial distance is common, as most designers often start with surface-level knowledge shaped by societal stereotypes or generalizations. P11, reflecting on his early work with healthcare professionals, described the context as “very foreign,” revealing the emotional and intellectual gap that existed between them and the user group.

In projects requiring specific knowledge, like healthcare or technical fields, designers like P16 also indicate the overwhelming complexity of his early engagements. They recognize that in fields such as healthcare, understanding the user —whether it's a surgeon or a patient— requires a steep learning curve, as professional settings present nuanced needs that aren't immediately apparent to outsiders. This unfamiliarity can be even more pronounced when working with marginalized or vulnerable populations. P10, for instance, humorously references the initial ignorance when starting her project taking place in a prison setting, using the phrase “courage born from ignorance” to describe how the lack of awareness shaped her early steps into unfamiliar territory.

During Familiarization: Many designers describe this phase as one where their assumptions are tested and, often, dramatically altered. P13, for instance, recalls the moment they realized that even the company’s internal users, colleagues who were presumed to have a shared understanding of systems, had distinct mental models. This realization came during testing, where subtle differences in how users interpreted interface elements highlighted the gap between the design assumptions and the actual user experience.

Similarly, P15 shares how her early stereotypes of refugees were dismantled after direct interaction. Meeting professionals who had once held esteemed positions, such as doctors and nurses now working in different, often underprivileged, roles challenged her preconceptions and helped them see the depth of these individuals' stories. This familiarization process sometimes becomes even more emotionally charged, as P07 describes. Engaging with refugees and children in distressing situations not only pushed the boundaries of her design skills but also required them to develop emotional boundaries —something they noted was rarely taught within design education. Similarly, P10's work that took place in prison highlighted how the trust-building process took time, with mutual understanding growing only after several weeks of consistent interaction.

After Familiarization: After significant engagement, designers report a substantial transformation in both their perception of the user group and their approach to design. P11 reflects on his work in the healthcare field, noting how his ability to predict user needs increased but still emphasizing that there would always remain some level of reliance on user input due to the complexity of the domain. This realization —that the designer cannot fully embody the user's experience but can reach a deep level of understanding through continuous dialogue—was echoed across several interviews. P13 emphasizes that complete familiarity with a user group is rarely, if ever, achieved.

The learning continues even after the formal engagement ends. P19, for example, recounts how his project with the visually impaired not only elevated their career but also fundamentally shifted how they viewed the world, highlighting the personal and professional growth that comes with such projects. Similarly, P10's project evolved into a more structured program that aimed to meet the unique needs of incarcerated mothers and their children, demonstrating how deep familiarity with the context can inspire more targeted and impactful design solutions.

4.2.2 Motivations for Targeting Unfamiliar User Groups

Participants working with vulnerable groups often uncover commonalities when reflecting deeply on their intrinsic motivations. The most dominant of these is the desire to tackle urgent and significant real-world issues. For instance, P20 is engaged in improving mining safety, particularly in the aftermath of a major disaster, recognizing the critical need for enhanced protective measures in such hazardous environments. A commitment to social justice and inclusion is also evident in these participants' motivations. The desire to create opportunities for disadvantaged children reflects (P3, 7, 9 & 10) a broader dedication to addressing systemic inequalities and ensuring that all individuals have access to the resources they need to thrive. For P10, this motivation could be related to a personal sense of justice or fairness.

In addition to these motivations, two further themes emerge that require separate attention. First, many participants reflected on the contrast between the capitalistic aspects of design and its social dimensions when discussing their motivations. This tension between profit-driven and socially driven aspects of design plays a significant role in influencing some designers' career paths and behavior within their organizations. Second, when participants sought to illustrate the visible impact of design, they frequently referenced examples from the medical sector. This indicates that the life-enhancing contributions of design in healthcare serve as a powerful reference point for them.

Capital vs Social Aspect of Design: Several participants explicitly reflected on design's position from the perspective of capital versus social impact. For P7, P15, and partially for P1, their inclination towards prioritizing social impact over commercial interest heavily influenced their career paths. These participants are driven by a desire to go beyond the profit-driven motives typically associated with design, seeking to create meaningful and socially responsible work instead. On the other hand, P16, and again partially for P1, focuses on finding a balance between their interest in social impact and the commercial goals of the corporate settings they operate within. This balancing act reflects their efforts to integrate social considerations into their work while navigating the demands of a profit-oriented environment.

P7 reflects on her disillusionment with traditional design practices, questioning the purpose of creating products merely for the sake of capitalism. She expresses skepticism about the sustainability of producing more goods as a solution to existing problems. It can be inferred that her contemplation suggests a deeper inquiry into the ethical and environmental implications of design practices and a search for more sustainable and meaningful contributions to society. Likewise, P15 expresses dissatisfaction with industrial design's "purely aesthetic and consumer-driven" aspects. She stresses the need to produce items that address genuine human needs and solve "real problems". Her focus on creating meaningful products aligns with her preference for social design, highlighting a desire to move beyond superficial consumer appeal to designs that contribute to societal well-being.

> "I didn't want to engage in industrial design focused on creating 'aesthetic products that consumers find more appealing, want to buy, or make slightly different from a thousand identical ones to make them attractive.' I don't find that very right for myself. It's not very satisfying for me. The current consumer habit and product fetishism aren't perspectives I like. So, if we're going to produce something, I always wanted to create something that genuinely meets a need and solves people's problems. That's why I was more interested in social design. . . . I believe the current consumer society creates significant psychological problems for people. For instance, I live with a sibling who suffers from this. For many years, she had to deal with issues like anorexia and bulimia because of society's beauty standards. Partly because of this, I don't like trends and the constantly changing aesthetic perceptions that everyone feels they must catch up with. I am somewhat against popular trends, I think. Therefore, I want to find real problems and create things that, when looked at a hundred years from now, won't be seen as 'oh, how ridiculous.' (P15)

P1, who shares some common ground with P7 and P15, also leans towards prioritizing social impact over commercial interest in design. This inclination influences the types of projects she chooses to engage in and reflects a commitment to integrating social considerations into their work. However, P1 also grapples with the realities of working within a corporate environment and the need to balance these values. P16 also discusses about maintaining a balance between commercial success and social responsibility. Although working within a corporate setting, he emphasizes the importance of not allowing personal values to be entirely overshadowed by profit-driven motives. He strives to incorporate social considerations into his projects, suggesting that despite being in a commercial environment, one can still focus on creating designs that have a positive social impact.

> “Well, I'm someone who looks at the world more from a social perspective. So, I'm not really someone who loves the whole ‘profit, market’ thing. This might sound a bit paradoxical since I work in a big corporate environment, but that's how I think. I'm trying to find a balance. . . . But as I said, I'm trying to find a balance. I'm trying not to get too involved in areas that solely exploit the market with the single aim of making a profit. Designers like us try to incorporate these kinds of concerns into our projects.” (P16)

Visibility of Impact: Beyond specific user groups and independent of individual projects, certain sectors inherently motivate designers to engage with them. Foremost among these is the healthcare sector. Given that many of the projects within my sample group intersect with healthcare, concerning both vulnerable groups and professional user groups, it is unsurprising that several participants (P4, 5, 8, 11, 12 & 16) explicitly reflected on their motivations for projects in the healthcare sector.

Most compelling aspect of designing in the healthcare sector is related to the direct and visible impact that design solutions can have on people's lives leading to a sense of personal fulfillment for designers (P5, 11, 12 & 16). P5 was particularly drawn to the healthcare sector after his medical design-oriented graduation project because he found the immediate influence on individuals' well-being especially appealing: “While all designs impact people to some extent, I was especially attracted to developing products that directly affect people's health.” Likewise, for P16, seeing the tangible benefits of designed products on patient well-being, particularly for children in hospitals, was emotionally rewarding in terms of making “a real difference in people’s lives” and providing deep personal fulfillment. P11 also elaborates on such personal fulfillment by coupling it with modern-day designers’ perceived role and responsibility by reflecting on his journey within the healthcare sector.

> “So, one of the roles I envisioned for a designer was to help humanity. I saw the designer as someone who aids people, and perhaps this is related to that vision. In the healthcare sector, there are groups of people in need, and designers are among those who can ensure they receive the best possible service, which brings a high sense of responsibility and emphasizes the idea of making a meaningful difference… When asked why it needs to be more meaningful, it might come down to the fundamental need to feel significant. Reflecting on myself, this is likely true. As a confused child [senior design student] not knowing what a designer does, the realization that a designer creates something useful and meaningful has been a motivating factor for me.” (P11)

In addition to the visible impact, some participants valued designers’ ability to address complex issues involving multiple stakeholders within the healthcare sector, which in turn contributes to their professional growth. P4 notes that industrial design is often overlooked in healthcare, despite its potential for long-term societal benefits. Designers in this field focus on enhancing the overall quality of life rather than just addressing immediate health concerns. P12 highlights the opportunities for interdisciplinary collaboration and professional growth in the healthcare sector, making it an attractive field for designers. Similarly, P8 emphasizes the numerous opportunities for innovation and problem-solving in healthcare, which keep the design work dynamic and engaging, offering continuous learning and development.

4.3 Behavioral Applications

The methods, tools, and strategies described within the following sections are not necessarily specific to understanding unfamiliar user groups and are often dependent on the designers' individual ways of working. Many of these methods are chosen intuitively and become more specialized over time. This is crucial for understanding how designers adopt themselves and under which conditions they find them useful. For example, the way they communicate with users, rather than just the act of communicating, becomes significant.

Additionally, the experiences and strategies shared by the designers and their concerns should not be seen as representations of 'good practices.' Instead, they are descriptions of how designers act under certain conditions and why they employ these methods to achieve the desired familiarization with user groups. These observations and strategies are either directly suggested by the designers, considered as good examples, or inferred from my analysis of their comments.

4.3.1 Familiarization through Secondary Sources

The participant utilizes traditional desk research methods, including literature reviews and online sources, to build a theoretical understanding of unfamiliar user groups and project domains. They also use benchmarking to compare their findings against industry standards and best practices.

P19 utilizes the Internet and social media to stay updated on the changing trends of culturally distant groups. As an experienced designer, he contrasts the current advantages of the Internet with its past non-existence, emphasizing how it has significantly enhanced the accessibility and growth of user and market information over the past 15 years. He particularly notes its benefits in learning about the lifestyles of unfamiliar cultures without needing to be physically present.

P1 highlights the importance of a holistic approach while making use of the secondary sources to understand unfamiliar user groups, particularly those that are difficult to reach. P1 emphasizes the need to explore diverse sources of information beyond direct interviews and observations, such as films, music, stories, and cultural artifacts “to piece together a fuller picture of the users' lives and experiences.”

> “So it's like, for example, if I were to choose a gift for Mert, but I don't know him, how would I choose it? Then I might look at Mert's Instagram or ask his friends. I need to find out what Mert likes, what he reads, what he wears; I can't select a gift for him without understanding him. So, I sort of stalk him to see what he's up to, what he's doing, what's going on behind the scenes so that I can choose a gift that will truly make him happy. That's my approach.” (P1)

Benchmarking plays a significant role in refining design strategies. P11 and P20 noted that observing competitors' solutions was key to understanding industry standards and identifying areas for familiarization. For example, P11's practice of analyzing five models and finding common solutions across them validated certain design choices while also flagging areas where innovation might be possible. The method of using competitor analysis is not limited to medical or highly specialized industries. In more consumer-driven contexts, such as gaming or lifestyle products, benchmarking can reveal trends and patterns that inform design choices. P17’s in-depth analysis of mental health and habit-changing apps, driven by personal interest, demonstrates how benchmarking can evolve into a tool for familiarizing with user groups.

User videos have emerged as a crucial resource for designers aiming to deepen their understanding of unfamiliar user groups and project domains. Several participants (P1, 2, 5, 8, 11, 15, 17 & 20) in the study mentioned the importance of these videos in enhancing their knowledge and informing their design decisions, particularly when direct access to users is limited or impractical.

User videos serve two key purposes in the design process. First, they function as an effective preliminary exploration tool, allowing designers to gain insights into user behaviors and needs before engaging directly with users. For instance, P11 mentioned how watching videos of refugees in which they describe their daily routines provided valuable context and allowed designers to identify critical aspects of users' lives, such as the challenges faced by a young girl caring for her disabled father, which directly informed the inclusion of specific design elements in a project.

Second, user videos act as a substitute for direct interaction when designers cannot access users in person. This is particularly relevant in scenarios involving specialized or sensitive environments, such as medical procedures or emergency situations. For example, P20 highlighted using YouTube videos to observe procedures like open-heart surgery, where direct observation was not feasible. These videos enabled designers to analyze different scenarios and gain insights into using medical devices, such as defibrillators, in real-life emergencies. By observing these videos, designers could understand the critical moments and user interactions that are pivotal in these high-stakes environments.

4.3.2 Domain Experts Consultation

Domain experts, as defined in this thesis, are individuals with specialized knowledge and familiarity with either the unfamiliar user group or the specific project domain. They are critical resources for helping design teams, particularly designers, become acquainted with the unique aspects of the user group or domain they are working with. Domain experts may provide guidance, insights, and knowledge that contribute to shaping the design process and ensuring that the resulting solutions are user-centered and contextually relevant.

For vulnerable user groups, domain experts could include psychologists, particularly those with experience in trauma, refugee populations, or children with special needs. Social workers who work directly with marginalized communities, such as the homeless, refugees, or people with disabilities, also serve as valuable domain experts. Social workers who work directly with marginalized communities, such as the homeless, refugees, or people with disabilities, along with NGOs and advocacy groups specializing in the needs of vulnerable populations, like those focused on mental health, disability rights, or refugee welfare, serve as valuable domain experts.

For specialist user groups, domain experts might include retired professionals, such as retired doctors, engineers, or military personnel, who bring in-depth, practical knowledge of their respective fields. Technical consultants with a deep understanding of specific technologies or industries, such as medical device consultants or defense technology specialists, are also essential domain experts. P8, P14, and P18 specifically discuss the concept of 'key opinion leaders' (KOLs), referring to well-known and highly respected experts in specific fields. These individuals are recognized for their deep knowledge and expertise, particularly in niche areas like pediatric MR. Furthermore, industry associations that represent professionals in a specific field offer insights into industry standards, best practices, and the needs of highly specialized user groups.

Domain experts integrated as team members play an active, continuous role throughout the project, contributing specialized knowledge to both strategic and operational decisions. In corporate settings, they may be contractually involved, while in socially oriented projects, they often collaborate as partners without economic incentives. These experts typically focus on the social and user-oriented aspects rather than the technical side. Below, the involvement of domain experts is detailed according to the project phases with a particular positioning to direct user engagement.

Early Phases of the Project: At the early stages of the projects, designers consult experts with specialized and contextual knowledge relevant to the unfamiliar user groups and project domains being explored. This consultation is crucial for shaping the fuzzy front end of the design process. Experts not only provide insights into the domain and user group, helping to identify potential challenges, opportunities, and clarifying objectives, but they also play a key role in uncovering additional data sources, relevant individuals, and networks that could be invaluable to the project. For example, P5, P7, and P12 each highlighted how engaging with certain NGOs led to the discovery of key figures within their projects' domain —individuals who would have been difficult to identify and access without these established connections.

Pre-User Engagement Consultation: In this phase, experts play a crucial role in shaping the approach to engaging with unfamiliar user groups. They offer guidance on communication strategies and key considerations for engagement activities. For instance, P9, before conducting a workshop with Syrian refugee children, consulted a psychologist specialized in working with refugee groups to gain insights on how to effectively communicate with these unfamiliar groups and address their potential sensitivities. Additionally, this phase includes the identification of specific individuals who could participate in the user engagement process. P12 highlights that experts from associations for people with mental disabilities might help select participants through established NGOs familiar with the target population. These NGOs are often aware of which individuals, particularly from vulnerable groups, are more likely to participate and feel comfortable contributing to such user engagements.

During User Engagement: Experts' involvement during the engagement phase is invaluable for ensuring that interactions are conducted in a manner that respects the sensitivities of unfamiliar user groups and adheres to overall ethical guidelines. Although designers may have already expanded their knowledge on how to engage with such groups by consulting experts, three participants (P3, 10, 12 & 15) explicitly stated that they find it crucial to rely on experts to be present and manage the majority of communication with vulnerable populations. P10 emphasized this reliance on experts due to the possibility of unexpected situations arising that designers might not be equipped to handle as they lack experience with such cases. In addition to ethical considerations, P12 highlights that the presence of domain experts from relevant associations can provide additional comfort to vulnerable participants, as these experts may have established trusting relationships with the participants through previous interactions. This familiarity helps create a safer and more supportive environment, which in turn leads to richer data collection.

> "The ethical aspect here is very important. Even when filling out an ethics application, certain vulnerable groups are specifically defined, such as those under 18, individuals with mental disabilities, etc. In such cases, there can be special circumstances. Instead of directly engaging with the users ourselves, I believe it should be done through an NGO. The reason for this is that they can suggest people who are suitable—those who won't be uncomfortable with participation or who have the right motivation. Secondly, I believe this approach is more ethical because there is a supervisory intermediary involved, someone representing their [vulnerable user group's] interests. Conducting it through such an intermediary seems more appropriate to me." (P12)

Lastly, P2 emphasizes the importance of having domain experts present for reliable data collection during engagement. Experts are better positioned to capture key insights and accurately analyze what has been communicated by or observed from the user engagement, ensuring that the data collected is both thorough and accurate.

> "Indeed, it is important to get an expert's opinion also during user research because the expert is the one who can interpret animal behavior most accurately. While you or I [a designer who is non-expert on animal behavior] might notice that the animal is uncomfortable, there could be behaviors that we might miss or misinterpret. The expert can provide the best interpretation of these behaviors, so obtaining their opinion is important." (P2)

<u>Post-User Engagement Validation:</u> After the engagement activities are completed, experts are found beneficial for validating the findings. Their review ensures that the

observations and conclusions are accurate and free from bias. According to P2, this phase acts as a control mechanism, safeguarding the integrity of the project before moving forward. Beyond post-engagement validation, experts can be consulted during the concept validation phase, particularly in product-oriented projects or technology-driven startups where scalability and market adaptability are among the key considerations. As evident in several participants' (P5, 8, 9, 11, 12, 13, 14, 15, 16, 18 & 20) reflections, in addition to user evaluations, domain experts provide valuable insights into the development of the design solution through to its finalization. P5 suggests that domain experts can also reflect on adopting the design solution for different markets or similar user groups, potentially eliminating the need for additional user engagements.

Post-User Engagement Validation: After the user engagement activities are completed, experts can be consulted to validate the findings. Their review ensures that the observations and conclusions drawn are accurate, unbiased, and reliable. P2 noted that this phase serves as a control mechanism, safeguarding the project's integrity before progressing to the next stages. Beyond post-engagement validation, experts are also valuable during the concept validation phase, particularly in product-oriented projects or technology-driven startups where considerations like scalability and market adaptability are among the key considerations. As reflected in the experiences of many participants (P5, 8, 9, 11, 12, 13, P14, 15, 16, 18 & 20), domain experts contribute essential insights that guide the development and finalization of the design solution. P5 suggests that domain experts can also provide critical reflections on how the design solution might be adapted for different markets or similar user groups, potentially reducing the need for additional user engagements.

Post-Project Communication: After the project is finalized, sharing the outcomes with the involved experts and stakeholders is often done out of courtesy rather than necessity. This step is particularly important in socially oriented projects, where it can open doors for future collaboration opportunities. By sharing the outcomes with NGOs and other partners, new projects may emerge, or designers may become integrated into existing initiatives —many of which may not have previously recognized the potential contributions of designers. P3 and P7 specifically highlighted that this ongoing collaboration not only strengthens relationships but also ensures that the project's impact and its core motivation to improve the well-being of vulnerable and often underserved populations extends beyond its initial scope. Another important benefit of continued interaction is acknowledging and giving credit to the contributions of domain experts, who frequently participate on a voluntary basis. For instance, P20 shared that when the finalized product solution was presented to emergency medical technicians, they felt a sense of pride and ownership of the achieved solution.

Additionally, the evolving roles of stakeholders were evident in multiple projects within my research. Domain experts who initially served as one-time collaborators often transitioned into more integral roles as projects progressed. For instance, in P5's project, a doctor P5 consulted informally became the project’s official consultant. Similarly, in P12's case, a consultant from an NGO eventually became a partner in the expanded application of the project. P3's case illustrates this shift through the process of stakeholder familiarization, where an initially consulted expert evolved into a core team member, eventually contributing to the project with an extended commitment.

During one of the cases involving a child user with a physical disability, P3 encountered a challenge she felt unequipped to handle. She realized that their approach might not solve the issue and acknowledged the difficulty in achieving effective communication with the child on their own. Recognizing the need for specialized knowledge, the team decided to consult with professionals in child development and psychology who were willing to volunteer their time and expertise. After observing the significant positive impact these experts had on the first case they were involved in, the team decided to include them in all subsequent cases rather than limiting their involvement to specific situations. Over time, these experts transitioned from being occasional consultants to integral members of the project team, offering continuous support and guidance across all cases. Additionally, these experts created a training package on how to communicate with children with physical disabilities for new volunteers who would be joining user engagements for the first time.

4.3.3 Direct User Engagement

In this section, commonly employed and preferred methods, tools, and strategies that participants use to familiarize themselves with user groups through direct engagement is articulated. This predominantly includes being in the same environment as the users and interacting with them.

Although only four participants (P7, 9, 12 & 15) explicitly emphasized the importance of participatory approaches, it is evident from the broader discussions that many others recognized the value of active user involvement as such approach transforms users from mere informants into active contributors, fostering ongoing interactions with the designers that significantly enhance the authenticity and richness of feedback. By engaging users deeply, participatory approaches not only increase the quality and quantity of user input but also provide designers with greater opportunities to identify valuable design insights through observation. P7 also reflects on the benefit of co-design activities held within such a participatory setting in terms of familiarizing with the target user group.

> "I find creating a truly participatory approach to be very effective. Instead of thinking, "I will understand this person and produce something for them," understanding the person while creating something together is much more impactful. The way people express themselves changes significantly [in this collaborative setting]. It's not a passive learning relationship, but rather, it allows the other persons to express themselves as they actively contribute to the creation process.
>
> Because… Well, I'm not particularly fond of the term "empowerment," but it's like… how to say… It genuinely lets the person see, "yes, I can create and produce something." In this way, they don't just remain a passive beneficiary. At this point, we [designers] can reflect their values more accurately. No matter how many interviews I conduct, it's not really possible for me to accurately interpret the experience of a mother of a child with

> cerebral palsy or truly understand a refugee's experience, just by examining them as a research subject. I believe such experiences emerge differently [naturally and authentically] when we create something together." (P7)

4.3.3.1 Interviews

For interviews, participants often highlighted the value of flexibility in user research, particularly when engaging with target user groups. Several participants (P2, P4, P5, P17, and P19) mention that they do not always rely on structured or pre-planned interviews. Instead, they often seize spontaneous opportunities to engage with users whenever possible. For example, P2 discusses conducting informal interviews with veterinarians and pet owners during casual encounters, such as social events. Similarly, P19 emphasizes the value of impromptu discussions outside the work context, noting that such interactions often yield unexpected insights crucial for understanding user needs.

P11 and P12 briefly mentioned their experiences with group discussions conducted with multiple participants in interviews. Both expressed a preference for one-on-one conversations over group discussions. P12 noted that while group discussions can be practical in certain situations, they often lack the depth and effectiveness of individual interviews. P11, through user engagement, observed that group discussions were not as effective, leading to a shift in focus toward individual interviews which proved to be more productive, providing deeper insights and more detailed feedback from each user.

For more structured interviews, it is challenging to draw a clear distinction between interviews and observations, as these activities are often intertwined in practice. Participants frequently engaged in what could be described as either articulated interviews or informal conversations that naturally evolved into observational opportunities. This fluidity in approach may define these interactions as a combined method, where interviews and observations occur in tandem.

4.3.3.2 Observations and Field Work

Participants frequently emphasized the value of observational activities, highlighting their importance in capturing accurate and meaningful insights that might otherwise be missed. For P11, observation emerged as the most valuable research method, revealing significant discrepancies between what users described and what actually occurred in the real context. Through these observations, P11 identified "the most creative solutions," often addressing issues that users did not verbalize and think of. Similarly, P12 states that observations are more beneficial than just asking questions to users as they often struggle to understand the designer's perspective.

> "Through observations, I was able to identify problems that led to the most creative solutions. These were issues that were not discussed and often not even remembered by the users themselves. However, when we presented a design proposal addressing these issues, the feedback was always, 'This is great, we never thought of this.' These insights always came from our observations." (P11)

> "When you ask people something, they can't always respond effectively because they may not fully understand your perspective or what you're trying to achieve. People tend to prioritize their own viewpoint, providing answers that align with their personal experiences. This can lead to data loss. Additionally, design is an abstract concept, and we're trying to identify and create something that doesn't yet exist based on abstract ideas. Even for a designer, this is challenging, so it's not realistic to expect users to notice and articulate these things accurately." (P12)

Additionally, P1 and P14 also articulate the benefits of in-person observation conducted in the field, particularly for capturing subtle aspects of daily life and gaining a multisensorial understanding of the context. P1 reflects on the value of being physically present in the environment to capture sensory details, such as smells, sounds, and visual cues, that might otherwise go unnoticed in a more controlled or remote setting. This immersive experience provides a richer and more nuanced understanding of the users' environment and lifestyles. P5 highlights the significance of immersing oneself in the user's daily environment to gain a deeper understanding of their experiences and challenges. According to him, by observing and experiencing what the user goes through, designers can both develop a more empathetic and accurate perspective and gain the trust of the user group by putting effort into being present.

> "And being in the same environment with them, I think, also creates a more sincere atmosphere. You might not have any work to do, but you are there at 10 in the morning. You are there waiting with that person. This motivates the other person a bit more; at least they think, "This person has put in effort, is trying to do something." You start talking, one thing leads to another, and you end up discussing something that is actually what you are looking for in the project. The main thing you want to get from the user is conveyed to you.
>
> I mean, this is valid for all users, not just in healthcare. Being in the same environment with that person makes a difference. Knowing that you are there." (P5)

Observation in the field enabled P15 to uncover a discrepancy between the feedback from special education teachers and the actual use of the product by children with autism. During mobile interviews, P15 stated that teachers expressed concerns about the complexity of certain tasks, potentially projecting their own understanding and expectations onto the children's capabilities. However, when she visited one of the schools to observe the product in use, she observed that children interacted with a product more intuitively and easily than anticipated, highlighting the importance of direct observation over relying solely on feedback from intermediaries like teachers.

Preconceived notions about vulnerable user groups that a designer holds can also be challenged and transformed through direct interaction and observation. P3 initially held assumptions about the limitations of a child with congenital limb difference, expecting significant challenges in performing everyday tasks. However, the designer's experiences with the child revealed that these assumptions were unfounded. The child demonstrated remarkable adaptability, performing tasks like cutting with scissors, writing with a pencil, and even using a professional camera — actions that the designer had initially thought impossible.

The subsequent insights explore diverse observational approaches employed by participants, including the use of tangible prototypes, unstructured observations, and insights gained from technical services.

Observations with Tangibles: P5, P8, P11, and P14 emphasize the importance of using tangible tokens such as prototypes during field engagements. They note that prototypes not only aid in observational data gathering but also enhance users' ability to contribute meaningfully to the research process. For example, during interviews, P14 and their marketing team used a mannequin head with artificial beards to better understand how participants use a trimming device. P14 explains that observing users interact with a physical prototype provides more reliable and actionable feedback. Engaging with something concrete makes users' responses and behaviors more reflective of real-world usage.

Unstructured Observations: Participants may also engage in unstructured observational research in to gain insights into broader user behaviors. P15, for example, conducts spontaneous observational research in toy stores, observing how children and parents interact with toys and noting who makes purchasing decisions. Although her startup's interactive educational product for children with autism is not yet available in toy stores, these observations help her understand overall trends within a broader user group. This approach provides her with valuable insights into user preferences and marketing tendencies, enhancing her familiarity with the target audience within the business context. Additionally, P6, who has released many products to the market, visits flea markets to observe how these products are being used. Although such observations do not involve direct engagement with users, the flea market serves as an informal observational space where he can see the long-term outcomes of design decisions.

Observations in Technical Services: P20 suggests that engaging with technical service and repair teams provides valuable insights, especially for medical product design. Watching these teams during maintenance and repairs reveals the internal mechanics of devices and highlights areas for potential design improvements. While this may not directly impact industrial design, P20 articulates that it encourages cross-disciplinary collaboration and challenges initial design assumptions, leading to the implementation of user-centered solutions previously eliminated by the team due to their perceived impracticality.

4.3.3.3 Facilitating the Communication

Effective communication is central to the familiarization process, often requiring adjustments in both language and demeanor depending on the user group. Several participants highlighted the importance of tailoring communication to different audiences, emphasizing the need for sensitivity and adaptability. They articulate various issues and strategies related to communication, pointing out that successful engagement often hinges on the ability to align language and interaction styles with the specific needs and expectations of the user group being addressed.

Having a positive attitude: P3, 4, 5, 12, and P15 particularly emphasize the importance of fostering positive motivation. They believe that discussions should center on how to move forward positively rather than dwelling on negative aspects. Maintaining a positive mindset throughout the process is seen as crucial. P15 employs a multifaceted approach to fostering effective communication and collaboration with parents and teachers. She emphasizes the importance of building confidence by encouraging them to trust in their own creativity and capabilities, which in turn leads them to be more open to sharing. By motivating communication without imposing her own views, P15 creates a space where parents and teachers feel comfortable expressing their thoughts. She also practices active listening, recognizing that parents may have limited opportunities to voice their concerns. Still, P15 sets clear boundaries by redirecting questions about children's abilities to the appropriate professionals, ensuring that discussions remain focused on relevant design or educational matters.

Sensitization: Making users familiar with the topic of engagement and the style of such engagement is particularly important when working with diverse user groups and stakeholders. For example, for a co-design activity, P12 suggests that before diving into the main stages of the design process, it is crucial to engage participants in an initial educational or sensitization phase. This phase serves to familiarize stakeholders with essential concepts, such as co-design principles. By providing foundational knowledge, participants are better equipped to engage meaningfully in the process, which enhances their contribution and leads to more effective collaboration. P12 also highlights that engagement often emerges over time rather than at the beginning. This shift can be attributed to several factors. As participants become more familiar with each other, a sense of "camaraderie" develops. They start to see themselves not just as subjects or respondents who are being asked questions or given tasks but as active partners in the project. This realization fosters a stronger sense of ownership and motivation.

Language sensitivity and speaking the 'same language': Several participants (P5, P8, P11, P17, and P20) highlighted the importance of learning and using the 'same language' when engaging with unfamiliar user groups. They emphasized that paying attention to the sensitive use of certain words helps build rapport and trust. P17 stresses the need for designers to adapt their language based on the user group they are engaging with, which helps foster a positive user experience and ensures that users feel comfortable and understood. For instance, in her work, terms like "patients" are avoided, and instead, "users" or "individuals with diabetes" are used to reduce stigma and create a more inclusive environment. According to P11, when users recognize that a designer understands their terminology and can converse deeper, they are more willing to share detailed information. Users avoid explaining in depth if they perceive the designer as having only a basic understanding. P8 also highlighted the same notion as follows:

> "In another instance, I personally try to be very mindful of this. When we visit them, talk to them, or when they visit us, or even during our online meetings, I make an effort to choose my words carefully, trying to use their

> terms. For example, there's a procedure where they go in through the groin, and instead of calling it 'groin access,' I try to refer to it as 'femoraxis' to communicate better with them. I don't know if these are interesting insights, but... “I’m constantly trying to work on my medical knowledge so that I don't come across as uninformed. It’s actually about earning back their respect. There’s also the aspect of building that connection, yes, and it’s out of the respect I have for them. I don't want to say something like 'how do you attach this?' in a way that seems dismissive.” (P8)

Language barrier: P14 and P16, designers working in a country where the primary language is neither Turkish nor English, specifically highlighted language barrier as a significant challenge that hindered their active involvement in user engagement. This challenge often led them to adopt a more observational role rather than engaging directly during user engagements. Additionally, P7 and P9 shared their experiences working with refugees, noting the necessity of having an interpreter for effective communication. P9 found that interpreters provided not only linguistic translation but also cultural interpretation, helping to explain certain behaviors of refugee children. This dual role of interpreters proved to have potential for familiarization with the user group in bridging both language and cultural gaps.

4.3.4 Documenting and Sharing the Insights

In this section, the focus is on how designers document and share insights gained from user research. The discussion highlights the importance of storytelling, visualization, and tools like personas and mood boards in conveying research findings, while also acknowledging the challenges and limitations associated with some of these applications.

Designers as insight mediators: P1 and P16 labeled designers and design researchers as “mediators” and “translators” of information gathered from direct or indirect user engagement to other stakeholders of the project. In their role as a mediator, the designer acts as a link between the raw insights gathered from user research and the stakeholders involved in the design process. As P01 describes, the designer's responsibility is to absorb and interpret the complex information, often drawn from various sources and perspectives, and then translate it into clear, understandable language that can guide the development process. This involves not just simplifying the information but ensuring that the nuances and underlying meanings are preserved and communicated effectively to groups having different professional backgrounds. The designer's task is to craft meaningful narratives and articulate insights in a way that resonates with all parties, by blending the diverse needs and sensitivities of the users with the technical and strategic requirements of the receiver.

Designerly narrating the insights: Storytelling and visualization are seen as powerful competencies of designers who share their derived insights with others. P08 emphasizes that effective storytelling goes beyond simply collecting and sharing data; it involves crafting compelling narratives that make the research more relatable and actionable for stakeholders.

In parallel, P1 and P20 utilizes diagrams as a visual tool for retaining and organizing complex information throughout various stages of a project —before, during, and after. These diagrams help capture and relate different pieces of information, allowing participants to visualize and articulate the connections between them. This approach not only aids in retaining information but also serves as a thinking tool, resulting in infographics that encapsulate the project's findings to be shared with colleagues.

P15 employs a narrative-driven approach to scenario building, creating detailed user profiles and usage scenarios based on real-life observations and interactions. By constructing realistic and relatable characters, often drawn from everyday situations, P15 ensures that the scenarios resonate with both herself and her startup team, making the design process more grounded in reality.

Personas and mood boards: Several participants (P1, P5, P9, P14, and P19) discussed the use of personas as a tool for representing users in the design process. P1 and P19 briefly mentioned how they use personas and mood boards to document and share insights gathered from both desk research and user engagement. However, other participants offered more nuanced perspectives, expressing concerns that, while personas are often viewed as valuable consultative tools, they can also oversimplify user groups and potentially exclude certain populations from the design process.

P9 finds personas to be “tricky,” “inherently risky,” and “potentially misleading” to represent user groups within the design process. They believe that while the intention behind personas is to provide clarity over similar patterns in demographics, users’ attitudes, and behaviors, they can inadvertently exclude user diversity among target groups and marginalize those who do not fit the predefined categories. This exclusion happens because personas rely heavily on “abstraction”, which can oversimplify complex realities. P14 also discussed the challenges in creating accurate personas and highlighted the potential problems of relying on “superficial and generalized” mood boards. He shared a related experience where he realized the issue of generalization while presenting personas and mood boards created for kitchen products for people with disabilities, commissioned by a company in France.

> “When I looked at the personas, I thought maybe I should have included more diverse examples. There was an elderly housewife, a couple, and a woman in her forties with two children among the personas. However, none of the women in their forties among the people I presented this to had children. At that moment [laughs]… Yes, I realized something significant. . . . The world is constantly changing, and you think you're taking a very modern approach to certain things, but there are actually some underlying cultural codes. Especially in international projects, these can come to the forefront.” (P14)

4.3.5 Emotional Challenges

Several participants (P4, 8, 16, & 20) reflected on the emotional challenges they faced while engaging in projects involving vulnerable people due to their medical conditions, particularly when conducting research in medical environments. In P4’s case, the primary user group for her project is the vulnerable user group. In the remaining cases, the primary user group consists of medical specialists, with the user research setting involving vulnerable people as patients.

In the design process, P04 initially experienced strong personal emotions related to their user group, particularly when envisioning the interaction with the product. She described a moment of emotional vulnerability, questioning how they could sell a product that was essential for people. Over time, P04's perspective evolved into a balanced approach they termed “logical emotionality.” While still motivated by the Robin Hood business model —taking from those who can afford to pay and revising the product for those who cannot— P04 acknowledged the necessity of selling the product to generate revenue to support this goal. P04 also noted that she had to temper their emotional perspective in investor meetings to align with what investors wanted to hear. Investors needed to perceive them as logical and focused on the business's financial viability, which sometimes meant downplaying their emotional attachment to the product.

Three participants (P8, P16, and P20), who primarily design for medical specialists, discussed the emotional challenges faced by designers when conducting observations in the presence of patients. Although their focus is not directly on patient engagement, the majority of their observational activities take place within hospital and surgery room environments.

P20 cautions that designers who are sensitive to scenes involving surgery or blood should be mentally prepared for what they might encounter. P16 and P8 reflect more on the emotional impact, particularly the experience of witnessing patients undergoing surgery and the environment's intensity. P8 elaborates on her experiences, highlighting the range of emotions a designer might feel, especially if it is their first time in such environments.

During a project on leg ulcers, P8 experienced significant emotional impact while conducting daily and routine mapping with a user in their home. The sensitive nature of the topic and the user's struggles, such as the inability to socialize and the chronic nature of the ulcers, deeply affected her and left a lasting impression for several days. As she became more experienced in medical domain, she developed coping strategies. For example, in operating rooms, she realized she becomes emotionally detached when seeing routine surgical setups but is deeply affected when seeing patients awake. Consequently, she tries to avoid entering the operating room when patients are awake. However, if she does see a patient awake, it still affects her deeply.

> "When I see all those drapes, you know, those green patient covers? After that point, you basically don't [engage further]. But if I see a patient awake, then I get very affected, I realize that now. The last time I attended an operation in which surgeons navigating [medical devices] to the brain through a single opening. And I remember seeing a young girl. She had a complex, congenital anomaly, and I saw her awake before the procedure, but luckily, I didn't have to watch [the whole procedure]. But it was overwhelming there. I was like, [gesturing with hands on face, lifting head] 'Oh no, I saw the patient awake again, I will be very affected!" (P8)

P8 highlights the importance of developing coping strategies in terms of maintaining a professional distance while still familiarizing herself with project domain. This awareness helped her manage her emotions better during complex and often distressing medical procedures, such as surgeries where patient outcomes could be critical. Despite still sometimes getting emotional and feeling inadequate, she adopts an analytical researcher mindset and tries not to let emotions overwhelm her.

> "I try to be mindful of it. Patients are often not very healthy, and there's a chance they might die while I'm there. I try to be aware of that. I usually attend those surgeries with the feeling that I'm here for user research, I have to keep that feeling separate. Still, I have those little self-questioning moments, especially during a particularly tough case. [She clenches her fists and pulls her arms in, adopting a posture of worthlessness] 'Right now, I am the most worthless and useless person here. If something goes wrong, I just stand there, unable to do anything, wondering why I didn't become a doctor, why I became a designer' [laughs to self]." (P8)

P10's experience as a new mother, often marked by physical and emotional exhaustion, resonates with the profound sense of helplessness felt by incarcerated women. Just as P10 struggled with feelings of being overwhelmed and inadequate in her new role, these women face a similar sense of powerlessness and devaluation within the prison system. This connection not only illustrates how designers might feel while engaging with vulnerable user groups but also demonstrates how personal vulnerabilities can foster understanding across seemingly disparate groups.

P7 described a challenge involving managing boundaries while working with a group of refugee women. There are instances where some individuals frequently reach out to the project team for help with personal needs, such as financial assistance or emergencies. While the team's role is to collaborate on projects rather than provide aid, it becomes difficult to maintain these boundaries, especially in serious situations like a participant's spouse needing emergency medical care. For P7, this creates a dilemma: should the team step in to help, or should they adhere to their established boundaries?

> "At some point, we had to set that boundary. We're not just helping people, we're doing something together. But on the other hand, it's very challenging. Like, imagine someone's husband is taken to the emergency room, she reaches out to you because she doesn't know anyone else [in Turkey]. Are you going to set that boundary then? At such a moment, you feel very strange. There's a very serious situation, and you have to say, 'No, I won't be involved in this,' at some point." (P7)

Lastly, a recurring theme is the overwhelming sense of responsibility that designers feel, particularly when working on socially impactful projects. P7 highlights the concept of "compassion fatigue," a form of emotional exhaustion resulting from the continuous effort to support others, and highlights the deliberate self-care practices to prevent burnout. P10's experience with large-scale social initiatives illustrates the heavy burden of responsibility placed on designers, often extending beyond their initial expectations. As she describes, a seemingly simple request for design assistance can spiral into a much larger project, such as applying for significant grants or expanding the scope of a design to address broader social issues. This sense of obligation often stems from a deep personal commitment to the project, but it can also lead to "burnout" as designers struggle to balance personal well-being with the demands of the work. P10's candid reflection on their struggle to manage these competing demands reveals a key challenge for designers: learning when to step back and prioritize personal well-being without feeling that they are neglecting their responsibilities.

In summary, the necessity of establishing and maintaining emotional boundaries for personal well-being is an important notion for designers as their work may involve engaging deeply with individuals who face extreme challenges and trauma, revealing the intense sacrifices made by those they aim to help, which can be emotionally overwhelming for the designer (P3, 7 & 10).

4.4 Evaluative Perspectives

This section reports on the reflective experiences of designers as they navigate the complexities of user engagement and the broader design process. The insights are structured around four key topics: the value of familiarization through user engagement, the balance between user expectations and practical constraints, the perceived role of the designer as a professional, and a comparative reflection between experienced and inexperienced designers in relation to their familiarization with user groups within the broader project context.

4.4.1 Value of Familiarization through User Engagement

While contemplating the value of user engagement, participants reflected on how this involvement influenced various aspects of the design process and their corresponding attitudes and behaviors. Their insights highlighted various perceived benefits, from boosting designer confidence to uncovering unexpected opportunities, challenging assumptions, enhancing creativity, and validating design decisions.

Boosting designer confidence: Many participants emphasized that user engagement significantly enhances a designer's confidence. P8 and P11 noted that grounding design decisions in real-world feedback enables designers to present and defend their ideas with greater conviction within their organizations. P11 specifically mentioned that without user input, they would feel less confident sharing their work with the team. Ongoing user engagement provided reassurance that his decisions aligned with actual needs, ultimately improving his confidence while presenting design interventions.

Uncovering unforeseen opportunities: Several participants emphasized that engaging with users often leads to unexpected discoveries beyond the original project scope. For example, while developing a manual external defibrillator, P20 explained how his team uncovered six functional improvements through user insights. These improvements, which were not part of the initial brief, emerged naturally from user interactions.

> "We didn't plan for these six functional improvements in the brief, but working with users, we ended up discovering them. These small enhancements improved the user experience and differentiated our product. These six useful models, all of them either came directly from what the users said or from things they mentioned without even realizing it." (P20)

Enhancing creativity for broader impact: Particularly with respect to unfamiliar user groups, engaging with underrepresented or marginalized users often unlocks new creative possibilities in design. P15 highlighted how working with groups such as individuals with disabilities prompted a reevaluation of routine actions, leading to fresh insights that not only benefit these specific groups but also have broader applications for general user populations.

Challenging assumptions: One key benefit of user engagement is its capacity to challenge designers' preconceived ideas about how products will be used. While designers may believe they understand users' mental models, user engagement frequently uncovers gaps. For example, P13 noted that soldiers' mental models often diverged from what the designers had anticipated. According to him, spending time with users not only bridges this gap but also improves the designers' confidence in the relevance and applicability of their solutions.

Validating design decisions: Beyond fostering creativity and innovation, user engagement plays an important role in validating design decisions and aligning them with broader business strategies. P17 found that ongoing engagement with users was instrumental in defending or challenging decisions throughout product development, particularly in tight feedback loops with teams and stakeholders.

4.4.2 Balancing User Expectations and Practical Constraints

One of the recurring themes in design practice is the delicate balance between incorporating user feedback and adhering to the practical constraints of a project. When dealing with projects that impact human lives and where the designer's expertise is gradually developing, user research is crucial for gathering valuable information. However, users might not always be fully aware of the product development process. In such scenarios, P11, P17, P18, and P20 emphasize the importance of finding the balance between user expectations and practical constraints posed by the broader project context. According to P20, designers are responsible for envisioning the "big picture" and determining how user requests fit within the project's scope. This sometimes means making intuitive decisions based on the designer's experience and professional judgment, even if it means diverging from direct user input.

P15 discusses the balance between user ideas, design, and business constraints. She acknowledges that while some ideas are excellent, they might be impractical due to financial constraints: "Sometimes users describe a game idea in detail. It would be great if we had a million dollars to develop it." In such instances, P15 and P16 state they often keep these ideas for future consideration when resources might allow for their implementation. While doing so, P16 stresses the importance of finding the "right compromises" in design projects, balancing what they want to achieve with what is feasible over his project aiming to enhance patient experience in hospitals:

> "As a designer, you dream big for the end user, but you can't always achieve it due to technical or business constraints. Business realities can prevent you from delivering the desired experience. Limited resources and the need to remain affordable for hospitals are key factors. . . . Ultimately, it's not a charity or government entity; it has to function as a business." (P16)

Additionally, P19 discusses the challenges posed by intellectual property and market competitiveness, which often necessitate a filtering of user demands. He notes, "For example, the most common request we get is, 'The X company made this product, so make the same one.' We can't and shouldn't do that." According to him, instead, the focus should be on creating superior products that better meet market needs. Similarly, P18 explains that their design philosophy sometimes necessitates setting boundaries that might contradict user expectations. She recounts, "During the process, we made and directed some fundamental decisions... because we are trying to do something more innovative here, we imposed some restrictions."

P11 stated that ultimately the final decision-making still rests with the designer, who integrates user feedback into their considerations. To distribute responsibility and ensure collective agreement, one prominent strategy involves convening the entire relevant team at key milestones. During these meetings, the designer presents the progress and seeks approval from the team by asking, "Are we all okay with this?" According to him, this strategy helps to distribute responsibility, gain collective buy-in, and ensure that all stakeholders are aligned with the project's direction based on user insights.

4.4.3 Perceived Role of Designer as a Professional

The traditional challenge of understanding what a designer does, especially within a corporate environment, still persists in some cases (P4, 9, 13 & 20). For instance, P20 had to gradually demonstrate the value of solving problems with a user-centered approach and the importance of empathy through the projects they were involved in. This process took significant time and effort. P9, who is working in a well-established company with a strong design tradition, referenced this issue by stating, “Even in here, a designer is still seen as someone who makes boxes and makes them look nice by some engineers.” These examples highlight that the role and value of designers in understanding and representing user needs are not always fully appreciated.

P11, P13, and P18 also highlighted the importance of involving designers early in the decision-making process to enhance transparency and ensure that management understands their needs and methodologies. According to P13, by integrating designers as informants from the beginning, even if they are not decision-makers, the organization can make more informed choices that align with best design practices.

In addition to this, some participants reflected on contrasting perspectives on the role of designers by focusing on the tension between the ego-driven desire to single-handedly innovate and the humble approach of designing in collaboration.

P12 states that designers have the potential to influence broader societal issues, such as promoting healthier lifestyles to prevent medical conditions like hypertension and diabetes. P12 highlighted the idea that designers could shift their focus from solely creating medical devices to developing products that encourage healthier living. This raises important questions about the extent of the designer's responsibility in addressing societal challenges. P12 also cautioned that while designing for prevention is beneficial in the long term, it may not immediately address the needs of current patients. Additionally, there is a risk that well-intentioned design interventions could have unintended negative consequences.

P7 emphasized the importance of humility in the design process, contrasting it with the ego-driven mindset often fostered in design education, where innovation and uniqueness are highly valued. P7 reflected on the need to approach design work with love rather than ego, questioning the motivations behind their work and recognizing the value of connecting existing talents rather than always striving for something new. This perspective aligns with the concept of "confidence in vulnerability," where acknowledging one's limitations and seeking help is seen as a sign of strength and self-assurance.

> "I think one of the most important things I've learned is to approach this work with humility instead of ego. I often ask myself now, whether it's research or the prototypes we're developing, 'Am I approaching this with love, or is something else motivating me? Is it the fear of failure, the fear of being insignificant, or the desire to leave a legacy?' Being able to identify this is important."
>
> *Researcher: "Have you been focusing on the love aspect recently?"*
>
> P7: "Yes, that's what I'm working on right now."
>
> *Researcher: "Can you elaborate on the ego and humility part? Is it an ego in the sense that 'Designers change the world, I will change the world'?"*
>
> P7: "Yes, there's that side of it. Also, in design education, we're constantly taught to seek innovation and uniqueness. But . . . Things don't always have to be new. There are people who excel at certain things, and connecting these talents is also important. On the other hand, yes, there is the tendency [among designers] to claim ownership, like 'I did this. This is mine.'" (P7)

4.4.4 Experienced vs Inexperienced Designers

Particularly in specialized domains such as healthcare, P16 emphasizes that a design team benefits greatly from having a lead who accumulates deep knowledge in a specific domain over time. This person becomes well-versed in the subject matter, the specific context, establish connections with relevant stakeholders and refine methodologies that can be quickly applied in new research setups. Similarly, P11 highlights the importance of leveraging the expertise of highly experienced members, especially when a team or unit is newly established, and formal knowledge-sharing mechanisms are not yet in place. He mentions a designer colleague on his team who fits this criterion. Due to this person's long-term specialization in the military field, the team often treats them as a 'super user’ and relies on their expertise for informal consultations.

According to P14, long-term specialization within a specific sector has both advantages and disadvantages. He agrees that experienced designers become highly skilled and efficient in managing and executing design processes smoothly “like a well-oiled production line.” However, P14 warns that this expertise can also lead to complacency and a lack of innovation. He observed that designers within the personal care products sector in Japan initially engage deeply with user feedback, conducting numerous interviews to understand user needs. Over time, as they recognize common user preferences, they may feel less need to continue this level of engagement, believing they already understand the core requirements. P14 notes this approach is peculiarly risky in Japan because trends change rapidly there. Given the cultural tendency in Japan for long-term employment within a single company, a designer might work on the same product for decades. This makes it crucial to continuously update their understanding to keep pace with changing trends. Despite possible alternative methods to stay current, P14 emphasizes the irreplaceable value of direct user interaction and observation to maintain relevance and innovation in design.

P6 reflects on a parallel challenge in maintaining attentiveness toward children's preferences, a user group he has specialized in for more than a decade. Initially, he deeply engaged with children to understand their needs but later began making assumptions based on past experiences, akin to a doctor becoming desensitized over time. P6 expresses a sense of unpleasantness, acknowledging that such a shift from direct user engagement to assumptions is not ideal and risks losing touch with the evolving preferences of children.

> "After a while, it feels like instead of asking things directly [to users], I start making assumptions like, 'a child would want this.' This is similar to how a doctor might lose sensitivity over time. Professionally, you begin to distance yourself, and that may be starting to happen to me. Why? Because I've been doing this for over 10 years. At a certain point, instead of always asking, 'Hmm, would a child like this?' I start thinking, 'Yes, a child wouldn't like that but would like this.' I begin speaking for my audience rather than conducting research. This is something I'm not very happy about with myself. It's a bit of self-criticism. . . . I would also miss opportunities. Every time you talk to a user, it's a chance to update your perspective. The child I talked to ten years ago is not the same as today's child. I would make a huge mistake if I assumed that. The experiences of a 5-year-old today are very different from those of a 5-year-old ten years ago. Therefore, it's essential to stay constantly updated." (P6)

To counterbalance this tendency toward complacency, P14 and P16 state that companies often hire inexperienced designers or interns who bring fresh perspectives and are not yet constrained by established norms. In the same vein, P8 articulates that newcomers' lack of prior knowledge can foster creativity and innovation, offering unique insights that long-term participants might overlook due to heightened familiarity and potential desensitization to project details. She advises the importance of viewing issues with fresh eyes, emphasizing that not knowing much can be an asset.

> "Let me point out the importance of not underestimating the value of looking at a subject or situation with fresh eyes. When I first started, I felt like I didn't know anything, so I refrained from contributing much in terms of ideas. I wasn't very involved in discussions because I thought I didn't know enough. But later, I realized that not knowing actually allows you to see the subject with fresh eyes, and that perspective can be valuable. Now, when I work with interns, I try to convey this to them. There's a certain creativity and freedom that comes from not knowing everything about a subject, especially because

we [experienced designers] get so immersed in it and become numb to some nuances." (P8)

4.5 Designers' Conceptualization of Empathy in Design

This section presents the findings from the set of interview questions from the second part of the interviews, based on the responses of 19 out of 20 participants, focusing on participants'[2] direct accounts of empathy within the design context.

The discussion is framed around five key questions that explore participants' understanding of empathy, its significance in the design process, and the specific qualities that enable designers to effectively empathize with users, reflections on empathy in addressing the needs of user groups and the indicators that suggest successful integration of empathy into the design process.

4.5.1 Empathy in General

Putting the Self in Other's Place: Ten participants (P1, 5, 6, 9, 11, 13, 14, 16, 17 & 19), with varying confidence and tone, described empathy as "putting yourself in someone else's place" in general terms. By doing so, according to some of these participants who elaborated further, people try to:

- "Think and feel like" that someone (P1, 9, 11 & 13);
- "Posture as someone" to develop respect and kind understanding towards others (P6).

Upon providing the conventional definition of empathy, P13 remains uncertain about its adequacy by stating: "It is known as the ability to think by putting yourself in someone else's place. I use it that way, too. I don't know if it's right or wrong, but I

[2] P10 was unable to continue with this part of the interview due to her time constraints.

use it that way." Likewise, P11 and P14 express dissatisfaction with their responses regarding how well they reflected their personal opinions. P11 elaborates on his internal struggle to come up with a more nuanced definition of empathy, as narrated below:

> "Hmm… Tough question. I mean, I don't want to give a superficial answer now, not going beyond the typical [in a sarcastic tone] 'putting your feet in someone else's shoes' kind of talk by visiting another language [refers to the English language].
>
> *Researcher: Why is that a superficial answer, if I may ask?*
>
> Well, it's a defined thing… Anticipating what someone else would think… Thinking in place of someone else… That's just a dictionary definition. It doesn't feel like a definition is coming from me, and that's why I said it was superficial. It doesn't fully reflect what I feel… Still, I'll take the easy way out right now and say it's trying to understand what someone else is thinking." (P11)

In a more critical tone, P6 and P17 point out issues regarding the common understanding of empathy and how it is actually practiced. P17 speculates on partial engagement with empathy and its susceptibility to manipulation through the 'shoes' analogy: "Even though it's said that you're wearing the other person's shoes, you often end up only wearing the right one. This means that empathy can sometimes be distorted or skewed." P6, on the other hand, criticizes empathy, arguing that deliberate efforts to cultivate kindness and understanding towards others imply that such behavior should already be the norm.

> "Empathy is really like 'pretending,' you know, trying to put yourself in someone else's place. But to me, it feels like a very primitive form of respect. I mean, you should already show respect and understanding to the other person because they are an individual. You should be able to do that without selfishly criticizing and thinking, 'If I were in their place or not,' right? That's how it feels to me... So, let me put it this way. For people with low EQ,

> empathy is like doing arithmetic with fingers for people with low IQ. If you have a problem understanding the other person, then you try to empathize, like 'let me put myself in their place,' and so on." (P6)

Perspective-taking through Non-Judgmental Acceptance: As can also be inferred from the above quotation of P6 and as directly articulated by six other participants (P4, 7, 8, 9, 15 &16), empathy fundamentally requires approaching and accepting others without judgment and respecting and acknowledging differences among people through a reflective mindset.

P7 describes how she practices empathy as "accepting people as they are," acknowledging that their experiences and worldviews differ, and highlights that complete understanding or agreement is not always necessary. She grounds her approach in the belief that such completeness is impossible to achieve: "Because whatever I do, I look at that experience through my own eyes. So no matter how much I try to interpret, I will always be looking through the lens of my own experience, right?" Likewise, P16 emphasizes the importance of understanding others "without pushing one's own thoughts" and recognizing that others have their own experiences and reasons that shape their actions through an example: "It's like when someone cuts you off in traffic; you get angry. But maybe they had a reason, and we don't know that. It's [empathy] about not treating every driver who cuts you off the same way, I guess." P9's perspective aligns with previous notions and particularly concentrates on the importance of "nonviolent communication[3] freed from judgments" and centralized around deliberate efforts given to active listening.

P8 and P15 highlight a similar motivation for accepting people and conditions as they are. P8 defines empathy as listening to others from a neutral point of view and comprehending what is presented without adding one's own interpretations.

[3] P9 refers to the 'Nonviolent Communication (NVC)' approach developed by Marshall Rosenberg, which aims to improve communication and understanding between individuals based on principles such as self-empathy, honest expression, and listening without judgment (Walden, n.d.). P9 expressed that her view on empathy drastically changed after reading Rosenberg's book with the same title.

> "Empathy to me is something like the ability of a person to step out of their own consciousness with awareness. I mean, not entering the consciousness of the other side, but stepping out of myself and trying to listen to the other side from a zero point seems empathy to me. It's like taking what is already present on a blank page without putting anything from my side." (P8)

Implying that empathy is often discussed in the context of people suffering from certain misfortunes, both P4 and P15 touch on non-judgemental acceptance from a slightly different point. They highlight the importance of understanding empathy beyond emotional sharing and seeking an objective stance. For P4, empathy is not about feeling another's suffering as one's own but rather acknowledging that a wide range of unpleasant experiences of others could have been one's reality. She suggests that the role of empathy is to grasp this reality as a driving force for giving equal attention to others' needs (not necessarily just in design) without internalizing their experiences. Similarly, for P15, considering another's viewpoints objectively while being mindful of the conditions causing unpleasant experiences provides a balanced empathic understanding.

> "To me, empathy is seeing events or situations from the perspective of the person experiencing them. Not by pitying or dramatizing the events, but directly and objectively thinking, 'If I were that person, if I had their abilities or their past experiences, how would I perceive this event or handle this situation?'" (P15)

4.5.2 Empathy in Design

Putting the Designer in the User's Place: Within the design context, eleven participants (P1, 3, 4, 5, 6, 12, 13, 14, 17, 18, & 19) described empathy as designers "putting themselves in the user's place". Some expanded their responses, suggesting that by placing themselves in the user's place, designers try to:

- "Think and feel like that user" (P1, 13, 19 &20);
- Foresee how a user would behave and feel "in a certain context" (P3 & 12);

- Understand what “goes on in users' lives” (P5);
- “Understand events from users perspective” (P17);
- Understand user experience through simulation (P5, 18 & 19).

Among participants who define empathy as placing designers in the user's place, advocates (P5, 18 & 19) mostly conceptualize it as a form of *simulation*, valuing its potential to provide firsthand experiences. P19 encapsulates this perspective on empathy in design as follows:

> “Empathy is defined as putting yourself in someone else's shoes. When you start doing this as a designer, you imagine yourself as the users and try to understand what they feel, think, and need. You try to translate this understanding into a creative product —a new product. This is essentially both the basic and the detailed definition of empathy.” (P19)

For example, P19 suggests that designers should try cutting with their eyes closed to design a knife for visually impaired individuals. P18 approaches the topic from an ergonomics perspective. She finds it beneficial to sit in the pilot's seat in a cockpit and perform specific tasks, as this simulation helps in familiarization to a degree with the physical and cognitive demands of the pilots and testing the efficiency of generated solutions. For P5, such firsthand experiences are valuable because they allow designers to realize the seriousness of the problems that users deal with, which extends beyond theoretical understanding. He suggests reading about a user's routine may provide surface-level knowledge, but direct engagement and personal experience with their tools and environment reveal the profound difficulties they face. P5 exemplifies this through his actual interaction with a medical product used by the user groups he designed for:

> “Once, I came across the distributor selling that product and used it. I realized how challenging it is. Watching videos [about users using the product], I saw people sitting for half an hour without a sound from the machine. But when I used the machine myself, even for just 30 seconds, it [tremor and sound] was so intense and uncomfortable that I couldn't stand it. It makes you realize

> what these people go through every day. This helps you start to empathize." (P5)

That being said, many participants, including P18 and P19, despite starting their reflections positively, articulated some limitations and skepticism regarding the efficacy of empathically derived insights and superficial adoption of the concept within design when it is approached from "putting the designer in the user's place" perspective. Among participants with this critical perspective, two distinct approaches can be observed. Some approach empathy with a degree of openness, acknowledging that it can provide useful insights to a certain extent before transitioning to discuss more effective methods. Others speak more impulsively, perceiving empathy as a way to exclude users' involvement from the process.

P1 states that while frequently utilized as a concept in design, empathy is inherently complex and not easily achievable by and for everyone. She expresses this sentiment: "Empathy is not as simple as saying, 'Let's take a piece of paper and see from someone else's eyes or put ourselves into their shoes.' It doesn't work like that." To make her point strong, she makes a comparison: "When you consider that it is already difficult to think and feel like our closest family members and guide things accordingly, how much harder will it be to genuinely empathize with an unfamiliar user group?" To solve a problem with genuine empathy, one must first fundamentally understand its "core", making empathy a nuanced concept. Both P1 and P19 calls empathy as "stepping stones" necessitating additional efforts to engage with users through discussions and interviews sessions to gain a deeper level of understanding.

P6 also uses a 'step' analogy but in a critical manner, caustically describing empathy as the "first step on the stairway to hell," emphasizing the limitations and potential superficiality of the concept in design. He argues that it is impossible to fully put oneself in the user's place due to the diverse and evolving nature of user demographics and cultural backgrounds. P6 emphasizes the importance of user research and hard data over relying solely on empathy, suggesting that empathy in design can sometimes serve as an excuse for insufficient research.

> "User research is an incredibly important data source. Empathy seems like an excuse to me for slacking off. I don't know if it contradicts your thesis or if I might be wrong. But I am very adamant about this: find and collect hard data! You cannot put yourself in someone else's place." (P6)

Regarding the superficial adoption of empathy in design, P7 comments on two slightly broader and perhaps ideological aspects. First, she reflects that empathy in design often feels inauthentic and pragmatically driven. She observes that while a general narrative suggests that understanding people and establishing empathy are crucial to achieving certain project goals, many practitioners do not fully embody or align themselves with the core value of the concept. Second, she criticizes the tendency of designers to adopt trendy labels like "sustainability" without grasping the true nature and genuinely integrating these values into their personal lives. Similarly, she feels that empathy in design is mostly conceptualized superficially, lacking depth and true comprehension.

> "I feel like it [the concept] doesn't come across very authentic to me and seems to be used in a very pragmatic way. I mean, 'We want to achieve certain results in projects, so we need to understand people, [that is why] we need to establish empathy, and so on.' That's how the general narrative seems to go. However, many people don't practice it in this way. On the other hand, it's exactly why people find this [designers placing themselves in the user's place] difficult in the first place. Maybe we're trying to apply it without fully understanding or embodying what empathy truly is.
>
> Another aspect is how, as designers, we create very fancy labels for ourselves, like titles such as sustainability, equity, and so on. But how much do you really apply this in your own life? For example, even in our department, I see people talking about sustainable transitions and so on. But when there's an event in the department, everywhere is full of trash, this huge pile of garbage. It makes you think, 'What happened to that sustainability you were preaching ?' So, it seems very fragmented, like the values we claim to

> advocate don't align with our actual lives. I'm full of frustration about this! [smiles]" (P7)

Empathy as Bond-forming: Although only one participant explicitly defined empathy as "the ability to form a bond with the user group and understand their needs and desires" (P2), several other responses implied that empathy involves establishing a meaningful connection with user groups. This connection goes beyond practical understanding, emphasizing genuine engagement during user-designer interactions and beyond (P1, 5, 7, 8, 9). As P2 articulated, these engagements don't necessarily have to be verbal, but establishing a deeper understanding of the other person "in some way" is crucial.

Reflections in this section indicate that the traditional notion of empathy —putting oneself in another's shoes— is seen by many participants as a complex and often contested concept within the design context. Nevertheless, these reflections provide valuable insights for evaluating how empathy is conceptualized and applied in design.

The next section explores the qualities of empathic designers, as illustrated by the participants and the analysis of their comments. This discussion offers valuable insights that inform and enhance the speculations and critiques surrounding the definition of empathy in general and in design context.

4.5.3 Qualities of Empathic Designers

Compared to previous questions that focused on designers' general views on the concept of empathy and its role in design, participants were less hesitant and skeptical to respond and provided a wealth of answers regarding the perceived qualities of empathic designers. Still, two participants expressed uncertainty and skepticism regarding the nature of the question.

P7 highlights the conceptual ambiguity surrounding empathy, describing it as “too confusing,” which led her to question, “What are the boundaries of empathy, and to what extent can we claim to empathize with someone?” In a similar manner, P19 emphasizes the importance of contextual variation, noting that the presence of empathic qualities and their relevance to designers would change depending on the “situation, product, and user group.”

4.5.3.1 Genuine Interest

P3 prioritizes being “genuinely interested in understanding others” to such an extent that no other qualities are crucial for becoming an empathic designer. She believes that as long as designers have the “true desire and motivation to understand others,” they can develop empathy by making a concerted effort, dedicating time, and doing the necessary work to see things from another's perspective. This foundational interest can be interpreted as the driving force behind empathetic design practices.

P4 leans strongly towards the importance of being a “good listener” as an overall mindset when reflecting on the qualities of an empathic designer. She expresses a general frustration with people who are “focusing solely on their own thoughts and words”, suggesting they might not “excel in any area.” She underscores that creating products without genuinely paying attention to what others articulate leads to self-centered designs. Similarly, P5 talks about being genuinely attentive as a quality.

> “For example, you're talking to a mother, and her child is sick... [in a compassionate tone]. When she talks about her child, let’s say she mentions her daughter's name, 'our Fulden doesn't follow her treatment at all.' Capturing that name and using it in the next conversation or even in the current one has a very positive impact; it shows the mother that you care. For instance, saying, 'Ms. Yasemin, what does Fulden do when she goes to school, how does Fulden manage her treatment there?' makes the conversation feel more heartfelt to the person you're talking to.” (P5)

P19 values open-mindedness in being receptive to others' viewpoints, especially when they differ from designers' own. By reflecting on his personal attitude, these efforts to understand diverse perspectives enable him to gain insights he might otherwise miss.

> "I listen to everyone on every subject, and politics is a clear example. I listen to people who don't think like me and try to understand them. I ask myself, 'Why are they saying this? What are they seeing that I am not? What needs do they have that make them say this?' If I can do this even in politics, it shows that I am open-minded." (P19)

4.5.3.2 Conscientiousness

Conscientiousness, under the theme of qualities of empathic designer, refers to designers' commitment to work diligently and in an informed way.

P18 and P13 elaborate on two general principles relevant to conscientiousness, a growth mindset, and being actively observant, which are qualities foundational to a heightened empathic capacity. According to P18, designers should continuously equip themselves with the necessary expertise, especially when working in unfamiliar industries and project domains. To achieve this, she suggests adopting a growth mindset and researching diverse sources of information and inspiration to strengthen the foundation on which empathy can be built. For P18, such a growth mindset is integral to the nature of design work, and forgetting its importance can lead to "complacency."

> "We need to continually equip ourselves and become familiar with each [new] sector. In this sense, a designer must be able to access various resources. For example, I look at gaming consoles [when I design flight control sticks.]" (P18)

Similarly, P13 identifies having an actively observant mindset as a significant quality for fostering empathy. By continuously paying attention to how designers and others use products —whether they are directly related to their current project domain or not— he believes designers can collect transferable insights that reinforce their capacity to empathize.

Three participants reflected on designers' conscientiousness from the user engagement perspective by valuing persistent efforts to access and understand users (P11, P1) and engaging with user research tasks in a serious manner (P1, P13).

P11 states that designers "must not be lazy" and should proactively seek ways to access users' knowledge and experience as part of their design process. P1 underscores the significance of "being curious" in understanding unfamiliar user groups, particularly in terms of committing themselves to further questioning instances where designers encounter incomprehensible aspects of the users' context.

> "[Designers] need to be curious because they need to understand the user from all perspectives. There will be times when they don't fully grasp something, and certain points might not make complete sense. In these cases, they should rely on their curiosity, ask questions, and strive to understand. That's why I believe that curiosity and the ability to ask questions are crucial skills." (P1)

Additionally, P13 touches on the ethical aspect of engaging with users within a professional context and highlights the importance of informing users about the process. For P13, a conscientious quality for empathic designers is educating themselves about ethical procedures and "genuinely" exercising them while engaging with users.

> "Transparency in the process is a form of sincerity. If I'm going to do something with [the user], I need to explain 'why I'm doing it and for what purpose . . . and what will happen to the information I gather from you [user]?' There needs to be clear communication about these aspects, which brings ethical processes into play. These processes must be carefully planned

> from the outset. . . . [In this context] genuinity is related to the transparency and integrity of the process." (P13)

Lastly, P19 evaluates empathy as part of a broader dedicated approach and signifies guided concentration as an overarching quality. This requires designers to invest the necessary time and focus on the design process holistically to achieve integrated results that go beyond empathic understanding.

> "As a skill, I highly value concentration. I don't believe in speed in design; I believe in quality. . . . Sometimes, when I design, I feel something close to meditation. That's what I mean by concentration. There's a point where you can fully immerse your mind in the task. I believe that reaching that point leads to better outcomes. It means really focusing on the thought process, dedicating time and energy, thinking calmly, rethinking, and incorporating feedback —it's a process." (P19)

4.5.3.3 Self-Reflection

Like the concept of 'designer introspection' mentioned in the literature (Section 2.4.5), participants emphasized the importance of designers reflecting on their own mental and emotional processes, particularly reflecting on one's implicit and explicit biases and the conscious effort to address and counteract them. P15 explicitly refers to self-awareness while making assumptions about the unknown aspects of the user.

> "Well, I think it's a bit about self-awareness. What I mostly observe in people is that they tend to fill in the unknown aspects of a user group they're not familiar with using their own life experiences. They think, 'they [users] must be doing it this way,' but that's often not the case. It's important to leave those unknown aspects blank. Therefore, we need to clearly differentiate between what we truly know about the person and what we are filling in from our own assumptions." (P15)

P2 touches on the concept of “being aware of one’s own biases” from human-nonhuman communication by highlighting that our human-centered perspective influences our empathy towards animals. When empathizing with a non-human, our understanding is shaped by our own experiences, beliefs, and biases as humans.[4]

P16 and P20 discuss the challenge designers face when they become deliberately or unknowingly attached to their own ideas, which can lead to bias in user research.

> “Sometimes, a designer has a design or solution in their mind and conducts user research, hoping to hear particular feedback [validating it]. When the feedback received isn't what they hoped for, it can disrupt some of their initial plans. Sometimes, they might realize that what seemed like a great idea actually isn't, or it could be making things more difficult for the user. In design, empathy can mean completely setting oneself aside. . . . Of course you will filter it [what you hear] through your own perspective, but don’t rush into doing so. . . . Listen once, listen again after three days. We designers often have preconceived notions of what is right, and design solutions form in our minds as soon as we hear feedback. It's important not to fall in love with that first solution.” (P20)

P18 and P19 highlight that having self-control over one's feelings is an important quality for an empathic designer, especially in fostering effective and positive relationships with colleagues. P18 touches on self-control from the traditional roles attributed to designers and engineers’ aspect, who are often positioned in opposition to each other. For her, recognizing that colleagues are all part of a larger system with their own complexities and challenges promotes cooperation and prevents unnecessary conflicts, since it benefits no stakeholder to have conflicts. Similarly,

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[4] In my experience as a dog owner, I have frequently observed a common misinterpretation of canine behavior by humans. When a dog becomes tired or overheated, it will pant with its mouth open and tongue hanging out. People often misinterpret this behavior as a smile or an expression of happiness. However, this is actually a thermoregulatory response, where the dog is attempting to cool down. This finding highlights the human tendency to anthropomorphize animal behaviors, projecting human emotions and expressions onto them, which can lead to misunderstandings of the animal’s actual physiological state.

P17 suggests an empathic designer must calmly handle conflicts within the team or from external sources, ensuring that personal feelings do not overly influence professional interactions. While it's natural to have emotional reactions, maintaining balance and "setting boundaries" by "knowing when to step back" is essential (P17). P17 further exemplifies this notion through a hypothetical scenario, particularly referring to being user advocates in a controlled manner within the work context.

> "A user crisis might occur at 10 PM, and they could write to our customer support. I can receive this news, but if it affects me too much, the decisions I make the next morning could adversely affect many things. There's already an ongoing process. Ultimately, I can't just dive in and say 'Yes, but people are dying, this problem has occurred, we need to do this' [mimicking an anxious and caring voice tone] because there are already business decisions, development decisions, and product decisions involved, and I work there. I must not allow my personal opinions or emotions to be too involved." (P17)

4.5.4 Characteristics Attributed to User Groups to Empathize

When reflecting on whether there are any user groups that require particular attention to empathize and while empathizing, participants reveal two directions. Dominant one was related to sensitivities and being informed and careful before applying empathy with certain groups. Still, three participants (P1, 9, & 13) reflected on the universal application of empathy to any target groups.

P1 favors treating "everyone other than designers themselves" with equal attention within the design process. Everyone has their own unique world and needs, which are significant and special within their own contexts, and designers strive to be "the voice for people with [such] specific needs," yet some of these needs may be easier to meet than others (P1). P9 states that the practice of understanding and empathizing with emotions and needs is universally applicable and effective for all groups if designers adopt a "non-violent communication" approach free from prejudice. P13 brings a pragmatic view, asserting that empathy is essential to a designer's job and should be uniformly applied to all user groups. They argue that the amount of empathy required does not vary between different groups, as the goal is to understand and address the needs of the users, whether they are "fishermen or disabled fishermen with a disability".

Users with communication barriers: P2 refers to vulnerable groups such as children, older adults, people with disabilities, and animals who face communication barriers due to their inability to express themselves verbally. This group is characterized by their unique challenges in conveying their worldviews and needs, which require designers to adopt a more empathetic and attentive approach to understand and address these needs effectively. P2 emphasizes that having limited knowledge about the experiences of these disadvantaged groups makes it difficult to empathize with them. Therefore, thorough research, including a review of secondary sources and literature, is necessary before conducting research or communication with these groups.

Users vulnerable to pity: Many of the user groups mentioned by the participants can be considered vulnerable, as their individual and collective circumstances often require special attention and care to ensure their well-being during user engagements and while catering to their needs in design.

P4 refers to patients in the healthcare sector, characterized by their need for thoughtful and practical empathy. These individuals may be undergoing various treatments and experiencing significant challenges. P4 implies that while empathy is essential, it should be balanced and free of pity, focusing on practical solutions to improve their conditions. P4 also discusses the risks associated with "excessive empathy" on the designers' side, particularly if it leads to feelings of pity. She urges designers to avoid overwhelming themselves with the emotional burden of patients' experiences, as this can lead to ineffective and unsustainable design processes.

> "A designer should recognize that it's unreasonable to push themselves into a difficult situation by trying too hard to empathize. Instead, they should listen to patients' experiences in a rational manner, such as noting how many

> medications they take daily or frequency of treatment they receive, and then proceed with thinking about how to improve these conditions. They need to evaluate what they have learned internally for a while and then focus directly on solutions. There's no point in getting bogged down and struggling within the problem itself" (P04)

Marginalized users: P7 highlights the necessity of heightened caution and preparation when engaging with "marginalized groups," especially those who have experienced trauma or come from "different historical backgrounds." She emphasizes the importance of prior training and contextual knowledge to avoid triggering negative responses.

> "Especially, when working with groups that have experienced trauma, it is crucial to be very careful. Honestly, if I were to do it again [working with refugees escaped from war], I would not rush into it without prior training because you can't always predict what you say might trigger in them" (P7)

Specialist user groups: The degree to which designers can familiarize themselves with users may increase when shared and relatable experiences exist. However, this familiarity might become relevant and feasible for empathizing when it aligns with the specific context and brief of the project. P11 illustrates this by comparing two unfamiliar user groups involved in his previous projects: war refugees, considered among disadvantaged user groups, and perfusionists, who belong to specialist user groups. For user groups engaged in highly technical work like perfusionists, he argues that it is more difficult to empathize because these roles involve experiences and contexts that are far removed from his own.

> "In cases that are very distant from our own experiences, for example, refugees [referring to refugee camp shelter project]. You live somewhere, and these people also live somewhere. You are in a position to empathize a bit more in terms of living spaces, and also, you can somewhat imagine, 'If there were a war in our country and I had to go somewhere else, I would be that person. How would I feel then?' Maybe your foresight can align more closely

> with theirs. Empathy is somewhat about foresight in that situation. But if it's a user group that does a very technical job, I think one should avoid trying to empathize. For example, this could be a perfusionist, a soldier, or a pilot. I don't know, but you should be more cautious when trying to empathize with people who are in positions you would never find yourself in." (P11)

4.5.5 Evaluating the Empathy Achieved in a Design Solution

The ability to accurately evaluate whether a design considerably embodies empathy depends on various factors. Six participants (P7, 11, 12, 13, 14 & 19) articulated several difficulties in accurately pinpointing empathy indicators in a design solution, all by considering the evaluator as someone other than the designers involved in said solution. These difficulties can be communicated under two overall factors: *identifying the originating source of the indicator* and *the evaluators' own capacity to empathize.*

Identifying the originating source of the indicator: P11, by considering empathy as imagining the users without direct engagement with them, comments on identifying the source of origin for observed empathy indicators. He speculates that deciding whether a satisfying outcome is because of empathy, or the result of accurate insights derived from user research is difficult to tell by only taking the product as a reference point.

> "I think it is quite difficult to tell this because empathizing involves speaking on behalf of the user, which means indirectly entering the process as a user. Did the person [designer] perform effective empathy there? Or did they just conduct good user research, gather insight from people [users], and satisfy their appreciation. . . . It's somewhat possible to understand if the user is satisfied by looking at the product, but discovering if it was due to empathy or because the designer satisfied the people involved in their process... I think it's very difficult to understand this from the product alone." (P11)

Similarly, P12 and P13 question the originating sources of identified empathy indicators; however, they equate empathy to understanding users through research. According to P13, desirable results might have been achieved based on “assumptions about users' previous usage habits” rather than through novel empathic inquiry. As for P12, it is quite difficult to discern whether the observed indicators result from a deliberate empathic design process or if they happened by chance.

> “There is something peculiar about this question. Empathy is typically something established before the design process, but you’re [interviewer] talking about the period after the design has been produced. Therefore, we can't really evaluate whether the empathy observed in the final product is coincidental or genuinely the result of user involvement and accurate empathetic understanding during the process. There's a critical point or question mark here. One aspect relates to the pre-design phase, while the other relates to the post-design phase.” (P12)

Evaluators’ own capacity to empathize: To decisively determine whether empathy is genuinely employed or effectively achieved in a design, the evaluator's perceived capacity to empathize plays an important role as it is influenced by contextual competency and individual differences. From a product design perspective, P14 highlights the importance of familiarity with a product or sector in recognizing innovative solutions and improvements, which he considers to result from empathic understanding. By giving a personal example, he articulates that it is easier for him to notice innovative improvements in frequently used items, but he would struggle to do the same with unfamiliar products.

> “I usually have an 'aha' moment for things like repair tools, for example. I guess I am quite familiar with that sector. When someone solves problems, I have experienced, I can immediately notice it. But for example, I wouldn't be able to see that in an iron. However, if it's something I use very frequently in daily life, like if someone adds something to a hammer drill, I can understand it very well. I mean, I can see the source of that solution, where it comes from.” (P14)

From a social design context, P7 argues that an evaluator without some form of "established engagement with beneficiary groups" would struggle to grasp "broader socio-political context and power dynamics within" sufficiently. It is because, for such projects, criteria to evaluate the empathy-orientedness of the suggested solutions are not predefined and emerge as the project unfolds along with concerned stakeholders' perception of these context-specific criteria (P7).

According to P19, recognizing empathy indicators requires evaluators to "possess similar empathy themselves" to those of designers involved in the generated solution. By implying empathy to be a "capacity" requiring context-specific expertise to identify users' needs and caring for discovering ways to respond to these needs, he suggests evaluators having alike capacity can accurately spot empathy indicators.

> "From my own experience, I can say this: We sent the same line of carpets in blue to Kazakhstan, and it sold four times more than it did before. This is a very clear, quantifiable fact. The customer was already loudly insisting that they wanted blue, but we kept trying to send brown. Breaking that resistance and making the change happened during one of my trips to Kazakhstan. The results were immediate and clear. The customer was vocal about it, and when you go there, you'll see blue carpets being sold everywhere. But the wholesaler coming here wasn't telling us this. It was strange. That person lacked empathy. They didn't have the ability to understand, but when you go there and listen to the local seller's concerns, you understand why they prefer the other carpet—because it's blue. Sometimes, it can be this simple. Even a minimal level of empathy can be the key to the solution." (P19)

Notably, two of these six participants speculating on the factors influencing empathy indicators finalized their responses by proposing that recognizing the "lack of empathy" in design might be easier than identifying whether it is successfully incorporated. P11 suggests that "poor designs" which appeared to be created "on a whim" or "without a clear understanding of reality" from users' perspective likely lack empathy. Likewise, P7 notes that empathy failures are more readily observable than its successes, which become particularly apparent during product-user interactions.

4.5.6 Indicators of Empathy in a Design Solution

This section presents empathy indicators signaling a perceived kind of empathy is involved in the design process or is achieved at the end through observable or inferable over a design solution.

Nearly all participants highlighted the effectiveness of a design solution in addressing a real problem of users or meeting users' needs and expectations. However, they predominantly used these references as supplementary arguments for other points. Empathy indicators can be categorized under two main categories*:* *Indicators originating from user response* and *indicators originating from the design solutions*

4.5.6.1 Indicators from User Response

User response, as expected, is a strong empathy indicator, given the number of relevant responses and the confidence participants exhibit when discussing it. It is categorized under two categories: user feedback and user acceptance. *User feedback* is characterized by solicited feedback from users through more systematic and conventional methods of collecting user data, such as surveys and product trials, either momentarily or at regular intervals. *User acceptance,* on the other hand, refers to observed data relying on secondary sources and extending to real long-term use. It involves evaluating how users integrate the product into their daily lives and its sustained impact on their routines and on themselves.

User feedback: Seeking feedback from users during the design process or for a finalized design solution is one of the conventional evaluation methods. Two participants explicitly identified the content and style of these users' feedback as important empathy indicators. P3 highlights that conducting surveys to measure satisfaction and collect suggestions demonstrates an empathetic approach to continuous improvement based on stakeholder feedback. Similarly, by revisiting a memory, P9 mentions that asking for feedback and receiving passionate responses made her feel euphoric, which she considers an empathy indicator.

> “The user's happiness definitely defines it [empathy achievement]. It means the product has genuinely solved a problem for them. For example, at my previous job, we designed something and then asked for feedback from users. There were videos of their reactions, and one woman was explaining with a beaming smile, 'Oh, I'm so happy you did this,' and so on. We were so happy because we realized we had truly solved her problem. It meant we had understood her needs correctly.”

In addition to evaluating users' feedback on their actual or anticipated use of a product, collecting insights on how they structure their feedback narrative, and their non-verbal reactions can provide valuable indicators for empathy evaluation. P20 suggests using a hypothetical setting to gauge the level of empathy achieved with a user group that has been previously consulted for product improvements.

> “Suppose someone provided you feedback, and you designed the product accordingly and presented it to them again. When you first present your product to them, does their initial reaction show a smile, or do they respond with, ‘Oops, this isn't what I meant’? If the person smiles and says, 'Oh, this part is really good,' rather than immediately focusing on the negative aspects, if they stay positive for the first half of their commentary, then it indicates that empathy has been effectively applied.” (P20)

Two participants place significant value on *spontaneous feedback* as an indicator of empathy during their ongoing engagement with user groups and other key stakeholders. P5 emphasizes the importance of receiving unsolicited comments, such as a domain expert saying, “This turned out even better than I expected!” He views such feedback as a key factor in defining project success and an indicator of higher levels of empathy throughout the design process. Similarly, in the context of social design, P3 recounts a moment when a child with a disability shared, “I took my prosthetic hand to school last week, and everyone loved it!” Such spontaneous feedback affirms the success of empathetic efforts and underscores the meaningful impact of the solution on users' lives. In the following quotation, P3 shares a touching observation that elaborates on this meaningful impact, illustrating how spontaneous feedback can also arise from observable changes in an individual's demeanor.

> A mother, who was my first case and a difficult one, was very distressed when they first came in [family gatherings]. Her child was about 8-9 years old. The mother looked very old, her hair was disheveled, and she seemed very unhappy. I was very affected by her. Every time she looked at her child, her eyes would fill with tears. She always approached everything with a sense of victimhood... I wish you could have seen her final state! She started coming in well-dressed, glowing. . . . in these family gatherings [projecting confidence] 'I went through this difficulty, I was in that place, but now I've moved past it.'" (P3)

User acceptance: Having predominantly articulated within the commercial design context, user acceptance of design solutions is a strong empathy indicator, considering participants' confidence when pronouncing it in their responses (P1, 9, 12, 15, 16 & 17). An overall structure of user acceptance can be summarized as follows: According to P15 " a right solution has been developed if users are satisfied with the product." Subsequently, satisfied users develop "a sense of ownership of the product and embrace it" (P9) which leads to its "widespread acceptance by its target group" (P12). According to P12, a product's acceptance in the market is a strong indicator of its success and empathetic design. However, lack of acceptance does not automatically mean the product failed due to poor empathy.

> "Looking at many products that didn't hold up in the market, it doesn't actually mean they are unsuccessful. Maybe they weren't given enough time. They didn't come out at the right time. By right time, I mean, for instance, they might have come out during a pandemic. So, they might not have received the impact they were supposed to get. This could also be limited by any external factor. But acceptance, meaning the product or service being accepted, is actually the fundamental indicator that it worked, I think. To reiterate, something not being accepted doesn't mean it is wrong. But if it is accepted, it confirms that it is right." (P12)

Building on this broader reflection on user acceptance in the market, three participants shared more nuanced empathy indicators related to user acceptance, distinguished by their passionate nature.

For P1, a product that “integrates seamlessly into the user's life” to the point where it feels “as if it has always been there” suggests a high level of empathic consideration. According to her, users “forget about the presence of a product” because it “works so well” and “the more it becomes a natural part of their daily routine, the more successful it is.”

According to P16, enthusiastic and heartfelt endorsements or reviews given by users to a product suggest that the product has empathically met or exceeded their expectations and needs. This enthusiastic sharing reflects a deep connection between the user and the product, highlighting its significant integration into their daily lives (P16).

> “[If a user] has fallen in love with the product, you know, if they're talking about it everywhere, constantly mentioning it on Instagram [a social media platform] and so on, then probably the right thing has been done, I guess.” (P16)

For P17, a key empathy indicator is the users’ willingness to recommend the product to others without any external incentives. By discussing a hypothetical mobile application within the UX design context, P17 articulates that such an act of recommending signifies that the product has become an “integral part of the users' lives.”

> “It's about the genuine desire to share something you find valuable. For instance, I might say to my friends, 'Look, I found something like this; you should check it out, too!' I had taken the time to learn about it myself, and now I'm trying to influence those around me.” (P17)

4.5.6.2 Indicators from Design Solutions

Intuitiveness: Several participants (P4, 13, 16, 17 & 20) seem to agree that the design of products should guide the users on how to intuitively interact with them. When such intuitiveness is achieved, this results in perceived ease of use, which participants relate to the presence of empathy during the design process. P4 and P20 concentrate on users' first encounters with a new or upgraded product and reflect on intuitiveness via matching affordances (P4, 16 & 20). Although none of them explicitly used the word 'affordances,' their comments implied the presence of affordances as interactional properties of a product facilitating use mainly based on users' previous experiences. P13 and P17 comment on the intuitiveness of products via the smooth interactions they enable.

According to P16, when users can "effortlessly use" the product without feeling the need to ask questions or provide feedback, it likely indicates that empathy was employed in the design process. Similarly, P4 suggests that if a product accurately triggers users "from where to start," empathy "has certainly been effective to some extent." Supporting this, P20 comments on the match between intended and actual use over the design of a handle for a mobile medical device having a screen on one side.

> "For instance, imagine you've added a handle to a device. The question is whether the user actually uses this handle as you intended. When they hold and carry the device, does the screen face the correct way? Do they hold it by the handle as expected, or do they lift it from both sides like a box? If the user interacts with the handle in the way you envisioned, it can be said that empathy has been applied [in the design process]." (P20)

P17 expresses her admiration for interactional features such as micro-animations providing smooth navigation within an interface design. For her, solutions involving such demonstrate empathy by improving the overall user experience in "subtle yet significant ways." Lastly, P13 strongly expresses his opinion on how "smooth interactions” signal that empathy should have been a genuine part of the design process.

> “From the perspective of user interface design, I believe that any product with smooth interaction shows a high level of empathy. . . . If something new that I just got feels very intuitive and I can use it quite easily, then I think there is a lot of empathy involved. If it is smooth, that’s it!” (P13)

Self-explanatory features: Many participants attributed empathic quality to the design process when the resultant solution presents self-explanatory formal and conceptual clues of being well-designed for an educated or experienced eye. Design solutions are perceived to be self-exploratory or include self-explanatory features when the evaluators find a consistent match between generated solutions with anticipated needs and expectations of target user groups.

As can be inferred from the two participants’ (P1 & 13) responses below, evaluators’ judgments are based on their expertise and familiarity with the design discipline in general or the specific sector that the design solution serves. It is also noteworthy that such judgments are characterized by swiftness as both participants labeled them as ‘aha moments,’ accompanied by success and appreciation value.

> “When I look at some products, they make me say 'aha', without needing any explanation. . . . When you look at the product, you say, 'Yes, this is really a product that the target group can use. Such products explain themselves. . . If the product is consistent with expectations, then I think it is successful. It's more likely to be unsuccessful if we can't see that consistency, and that's when we criticize it.” (P1)

> “With some products, you see them and immediately think, 'Aha! They've nailed it.' So what defines that feeling…? In my opinion, features seamlessly integrate into the product, not something like an add-on that feels tacked on, but rather an inherent part of the product that addresses a problem so naturally that it seems like it was always meant to be there. When a product finds such [integrated] solution, that's when you get the 'aha' moment.” (P14)

In addition to self-explanatory visual features signaling the usefulness of a design solution, P14’s response quoted above also celebrates the seamless integration of such features into the whole design solution as an empathy indicator. Similarly, P9's brief statement on empathy indicators, “If it [product] doesn’t look like it's been designed!” implies that a truly empathetic design is so well-executed that it feels natural rather than forced or artificial. P18 adds to this by noting that the visual orderliness of a design suggests that attention to detail likely extends to the entire design process, reflecting “empathic care.”

> “There really is such a thing as a ‘clean appearance’; it looks clean because efforts have been put into it. For instance, the concealment of elements like screws in furniture design suggests to me that meticulous care has been given there, leading me to conclude that similar attention has been given to many other aspects behind the scenes as well.” (P18)

So far, self-explanatory features that indicate the presence of empathy tend to resonate with something familiar in the evaluators' minds. Evaluators may also perceive empathy in design solutions indirectly when encountering an unfamiliar feature. After expressing her ability to notice “empathic attention” given by designers “even from the physical form alone,” P18 elaborates on her response to unconventional flight control grips designed for cockpits. As someone with relevant expertise and informed about the regulations coming from aviation standards, unusual approaches in the design of control grips allow her to infer that deep consideration should have been employed.

> “In benchmarking, some control grips’ forms tell me, 'Oh, here ergonomics were applied differently. That means a lot of testing was done on this.' I see a different kind of ergonomics and think, 'This has been thoroughly tested.'” (P18)

Inclusiveness: Design solutions are considered more empathetic when they show sensitivity to inclusion by recognizing the presence of multiple stakeholders and addressing their diverse needs. P3 emphasizes the importance of identifying key stakeholders and enriching design solutions to involve them, as a sign of empathetic sensitivity. She illustrates this over the pet tracking device project, suggesting that such sensitivity leads to increased stakeholder participation and concurrently enhances their overall well-being. Tailoring solutions based on the diverse needs of these stakeholders may require different approaches. For example, solving ergonomic fit could be crucial for dogs, while minimizing veterinarians' workload by filtering necessary data transmitted from the device could be essential. P2 concludes, “Meeting the needs of all these stakeholders is probably the most fundamental indicator of sufficient empathy.” Additionally, P2 highlights the importance of considering user diversity within specific stakeholder groups.

> “For example, among dog owners, there are specific user groups with varying information needs. You provide data from the product or interface, including tracking data. However, what each person focuses on or seeks to track differs. Therefore, correctly identifying these personas and providing tailored information to them is important for such devices, in my opinion. Consequently, empathizing when identifying these groups is necessary.” (P2)

CHAPTER 5

CONCLUSION

Empathy possesses a certain ineffable quality that draws designers to it as a concept, often cited when discussing their motivations, engagement, and the outcomes of their design solutions. However, the specific qualities that render empathy so valuable for understanding others in design remain elusive. This thesis, driven by the observation that empathy frequently arises in conversations about unfamiliar user groups —typically characterized by an experiential gap— aimed to explore designers' experiences with such groups to investigate designer empathy through the following research questions:

1. How do designers empathize with unfamiliar user groups in the design practice?

- What are designers' motivations and values for empathizing with unfamiliar user groups?
- What methods and strategies do designers apply to empathize in the design process?
- Whether and in which ways do designers reflect on the empathic processes they experience during the design process?

2. What is empathy for designers?

- How do designers conceptualize empathy in the design practice?
- What are the qualities of an empathic designer?
- What are the characteristics of unfamiliar user groups that designers aim to empathize with?
- What might be the evaluation criteria for empathic design processes?

5.1 How do designers empathize with unfamiliar user groups in the design practice?

5.1.1 What are designers' motivations and values for empathizing with unfamiliar user groups?

Designers' motivations for engaging with unfamiliar user groups and practicing empathy stem from a combination of personal values and professional responsibility. As highlighted in the literature, recognizing the significant gap that often exists between their own experiences and those of users who may differ socio-economically, bodily, culturally, or professionally, designers are driven by the desire to close this gap through empathic understanding within the scope of design projects. According to the literature, this commitment is mostly fueled by a strong belief in inclusivity and the conviction that understanding diverse perspectives is crucial for creating more meaningful and impactful design outcomes that satisfy multiple stakeholders involved. This commitment is also evident in the field study, which reveals *additional* insights concerning the unfamiliar user groups it focuses on.

For Vulnerable User Groups: Vulnerable users have distinct needs due to factors like age, disability, or marginalization, requiring deep empathy and specialized methods to address their unique challenges. These groups are often underrepresented, facing social and representational barriers that designers may feel the necessity of advocating for in the design process. When the perceived gap between designers and user groups is due to the vulnerability of the users, the predominant motivation centers around social responsibility and personal fulfillment. These motivations are primarily rooted in a commitment to addressing urgent real-world issues and fostering social justice and inclusion—goals that transcend purely commercial interests. Designers are also driven by the visible impact of their work, particularly in sectors like healthcare, where the tangible benefits of design solutions provide both personal fulfillment and opportunities for professional growth. When vulnerable user groups are the focus of corporate projects, the tension between social impact and commercial pressures becomes more pronounced, influencing designers' motivations. In such contexts, designers often perceive themselves as advocates for user well-being, especially when compared to other professionals within the same work environment and aim for a balanced approach.

For Specialist User Groups: Specialist user groups consist of individuals with advanced knowledge in specific domains, demanding precise, high-performing designs that reflect their complex workflows. Designers may bridge the expertise gap through trust, effective communication, and a deep understanding of their specialized contexts. When the perceived gap between designers and user groups is due to a lack of professional and experiential familiarity, the motivation to be involved in projects with these groups is usually not evident at the outset; these projects are often conducted within a corporate setting, and the user group is mostly not defined by the designer. However, designers' motivation for such groups becomes more evident *during and after* the engagement with these user groups. In these cases, the potential to learn from challenging and unusual design problems, such as designing a cockpit for air force pilots considering their unique context and the dynamic and unique nature of the design solution, become motivating factors. The unfamiliarity of these groups often highlights opportunities for exploration, driving designers to push the boundaries of conventional products and services. It is also evident that designers are motivated to understand such specialist user groups to better communicate with them and build trust, ensuring that their engagement within the work context is fruitful and demonstrates a level of competence towards such professionals.

5.1.2 Methods and Strategies for Empathizing with Unfamiliar User Groups

Designers employ various methods and strategies to familiarize themselves with users, reflecting the value of empathy in multiple forms and stages of the design process. This question has been primarily addressed by prioritizing the findings from the field study while similar stages and methods are discussed in the existing literature.

Building a Foundation for Empathy: The field study highlights two main strategies designers adopt to build a foundation for empathizing with user groups. The first is related to the breadth of knowledge and experience, or a "hinterland," that expands designers' capacity to empathize with various unfamiliar user groups and project domains. The second involves deepening knowledge and experience with respect to a specific user group and project domain. Designers begin their empathy-building process with traditional desk research methods, which include literature reviews, online searches, and benchmarking to construct a solid foundation. By exploring diverse sources, such as cultural artifacts and user-generated content (e.g., YouTube videos and social media posts), designers create a more comprehensive picture of users' lives and experiences. Before directly engaging with users, designers broaden their contextual and experiential understanding of the user group and the project domain.

Consulting Domain Experts: Throughout the design process, designers engage with domain experts to deepen their understanding of user groups and the project context. These experts provide invaluable insights, guide communication strategies, and assist in identifying appropriate participants for user engagement. Their involvement is particularly crucial during direct interactions with users; it ensures that ethical guidelines are adhered to, and their presence facilitates the generation of more reliable design insights.

Direct Engagement with Users: Both the literature review and field study indicate that direct engagement with users is seen as central to designers' empathy-building efforts. Designers may employ participatory methods to transform users into co-creators, fostering ongoing interactions that enhance the authenticity of feedback. Another approach involves unstructured interview techniques combined with in-person field observations, which allow designers to capture real-world behaviors, often revealing discrepancies between what users say and what they actually do. As highlighted in the field study, the quality of communication is critical to these engagements; designers encourage user participation and communication by using the "same language" or jargon familiar to the user group.

Handing over Empathy through Creating and Sharing Narratives: According to both the literature review and the field study, designers' narrative skills play an important role in creating and sharing empathic insights throughout the design process. Designers act as "translators" of complex user data into actionable information for diverse stakeholders, including colleagues, decision-makers, or external partners, through tailored narratives that preserve the nuances of user experiences. Designers use their visual narrative skills to craft compelling stories to facilitate empathy-building and convince the involved parties.

Developing User-Oriented Design Solutions: This process involves synthesizing the deep understanding of user needs, behaviors, and contexts into tangible design ideas that address the identified challenges. Designers use their empathy-driven insights as a foundation to generate ideas that are not only functional but also resonating with the users on multiple levels. In this iterative process, on the one hand, designers aim to balance technical and business constraints with derived insights, and on the other hand, they actively seek and share alternative ways and means that would result in a more user-oriented solution.

5.1.3 Whether and in which ways do designers reflect on the empathic processes they experience during the design process?

In the field study, designers engage in a range of reflective practices with respect to empathic processes, which reveal insights into how they navigate their roles, responsibilities, and challenges in a broader project context.

Designers' reflections on their roles as user advocates: Designers often face the challenge of defining and demonstrating their value within organizational contexts that may not fully appreciate the importance of empathy in design. By integrating themselves early in the decision-making process, designers may ensure that their perspectives and methodologies are recognized and valued by project partners and stakeholders. Designers frequently find themselves advocating for user needs within business environments which may prioritize project goals over user-centered concerns. This advocacy can be both rewarding and challenging, as designers strive to ensure that users' well-being is not compromised for the sake of efficiency or profit. The designer's role as a user advocate is essential, though it is often accompanied by the need to navigate tensions between user-centered design and business objectives.

Designers' reflections on their altered understanding of unfamiliar user groups: Their understanding deepens significantly as designers move from background knowledge to direct engagement with users. Initial assumptions about user capabilities and needs are often challenged and altered through real-life interactions, leading to a more accurate and empathic understanding of the user group. This transformation achieved through engagement and empathy building highlights the importance of not underestimating users' abilities and ensuring that design solutions enhance, rather than limit, their potential.

Designers' reflection on social impact: For vulnerable user groups in particular, designers reflect on the broader social impact of their work, recognizing the potential to contribute to societal well-being beyond the immediate project scope and business objectives. By focusing on long-term goals and creating supportive communities, designers seek to extend the impact of their work, fostering inclusivity and innovation that benefits a wider audience.

Reflective Summary on "How do designers empathize with unfamiliar user groups in the design practice?"

This research question examined how designers engage with unfamiliar user groups by exploring their motivations, methods, and reflections on familiarization processes with respect to designers' empathy. Designers empathize with unfamiliar user groups by navigating the interplay of personal motivations, professional responsibilities, and practical constraints. While they are driven by values such as social responsibility and inclusivity, they may conflict with the commercial pressures and project constraints in corporate settings. Designers employ strategies like desk research, consulting domain experts, and direct user engagement to build empathy, aiming to integrate these insights throughout the design process. However, the true effectiveness of these methods relies on their ability to go beyond procedural tasks and embed empathy genuinely into their work.

Reflective practices play a critical role, allowing designers to reassess their assumptions and refine their approaches as they deepen their understanding of user groups along with other stakeholders involved within the project context. Yet, systemic limitations, such as organizational dynamics and business priorities, frequently challenge how much empathy can influence the final design decisions. As designers strive to advocate for user needs, they must balance these competing factors, often facing compromises that impact the depth of their empathic engagement.

5.2 What is Empathy for Designers?

5.2.1 How do designers conceptualize empathy in design practice?

As examined in this study, empathy is a multifaceted concept that plays a prominent role in the design process, especially when designers engage with user groups unfamiliar or distant from their everyday experiences. Literature suggests that empathy is inherently other-oriented, and the need or drive to empathize becomes more pressing as the familiarity gap between designers and user groups widens. This involves not only perspective-taking but also the integration of emotions in understanding the user's experience, highlighting that empathy requires an emotional investment alongside cognitive understanding. Recent studies emphasize that empathy is not merely about understanding another's perspective but requires deeper, sustained engagement to bridge this gap and authentically represent users' needs, desires, and contexts.

Building on the literature review, a framework has been developed (Section 2.4.6), identifying three core dimensions for designer empathy: attitudinal approaches, behavioral applications, and evaluative perspectives.

Attitudinal approaches: This dimension refers to the conceptualization of empathy as the mindset, values, and motivations that designers bring to the design process. It emphasizes empathy's affective and passive dimensions, which are central to designers' sensitivity towards users and the broader project context. Attitudinal approaches highlight designers' personal conception of the notion of the user and the self-reflective process that shapes how empathy is and will be embedded in the design practice. This dimension serves as the foundation, establishing the underlying principles and attitudes guiding the designer's empathy approach.

Behavioral applications: Behavioral applications refer to the interactive aspects of empathy, involving the concrete actions designers take to understand and connect with users. This dimension conceptualizes empathy through the methods, techniques, and strategies employed during the design process to gain a deeper, experiential understanding of users. These actions are often tangible, such as user interviews, observations, and participatory design activities, and they directly influence design decisions and outcomes. Behavioral applications are predominantly motivated by attitudinal approaches, which are translated into practical and communicative actions in the design process

Evaluative perspectives: The evaluative dimension focuses on the reflective and constructive practices that designers engage in to assess and refine their empathy throughout the project. This involves critically examining the impact of their attitudes on, and behaviors towards users, project partners and other stakeholders. Evaluative perspectives require designers to engage in an ongoing introspection considering feedback and to make adjustments to their approach based on their experiences and reflections. This dimension ensures continuous improvement and adaptation in response to the complexities of the project domain.

The field study further highlighted the importance of understanding empathy in a more speculative and reflective sense from the designers' perspective. Empathy in design is not only a matter of understanding another's experience but also about forming genuine connections that extend beyond surface-level insights. While traditionally conveyed through metaphors like "putting oneself in someone else's shoes," this view oversimplifies empathy's true depth in design. In practice, empathy is perceived to involve continuous, reflective engagement with users that respects the complexity and diversity of their experiences. It requires designers to move beyond mere perspective-taking and instead foster deeper, more meaningful connections that inform the design process in a holistic manner.

Additionally, many designers challenge the practical implications of empathy in design, particularly in relation to evaluating empathy in design substitute for thorough user research. This perception has led to critical evaluations of empathy, particularly when it relies upon simulation and imagination of users' experiences without being backed by robust research methodologies. Designers' skepticism about empathy's potential to substitute for rigorous user research suggests that it may be used as an excuse for inadequate or poorly executed design work and user representation. This critical stance reflects a broader concern that empathy in design may sometimes be reduced to a trendy buzzword, applied more as a pragmatic tool for achieving project goals than as a deeply embodied value.

5.2.2 What are the qualities of an empathic designer?

The literature highlights several qualities that are essential for empathic designers. It emphasizes the importance of *emotional and cognitive flexibility,* where designers combine affective engagement with cognitive reasoning to deeply understand users while avoiding the “empathy trap” that may hamper innovation (Kouprie & Visser, 2009; Mattelmäki et al., 2019). Additionally, it points to the need for *sensitivity and adaptability* across various dimensions —such as human experiences, design possibilities, techniques, and collaboration— enabling designers to navigate complex and dynamic design contexts more empathically (Mattelmäki et al., 2014).

The literature also underscores the significance of *effective communication* in translating empathy into design action, where empathic understanding aids in bridging user research with design requirements (Töre Yargın, 2013). Furthermore, the need for *reflective awareness and ethical responsibility* is emphasized, where designers are encouraged to remain conscious of their biases and ensure that their empathetic practice remains ethical and aligned with user needs (Mattelmäki et al., 2019).

Both the literature and the field study agree on the necessity of flexibility and sensitivity to various contexts and user groups. The field study stresses the need for strategies tailored to different scenarios, supporting the literature's argument for a sensitive and adaptive approach. Additionally, the field study reiterates the literature's point on the importance of effective communication in transforming empathy into actionable design insights. The following qualities attributed to an empathic designer synthesize the perceived characteristics of an empathic designer: genuine interest, conscientiousness, and self-reflection.

<u>*Genuine interest:*</u> An empathic designer demonstrates a sincere and sustained curiosity about understanding others. This involves not just gathering information

but genuinely engaging with users' perspectives, needs, and experiences. Such a mindset drives designers to actively listen, pay attention to details, and invest time and effort in seeing the world through the eyes of those they are designing for. This quality fosters deeper connections and more meaningful design outcomes.

Conscientiousness: Empathic designers exhibit a conscientious approach characterized by diligence, ethical awareness, and a commitment to continuous learning. They maintain a growth mindset, actively seek out new knowledge, and remain observant of user experiences, even beyond their immediate design tasks. This quality ensures that empathy is applied thoughtfully and strategically, balancing user needs with project goals and ethical standards.

Self-reflection: Self-reflection is of great importance for empathic designers to recognize and address their own biases and assumptions. It involves regularly evaluating one's emotional responses and thought processes to avoid projecting personal perspectives onto users. By cultivating self-awareness and practicing emotional self-control, designers can maintain a balanced approach that ensures that empathy enhances, rather than obstructs, decision-making and design effectiveness.

5.2.3 What are the characteristics of unfamiliar user groups that designers aim to empathize with?

Understanding designer empathy in reference to unfamiliar user groups goes beyond labeling specific user groups. The characteristics of vulnerable and specialist user groups bring into sharp focus the complexity of empathizing with these users. Vulnerable groups, with their specific needs and limited representation, require designers to go beyond standard practices, often pushing the boundaries of empathy to understand deeply personal and often marginalized experiences. Similarly, specialist user groups demand a different kind of empathy —one rooted in respect for expertise and precision. By focusing on following shared characteristics identified in the field study and recognizing their intersectional, designers can create scalable empathy strategies that facilitate empathic understanding of both vulnerable and specialist user groups.

Contextual unfamiliarity: Users in unfamiliar or highly specialized contexts, such as technical professionals or culturally distant groups, present a challenge in empathetic design. Contextual unfamiliarity involves the degree to which designers can relate to or understand these users' specific environments or contexts and experiences. When users' contexts significantly differ from the designers' own experiences, the ability to empathize is challenged, requiring a deeper engagement with the users' specific realities.

Communication complexity: This characteristic pertains to users who face barriers in communication, including those with disabilities, non-native language speakers, and specialist groups who rely on technical jargon and specific language conventions. For specialist groups, effective communication often hinges on using precise, field-specific terminology. The complexity increases when users require communication that aligns with their professional language or when there is a need for alternative communication methods due to other barriers.

Emotional fragility: This characteristic is derived from emotionally vulnerable users such as trauma survivors, patients, or professionals experiencing high levels of stress. Emotional fragility necessitates carefully considering how to engage without causing distress, as these users may be sensitive to interactions that impact their emotional state. The presence of multiple vulnerabilities can further amplify emotional fragility, making it a critical aspect of empathetic engagement.

Power dynamics: Power imbalances are prevalent among both vulnerable and specialist user groups. Vulnerable populations, such as marginalized communities, often face social or economic disparities that affect their interactions with designers. Specialist groups may also encounter hierarchical dynamics in their professional interactions. Understanding these power dynamics is essential to eliminate barriers to more open communication and genuine understanding.

Dependence on practical solutions: Some users are defined by their need for immediate, practical outcomes rather than abstract empathy. For instance, users in vulnerable situations, like those facing a health crisis, may benefit more from empathy that translates quickly into actionable steps or tangible improvements. Here, the designer's role involves not just understanding the users' emotional state but also channeling that understanding into clear, effective interventions that address immediate needs.

5.2.4 What might be the evaluation criteria for empathic design processes?

The evaluation of empathy in design involves multiple facets, reflecting empathic engagements' complex and varied nature. The field study revealed four primary areas with respect to evaluation criteria from the designers' perspective: the depth of engagement with user groups, user responses to the product in the market, designers' self-reflection and introspection, and the acknowledgment of user contributions.

Depth of engagement with the user group: When considering how to evaluate empathy in design, it is essential to acknowledge the complexity and multifaceted nature of the concept. Empathy in design can be interpreted in various ways, depending on the context and the specific approaches taken. Generally, the act of selecting a user group and trying to understand them —whether through attitudinal or behavioral perspectives— is often considered a key indicator of empathy. This is particularly evident in the literature review, where engaging with user groups is seen as the first criterion of empathy, commonly described as being motivated to empathize with the user group.

User responses to the product in the market: The field study highlighted user responses to the product as a significant indicator of empathy, particularly as the product approaches the final stages of its development or after it has been released into the market. Empathy here is reflected in how users engage with the product — whether they interact with it effortlessly and provide positive feedback or express emotional attachment to it over time. These indicators suggest that the design has resonated with users more deeply, signifying a successful empathetic process.

Designers' self-reflection and introspection: Additionally, a critical aspect of evaluating empathy in design lies in the designer's ability to engage in self-reflection and introspection throughout the process. Designers should assess the source of their insights —whether they are a product of their own interpretations or directly observed by the user. In line with psychological definitions of empathy, one of the most crucial aspects is whether empathy leads to a *behavioral outcome*. After establishing empathy, the key question becomes: what actions were taken as a result? This outcome does not necessarily have to manifest as a direct design insight or product feature. Instead, it can take other forms, such as spreading the knowledge or insights gained about users within the company or making extra efforts to incorporate user insights into the design process

Acknowledgment of user contribution: Lastly, acknowledging the contributions of participating users throughout the project, especially towards the end, is a significant indicator of empathy. This acknowledgment can take various forms, including economic compensation or other forms of recognition, depending on the group's nature and motivation for participating. Continued engagement and explicit credit for their contributions can further reinforce the genuine connections built with user participants of a project.

The above criteria encourage the evaluation of empathy in design to go beyond momentary identification with users. Based on both the literature review and the field study, designer empathy should not be treated as an endpoint of achieving complete understanding but as an ongoing process of attunement with user groups in the greater project context. Rather than attempting to create a perfect symmetry between the designer and the user, the empathic approach should embrace the asymmetry of different experiences and work constructively with these differences to foster meaningful, inclusive, and innovative design solutions (Bennett & Rosner 2019). Such notion of designer empathy focuses on collaboration, open-endedness, and a transparent engagement with users and diverse stakeholders involved in the project context. Evaluative perspective on designer empathy is closely tied to how well designers sustain their empathetic connections with users, navigate project constraints, and translate these insights into actionable design outcomes within a broader project context.

Reflective Summary on "What is Empathy for Designers"

This research question explored the conceptualization of designer empathy in design practice. For designers, empathy in design is a concept that requires both emotional investment and sustained cognitive understanding when engaging with user groups whose experiences are unfamiliar or distant. This involves not only perspective-taking but also forming deeper, meaningful connections with users through three core dimensions: attitudinal approaches, behavioral applications, and evaluative perspectives. These dimensions work together to shape the foreground for conceptualizing designer empathy.

Three overarching qualities ascribed to empathic designers are genuine interest, conscientiousness, and self-reflection. These qualities highlight how designer empathy may extend beyond surface-level understanding, requiring designers to deeply engage with users' perspectives, remain professionally and ethically conscientious, and continually reflect on their own biases and experiences, ensuring that empathy is authentically integrated into their design process within a broader project context.

The characteristics of unfamiliar user groups encourage designers to approach empathy with greater care. Recognizing contextual unfamiliarity helps bridge the gap between different experiences while navigating communication barriers ensures clear understanding. Handling emotional fragility with care fosters sensitivity, and acknowledging power dynamics promotes more equitable interactions. Focusing on practical solutions ensures empathy leads to actionable, beneficial outcomes.

Evaluation criteria for designer empathy in the broader project context suggest key references for measuring perceived success, including the depth of engagement with user groups, user responses to the suggested design solution, designers' self-reflection regarding the process, and acknowledgment of user contributions to the process. These criteria encourage designer empathy to be assessed not only through direct design outcomes but also through ongoing engagement and recognition of the users' role in the design process.

Based on the answers given to research questions, the following section introduces the concept of *informed empathy* in design practice through the upgraded framework for designer empathy and provides a broader reflection on the role of designer empathy in design.

5.3 Informed Empathy in Design Practice

A central challenge for designers is the aspiration to maximize the impact of their empathic understanding of unfamiliar user groups while recognizing the often-rigid constraints imposed by the project context. Genuine empathic considerations add layers of complexity to this task, as designers must balance their professional integrity and honest intentions toward the user groups they serve, all within the boundaries of project feasibility. Achieving this balance requires a careful and sensitive alignment of expectations between various stakeholders, including the design team, users, and other parties involved in the project context.

However, aligning these expectations is rarely a straightforward task. Differences in priorities —stemming from limited resources, budget constraints, stakeholder perspectives, and organizational goals— can create tension and lead to misaligned expectations. This introduces a significant psychological and cognitive burden on designers, who must juggle these complexities while striving to ensure their design decisions are both well-informed and empathetically grounded. The well-being of the designer and their capacity to maintain coherence in their decisions is tested in such contexts. In these scenarios, *designer empathy* is not only a tool for understanding users but also becomes crucial for managing the intricate dynamics of the design process.

Discursively Informed Empathy in Design

Krippendorff (2007) introduced the concept of *second-order understanding*, which emphasizes the awareness that the meanings attributed to artifacts or actions in design are not universally shared, but are instead shaped by specific cultural, social, or individual contexts. He argues that understanding is not merely about the observable or what is immediately apparent but about recognizing how meaning is constructed through various interpretations and dialogues. This notion of second-order understanding, which aims to understand not just what something means to us but how it is understood by others in their own contexts, aligns well with core motivations and values ascribed to designer empathy in reference to understanding and representing unfamiliar user groups.

Drawing from Krippendorff's (2014) following work, framework of "discursively informed design," the concept of *informed empathy* is introduced to represent a more comprehensive understanding of designer empathy. Krippendorff's approach highlights the centrality of language, communication, and social narratives in shaping design processes. Therefore, designer empathy extends beyond merely understanding isolated user needs —it encompasses the broader discursive contexts in which users and designers operate. Designer empathy becomes an *informed practice*—one that is intricately connected to the complex social, cultural, and psychological dimensions surrounding users, themselves, and other stakeholders involved in the project context (Turner, 1986; Krippendorff, 2007).

Informed empathy requires designers to acknowledge the complex and interconnected social, cultural, and psychological dimensions surrounding the project context. It demands that designer empathy be embedded in these discursively informed contexts, allowing designers to not only gain a deeper understanding of user experiences but also to create solutions that satisfy broader organizational needs. This type of empathy involves interpreting more than just what users explicitly express; it also requires uncovering the deeper motivations and underlying narratives behind their interactions and needs. These narratives are shaped by collective experiences, societal norms, and cultural expectations (Lyotard, 1984; Krippendorff, 2007), all influencing how users interact with products, systems, and services.

The ABE Framework of Informed Designer Empathy

In *Section 2.4.6, the ABE Framework for Designer Empathy* was introduced based on the literature review. The framework integrated three core dimensions to reflect on the conceptualization of designer empathy in design practice: *Attitudinal Approaches, Behaviora Applications,* and *Evaluative Perspectives*. Figure 5.1, *ABE Framework of Informed Designer Empathy,* is an upgraded version this framework based on the answers given to research question of this study, together with the notion of informed empathy articulated in the above section. The goal is to depict the nature of designer empathy in design practice.

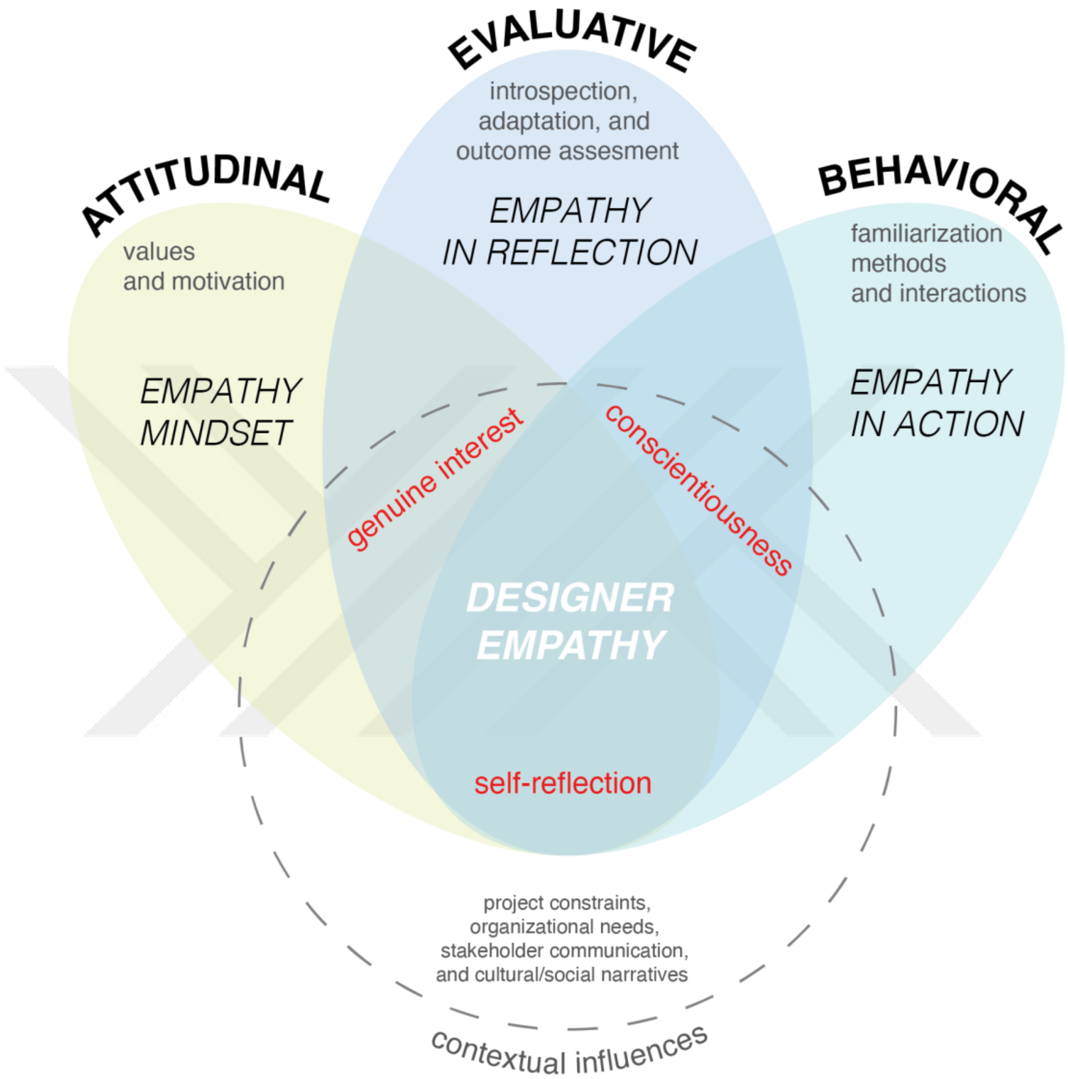

Figure 5-1 The ABE Framework of Informed Designer Empathy

Empathy is not merely a skill or tool for designers, but an embedded mindset shaped by a combination of emotional, cognitive, and ethical engagement. The *attitudinal dimension* of the framework refers to designers' **empathy mindset**, serving as the foundation by establishing the values and motivations that guide a designer's empathetic approach. This internalized mindset requires designers to adopt a *genuine interest* in empathic understanding and representation of unfamiliar user groups, alongside continuous *self-reflection*. However, without translating these values into practical actions, empathy risks remaining abstract and ineffective. While the **empathy mindset** is essential, it needs to be supported by concrete steps to ensure its desired influence on design decisions.

The *behavioral dimension* describes **empathy in action**, referring to the steps for actualizing the **empathy mindset**. It focuses on the practical methods and strategies designers put into practice for engaging and representing users. These actions are driven by a conscientious commitment to understanding users and amplifying their voice in the design process through direct or indirect user engagement. However, there is a risk that these actions may become mechanistic if not deeply informed by the **empathy mindset**.

The *evaluative dimension*, referring to **empathy in reflection**, introduces an ongoing critical lens through which designers assess their experiences and the interaction between their **empathy mindset** and **empathy in action**. This dimension involves ongoing introspection and adaptation through self-reflection, ensuring that empathy is not static but informed throughout the project lifecycle. **Empathy in reflection** considers *contextual influences* that externally affect designer empathy. It aims to balance an empathy-driven mindset and actions with the realities of project constraints and organizational needs within the project context. This reflection also considers the needs of other stakeholders in the project context, requiring tailored communication strategies to achieve a genuinely empathetic project realization. Furthermore, it critically informs the designer's **empathy mindset** and **empathy in action** by integrating broader cultural and social considerations, referencing potential outcomes of their decisions or the lack thereof in the project's realization. In this way, an informed designer’s empathy also recognizes the potential challenges posed by their subjective interpretation and their influence on organizational decisions to guide the design process toward solutions that are both contextually appropriate and empathetically grounded.

Towards Broader Notion of Informed Empathy in Design

A broader understanding of empathy in design practice shifts the focus from empathy as an individual practice to empathy as a collective mindset. It is essential to recognize that empathy is not solely about understanding users' needs but also about navigating the intricate web of relationships, responsibilities, and constraints within the project context. Designers are not isolated creators —they are part of a larger system of actors who contribute to shaping the final design. In this sense, designers are not only empathetic toward users but also toward the other stakeholders with whom they collaborate. Designer empathy enables them to align these stakeholders' diverse perspectives, values, and goals, ideally working toward a shared vision within the project context.

When empathy is expanded beyond the traditional user-designer dyad, it becomes a powerful concept for fostering collaboration and innovation. It informs how designers approach stakeholder engagement, negotiate conflicts, and co-create solutions with their teams. By approaching empathy as a mindset and action that permeates all aspects of the design process, from the early stages of conceptualization to the final phases of implementation, designers can better navigate the complexities of real-world projects when aiming for more inclusive and impactful outcomes that satisfy the needs of a broader range of stakeholders involved in the project.

This shift in perspective positions informed empathy as not just a means of "being like" the user (Bennett & Rosner, 2019), but as a strategic capability that enhances the overall coherence, relevance, and success of design solutions generated collectively. This capability is particularly beneficial when addressing the needs of unfamiliar user groups operating within complex social, cultural, and organizational contexts. The qualities of an empathic designer, as revealed through the literature and the field study findings, point to several key directions for promoting a broader understanding of empathy in design practice:

From technique to philosophy: Empathy should be ingrained as a design philosophy rather than being treated as a mere method or technique to employ. This philosophical shift requires fostering an environment where genuine interest, curiosity, and compassion for users are prioritized over rigid, prescriptive methodologies. Empathy becomes the lens through which design and project decisions are made, guiding the entire process rather than being confined to specific stages of user research.

Empathy with strategy: By integrating empathy with conscientiousness, designers can develop a strategic approach to empathy. This broader understanding of empathy does not require designers to disregard project constraints or organizational objectives. On the contrary, it involves aligning empathic insights with these factors as strategically as possible, ensuring that empathy enhances the viability and impact of design outcomes.

The practice of introspection: Self-reflection through introspection plays a critical role in ensuring that empathy remains an ongoing and evolving practice. Designers are encouraged to regularly reflect on their own biases, assumptions, and emotional triggers. By embedding reflective practices—such as regular debriefs, peer reviews, or journaling—into the design workflow, designers can maintain empathy as a core, evolving mindset that informs not only their design work but also their partners in design work.

A culture of informed empathy: For empathy to more effectively become a guiding philosophy in design, it should become a shared mindset embedded into the culture of design teams and organizations. By nurturing a culture of empathy, project teams can cultivate an environment where empathy is not just an aspirational value for designers, but a shared ethos that informs collective decision-making.

By focusing on these key directions, designer empathy can inform empathy in design practice and transform the notion of empathy from being an individual skill of designers to an integral part of the project context and organizational culture in a sustained manner.

Informed Empathy Empowering Design Communities

A significant barrier for culture of informed empathy in the current understanding practice of empathy in design among designers is the lack of shared strategies and documented experiences. While many designers develop effective personal strategies for understanding and empathizing with users, these strategies often remain confined to individual experiences. The design community should prioritize the creation of platforms and structures that allow designers to externalize their empathy-orientated experiences and contribute to a collective pool of knowledge.

In other professions, such as medicine, established practices exist for sharing knowledge and strategies in other professions, such as medicine. Medical professionals routinely document cases, create protocols, and share experiences with peers, ensuring that valuable insights are not lost. This systematic approach ensures that knowledge is disseminated and used to improve professional practice. However, industrial design practitioners, particularly in the Turkish context, appear to lack similar mechanisms for sharing empathy-related strategies. This results in fragmented and isolated practices, with few opportunities for designer empathy to be systematically externalized and shared.

Integrating designer empathy within the broader design research framework, as well as into design education, is critical for ensuring that empathy is treated as a core competency for both novice and experienced designers. The intersection of design research, education, and practice provides fertile ground for exploring and amplifying designer empathy as a unique quality. Such exploration could foster a more holistic and contextually aware design process, where empathy is not an isolated tool but part of a larger set of strategies aimed at emphasizing designers' capacity to understand and represent users in multidisciplinary organizational contexts.

Informed Empathy Through a Critical Lens

This thesis has focused on conceptualizing, applying, and evaluating empathy within design practices. However, it may have taken empathy's presence as a constant or unquestionable element in the design process. Therefore, a critical reflection is needed on whether empathy should be viewed as an essential aspect of every design scenario.

Empathy in design is often positioned within a framework of positive and virtuous intent, typically aimed at understanding and supporting users who are perceived as deserving or vulnerable. However, this conventional approach overlooks the potential for empathy to be employed in more complex and ethically ambiguous contexts. The application of empathy extends beyond merely assisting users to encompass scenarios where the primary goal is not the direct benefit of the user but rather addressing broader societal needs. This shift is exemplified in initiatives like "design against crime," (Design Against Crime Lab, n.d.), where the focus transitions from supporting the user to mitigating negative impacts on society.

Exploring the 'Design Noir' aspect, the darker side of empathy challenges the prevailing notion of empathy as inherently benevolent (Dunne & Ruby, 2001; Bloom, 2016). Understanding and empathizing with 'undesired' user groups, such as criminals, introduces a form of counter-user research that seeks to anticipate and counteract harmful behaviors rather than accommodate user needs. This approach expands the role of empathy from a tool for compassionate engagement to a strategic mechanism for navigating complex ethical landscapes in design. Such a perspective necessitates a more critical evaluation of the designer's role, prompting reflection on whether designers are merely facilitators of user desires or are responsible for intervening when user actions conflict with societal values.

More generally, the question of whether designers should empathize is not a simple binary choice but a complex, context-sensitive decision. It is important to consider the broader goals of the design process and the ethical implications of employing empathy. To illustrate, empathizing during the design of products for groups such as babies, non-human users, or individuals in perilous situations can considered for speculating such intricate emotional, practical, and ethical challenges. In designing for babies, empathy is often mediated through caregivers, as direct interaction with the end users is impossible. This proxy empathy may focus more on caregiver anxiety and needs, potentially leading to misinterpretations of the actual needs of the baby. Similarly, designing for non-human users, such as animals, presents another layer of complexity, as empathy often relies on anthropomorphizing behaviors, which risks projecting human biases onto non-human experiences. In more critical contexts, such as designing for individuals in high-risk or dangerous environments, designers must balance emotional engagement and professional detachment. Over-empathizing in these situations can lead to emotional burnout or impair the objectivity necessary to create effective solutions.

The above examples and reflections highlight empathy's limitations in design and additional notions that should be considered when informing designers of empathy. While empathy remains a powerful tool for creating user-centered products, there is a clear gap between understanding and experiencing another’s reality. As such, empathy must be applied thoughtfully, recognizing its limitations and ensuring it serves both user needs and broader societal goals without compromising objectivity or innovation. Empathy should be used with a clear understanding of its purpose and limitations —it's not solely about forming emotional connections with users but using those connections to inform design decisions that align with societal needs and organizational goals.

5.4 Contribution of the Study

The main significance of this study lies in its contribution to the ongoing discourse on empathy in design and designer empathy by offering a nuanced exploration of how empathy manifests in design practice, particularly when designers engage with unfamiliar user groups. It departs from conventional approaches that often view empathy as a general psychological trait or as an isolated activity in the design process. Instead, this study reveals that empathy, as practiced by designers, is an intrinsic and continuous aspect of their work, deeply embedded in the overall design experience.

Drawing on firsthand accounts from designers, empirical insights from the study provide a field-based perspective on how empathy functions as a concept from designers' perspectives in professional practice. This perspective goes beyond standard user-designer interactions and offers a nuanced understanding of how empathy manifests within the broader context of a design project involving multiple stakeholders. The insights gathered from designers reveal that empathy is not limited to moments of direct engagement with users but is continuously integrated into decision-making, solution generation, and reflection on user needs, even in cases where users are not present.

In positioning empathy as a strategic capability genuinely informed by empathy mindset and empathy in action, this study introduces the concept of "informed empathy," which transcends emotional connection with users and incorporates a broader understanding of the discursive, cultural, and psychological contexts in which design occurs. By drawing on Krippendorff's (2014) theory of discursively informed design, the thesis highlights the importance of social narratives within which both users and designers operate when practicing empathy in design.

In relation to informed empathy, a major conceptual contribution presented in this thesis is the *ABE (Attitudinal, Behavioral, Evaluative) Framework of Informed Designer Empathy*. This framework synthesizes empathy as a mindset (attitudinal), an action (behavioral), and a reflective practice (evaluative). Unlike previous frameworks that often treat empathy as a static trait or isolated event in the design process, the ABE framework demonstrates that empathy is an ongoing and dynamic process that requires continuous introspection and adaptation. By linking designer empathy with broader project contexts and organizational dynamics, the framework positions empathy as both a personal and professional tool, as well as a collective organizational strategy.

The implications of this study extend to both design education and professional practice. Integrating designer empathy within the broader design research framework and into educational curricula advocates for the treatment of empathy as a core competency. The call for creating platforms where empathy-related strategies and experiences can be shared within the design community addresses a significant gap in current practices. In doing so, the study highlights the need for a collective, rather than individual, approach to empathy in design, encouraging the design profession to develop structured, shared methods for documenting and disseminating empathic practices.

5.5 Limitations of the Study

This study has several limitations. To begin with, semi-structured interviews with designers introduce certain constraints, such as the dependence on participants' retrospective thinking and recall. Although this method provides valuable insights grounded in real-world experiences, it is susceptible to biases inherent in self-reported data, including selective memory, potential inaccuracies, or varying levels of self-awareness among participants.

Another limitation lies in the potential subjectivity during the analysis and interpretation of interview data. While thematic analysis was employed to enhance objectivity, generating themes and insights may still reflect the researcher's inherent biases.

The study's participants were designers who spoke Turkish, which facilitated access and consistency in conducting interviews. While this language preference contributed to a cohesive set of insights, it may have introduced a bias towards perspectives shaped by Turkish cultural contexts. Still, it is important to note that some participants were residing and working abroad, and many projects reflected insights from diverse cultures, offering a broader view beyond the local context.

The study's scope is intentionally concentrated on designers' perspectives. However, the field study revealed that designer empathy is closely tied to broader project contexts and involves multiple stakeholders. While the study primarily captured designers' viewpoints, integrating the perspectives of other stakeholders would have provided a comparative and nuanced understanding of how empathy manifests in relation to users and other project partners in a broader project context.

Lastly, the study's focus on both corporate settings and social issues often involved navigating various bureaucratic structures, making anonymization of projects and participants essential. While this ensured confidentiality, it also limited the clarity of the project contexts mentioned in the findings. The lack of specific details regarding these projects may have made some findings less comprehensible, potentially reducing their accessibility and the readers' overall interpretability of the research outcomes.

5.6 Recommendation for Further Research

Building on the insights and limitations of this study, several areas for further research emerge that could deepen the understanding of designer empathy and its application in diverse design contexts.

Validating the ABE Framework of Informed Designer Empathy in fictive scenarios: To support the investigation of designer empathy, which has been conceptualized based on designers' retrospective reflections, a key area for future research would involve testing the ABE (Attitudinal, Behavioral, Evaluative) Framework through real-time designer reflections. This research could be conducted through workshops where designers engage with hypothetical scenarios involving unfamiliar user groups derived from the representative cases of this study’s project sample. These controlled scenarios would enable the study of how designers apply and reflect on their empathy in real time, providing valuable insights into the framework's perceived utility and relevance.

Exploring designer empathy over culturally diverse sample of designers: To enhance the global relevance of designer empathy and informed empathy in design, further research could concentrate on a more culturally diverse range of designers. By incorporating designers from different cultural backgrounds, researchers could examine how cultural norms, values, and worldviews influence empathy. Such research would provide critical insights into how empathy is conceptualized, practiced, and reflected upon in various cultural contexts and could inform designer empathy in relation to the increasingly interconnected and multicultural landscape of design practice.

Informing designer empathy from other stakeholders’ points of view: Exploring designer empathy and conceptualizing empathy in design practice, the perspectives of users engaged with designers and other project stakeholders involved in the process could be investigated. Conducting interviews with users who participated in design projects as co-creators or research participants could offer critical insights into how designer empathy is perceived from the user's point of view. Similarly, gathering the perspectives of colleagues, business partners, and other project stakeholders could reveal how designer empathy influences the broader design process and its perceived value within organizations.

Researching the emotional and psychological well-being of designers engaging in empathy: This study identified that empathizing with vulnerable or marginalized user groups can take an emotional toll on designers, leading to potential burnout or compassion fatigue. Further research could explore the emotional and psychological impact of sustained empathic engagement on designers themselves. Such inquiry could examine how designers manage emotional boundaries, the support mechanisms available within organizations, and how design education can prepare future professionals to handle the emotional complexities of designer empathy.

Investigating empathy in design as a collective and organizational practice: While this study concentrated on designers' individual experiences with respect to unfamiliar user groups and its implications for designer empathy, future research could explore how empathy can be institutionalized as a collective practice and examine how empathy is fostered, sustained, and rewarded at an organizational level, and the structures that can be put in place to ensure that empathic practices permeate design teams, workflows, and operational strategies.

Investigating ethical considerations for designer empathy over niche design scenarios: The study's brief critical reflections on informed empathy regarding the ethical complexities of empathy, such as designing for 'undesired' user groups or navigating emotionally fraught situations, presents opportunities for further research. A study investigating how designers should ethically engage with empathy when designing for users whose needs may conflict with societal goals and empathy in relation to such scenarios could contribute to developing ethical guidelines for empathy-driven design practices.

Extending research on designer empathy to more-than-human actors: A promising area for future research is exploring how a post-humanist perspective can inform designer empathy by focusing on the inclusion of non-human actors in design processes. This approach would investigate how designers might cultivate empathy for ecosystems, animals, or technologies, acknowledging the interconnectedness of humans and non-humans within complex systems. By extending empathy beyond human users, such research could address ecological, technological, and ethical challenges related to design. Additionally, it would offer insights on how to rethink designer empathy toward human user groups, particularly in relation to the concept of unfamiliarity.

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APPENDICES

A. Ethics Committee Approval

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ORTA DOĞU TEKNİK ÜNİVERSİTESİ
MIDDLE EAST TECHNICAL UNIVERSITY

13 EYLÜL 2022

Konu: Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)

İlgi: İnsan Araştırmaları Etik Kurulu Başvurusu

Sayın Gülşen Töre YARGIN

Danışmanlığını yürüttüğünüz Mert KULAKSIZ'ın **"TASARIMCILARIN KENDİLERİNE UZAK OLAN KULLANICI GRUPLARI İLE KURDUKLARI EMPATİNİN DAVRANIŞSAL VE YÖNTEMSEL AÇIDAN İNCELENMESİ"** başlıklı araştırmanız İnsan Araştırmaları Etik Kurulu tarafından uygun görülerek gerekli onay **0485-ODTUİAEK-2022** protokol numarası ile onaylanmıştır.

Bilgilerinize saygılarımla sunarım.

B. Consent Form

GÖNÜLLÜ KATILIM FORMU

Lütfen dikkatle okuyunuz.

Katılacağınız görüşme, ODTÜ Endüstriyel Tasarım Bölümünde Dr. Öğr. Üyesi Gülşen Töre Yargın danışmanlığında Mert Kulaksız tarafından yürütülen doktora tezi çalışması kapsamında gerçekleştirilecektir. Görüşmenin amacı özel kullanıcı gruplarına yönelik çalışan tasarımcıların ve tasarım araştırmacılarının kullanıcıyı anlamaya ve kullanıcıdan edindikleri bilgileri değerlendirmeye yönelik yaklaşımlarına, yöntemlerine ve süreçteki kişisel deneyimlerine dair bilgi toplamaktır. Görüşmeye katılım tamamıyla gönüllülük temelinde olmalıdır. Görüşmeye katılmayı kabul ederseniz, sizden 90 dakikalık bir görüşme içerisinde size yöneltilen sorulara cevap vermeniz beklenecektir.

Çalışmada sesli veya görüntülü kayıt alımı:
Zoom platformu aracılığıyla gerçekleştirilecek görüşmelerde, izniniz alınarak ses kaydı ve oturum video kaydı alınacaktır. Kayıt sırasında istediğiniz anda kaydı durdurabilir veya belirli kısımların çıkarılmasını talep edebilirsiniz.

Gizlilik:
Görüşme kayıtlarına ve elde edilen bilgilere sadece çalışmayı yapan doktora öğrencisinin ve tez danışmanının erişimi olacaktır. Çalışmada edinilen veriler toplu halde değerlendirilecek; verdiğiniz bilgiler, kimlik bilgileri çıkarılarak ve kimliğiniz ile eşleşmeyecek biçimde doktora tezinde ve bilimsel yayınlarda kullanılacaktır. Talep etmeniz durumunda, yayınlarda ve tezde sizin sağladığınız bilgilerle ilgili kısımlar kontrol etmeniz amacıyla sizinle paylaşılacaktır. İzniniz olmayan kısımlar kullanılmayacaktır.

Katılımınızla ilgili bilmeniz gerekenler:
Katılım sırasında sorulardan ya da herhangi başka bir nedenden ötürü kendinizi rahatsız hissederseniz cevaplama işini yarıda bırakıp çıkmakta serbestsiniz. Böyle bir durumda çalışmayı uygulayan kişiye, çalışmadan çıkmak istediğinizi söylemek yeterli olacaktır. Çalışma sonunda, bu araştırmayla ilgili sorularınız cevaplanacaktır.

Çalışma ile ilgili bir sorunuz olduğunda ulaşabileceğiniz kişiler:
Bu çalışmaya ilgi gösterdiğiniz için şimdiden çok teşekkür ederiz. Araştırma hakkında daha fazla bilgi almak için araştırmacı Mert Kulaksız [redacted] ve Endüstriyel Tasarım Bölümü öğretim üyelerinden Gülşen Töre Yargın [redacted] ile iletişim kurabilirsiniz.

Yukarıdaki bilgileri okudum ve bu çalışmaya tamamen gönüllü olarak katılıyorum.
(Lütfen formu doldurup imzaladıktan sonra araştırmacıya geri gönderiniz).

Katılımcı Adı Soyadı   Tarih   İmza

Telefon ve E-posta

C. Interview Questions in Turkish

Belirli/seçilmiş bir proje özelinde

Davranışsal yaklaşımlar

1. Bu projenin hikayesini ve süreçteki deneyimlerinizi anlatabilir misiniz?
2. Bu projede, proje konusu/tanımı (brief) oluşturma süreci nasıl gerçekleşti?
3. Proje hedefindeki kullanıcı grubundan bahsedebilir misiniz? (Bu kullanıcı grubu nasıl belirlendi?)
4. Proje hedefinde yer alan kullanıcı grubuyla yakınlığınızı/ aşinalığınızı nasıl tanımlarsınız?
5. Projeye dair motivasyonlarınızdan bahsedebilir misiniz? (Süreçte bu motivasyonlarda değişikler oldu mu?)
6. Proje hedefinde yer alan kullanıcı grubuyla çalışmaya dair motivasyonlarınızdan bahseder misiniz?
7. Projeye dair ilk izlenimlerinizden bahsedebilir misiniz? (Süreçte bu izlenimlere dair değişikler oldu mu?)

Yöntemsel Yaklaşımlar

1. Hedef kullanıcı grubunu anlamaya yönelik ne gibi aktivitelerde bulundunuz, bahsedebilir misiniz?
2. Kullanıcı grubuyla doğrudan etkileşim içerisine girdiyseniz, bu deneyiminizden bahsedebilir misiniz?
3. Kullanıcı grubuyla doğrudan görüşmeden önce nasıl bir hazırlık süreci geçirdiniz? Açıklar mısınız? (Bu hazırlık sürecindeki aşamalardaki motivasyonlarınız nelerdi?)
4. Kullanıcını grubunu anlamaya yönelik süreçte yardımcı kaynaklara danıştınız mı? (Danıştıysanız ne gibi kaynaklar?)
5. Hedef kullanıcı grubunu anlamaya yönelik planınızda süreçte değişiklikler oldu mu? (Olduysa neler oldu? Bu değişikliklerin ne gibi faydaları oldu?)
6. Süreçte elde ettiğiniz bilgileri nasıl ve hangi formatta değerlendirdiniz?

Değerlendirici ve Eleştirel Yaklaşımlar

1. Proje kapsamında elde ettiğiniz kullanıcı bilgilerinden nasıl faydalandınız?
2. Kullanıcıya dair hangi gözlemleriniz projeye yansıdı? Ne gibi gözlemlerinizin projeye yansımadığını düşünüyorsunuz? (Sizce bunun nedeni nedir?)
3. Proje/kullanıcı araştırması sürecinde ne gibi durumları olumlu buldunuz? Açıklar mısınız?
4. Proje/kullanıcı araştırması sürecinde beklenmedik, sizi şaşırtan durumlar oldu mu? Açıklar mısınız?
5. Proje/kullanıcı araştırması sürecinde sizi zorlayan durumlar oldu mu? Açıklar mısınız?
6. Kullanıcı grubu karşında sizi iyi hissettirmeyen durumlarla karşılaştınız mı?

7. Projeye geri dönüp baktığınızda proje hakkında düşünceleriniz nelerdir? Süreçte değiştirmek isteyeceğiniz unsurlar var mı? Nasıl değişiklik önerileriniz olurdu?
8. Sizce bu proje başarılı bir proje miydi? Bu kararınızı etkileyen faktörler nelerdir? Sizin kullanıcıyı tanıma çabanız bu durumda ne kadar etkili oldu?
9. Proje sonunda hedef kullanıcı grubuna dair düşünceleriniz, hisleriniz etkilendi mi? Nasıl?
10. Benzer projede/kullanıcı grubuyla çalışacak bir tasarımcıya önerileriniz var mıdır?
11. Onun bakış açısıyla kaldığınız oldu mu? Ne yaptınız?
12. Bir noktada durdunuz mu? Ne derece onun yerine karar veriyorsunuz?

Genel projeler ve empati konusu özelinde sorular

Yöntemsel Yaklaşımlar

1. Konuştuğumuz proje dışında ne tür projelerde yer aldınız?
2. Bahsettiğiniz projeden farklı bir hazırlık süreciniz yaşadığınız oluyor mu?
3. Genelde yürüttüğünüz tasarım süreçlerinde, kullanıcıyla ne sıklıkla kullanıcıyla iletişime geçiyorsunuz? Neden kullanıcıyla iletişime geçmeye ihtiyaç duyuyorsunuz? (Kullanıcıyla etkileşime geçmenin ne gibi faydalarını gördünüz)
4. Kullanıcıyı tanımaya dair ne gibi yöntemlere başvurursunuz?
5. Elde ettiğiniz bilgileri değerlendirirken ne gibi yöntemlere başvurursunuz?
6. Sizce ideal durumda kullanıcıyı hakkıyla anlamaya yönelik neler yapılmalıdır?

Değerlendirici ve Eleştirel Yaklaşımlar

1. Tasarım sürecinde kullanıcıyı samimi bir biçimde temsil etmek için ne yapmak gerekli? Buna aykırı olan durumlar gözlemlediniz mi?
2. Kullanıcı tanıma emeğinin projeye/son tasarıma katkısı hakkında ne düşünüyor sunuz?

Doğrudan Empati üzerine Sorular

1. Size göre empati nedir?
2. Tasarımda empati kavramı hakkındaki görüşleriniz nelerdir?
3. Tasarım sürecinde kullanıcıyla empati kurabilmesi için, bir tasarımcının ne gibi özelliklere sahip olması gerekir? (Örnek verebilir misiniz?)
4. Sizce empati kurarken özellikle dikkatli olunması gereken kullanıcı grupları var mıdır? Bu cevabınızı etkileyen kriterler nedir?
5. Bir ürün tasarımında etkili bir şekilde empati kurulduğunu gösteren unsurlar var mıdır? Nelerdir?

D. Interview Questions in English

For a Specific/Selected Project

Attitudinal Approaches

1. Could you share the story of this project and your experiences throughout the process?
2. How was the project topic or brief developed for this project?
3. Can you describe the target user group for this project? (How was this user group chosen?)
4. How familiar are you with the target user group? How would you describe your connection or relationship with them?
5. What were your motivations for this project? (Did these motivations change over time?)
6. What motivated you to work with this specific user group?
7. What were your initial impressions of the project? (Did these impressions evolve as the project progressed?)

Behavioural Applications

1. What activities did you undertake to better understand the target user group?
2. If you had direct interaction with the user group, can you describe that experience?
3. How did you prepare before directly engaging with the user group? (What were your motivations during each stage of preparation?)
4. Did you consult any additional resources to better understand the user group? (If so, what kinds of resources?)
5. Did your approach to understanding the target user group change during the project? (If so, what were the changes and how did they benefit the project?)
6. How did you analyze and format the information you gathered during the project?

Evaluative Perspectives

1. How did you apply the user information you collected during the project?
2. Which observations about the user influenced the project? Are there any observations you think weren’t reflected in the project? (Why do you think that was the case?)
3. What aspects of the project or user research process did you find positive? Can you elaborate?
4. Were there any unexpected situations during the project or user research process that surprised you? Can you explain?
5. What challenges did you encounter during the project or user research process? Can you describe them?
6. Were there any situations where you felt uncomfortable interacting with the user group?
7. Looking back on the project, what are your thoughts on it? Are there any aspects you would like to change? How would you suggest making those changes?

8. Do you consider this project to have been successful? What factors influenced your judgment? How effective was your effort to understand the user in this context?
9. By the end of the project, had your thoughts or feelings about the target user group changed? If so, how?
10. What advice would you give to a designer working on a similar project or with a similar user group?
11. Did you ever find yourself adopting the user's perspective? How did you handle that?
12. At any point, did you stop and question how much you were making decisions on behalf of the user?

General Questions on Projects and Empathy

Behavioural Applications

1. Apart from the project we discussed, what other types of projects have you worked on?
2. Have you ever gone through a different preparation process compared to the one you described for this project?
3. In your general design processes, how often do you interact with the user? Why do you feel it's important to communicate with them? (What benefits have you observed from interacting with the user?)
4. What methods do you use to get to know the user?
5. How do you analyze and evaluate the information you gather?
6. In your view, what should ideally be done to truly understand the user?

Evaluative Perspectives

1. What is necessary to genuinely represent the user in the design process? Have you observed situations where this wasn't the case?
2. What are your thoughts on how understanding the user contributes to the project or final design?

Direct account on Empathy

1. What does empathy mean to you?
2. What are your thoughts on the concept of empathy in design?
3. What qualities do you think a designer needs to empathize with the user during the design process? (Can you provide examples?)
4. Are there any user groups that you believe require special attention when it comes to empathy? What criteria influence your answer?
5. Are there specific elements in product design that indicate empathy has been effectively integrated? What are they?

CURRICULUM VITAE

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EDUCATION

Degree	Institution	Year of Graduation
MS	METU Industrial Design	2016
BS	METU Industrial Design	2013
High School	Mehmet Emin Resulzade Anadolu Lisesi, Ankara	2006

FOREIGN LANGUAGES

Advanced English, Intermediate German

PUBLICATIONS

1. Günay, A., Töre Yargın, G., Süner-Pla-Cerdà, S., & Kulaksız, M. (2022). 'How should my family assistant be?': initial perceptions about prospective and anticipated use of in-home virtual assistants in an emerging context. *Behaviour & Information Technology*, *42*(7), 961–984. https://doi.org/10.1080/0144929X.2022.2054357

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3. Kulaksız, M., Güngör-Boncukçu, I., Oğur, D., Paksoy, Y., Turhan, S., & Doğan, Ç. (2019). Generative Design Research for Sustainability: Exemplary Cases for the Adaptation of the EC Guide Tool and the ERM Method. In G. Muratovski and C. Vogel (Eds.), *Re:Research – Design and the Creation of Social Value* (vol.3, pp. 109-130), Bristol, UK: Intellect. ISBN: 978-1-78938-135-1