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A study of wayfinding and wayshowing in a Swedish hospital setting

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A study of wayfinding and wayshowing in a Swedish hospital setting

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Muna Alibrahim

LUND UNIVERSITY

DOCTORAL DISSERTATION

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A study of wayfinding and wayshowing in a Swedish hospital setting

Abstract

This thesis investigates the role of interior design elements, especially artwork, in way-searchers' wayfinding and orientation in hospital environments. The thesis considers the way-searcher's background and the impact of cultural belonging, occupation, memories, aesthetic preferences, and language, and the influence that such factors might have on the perception of the hospital environment and its guiding elements. The aim is to increase the knowledge about the role of art objects and how they relate to design processes by studying how art and design appear to users at three different sites at the hospital SUS Malmö, and also to gain insight into decisions made about the design and the placement of public art in a health-care environment.

The thesis consists of four studies developed to complement each other. They include three different experiencing perspectives: the visitor's perspective, the designer's perspective, and the observing researcher's perspective. This mix of perspectives helps to obtain a broad understanding of the complex experience and effectiveness of wayshowing design in a health-care environment and of the intentions behind making, choosing, and installing art for and in hospitals. A mixed-methods approach is used that mainly relies on qualitative studies, but that also has some quantitative elements. The techniques used for collecting information are: questionnaire, on-site interviews, semi-structured interviews, walking interviews, observation, and photographic documentation. This mixed-methodological approach is used to attain a successively deeper understanding and acquire more diverse knowledge of the role that interior design and artwork have for wayfinding, and by that also pointing to the development of wayfinding theory, especially as it refers to notions like *orientation, wayfinding, legibility, affordance,* and *familiarity*. These theoretical concepts are used here in analyses and descriptions of way-searchers', especially newcomers', experiences and perceptions of the interior health-care environment.

The four studies of this thesis point out different areas of interest for analyzing wayfinding in hospitals, thus also indicating how they could be considered to guide the design of wayshowing in hospital environments. The areas of interest can be listed as: *spatial heterogeneity* (about the making of contrasts between spaces); *evoked familiarity* (about elements in the hospital space that may bring back memories); *overfamiliarity* (about places taken for granted due to frequent use); *broad participation* (about consulting a range of users in all stages of the realization of a hospital environment); *users' background* (about considering ethnicity, cultural knowledge, occupation, and previous experiences of art), and *time- and duration effects* (about acknowledging that perception might change during visits or in stays of a longer duration).

Keywords: health-care architecture, hospital design, interior design, public art, wayfinding, orientation, affordance, familiarity, wayshowing, heterogeneity, and temporality.

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Effects of Art and Design on Orientation in Healthcare Architecture

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To my parents

Mohammad Alibrahim & Nayfeh Alhatamleh

Abstract

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The thesis consists of four studies developed to complement each other. They include three different experiencing perspectives: the visitor's perspective, the designer's perspective, and the observing researcher's perspective. This mix of perspectives helps to obtain a broad understanding of the complex experience and effectiveness of wayshowing design in a health-care environment and of the intentions behind making, choosing, and installing art for and in hospitals. A mixed-methods approach is used that mainly relies on qualitative studies, but that also has some quantitative elements. The techniques used for collecting information are: questionnaire, on-site interviews, semi-structured interviews, walking interviews, observation, and photographic documentation. This mixed-methodological approach is used to attain a successively deeper understanding and acquire more diverse knowledge of the role that interior design and artwork have for wayfinding, and by that also pointing to the development of wayfinding theory, especially as it refers to notions like *orientation, wayfinding, legibility, affordance,* and *familiarity.* These theoretical concepts are used here in analyses and descriptions of way-searchers', especially newcomers', experiences and perceptions of the interior health-care environment.

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شكراً لك أبي .. شكراً لكِ أمي ..
شكراً يا من كنتم سبباً أساسياً في نجاحي و دافعاً لتحقيق كل هذه النجاحات.
مهما نطقت الألسن بافضالكما ومهما خطّت الأيدي بوصفكما تصمت جميع كلمات الشكر و الثناء أمام عطائكما لتختصر ب "ربي ارحمهما كما ربياني صغيرا".

Introduction

1. Introduction

Hospital architecture is, in many ways, a “basic” architecture, in the sense that in addition to supporting caretaking and healing, it also provides some of architecture’s more basic functions, such as sheltering, dwelling and giving pleasure. But hospitals are also basic because they are relatively early examples of the kind of logistic complexity that characterizes most modern architectural projects today. Apart from the purely visual appearance of the external form of buildings, there are always functional issues that make buildings complex; hospitals in particular show an exemplarily vast diversity of facilities and services that could – if not handled with care in design – inadvertently create unwanted spatial challenges and confusing spaces for users, instead of welcoming places (Van den Berg & Wagenaar, 2006).

Previous studies of health-care architecture indicate that the built environment may contribute to healing (Huisman, Morales, van Hoof, & Kort, 2012). Healing architecture is related to the science of medicine, but it is also reflected in other disciplines and theoretical domains, such as sociology, perception theory, environmental psychology, space/place theory, and experiential aesthetics, which means that physical, social, and cultural aspects are important in an architecture capable of supporting health and well-being (Huisman et al., 2012).

A large hospital is like a small city, with different kinds of facilities where all kinds of people come with various backgrounds and in different situations. Because of this, both architects and designers must take the visitors’ potential lack of experience of hospital buildings into consideration and strive for a design that reduces confusion and stress (Huelat, 2007). Studies of the relationship between the hospital’s design and finding one’s way in the hospital environment show that wayfinding is crucial and should be given importance throughout the design process (Carpman & Grant, 2001). Losing one’s way can be a significant cause for feelings of helplessness; such difficulty can even generate physical signs such as raised blood pressure and headache, as well as fatigue during navigation.

Furthermore, wayfinding difficulties may also deprive visitors, as well as patients, of meeting time during hospital visits (Carpman & Grant, 2001).

For newcomers to a hospital, finding one's way in a literal sense is not the only important aspect; orientation in a broader sense, i.e., related to the feeling of belonging in the environment, is also of significance. In this thesis, I will investigate orientation and wayfinding in relation to how we use a wide range of material and spatial objects in the environment to help us navigate. The informative signage at hand is not always effective for averting disorientation problems. In finding our way, and reaching our destination, we engage with everything in the surrounding context that we are able to see, hear, touch, and smell (Muhlhausen, 2006). In other words, "wayfinding concerns perception, spatial knowledge, information elaboration, memory and problem solving processes" (Rooke, Koskela, & Tzortzopoulos, 2010, p. 234). An environment that offers good wayfinding, according to Muhlhausen (2006) is one in which a person understands her current position, and can sense her intended destination without difficulties and without obstacles such as unreadable signage systems or confusing architectural elements. "Signs cannot be a panacea for poor architecture and illogical space planning" (Muhlhausen, 2006). The logic of the architectural plan and the spatial formation of the building are important factors for the sense of orientation, but interior design elements also play a significant role in promoting wayfinding. Design elements such as decorations and furniture, lighting and color, but also wall, floor, and ceiling materials, are memorable features of interior space that work as landmarks when we try to find our way within a hospital (Huelat, 2007).

Where am I? Where is my destination? How do I get there? These reccurent questions should ideally be answered by interior elements that support wayfinding within the space of hospitals, or by the designed navigation systems. Design that can help answer such questions can influence wayfinding positively, and hence give the hospital visitor a feeling of security. One effect of this can be that visitors' feelings of stress and anxiety may decline; this has already been noted and well established in wayfinding theory that has attempted to map how we think in way-seeking situations (Arthur & Passini, 1992, p.7).

The organization and the design of wayfinding, as a complicated and dynamic system in hospitals, must be created to fulfill the intended function of guiding patients, staff, and visitors to their destinations. Furthermore, wayfinding

design must take into account a wide range of abilities in terms of individuals' navigation possibilities within the hospital. In other words, architects and designers have to take into consideration that those who navigate within the hospital are not only "super-users" (Arthur & Passini, 1992, p. 5), but individuals and groups that carry with them a highly diverse range of abilities, experiences and histories. This calls for carefully planned and designed "wayshowing" elements in hospital design, which can be used by architects and designers to facilitate the way-searcher's wayfinding, especially in complex buildings such as hospitals (Mollerup, 2009, p.114).

Art has been used in various ways in hospitals to support wayfinding. For instance, works of art can be used deliberately as spatial markers that are part of explicit wayfinding systems, as images placed on pre-established architectural landmarks, on lists of directions on walls, or as additions to signage systems on maps (Huelat, 2007). However, artwork is most commonly used on its own, i.e., more as an interior design element in its own right that can be used indirectly by patients, visitors, and staff to facilitate navigation. The mere presence of artwork at a given place serves as a cue. But the works of art may also help eliminate the need and reduce the number of explicit signs for guiding people to their destinations, similarly to how works of art function as identity markers at airports (Hubregtse, 2016). The artwork of a place can relate to other design elements in that place, such as the color and material of the ceiling, walls and flooring, as well as to the lighting ambience. Together, these interior design elements support the understanding of the function of a place, and thus help guide users to their destinations (Hubregtse, 2016). The purpose of installing work of art as landmarks in hospital environments can vary. For example, artwork can support or even set the theme of the space and its function in the hospital, and as such impact visitors' moods in both positive and negative ways. Works of art can also support the direction of movements within the space, depending on where and how they are installed.

It is well established in research that visual art in hospitals and images and ambient objects in the environment can have a positive impact on patients' well-being, their health outcomes and their recovery, as well as their pain acceptance (Rollins, 2011; Lankston, Cusack, Fremantle & Isles, 2010; Scher & Senior, 2000; Nielsen, Fich, Roessler, & Mullins, 2017). However, it is important to mention that different types of art are considered to have different stress-reduction potential

(Ulrich & Gilpin, 2003; Eisen, Ulrich, Shepley, Varni & Sherman, 2008; Rollins, 2011; Nielsen et al., 2017). As an example, it has been stated that art with nature motifs reduces stress, pain, and anger, and increases satisfaction to a greater degree than art with more abstract motifs (Eisen et al., 2008). The relation between art's ability to give pleasure and art's ability to support wayfinding will be one of the issues of interest in this thesis.

In this thesis, specific attention will be given to the complexity of art's role in hospitals and its relation to the design of hospitals. I will, however, place less emphasis on determining which general types of motifs are considered to relieve stress, reduce anxiety, or bring pleasure; my focus is more on how art is experienced in a place in a broad and multifaceted sense that is related to how visitors and patients and staff move, but also to differences in personal and cultural background. I will specifically focus on how works of art, as objects situated in a hospital environment and in a relation to architecture and interior design, may support orientation and wayfinding within the hospital. The notion of orientation is used more broadly here, denoting more than simply a matter of trying to understand spatial directions and distances. As I explain in Chapter Two, I view orientation more as an integrated part of our perception of the environmental features (Ahmed, 2006). Orientation is thus influenced by our emotions and our sense of identity, such as for example feelings of familiarity or unfamiliarity. According to Ahmed (2006), the sense of familiarity is about more than simply having been in a particular place before; it is also about feeling at home there. This thesis also investigates how emotions based on familiarity, or unfamiliarity, could further influence people's orientation and wayfinding, and how the impact of these feelings also can be related to individual differences such as background and occupation. This is relevant because individual differences based on personal experiences related to memory, history, society, and culture could play a significant role in how people perceive the properties of the environmental elements. Since the way-searcher's orientation and wayfinding is influenced by her perception of the environmental features, as well as by the personal emotions that they evoke, the perception of what the environment offers, i.e., the affordance (Gibson, 1979) given by its elements, can vary. Hence, the perceived possible actions (or affordances) within the environment (Norman, 2002) also vary according to the perceiver's background. How I use the theory of affordance will be elaborated in Chapter Two.

The focus in this thesis is on relational space (between perceiver and perceived objects), and the outcomes are aimed at increasing the knowledge about planning and design processes that utilize spatial elements to increase people's possibility to orient themselves in hospital environments. Specific attention is devoted to newcomers' possibilities to orientate themselves and navigate in a previously unknown environment, or in environments that differ culturally from similar, more familiar, environments. My study strives to capture aspects of the subjective types of orientation that are based in personal experiences and emotions, and that may be activated when navigating within hospital environments and experiencing the art and design there. Furthermore, wayshowing (Mollerup, 2009, 2013), as a pragmatic and pro-active element of wayfinding-design directly aimed at providing ease of reading, understanding, and using the physical interior elements (especially artworks) is discussed. Wayshowing strategies will here be seen as including a certain flexibility in the sense that they take into account both intended and non-intended uses or perceptions. The main concepts that describe this study and frame it theoretically are orientation, wayfinding, legibility, affordance, familiarity.

1.1 Aim and objectives

The general aim of the thesis is to increase the understanding of how artwork influences people's orientation in the hospital environment. This influence will be investigated by interviewing users of interior hospital space and observing how they relate and react to the presence of art as they experience it. More specifically, I address three main questions: 1) What roles do the interior design elements, especially works of art, play as regards way-searchers' orientation in a hospital environment? 2) What types of art, and what placement of artwork, enhance or hinder wayfinding in a hospital? 3) How might background knowledge impact the perception of art and its presence in the hospital environment?

The investigation is done in four different types of situated investigative studies. These four studies provide different perspectives on how wayfinding and orientation depend on physical environmental features, especially art as a part of the interior design of hospital buildings. The studies complement each other by taking into consideration both newcomers', familiar users' and professionals' relation to art in hospital spaces. Wayfinding, in the sense of choosing an adequate

path in the environment in order to reach a desired destination, is investigated at chosen locations at the Skåne University Hospital (SUS) in Malmö, Sweden. The first study is an exploratory investigation looking at the potential of interior design and artworks in supporting way-searchers' orientation in the reception hall of the Department of Radiology with an intended aim to reach the Department of Surgery, located in the same building complex. In the second study, the role of artwork is studied in its capacity to facilitate way-searchers' orientation and wayfinding along a defined path in the outpatient clinic of the Department of Infectious Diseases. The third study aims at gaining a deeper understanding of the process of designing interior environments and works of art in hospitals, and consists of interviews with three design professionals on the subject of making, collecting, choosing, and placing artworks in hospitals, and how this relates to the overarching architectural design of hospital buildings. The fourth study is an on-site observation from a waiting area of one of the main entrances of the SUS hospital in Malmö, aimed at understanding the movements in, and interactions with, the environment amongst a variety of users – both people familiar with the space, such as hospital staff and inpatients, and newcomers to the place, such as visitors or new patients.

1.2 Outline of the research in four studies

The four studies of this thesis relate mainly to public or semi-public interior spaces at the hospital SUS Malmö (see Figures 1.a. and 1.b.). The first study was conducted as an exploratory investigation, and was a pilot study in the sense that it provided information on how different users are attentive to a variety of interior design elements. This initial study included a questionnaire with additional on-site interviews, focusing on the potential of artwork and interior design elements to aid people's orientation and wayfinding. It was conducted in a large reception hall and its connection to the nearby Department of Radiology. The second study was structured as a walk-through interview study, aimed at investigating the importance and role of certain displayed works of art and how they aid orientation and wayfinding in the outpatient clinic of the Department of Infectious Diseases.

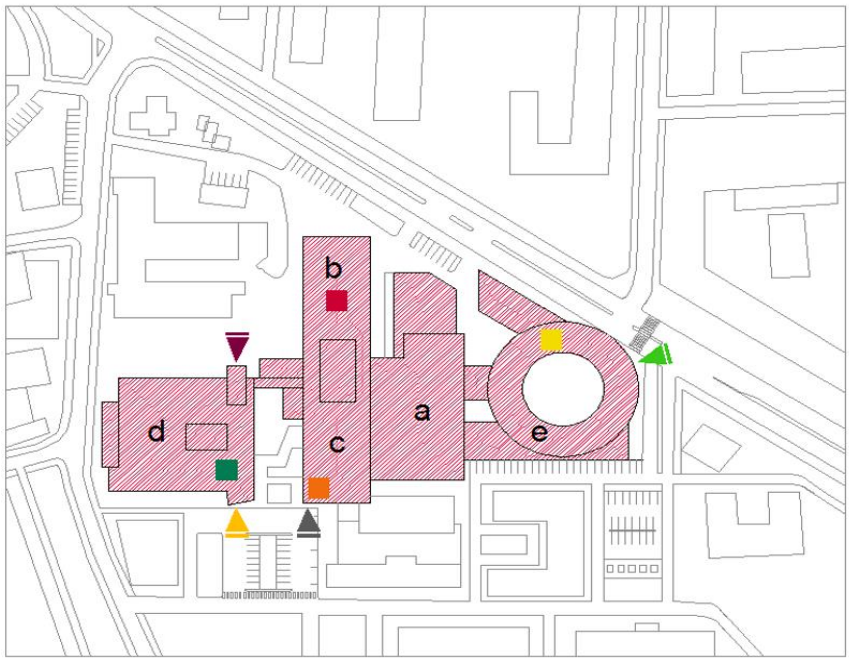
These two initial studies, using questionnaire and on-site interview techniques, led to a third study in which art and design professionals (an artist, an art administrator, and an architect) were interviewed in order to gain a deeper

understanding about the process of designing a hospital's interior environments, as well as the process of choosing, collecting, and distributing artwork in hospitals. The professionals provided a designerly point of view on the relation between artistic objects and architectural design, and how this in turn relates to the end users in terms of navigation and orientation.

The fourth study consisted of two on-site observations, made with the objective of better understanding the mixed interactions with an interior space with its design elements, including artworks. This study regarded both users who were very familiar with a place (such as staff, inpatients, and recurring visitors), as well as users who were less familiar or unfamiliar with it (such as first-time visitors and patients). The observations were conducted in an entrance and waiting area that leads to several clinics, departments, and services in the hospital SUS Malmö.

The places investigated in these four studies were chosen based on my own initial impressions as a way-searcher and as a newcomer (in terms of language, culture, and background), and as an architecture researcher with a degree in architecture. They were found after an explorative journey to the hospital SUS Malmö, where I looked for appropriate places that would fit the theme of my thesis by providing a mix of interior design elements, especially artwork, that could possibly impact way-searchers' orientation and wayfinding (see the following pages 41, 52, and 116). During this labyrinthine explorative journey phase, I discovered that the signs providing information were only written in Swedish. Additionally, these informative signs were mostly situated in connection to elevators, instead of being placed at regular intervals throughout the hospital environment. From all the places that I visited on my preparatory journey in the hospital, I finally chose three: the reception hall of the Department of Radiology (the first study); the outpatient clinic of the Department of Infectious Diseases (the second study); and one of the main entrances and waiting areas of the hospital SUS Malmö (the fourth study). I chose these three particular spots because of their interior design, which was unique compared with the other places that I had seen at the hospital, and because they also contain various different types of artwork. They were also chosen because they are node zones (especially those in Study One and Study Four, but to a significant extent also Study Two), which enabled me to observe how the users interacted with the alternative paths given by the immediate architectural surroundings when deciding the route to reach a desired destination. The outpatient clinic of the Department of Infectious Diseases was chosen for the

second study especially because from there, I could gather different impressions at three different spots in the generic space of the department, each of which displayed a different character with regard to the interior design and the works of art there.



The hospital main buildings (a-d) with the emergency care building (e)

The reception of the Department of Radiology

The Department of Surgery (arrival destination in the first study)

The Department of Infectious Diseases (the second study)

The entrance zone (the observed place in the fourth study)

The direct entrance to the reception hall in the first study

The alternative entrance to the reception hall in the first study

The main entrance to the emergency building to reach the Department of Infectious Diseases in the second study

The direct entrance to the observed entrance zone and waiting area in the fourth study

Figure 1.a. The hospital SUS Malmö.

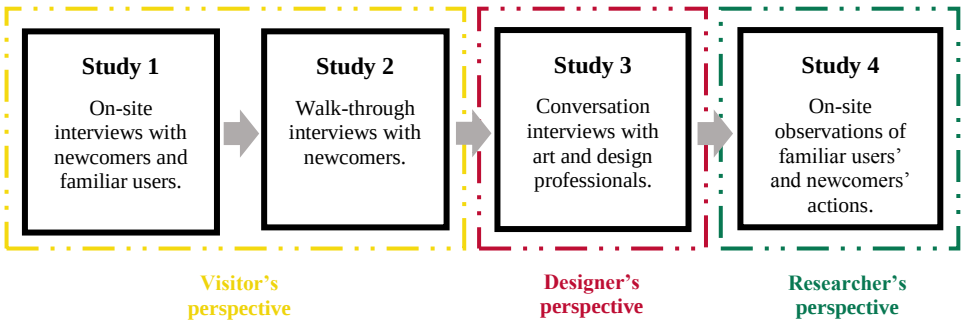


Figure 1.b. A graphical summary of the four studies in this thesis.

All of these four studies concern the impact of architectural and interior design – particularly the works of art on display – on people's orientation and wayfinding. This means that apart from the overall formation of these interior spaces, design qualities like color scheme, furnishing, lighting, and plants, are also discussed in this thesis. In the individual studies, I have partly addressed different target groups and in doing so tried to gather many different perspectives: 1) the user perspective in general (patients, visitors, and staff – both familiar users and newcomers); 2) the newcomers' perspective in particular (especially newcomers who are also unfamiliar users in terms of language and culture); 3) the formation professional's perspective (artist, art manager, and architect); and 4) the architectural researcher's observational perspective (i.e., my own).

Theoretical background

2. Theoretical background

This chapter begins with an initial summary of the theoretical background that describes some features of the theories that I use in this thesis. Following this summary, I will describe certain aspects of these theoretical domains in greater depth, and also discuss how I use them in relation to the four studies.

The notion of wayfinding most often describes the attempt to find a trajectory between two points (starting point and destination). However, as a concept, wayfinding theory has developed differently than different disciplines such as architecture, psychology, information technology, geography, and so on. In this thesis, I will primarily utilise theories that approach wayfinding in relation to architecture or places, but I will also discuss and test relevant concepts from disciplines that explicitly deal with perception, especially regarding orientation, familiarity, and affordance.

The urban planner and space theorist Kevin Lynch is often considered the pioneer, having coined and introduced the term 'wayfinding'. In his book "Image of the City," he defines it as "a consistent use and organization of definite sensory cues from the external environment" (Lynch, 1960, p. 3). At the outset, Lynch's work focused on spatial orientation, in the sense of people's capacity to determine their position in relation to the surrounding physical environment. Lynch focused especially on how this positioning was done in relation to what he calls paths, edges, regions, nodes and landmarks, and how these physical elements help guide people in the city (Lynch, 1960). As will be clear in this thesis, the notion of "orientation" will be addressed a bit differently here, including more existential aspects and not solely spatial navigation.

In 1984, the environmental psychologist Romedi Passini defined wayfinding as denoting the "ability to reach spatial destinations in novel as well as in familiar settings" (1981, p. 17), including the effects of signage and other visual cues in the environment (for example architectural features). Later, Passini and the designer Paul Arthur (1992) worked together to expand the wayfinding concept by

relating it to architecture, graphics, and verbal human interaction within the context of the built environment. In this work, they saw the fundamental features of wayfinding as related to spatiality, orientation, and perception, while also noting the individual differences regarding the ability to read and understand the legible elements provided at a place (Arthur & Passini, 1992).

Later, airport designer Rodney Fewings (2001) came to view wayfinding as a pragmatic concept that also comprised situations in which people's various experiences on the way to a destination may have priority over the immediate need to quickly reach that destination from an origin point. One example is a shopping tour in a mall, undertaken in part for entertainment purposes, where one needs to depend on the physical cues and signs in the surrounding environment to find an item, but where one also allows oneself to take detours and be distracted. In other words, Fewings's observation can be seen as a recognition of orientation involving other elements, other desires and other actions than rationalist modes of wayfinding.

The architect Per Mollerup (2005; 2009) coined a new term, wayshowing, to emphasize the operative acts taken when professionally facilitating wayfinding in the physical environment. While Lynch, like Arthur and Passini, used the wayfinding term to denote perceivers' ability to understand the relation between the perceiving person and the built environment in order to reach a destination (SEGD, 2014), Mollerup emphasizes that "when assisting wayfinding, designers practice wayshowing. Wayshowing enables wayfinding" (SEGD, 2014). In other words, while wayfinding is mostly concerned with the cognitive process of attempting to reach a destination, wayshowing, in Mollerup's more pragmatic view, is the application of key elements and design principles in the physical environment, made by designers, architects, or other actors defining the spatial conditions to guide people to find their way. Based on his experience from design projects at airports in Copenhagen, Oslo, and Stockholm, Mollerup added new aspects to the concept of wayfinding, summarised as "wayfinding strategies". (Mollerup, 2009). He views these strategies as "a tacit knowledge" that "most of us know and apply" when we "navigate" (2009, 113), and he regards these wayfinding strategies as background knowledge for wayshowing design intention in the design of environment and their elements, not least the graphical information provided through signage. Reminiscent of how Arthur and Passini were concerned with different types of "impairment" (1992, pp. 62-74), these

strategies also express an ambition to incorporate wayfinding in what Mollerup calls “weak groups” (2009), i.e. people with capabilities deviating from the normative way-searcher figure that often represents the standard user.

Anthropologist Tim Ingold (2011) introduced a different perspective on wayfinding, where the main interest is on how we perceive the environment. Ingold (2011) proposed that places in which we navigate are not always static. He supported his proposed ideas by exemplifying with the movements of Inuit people who went hunting for food not in static locations, but in places based on the animals’ movements. He also sees our navigation in the environment more in terms of affordance (Gibson, 1979), i.e. less as a succession of cognitive operations on, and interpretations of, bodily actions, and more as direct action where body and mind are “indissolubly” one (Ingold, 2011, p. 166).

Affordance theory is part of an “ecological psychology” (Gibson, 1979; Ingold, 2011) that rejects the idea in cognitive models that emphasizes segmentized and successive mind operations as though they were separate from the action itself. Starting instead as reflections on human beings in natural circumstances, over the years affordance has become a significant concept for design, and can also be discussed as a more direct way to approach the issue of wayfinding, since it emphasizes immediate action possibilities in the environment in the moment when we perceive them.

A recent contribution to wayfinding theory was made by Paul Symonds, a PhD student studying wayfinding; sociologist David Brown, and Valeria Lo Iacono, a PhD student in dance and cultural heritage (2017), in the article *Wayfinding as an Embodied Experience*. In the article, they link historical and modern definitions of wayfinding by integrating cognitive knowledge with physical, corporeal, and social experiences: Wayfinding is “[t]he cognitive, social and corporeal process and experience of locating, following or discovering a route through and to a given space” (Symonds et al., 2017, 6.2). This is an attempt to move away from a common research tradition of viewing wayfinding as solely an action of transportation leading from A to B, by also including movements that try out various paths that link to each other in social ways. In other words, Symonds et al. also include intersubjective forces (i.e., how others impact us for example when we move).

The concept of orientation is discussed as a feature of human perception in a phenomenological perspective by the feminist writer and independent scholar Sara

Ahmed (2006). She emphasizes that orientation is linked to emotional intentionality and to identity-formation, meaning that the sense of orientation is not primarily a capability of making mental images, but is formed in intersubjective and inter-cultural contexts. In this line of thought, emotions are evoked by the surrounding context; thus, a way-searcher's orientation in a broad existential sense, tied to one's sense of identity, becomes an ingredient in wayfinding when the way-searcher interacts with physical elements in the environment. Orientation is hence not only related to how the way-searcher occupies and navigates in space, but also to how the way-searcher understands and interprets the sense of being oneself in the surrounding environment, as well as to what the way-searcher directs a personal mode of attention (Ahmed, 2009; Lawaczeck Körner, 2016).

In the following, I will expand on the development of wayfinding theory so that it ultimately includes more of the notion of orientation as discussed above. By letting the concept of orientation as it is put forward by Ahmed (2006) have a significant part in my thesis, I also allow for other experiences than those connected explicitly to wayfinding – such as, for example, art appreciation and emotional reactions whilst in a hospital environment – to come forward in my investigations. Still, the issue of finding one's way, or what urges one to move from one interior space to another within a hospital environment, is the main starting point and issue of discussion in my thesis, and I will therefore begin with a deeper reflection on wayfinding theory before moving on to the notions of orientation and affordance.

2.1 Wayfinding theory

An issue of specific interest since the mid-20th century, wayfinding is most often based in varying disciplinary intentions to understand how intended destinations can be effectively reached. In the pioneering phases of theoretical interest, wayfinding was largely considered a cognitive process tied to the problem of how to move in the material environment (Lynch, 1960; Arthur & Passini, 1992; Golledge, 1999), sometimes with an emphasis on cognitive abilities (Downs & Stea, 1977), and more recently as a process where cognitive, corporeal, and social aspects together form the experience (Symonds et al., 2017). The latter definition includes for instance wayfinding as related to the way-searcher's trial and mapping of several paths, and how wayfinding stands in relation to other people as well as to personal previous experiences.

2.1.1 Cognitive Maps, orientation, and navigation

Terms like orientation, navigation, and cognitive maps are used often in wayfinding literature. Because of this, these terms need further clarification in relation to how the concept of wayfinding is used in this thesis. These terms are often seen as integral parts of what is termed wayfinding, and each term can have a role in the wayfinding process. On one hand, wayfinding can be seen as the open process of attempting to locate a desired place, including getting there through movements that also have "recreational" purposes (Fewings, 2001), but it is most often seen as a more result-oriented process, about how to achieve a correct ending, or even a fast and easy one. A wayfinding process can be divided into phases of cognitive recognition to actions taken to get to the desired place. According to the Passini (1981) model (described below), a cognitive mapping is included in the phase where one attempts to make a decision after some initial information about the environment has been processed, and before actual action is taken. The cognitive map is seen here as an "overall mental image or representation of the spaces and the layout of a setting" (Arthur & Passini, 1992). Similarly, Lynch (1960) already defined the cognitive map as the image that a person keeps in mind as an internal reflection of the perceived surrounding context. In these cognitive and rationalist models, orientation is the spatial information that defines the position of a person in the immediate surrounding context (Downs & Stea, 1973), or in an extended understanding of the space itself. As will be seen later, orientation can also be seen as including an experiential and

historical background that ties the subject to a place in a specific way (Ahmed, 2006). Thus, in more ways than one, orientation can be considered a key step in wayfinding, directing different persons differently in the navigation act that follows a first ocular perception. Navigation, if seen as a component, or a phase, in a wayfinding process, is the individual or collective ability to know or decide how to actually move in space, but it can also be used to denote the very action of walking through an environment (Golledge, 1999). In this thesis, I will regard the notion of "navigation" as more directly linked to the movements as such, and less to existential or emotional factors (which I link more to the broader concept of "orientation").

According to the Passini model (1981), wayfinding is a process in which three basic cognitive phases are seen as linked to each other in succession: information processing, decision-making (or planning), and decision execution. The first phase, information processing, concerns registering the physical features of the environment that are considered key factors in terms of their impact on the way-searcher's perception. The second phase is about making spatial decisions based on initially registered information, on spatial orientation, and on the building of a cognitive map. The third step in the Passini model concerns deciding exactly which route to follow, and executing this decision in order to reach the destination (see Figure 2). While this model is still often referred to, since it still renders basic components in wayfinding as we experience it, it has also been the subject of discussion and criticism (cf. Symmonds et al., 2017) because it implies an overly simple and absolute linkage, as well as division, between perceiving, cognizing, and acting. Not least when it comes to variations in how the environmental features can be reacted to, and embodied experiences of places, there is a need for various extensions or alternatives to this model, as we shall see.

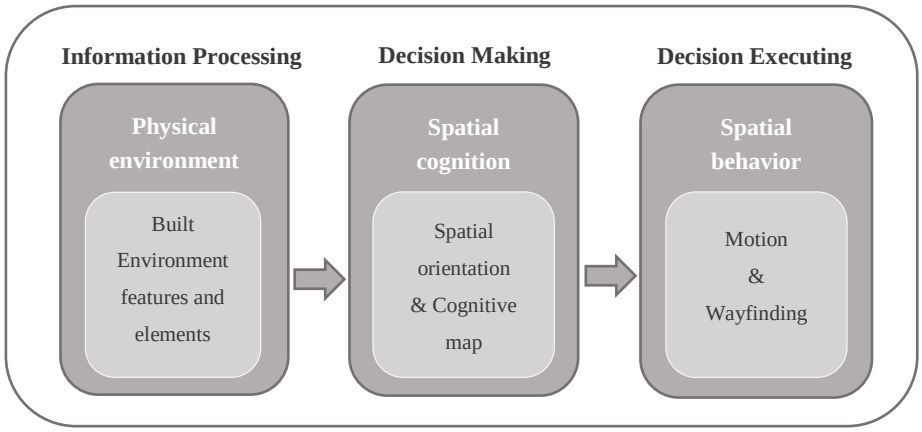


Figure 2. Wayfinding process, Passini's model.

Through the introduction of Passini's (1981) segmented cognitive model, time was introduced as an important category to include when gathering spatial information. It relates to when and how wayfinding decisions are made, and to when questions are answered in our attempts to define a spatial situation. In his early work however, Passini did not elaborate further on the nature of the temporal aspects, even if he concludes from his studies that the number of decisions made by persons in wayfinding situations quickly proliferates to "over 100 100 […] for even a relatively simple task," (Passini 1981, p.25), which makes it hard to pursue investigations without breaking them down into subtasks. Later, Arthur and Passini (1999) mention both biographical time (the fact that our attitudes change as life goes by) and the obvious fact that it takes different amount of time for different people to reach destinations. They also give explicit examples where time is important for the quality of the wayfinding experience, not least in the case of what they call "mobility impairment" situations (1999, p.72), referring for instance to a study they did in which the wayfinding information required by wheelchair users was often misleading, or designed in such a way so as to require long transportation times via alternative routes to destinations located only a short distance away. On the whole, Passini's early investigations showed the importance of time, but also the limitations of modelling wayfinding in separate sequences – or, as he himself noted: "Although the sequence of behavioral actions may be observed and recorded, they do reveal only little about the nature of the solution" (Passini, 1981, p. 22).

2.1.2 Spatial information and spatial knowledge

As navigating subjects, we rely daily on different kinds of information reaching us from the surrounding context. Our embodied presence in the world makes the reception of this information differs depending on the individual. This means that when theorizing about wayfinding, navigation and orientation in space, we must also take into consideration differences in users' abilities to be attentive to, and move in, the environment, and to reach intended destinations. Various attempts have been made to add spatial factors, basically building on successive steps similar to those of the Passini-model. According to the industrial engineers and computer navigation theorists Jui Lin Chen & Kay Stanney (1999), the surrounding spatial information on which the navigating person relies is turned into spatial knowledge. Chen and Stanney (1999) follow the theory about cognitive mapping of space made by the geographers Roger Downs and David Stea (1973). According to Downs and Stea, spatial information can be classified into locational information and attributes information. The locational information includes distance information and/or direction information, whereas attributes information explains what the environment is and why people would like to be there by including descriptive- and evaluation attributes (Downs & Stea, 1973). Descriptive attributes, further investigated by psychologist and virtual space theorist Simon Shum (1990), relate to the perceived features of the context, for example a slanting blue entrance, or a tall circular building, whereas evaluation attributes are aspects of the environment of a place that motivate people to visit it or not. This also includes uncomfortable elements that may inhibit rest, decluster groups of people, or trigger rejection by for instance the unintended emergence of odors in a place (Shum, 1990). In rational wayfinding, distance and the direction are generally what the navigating person is looking for, but as noted already in these cognitively-based theories, emotional tags tied to places and specific needs also have an impact when a way-searcher estimates appropriate routes and the time needed to reach a destination.

The spatial knowledge associated with wayfinding is derived from spatial information, and can be classified into landmark knowledge, procedure knowledge, and survey knowledge (Siegel & White, 1975; Chen & Stanney, 1999). Landmark knowledge is the recognition, registration, and interpretation of visual cues that are perceived directly. Landmark knowledge is often considered an essential component of the other types of more action-oriented knowledges, i.e.

procedure knowledge and survey knowledge (Goldin & Thorndyke, 1981; Darken, 1996). Procedure knowledge, or route knowledge, is the adaptation of information given through a sequence of actions to reach a destination – descriptive information that guides the user from an origin point to a destination (Gale, Golledge, Pellegrino & Doherty, 1990), as well as helping the user to estimate the direction and the distance between the origin point and the destination (Goldin & Thorndyke, 1981). Survey knowledge, or configuration knowledge, presents the relation between a given location and the possible route to the intended destination. On a map for example, the geographic properties present the location in relation to the global coordinate system for assisting the user in finding the shortest distance and the direct direction to his/her destination (Siegel & White, 1975; Thorndyke & Hayes-Roth, 1982).

2.1.3 Cognitive phases and intuition in wayfinding

Passini (1981) defined wayfinding as an enacted cognitive process, and as we have seen, he divided it into three main parts: cognitive mapping, decision-making, and decision execution. In addition, Chen & Stanney (1999) proposed a model derived from Passini's model, to be used as a guideline when designing wayfinding in virtual environments. This model consisted of three processes: cognitive mapping, wayfinding plan development, and physical movement. Both of these models make a clear distinction between the cognitive processing of a possible route and the actual execution of movement based on what is processed. A possible basic formulation of a wayfinding model could therefore also be seen as comprised of two main phases, rather than three. The first is a wayfinding planning phase that includes information processing and the development of a plan that leads to decision-making. This first phase includes perceiving the physical elements of an environment and forming a mental image representing the environment. This first phase is grounded in spatial orientation based on what is actually in the room/environment (environmental features), but it also includes individual factors, – not physically present – that could influence both information processing and decision-making, such as personal motivations, differences in ability, experiences derived from familiarity with an environment, or previously obtained information that could present visual as well as verbal cues. The second phase of this two-folded wayfinding model would be navigation in motion, which includes the execution of decisions, where the user moves towards the estimated destination

based on the cognized plan. In reality, these two phases would in their turn actually be part of one and the same wayfinding loop, and as we shall see, it can be difficult to say which one comes first. The actual final outcome of a wayfinding decision can be either positive (reaching the intended destination), or negative (not finding it, or getting lost); therefore, the navigating subject needs continuous feedback from the environmental features to successively develop the overall wayfinding plan, forming new plans as the wayfinding progresses.

Health-care design researcher Debajyoti Pati, architect and health-care facility planning consultant Thomas Harvey, Nurse Douglas Willis, and health-care design researcher Sipra Pati (2015) categorized the perceived features of the surrounding environment that contribute to wayfinding into primary navigational cues, supporting navigational cues, and familiarity markers. In congruence with Pati's more recent recognition of perceived objects in the environment, and with the earlier wayfinding theories of Lynch (1960), Passini (1981) and Chen and Stanney (1999), decision-making can be seen as fundamentally dependent on spatial orientation and attempts to map supportive knowledge about the way in which the wayfinding subject develops wayfinding plans. In situated reality however, isolating exactly what constitutes spatial orientation is not possible, since this orientation is also embodied and subjectively conditioned (Symonds et al., 2017). Apart from spatial environmental features, such as architectural form, structural elements tied to the overall architecture, specific spatial functions, and interior design elements such as artwork, plants, daylight inlets, furniture, colors and the material of walls, ceiling and floors, etc., we must conclude that wayfinding knowledge also depends on a variety of personal factors that are brought along, such as experiences related to previous visits to a place, various types of abilities, motivation, and intuitive elements (Pati et al., 2015; Hubregtse, 2016). The elements that form part of that experience are given as cues that enable the way-searcher to gain access to stored memories that can help to make a decision about which direction to follow. Furthermore, it is not always possible to logically explicate or formulate this decision in full in relation to apparent conditions, but can it bear traits of intuition. Stefan Lundin (2015), architect and researcher in health-care architecture, discussed and defined intuition as an alternative mode of knowledge based on experience: "Intuition is not the same as guessing. Nor is it the same as luck or chance. It is not rolling the dice. Instead we should see intuition as [complementary and] an expression of a kind of knowledge that is hidden from our immediate consciousness" (Lundin, 2015, p. 82). In

Lundin's view, intuition is our corporeal interaction with a real environment based on our previous knowledge of similar environments, but without conscious reasoning through our senses (sight, sound, taste, smell and touch). Since the interaction is nevertheless reliant on the physical environmental elements, this reveals that material and spatial features are crucial for our intuition (Lundin, 2015). Intuition is sometimes also at work when a way-searcher becomes aware of a getting-lost situation, without any explicit indications that s/he is going the wrong way. As stated earlier, the type of sequence in which a way-searcher moves is not always obvious, in the sense that it can be hard to actually pinpoint what comes first: perception of the environment, mental mapping, or moving. Nor is the order in which one navigates (or acts intuitively) with the help of visual objects or by way of seeking explicit information self-evident, and this could vary from case to case. Artwork, plants, skylights, furniture, material and angles, the size and colors of walls, may instantly start to influence or support people's navigation, even if signage is what people look for first (Alibrahim, 2017).

If viewed in terms of cognitive processing of impressions, we have seen that wayfinding can be defined as the execution of a personal plan for reaching a destination based on the perceived navigational cues in the surrounding context, while developing the plan recursively under the influence of the environmental features, individual ability, individual experience, and personal or social motivations. This definition has an all-encompassing ambition, and exhibits some of the complexities of wayfinding, but it does not say much about the impact of the design of space, and it does not show the effects of emotional responses to the spatial and social environment. As Lynch (1960) already pointed out, the possibility of finding one's way is dependent on the legibility of the environment, which offers visual cues to enhance the wayfinding process. In other words, the environment presents itself, as it were, as affordances (or action possibilities) to the subject searching and finding the way, and this subject is not a perfectly stable one. In the next three sub-chapters, the notions of orientation, legibility and affordance will be further reflected upon, in order to reframe and further develop the theoretical background, which has hitherto focused on enacted cognitive processes.

2.2 Legibility, imageability, and the impact of landmarks and spatial form

If the cognitive models mentioned above are general attempts to describe how we, as wayfinding subjects, process data that promotes movement in an environment, Lynch (1960) focused more explicitly on our understanding of materialities and spatial structures in the environment as such. Lynch also came to recognize that people's abilities to perceive and grasp the surrounding context are diverse. When trying to orientate ourselves in space, we depend on the senses of vision, hearing, and smell, but also, he mentions, on how we relate to our social and cultural background (Lynch, 1981). However, he did not develop the subjectivity aspect of wayfinding to the extent of attempting a proposal of what social and cultural differences might mean in practice. In his early views on wayfinding in the city, Lynch (1960) classified the experience of physical elements in the environment into three categories: identity, structure, and meaning. As a planner and architect, he had the pragmatic view that these three elements were part of the built environment, or that they were provided by it. The appearance of these categories in the environment is essential for people to gain a sense of place, and hence also a sense of control, which can be seen as the ground for easier navigation and for reaching a destination.

The notions of "structure" and "identity" were the major elements in Lynch's early (1960) studies of the sense of place. Structure concerns the relationship between the physical features in the place, while identity is the term used to distinguish physical elements from one another (Lynch, 1960). The "meaning" element came to gain importance, as his studies of people's relations to their environments required a consideration of relations to history, to backgrounds embedded in social and cultural contexts, and to people's emotions (Lynch, 1981).

The meaning element is an integral part of both the structure and the identity element when it comes to sensing the legibility of an environment, legibility being a measure of the ease of perceiving and grasping the surroundings (Lynch, 1960). Legibility has continued to be of interest for space analysts; a later definition describes it as "the degree of distinctiveness that enables the viewer to understand or categorize the contents of a scene" (Bell, Greene, Fisher & Baum, 2001, p. 45). Legibility of the inner environments of buildings is embodied in what the physical features afford, or offer, to the process of wayfinding (Weisman,

1981). In other words, the readability of particular environmental elements (physical features) has an important role to play in defining and strengthening the degree of legibility of the environmental features.

An environment that includes clearly readable and noticeable elements can foster spatial information (Kosslyn, 1975; Weisman, 1981), which means, in line with Lynch (1960), that environmental elements, and how they are formed, have an impact on people's perception and representation of their surrounding context, thus influencing how their wayfinding is planned and executed (Long, 2007). Apart from imageable spatial elements in general – i.e., any distinct, perceivable forms of the environment – elements for specific purposes such as signs and numbers, architectural differentiation, visualized plans and configurations are also part of an environment's legibility within a complex building (Weisman, 1981). In his initial studies on legibility, which he initially called imageability, Lynch (1960) saw the influence of the physical environmental elements on people's perception as a measure of spatial or planned success. In his early studies, he requested that participants sketch a map based on their memory of a space, including the most attractive physical elements within the studied context. Lynch called them imageable elements, that is, readable and graspable elements that assist people in creating cognitive maps (mental images). The imageable elements that people relied on in their wayfinding were grouped and classified by Lynch (1960) into paths, landmarks, districts, edges, and nodes. Thus, for Lynch, imageability is conditioned by physical environmental features (Lynch, 1960). Following Lynch, then, imageability has been seen as having both physical and cultural aspects, the physical aspects relating to location and the appearance of the physical elements, and the cultural aspects including meaning and further association (Bell et al., 2001).

Visual qualities in the physical environment can hence be regarded as defining a degree of imageability, supporting the building of mental images of the surrounding context, which in turn impacts people's wayfinding (Lynch, 1960). The possibility to differentiate between imageable qualities in an environment became a focus in this thesis, with the investigation of how particular qualities, mostly connected to the display of art objects and interior design in hospitals, rely on imageable elements. To some extent, Lynch's categories – primarily landmarks and nodes, and to some extent paths or fragments of paths – have guided the choice of sites of investigation, as well as method in this thesis. A node is a place

of intersection, considered a focal point at which people need to choose which course to follow to reach the intended destination. Landmarks are physical elements in the environment that catch people's attention as noticeable features. Paths have been seen here as the directions that appear in the environment that seem to lead a way-searcher further. Given landmarks, nodes, and paths contribute to the planning and navigating phases of wayfinding, since a destination or a desirable route to reach one depends on such perceivable and memorable features of the environment. From a design point of view, these imageable (or legible) elements are also what is physically at hand to work with. Designerly experience and expertise are important contributors to the conception of wayfinding, and as we shall see, this type of experience can merit further exploration that may add to our knowledge of what influences wayfinding.

2.3 Beyond signage systems: Designerly aspects on making and showing ways in built environments

Navigation in complex buildings, such as hospitals, is considered one of the challenges for users when trying to find their destination, even if there are traditional signage systems at hand (Rooke, Tzortzopoulos, Koskela & Rooke, 2009, p. 1). Rooke et al. (2009) argued that a person's spatial knowledge of an environment, which is reliant on the physical properties of that environment as well as the variety within it, can improve wayfinding without dependence on informative signs. Based on literature searches and fieldwork, Rooke et al. (2009) stated that the environment has plenty of physical properties with the potential to decrease the users' dependence on signs, such as artistic landmarks that help users to distinguish the different places within the hospital from each other, and guide the users to find their destination, even if they can't read the signs.

Improving the conditions for wayfinding, in other words, is not only about deliberately providing signs and signage systems. The architectural design elements (Arthur & Passini, 1992) and the legibility of the physical elements of the environment (Carpman & Grant, 2001) offer the user various wayfinding cues that support the intuitive act to orientate, without reliance on signage.

Not only architects and designers occupied with physical space, but also computer- and cognition-oriented researchers on space, such as Roy Ruddle and Patrick Peruch (2004), state that designing a signage system (written and graphic information) in harmony with the physical properties of an environment improves the users' orientation within a given place, even in complex environments such as hospitals. The American signage company ASI emphasizes the importance of consistency in what they call an "intuitive wayfinding system" (ASI, 2011), which, in their pragmatic perspective, means fore-fronting a well-functioning integration of the tripartite relation between the signage system, the interior design elements, and the architectural elements. Furthermore, Michael Crump (2016), a website designer at Microsoft, has named consistency (in the sense of meeting the user's expectations) as one of the three principles of good navigation design; the other two are simplicity (in the sense of not doing more than necessary), and interaction, which, in his case, "refers to the physical way that users interact with navigation across a variety of contexts" (Crump, 2016), where the designer needs to understand the user's behavior and put him/herself in the user's position whilst

designing. The degree to which designers and architects actually try to put themselves in users' positions, is, as we shall see, a matter of concern in this thesis – one to which the thesis itself is an answer through its interviews and observations.

In a designerly perspective, the whole question of wayfinding can be turned into a matter of wayshowing instead, where wayshowing is the active concern with how to make wayfinding easier in an environment.

2.3.1 Basis of "wayshowing"

If wayfinding, as we have addressed it here, is a common term in space analysis, denoting the process of finding a destination or a possible path to a desired destination, the term wayshowing is more rare. Wayshowing, according to the Danish designer and design researcher Per Mollerup (2009), is the design of key elements in the physical environment used by designers and architects for guiding people on their way through complex buildings such as hospitals. Mollerup (2005; 2009) describes the situations and causes for wayfinding problems in hospitals and suggests nine specific features of wayfinding, or "strategies" as he calls them – strategies important for us when finding our way, and that correspond to his personal experience and observations as a designer.

According to Mollerup (2009), dysfunctional or difficult wayfinding processes in hospitals appear in two main categories: either related to the complication (complexity) of the environment, or related to the way-searcher's capacities (or, rather, weaknesses), such as mental, visual, or physical functional variations, reminiscent of what Arthur and Passini (1992) called "impairments". As mentioned previously, becoming disoriented may cause feelings of anxiety. Mollerup (2009) stated that anxiety in itself is one of the things that make finding a destination in hospitals difficult. Apart from a usually complicated hospital environment, in which one may be a first time visitor, or in cases where the hospital is being or has been renovated/rebuilt, there can be a confusing similarity in the signs and the names of departments. This, in combination with low observation and movement abilities of patients and visitors, such as visual impairment, impaired mental abilities, impaired mobility, and so on, makes wayfinding difficult. As a remedy, Mollerup proposes deeper consideration of what actually shows the way in hospitals. "The combination of a complicated

environment and possibly weak wayfinders calls for carefully planned wayshowing", and "good wayshowing means that more resources can be used for the proper purpose of the hospital" (Mollerup, 2009, p. 112).

According to Mollerup (2009), signage systems are often used as a standard cure to solve wayfinding problems, but the designer should instead diagnose the problem before adding more signs. Three main, basic factors should be taken into consideration in designing wayshowing in large hospitals to minimize wayfinding problems and reduce the use of signs, from Mollerup's (2009) point of view. They are pre-visit information, architectural design, and toponymy (the naming of places). Pre-visit information is given to patients and visitors before they arrive to the hospital, for instance when they book their appointment. This information could for instance be in letter-form, or the address of a website with a map indicating the location of the appointment in relation to the general plan of the hospital and showing the trajectory from the main entrance to the intended destination. Such information could help the way-searcher, alleviating worry about not finding the way, as well as decreasing the time needed to reach the destination, and hence the time spent at the hospital (Mollerup, 2009). Mollerup's concern is thus with design that goes beyond physically situated spatial orientation, in that it includes linguistic advice, maps, and visualizations, and how they may direct the way prior to the confrontation with physical space, and improve the logistics of arrival.

Architectural design is the fundamental factor for well-designed wayfinding, and it includes both location and appearance. As an example, location relates to the way-searcher's expectations of a logical organization of the departments in a hospital (Mollerup, 2009). The main reasons for the illogical organization of functions in large hospitals are the overlapping of numerous logical systems and multiple economic issues in the hospital design, which could limit the logical potential of the whole design (Mollerup, 2009). Instead, he says, "expressive architecture" – in other words buildings and environments that include variation, landmarks, and visual anomalies – can help the way-searcher to recognize and distinguish different places within the hospital (Mollerup, 2009, p. 113). Similarity in terms of appearance linked to certain functions, such as for example toilet facilities, can also help the way-searcher find her destination. Mollerup is also aware of the fact that hospitals change and add clinical functions,

and that if possible, the architecture should be able to allow change without losing its ability to support orientation.

The third factor, toponymy, is “the giving of names and numbers to places and functions” (Mollerup, 2009, p. 113). The designer and the architect should be conscious of the fact that they are addressing different types of people with diverse mental and physical abilities (Mollerup, 2009). For instance, the medical names of the departments are readable by doctors and others who are familiar with the terminology, but they are not readable for all categories of people. Addressing the variations in how hospital design is understood could facilitate wayfinding with fewer informative signs, but in large hospitals, designers and architects cannot eliminate using signs altogether (Mollerup, 2009).

Mollerup (2009) defined nine common wayfinding strategies that, as he says, “most of us” tacitly know and use; according to Mollerup, these strategies should be regarded as background knowledge for wayshowing design, preferably as professional and reflected knowledge in applied design work. The nine strategies are: track following, route following, educated seeking, inference, screening, aiming, map reading, compassing, and social navigation (Mollerup, 2009, 2013). The first strategy, track following, is supported through “directional signs with arrows [that] help users to go from one part of the hospital to another” (Mollerup, 2009, p. 113), or a colored line on the floor guiding the way-searcher from the reception to the destination department. The second strategy, route following, is the use of an elaborated “route description” (Mollerup, 2009, p. 113), given based on location, for instance: go straight until you reach the green statues, turn left and continue straight, then enter the blue door. To explain the third strategy, educated seeking, Mollerup makes use of the classical notion of “syllogism,” or logical inference, that can be traced all the way back to Aristoteles (Mollerup, 2009, p. 113), meaning that to find one’s way, one needs to draw a conclusion built upon premises. If the premises are true, or relevant in the current situation, then it is likely that the conclusion will be true. For instance, the reception desk is usually located in the lobby of the main entrance in the hospital, and based on that common logic, the way-searcher will build his/her premise of finding the reception desk in the main lobby of the hospital. Inference, the fourth strategy, as used by Mollerup, is similar to educated seeking, namely that one adds previously acquired knowledge to make a conclusion on one’s own in a new situation: “inference involves reading numerical and alphabetic information on

doors and elsewhere and understanding the direction of unseen numbers and letters" (Mollerup, 2009, p. 114). Inference is a more cognitively advanced strategy than simple sign following, and recalls the first two cognitive steps (information processing and decision-making) in the other cognitive models discussed above. The fifth strategy, screening, is "systematic searching an area for a certain destination" (Mollerup, 2009, p. 114). Aiming, the sixth strategy, is used in cases where the intended destination is seen, or is close to known features that can be seen (Mollerup, 2009). Map-reading, the seventh strategy, is finding one's location, the "you are here", in relation to other functions, when guiding oneself by following the shown trajectory on a map, including connecting the virtual environment in maps with the reality. The eighth strategy, compassing, is "using compass directions for – primarily outdoor – navigation" (Mollerup, 2009, p. 114), We could add that today compasses are a common feature on smart phones, sometimes linked to advanced GPS or other technical navigation systems. However, a compass direction can also be a rough hint at a direction, without the actual use of a compass. "Maps, the sun, and names such as 'South entrance' and 'North wing' may deliver helpful clues" (Mollerup, 2009, p. 114). The ninth and last strategy is social navigation, "learning from what others do (or have done)" (Mollerup, 2009, p. 114). With the ninth strategy, Mollerup seems to mean primarily following others, and not so much talking to others. On the whole, he promotes visually conducted strategies, hence conveying a certain social passivity, and lack of involvement of other senses, in all of the strategies. However, his views are closer to what might be required as functions to be considered in actual design, than the more general modeling provided by the cognitive tradition discussed above.

2.3.2 Designing for inclusive wayshowing

The strategies described above identify nine different way-showing problems that can be addressed with professional solutions. According to Mollerup, "what intuitively appears as good wayshowing will often prove to be counterproductive, nothing can replace the experienced wayshowing designer's accumulated knowledge" (Mollerup, 2009, p. 114). This view of wayshowing as an aspect of design, or a design tool, is valuable for my thesis, even if I am not explicitly looking for "tools," but rather areas of concern. Not only are these nine strategies a premise for a pragmatic and result-oriented view on wayfinding, but they can also

be seen as raising questions about the extent to which designers actually take the views of patients, staff and visitors into account when hospitals are being designed or altered. It also leads the way toward an understanding of how the knowledge on the relation between wayfinding and interior design elements, including works of art, could actually be disassembled and used by design professionals in the making of interior hospital environments.

As Mollerup noted, way-searchers can have many different functional variations, and a designer of wayshowing artefacts must take all these differences into consideration. An established design approach that specifically deals with addressing as many users as possible is Universal Design. Universal design is "the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design" (Connell, Jones, Mace, Mueller, Mullick, Ostroff, Sanford, Steinfeld, Story, & Vanderheiden, 1997). Some of the principles of universal design are to keep the use of space flexible, simple, and intuitive, and to keep spatial information perceptible for as many as possible (Rossetti, 2006). Intuitive use means that the design has to be simple and easy to understand and utilize, "regardless of the user's experience, knowledge, language skills, or current concentration level" (Rossetti, 2006). Perceptible information means that "the design communicates necessary information effectively to the user" (Rossetti, 2006), which increases the legibility and remarkability of the design features. These principles could resonate well with Mollerup's (2009) wayfinding strategies, as well as with what is called perceptible affordance (Gaver, 1991), which I will describe in more detail later in this theoretical background section.

Other similar design approaches concerned with promoting the accessibility of physical spaces are barrier-free design, design for all, inclusive design, accessible design, universal access, and cooperative design (Persson, Åhman, Yngling, & Gulliksen, 2015). The term cooperative design, sometimes called participatory design, can be seen as another variant in that in this approach, the designer engages in a dialogue and a collaboration with the intended users of the actual design in order to better understand their needs and wishes (Till, 2005; Hofmann, 2014). However, participatory design is "a design process involving much more than just the active involvement of users in the process. It entails full cooperation between the user and the development team who share their respective knowledge and experience by designing together" (Persson et al., 2015, p.510; cf.

Schuler & Namioka, 1993). The studies in this thesis aspire to include a greater number of unheard voices in design, even if they are not a participatory study in the sense that the participants actually co-operate in designing the research or the space in discussion. I do, however, work in line with the Universal Design approach in that I strive to take the various differences of cultural background into account when looking at how familiarity and unfamiliarity affect the way-searchers' orientation and wayfinding in the hospital environment. In the next chapter, I will more explain in more detail what I mean by familiarity in the context of this thesis.

2.4 Familiarity

The user gains information about the surrounding context through direct experience of it, and his/her understanding of that surrounding context is also improved by previous experiences of similar (and hence familiar) environments. Familiarity is induced by frequent exposure to an environment, which is called "actual familiarity" (Craig, Conniff, & Galan-Diaz, 2012). One could also seem familiar with an environment that one has never experienced directly, but perhaps indirectly via acquaintance with similar environments (Craig et al., 2012). The sense of familiarity with an unfamiliar environment is something that Craig et al. (2012) term "perceived familiarity;" this means that the "reactions to the physical environment result from a comparison with previous examples of a particular environmental type" (Craig et al., 2012, p. 2). Both actual and perceived familiarity can be seen as prerequisites for Mollerup's strategies of educated seeking and inference in wayfinding. Familiarity, however, does not always lead to mere efficiency in wayfinding. Sometimes – not least in reactions to art – a strong sense of familiarity can be sensed, albeit without directly recalling previous wayfinding experiences or previous similar environments. In order to cover the possibility of this kind of associated, rather than environmentally similar familiarity, I will use the term "evoked familiarity" for these kinds of situations throughout this thesis.

This decision emanates in part from my observations of how informants in my second study of wayfinding and orientation recalled memories from many different former experiences and settings, for example from their backgrounds in Syria both before and during the war, and not from wayfinding experiences in the current Swedish hospital setting.

The complexity of buildings such as hospitals can be a challenge in itself, for staff, patients, and visitors (Hölscher, Brösamle, & Vrachliotis, 2007). The way-searcher's experience is influenced by a variety of explicit and implicit informational factors, such as, for example, informational data in plan configuration, maps, spatial landmarks, spatial differentiation (paintings, sculptures, forms, volumes, finishes, lights, colors, materials, and so on), as well as by less directly informational familiarity (Lee & Dazkir, 2015). Plan configuration, environmental features and landmarks are often considered more effective in terms of how they impact the way-searcher's wayfinding in unfamiliar

environments (Lawton, 1996). For example, Aysu Baskaya, assistant professor at the Department of Architecture at the Gazi University with a research interest in wayfinding and visual perception, Christopher Wilson, a PhD student studying the relationship between architecture and identity, and sociologist Yusuf Ziya Özcan (2004) state that newcomers can obtain more effective orientational information through landmarks and spatial differentiation when seeking their way in unfamiliar environments. However, an environment that lacks spatial differentiation has a negative influence on the orientation and wayfinding of both the newcomer and the familiar way-searcher (Gärling, Böök, & Lindberg, 1986; Baskaya et al., 2004). In other words, the complexity that is induced by design elements (spatial differentiation) has a positive impact on the way-searcher's performance, regardless of his/her previous level of familiarity with the place (O'Neill, 1992). Being familiar with an environment makes a significant impact on wayfinding and orientation within that environment: orientation performance improves with the amount of experience one has of the milieu (O'Neill, 1992), while a greater increase in the amount of experience (such as daily experience) can lead to "overfamiliarity" (Craig et al., 2012, p. 3). Craig et al. (2012) rate the liking of design and planning proposals among people who are familiar or unfamiliar with the sites of the proposals. In reference to Kaplan & Kaplan's (1989) investigations on the correlation between familiarity and preference regarding experiences of landscape and images of landscape, Craig et al., (2012) point out that too much familiarity in a population that evaluates an environment makes it hard to achieve valid points of view. If we view "overfamiliarity" as the kind of routine knowledge that one can accumulate through frequent use of a place, a way-searcher's overfamiliarity with an environment could make his/her wayfinding and orientation easier, even though the overfamiliar way-searcher may also pay less attention to the surrounding environmental features, in the sense of being "bored" (Craig et al., 2012). Designing wayshowing by deciding on signage or art or other interior elements in an environment, or in a type of environment with which one is quite familiar or even overfamiliar, can have both positive and negative aspects: One has a high level of potential to improve the environment in relation to the users' needs, since one already has expert knowledge about it; however, with overfamiliarity with an environment comes a risk of not understanding the obstacles that newcomers confront. As a designer, one might simply miss the features of the environment that are difficult when it comes to finding one's way as a newcomer (Cohen & Cohen, 1979). Furthermore, there is a connection

between peoples' familiarity with a certain type of environment and their preferences for certain designs and settings of that environmental type (Craig et al., 2012; Pedersen, 1978; Purcell, 1986; Kaplan & Kaplan, 1989). All in all, the combination of actual and evoked familiarity could have a significant impact on users' preferences for a given setting, and their orientation in it.

The cognitive and systemic modeling of wayfinding that I have mentioned so far have a certain rationalist view in common, where wayfinding is seen in general terms as divided between decision-making and decision executing in a structured way, according to how well we read our environment and how well we understand what to do in it. In reality, this dividing line, or this segmentization of a wayfinding process, can be sensed as to some extent true: we usually do not move until we have gotten a sense of direction. But we cannot, on the other hand, simply presume that everybody reacts in the same sequential way to physical elements in the environment. In reality, individual differences in how we sense and react to environments, and how actual and evoked familiarity appears, have an impact on how we understand and use a certain setting. In a theoretical perspective, it can therefore be hard to see experiences of wayfinding in definite terms, only as clear-cut segments or sequences. This possible variation of how and when an impression is formed in a user also implies that the environment cannot only be seen as a definite set of structures, forms, and objects, but something that is created as one moves in it. The emotions that are evoked, as soon as one moves in space, further influence the interaction between a way-searching person and his/her immediate environment. In order to delve a little deeper into the issue of the connection between our perceptions and our emotions, in the next section of this theory chapter I will turn to the notion of orientation, which in this thesis is seen both as part of a wayfinding act and as a broader sense of existential positioning in a specific situation, where also emotions play a part.

2.5 Orientation

Through the concept of orientation, the identity theorist Sara Ahmed (2006) discusses perception in a phenomenological perspective, and includes emotional intentionality as important for our navigation in space. Emotional intentionality is part of our attention to the world, meaning that our perception is influenced by emotions tied to the surrounding physical elements with which we interact. She states: “emotions are directed to what we come into contact with, they move us “toward” and “away” from such objects” (Ahmed, 2006, p. 2). In addition, “orientation shapes not only how we inhabit space, but how we apprehend this world of shared inhabitance, as well as “who” or “what” we direct our energy and attention toward” (Ahmed, 2006, p. 3).

“What does it mean to be orientated?” Ahmed (2006, p. 6) asks in an attempt to include an existential and phenomenological view on how we attend to, and interact with, our surroundings. She continues: “How do we begin to know or to feel where we are, or even where we are going, by lining ourselves up with the features of the ground we inhabit, the sky that surrounds us, or the imaginary lines that cut through maps? How do we know which way to turn to reach our destination?” (Ahmed, 2006, p. 6). Ahmed (2006) argues that to be orientated, one must first experience disorientation. We often experience ineffective relations among ourselves, and between ourselves and the material world, and through our navigation, we may turn this sense of disorientation aside, and consequently “we might not even notice that we are orientated: we might not even think ‘to think’ about this point” (Ahmed, 2006, p. 5). Knowing where one is when navigating in a place, knowing the direction that one will follow to reach a specific destination, recognizing elements (surrounding physical environmental features) as “landmarks or other familiar signs”, makes us feel orientated; still, Ahmed says: “objects [create] different grounds” for our navigation (Ahmed, 2006, p. 1).

When we experience orientation or disorientation in a hospital, encountering the specific medical context with its physical elements, our way of experiencing influences our perception of the environmental features. “The word perception indicates a direction rather than a primitive function” (Ahmed, 2006, p. 27). In other words, perception includes orientation, and an act of perception occurs when the orientation allows us to see surrounding physical features, where the physical elements have to be close enough for us to see them. From my own point of view,

as a person situated in a hospital environment, “being close enough” does not necessarily mean being in sufficiently close proximity to the object, but rather that the object shows itself in the current field of vision, and therefore presents itself as an object that means something special to me.

Ahmed (2006) describes familiarity as what is “given, and which in being given ‘gives’ the body the capacity to be orientated in this way or in that. The question of orientation becomes, then, a question not only about how we ‘find our way’ but how we come to ‘feel at home’” (Ahmed, 2006, p. 7). In a familiar place, the way-searcher extends their selves and are thus able to reach their destination. Navigators in a strange (unfamiliar) place, however, will encounter a more difficult situation to find their way.

Familiarity does not only concern having been present in a place previously, but feeling that the place is familiar in relation to the inviting and comfortable environment, induced by its interior design, i.e. forms, colors, lighting, furniture, also including installed artwork and the messages of the works. Through elements such as these, the perceiver can experience a sense of familiarity in a place even if s/he has never been there before. Furthermore, familiarity could be related to previous experiences (background) of other places recalled in relation to the environmental features of a new place. After becoming more acquainted with a particular place and its physical elements, these elements tend to gradually become a more natural part of the environment, to the point where no notice is taken of them anymore. Hence, familiarity with an environment and its features eventually “takes shape by being unnoticed” (Ahmed, 2006, p. 37).

Ahmed (2006) states that “orientation involves aligning body and space.” Ahmed includes the two terms, location and position, to describe how our bodies inhabit a place: “in geographical terms, ‘location’ fixes a point in space, usually by reference to some abstract co-ordinate systems such as latitude and longitude,” while “position by contrast, implies location vis-à-vis other locations and incorporates a sense of perspective on other places” (Ahmed, 2006, p. 12). If a navigating person stands in a specific place, then s/he has a location. When the navigator relates his/her location and particular view to another location, then s/he has a position.

Referencing in part to the phenomenology of Martin Heidegger (1973; 1975), Ahmed (2006) says that “the pragmatic orientation of things is associated within their being, or what [Heidegger] describes as the ‘equipmentality’ of

objects" (Ahmed, 2006, pp. 45-46). The equipmentality of things is what they offer us to do with them, and this basic property of things – such as the ones we find in a hospital environment – has an apparent role to play for wayfinding. Seen thus, objects may both encourage and hinder our orientation. "Equipmentality is about what 'things' or 'objects' allow bodies to do: they have an 'in-order-to' structure, which assigns or refers to something. So what makes the object 'itself' is what it allows us to do, and that 'doing' takes the object out of itself and makes it 'point' toward something, whether that something is an action or other objects" (Ahmed, 2006, p. 46).

The properties that a physical element possesses are able to guide the perceiver in how to use it; in other words, to the object's intended "usefulness" (Ahmed, 2006, p. 46). In extension, and especially when we talk of design, the capacity of a physical element relates to the intended purpose of that element and how it was made or installed to be used. For instance, works of art that are created to assist peoples' orientation, and the properties that may be embodied in their concepts, including motifs, colors, or spatial/sculptural performances, would be capable of supporting wayfinding actions or further guiding the perceiver to other physical elements, such as for example another piece of art or an entrance sign. However, the wayshowing capacity of a work of art is also influenced by each person's perception of its properties, properties that could evoke or provoke previous memories and experiences. It cannot be excluded that the type of experiences evoked by a work of art, for instance, can be both directing and distracting for the perceiving subject trying to find his/her way to an intended destination.

Ahmed discusses Heidegger's differentiation between using an object and perceiving an object. According to Heidegger (1975), direct usage is about grasping the properties of an object that enable a certain user action, whereas the perception of an object's physical elements is affected by the perceiver's background and occupation. When an object fails in its function, it is suddenly perceived as having a diversity of properties instead of an immediate function (Ahmed, 2006). Ahmed, however, also points out that even if they change from user property to perception property, objects may still possess their initial and immediate familiarity as the objects that they are. For instance, when a hammer is perceived as too heavy, the heaviness becomes a property in itself that may prevent the user from performing the expected action, which is to hammer; but, as

Ahmed adds, "the heaviness of the hammer *still refers to the action that the hammer itself directs us toward*" (Ahmed, 2006, p. 48).

"Failure, which is about the loss of the capacity to perform an action for which the object was intended is not a property of an object […] but rather of the failure of an object to extend a body, which we can define in terms of the extension of bodily capacities to perform actions" (Ahmed, 2006, p. 49). "The experience of this "nonextension" might then lead to "the object" *being attributed* with properties, qualities, and values" (Ahmed, 2006, p. 49). The heaviness of the hammer "shows us how the position of the object, and indeed the qualities perceived in an object as given, refer us to the relation between objects and the subject that make use of them" (Ahmed, 2006, p. 50). "Those qualities only come to matter in terms of how the objects and the subjects work together" (Ahmed, 2006, p. 50) – for example, the hammer is very heavy for me and I cannot use it, but it fits another person who can use it effortlessly. Finally, "an action [orientation] is possible when the body and the object 'fit'" (Ahmed, 2006, p. 51). What Ahmed clearly points out is that "orientation," "familiarity," and "fit" depend on the individually different relations that are established in perception and usage situations, which means that this has to be taken into consideration in wayfinding, as has also been done in walking studies tied to outdoor architectural contexts (Lawaczeck Körner, 2016). Ahmed also points out, in reference to the phenomenology tradition, that the way the objects in the world "show themselves to us" is a matter of emotional intention, and that this influences the way we regard their usability. In the following chapter, this kind of readiness to usage, or potential action, that objects present to a perceiving subject will be discussed in terms of affordance: a concept whose use is already well established in design theory.

2.6 Affordance theory

2.6.1 Affordance as perceived action potential

In *The Ecological Approach to Visual Perception*, the psychologist James Gibson (1979) saw perception and action as unified in one moment, i.e. not as a sequence of cognitive steps followed by corporeal action. He was interested in the situation when an animal (such as a human being) moves in an environment, perceiving and acting directly on the environmental possibilities that appear; he called the concept he coined for this perceived action "affordance." "The affordances of the environment are what it offers the animal;" that is, they are the actionable properties between the environment and a user (Gibson, 1979, p. 127). In other words, Gibson outlined his theory based on the relation between a user's abilities and the environmental features that surround this user. For Gibson (1979), the notion of affordance is therefore a perceived action potential that depends on the physical relationship between user and environment. The notion of affordance has a kinship to the notion of instrumentality, however, it is more directly a part of perception seen as an ecologically situated act.

Gibson (1979) claimed that affordance is a quality offered by the environment to the perceiver, i.e., affordance does not have what the gestalt psychologist Koffka (1935) called "demand character," meaning that affordance is not based primarily on the observer's needs and does not solely depend on the observer's perception of the object. For example, air affords breathing, ground affords standing on, and the post-box affords mailing letters to others, whether or not the user perceives it. In other words, Gibson (1979) emphasized the objectivity of affordance by stating that the objects around us exist regardless of whether we perceive them as they are or not. For example, an apple is recognizable as edible matter by its shape, its color, and its size, while its taste is perceived in relation to an observer's individual (mouth, teeth, and digestive system) preferences. The "food users", or those who eat the apple, each perceive the apple's edibility in an individual way. The individual perception of the object, and its relation to a general quality of it, was later discussed by many, and not least in relation to matters of design, starting with Gibson's student Donald Norman (1988).

In addition, Gibson (1979) mentioned that "misaffordance" (misperceived or misinformed affordance) could occur if a user fails to perceive something that

exists, or perceives something that is not presented. In other words, visual perception can fail to recognize certain action-possibilities due to the lack of stimulation (darkness, closed eyes, eye disease), or in situations where the perceiver/user does not get the chance to extract the details of the object in a sufficient way. Furthermore, familiarity could be a reason for not perceiving affordances of environmental elements, in that the characteristics of the surrounding contexts become unnoticed properties (Ahmed, 2006).

The theory of what an environment affords to a perceiver is useful in wayfinding studies because it introduces the idea that not all action possibilities are followed, but that we select from among them. In addition, one could suspect that affordances do not always appear due to environmental circumstances, despite the fact that they are there (in the long run), and also that given perceptions can mislead us. We may also need chains of affordances to reach certain action-possibilities presented in an environment. These ideas about what an environment offers or not are quite central in terms of what we expect architecture and design to provide to its users, not least when we orientate ourselves or when we try to find our way forward.

2.6.2 Affordance and design

In the late 1980s, the psychologist and design theorist Donald Norman proposed that affordances could add advantage to design. Norman (1988) linked the affordance concept to the design field by defining affordance as the visual cues of design properties of an object that determine the possibilities of using the object; in other words, as a matching between the visual quality of the object and its possible actions. Norman (1988) stated that the affordance of an object is embedded in the object’s actual (real) and perceived properties. The actual properties are the object’s actionable properties, while the perceived properties are the possible actions that the user perceives as given by the object. The actual properties of a door handle, for example, are its physical materials, its size, its shape, and its colors, and the perceived properties are how it is intended to be used. When the actual and the perceived properties are integrated into one immediately sensed affordance, a user-relationship emerges between the object and the user (Norman, 2002).

There are some differences between Gibson's use of the term affordance and Norman's. On the whole, although Gibson mentioned the possibility of the existence of cultural affordances (1979), he considered affordance as somewhat independent from the user's biographical experiences or cultural belonging. One could say that Gibson, especially in his brief examples, maintained a somewhat natural science-oriented, ecological approach, while Norman's thoughts on affordance are more dependent on the experience and culture of the user. This is perhaps because Norman's concerns grew to relate more to how perceived affordances could be thought of in actual design (for instance, the manoeuvring of digital devices). The second difference is that, according to Gibson, affordance has a binary presence: it either exists or does not exist as a presentation in the environment; Norman on the other hand is more usability-oriented, considering affordances as existent clues in relation to how to use an object, especially how these clues could complicate or facilitate the user's actions. A third difference is that Gibson relates action possibilities to the user's capabilities as a user, whereas Norman relates action possibilities to the user's perceptual capabilities. Norman even comments on his own perception-oriented use of the concept of affordance: "I should have used the term "perceived affordance", for in design, we care much more about what the user perceives than what is actually true. What the designer cares about is whether the user perceives that some [specific] action is possible (or in the case of perceived non-affordances, not possible)" (Norman, 1988, p. 1). Norman (1988) shows his usability-oriented approach by asking how a designer can create an object so that the user sees it as something that can be used.

The designer William Gaver (1991) developed Norman's concept of affordance as applied to everyday objects and to computer screens. Affordances, according to Gaver (1991), "exist whether the perceiver cares about them or not, whether they are perceived or not, and even whether there is perceptual information for them or not" (1991, p. 80). Gaver (1991) classified affordances from the information available about them, and thus contributed an easy distinguishing model between correct rejections, false, hidden, and perceived affordances (see Figure 3). Correct rejections occur when there is no affordance and no perceptual information for a given action; false affordance occurs when there is no affordance, but the perceptual information for a specific action is available; hidden affordance occurs when affordances exist, but the perceptual information does not identify them; and perceptible affordance occurs when affordance and perceptual information are both available (Gaver, 1991). Gaver's

notions of false and hidden affordances are akin to something that Gibson (1979) gathered in the single concept “misaffordance.”

In addition, Gaver (1991) analysed complex actions and suggested that these actions could be understood in terms of groups of affordance, or nested affordance. “[N]ested affordances describe affordances that are grouped together in space” (Gaver, 1991, p. 82). In other words, a specific affordance could be grasped through a combination of several properties of an object (or affordances of an object). Additionally, architectural researcher Sandra Kopljar presents a modified affordance concept by merging it “with the notion of affect on a theoretical level, resulting […in…] the concept of carried affordances” (Kopljar, 2016, p. 225). Kopljar further suggests that carried affordances “are the offers perceived in a situation […] that are largely conditioned by what is carried into that situation in terms of assimilated knowledge and previous experiences” (Kopljar, 2016, p. 230). Hence, carried affordances are dependent on for example educational, social, and cultural background, and as a concept they can be used “to describe the kind of action that is previously assimilated and then carried into a design situation” (Kopljar, 2016, p. 248).

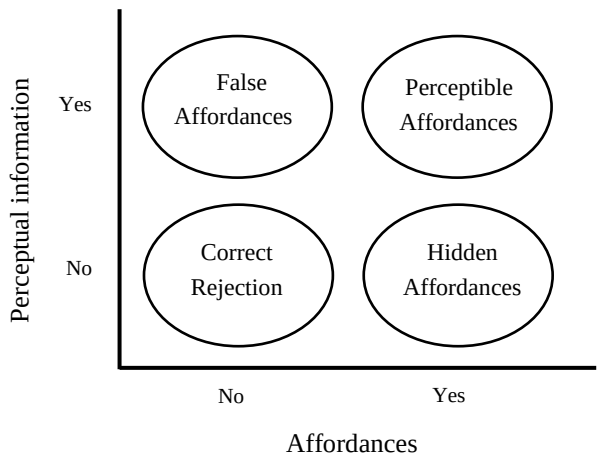


Figure 3. Gaver’s framework for the classifying of affordances from the available information.

The concept of affordance has a wide use in design studies and in applied design problems, not least because ecological psychology studies put an emphasis on human behavior in the built environment (Warren, 1995), and because affordance concerns the features of the environment that offer actions to users (Gibson, 1979; Norman, 1988). This actualises the designer's and the architect's abilities to understand and consider a variation when it comes to users' needs, accepting that peoples' perceptions and actions may not be what was initially expected and programmatically designed for. In other words, "environmental design can be construed as the design of affordances" (Warren, 1995, p. 211) allowing for a number of affordances to appear. In certain situations, however, a specific action or function has to be aimed for, and in terms of Norman's more usability-oriented approach, the design should then possess a high level of potential to guide the user in how to use the environment or the object as it was intended (Norman, 1988).

The psychologist William Warren (1995) proposed two provisional criteria for achieving an effective design based on affordances: firstly, the design should be appropriate for the users' action abilities; and secondly, "an affordance must be perceptually specified to the user" (Warren, 1995, p. 212). This implies that the designer should have a sufficient knowledge base to be able to design for the desired actions. Warren thus takes a usability-oriented approach to affordances, aiming for certain fulfillments in actions. "Desired actions" could also be discussed in relation to the idea that well-designed affordances should "name themselves" (Koffka, 1935). A third criteria proposed by Warren is that "affordances must be designed to complement social patterns of use" (Warren, 1995, p. 214). Finally, the designer designing an object and/or an environment should, according to Warren's pragmatic approach, consider esthetical aspects associated with pleasure in addition to the design's functional aspects. The "art" of designing affordances, as Warren sees it, is then to create a well-integrated unity between the function and the appearance of the environment or designed object. Defining entanglement of relationships and the interactions between designers, environment/object, and users calls for a relational concept of design that already exists in the affordance concept (Maier & Fadel, 2009, pp. 19-20; cf. Warren, 1995; Reed, 1985).

Observing the problem of loading a film projector, Norman (1988) extracted two main stages of an action: the execution and evaluation. Both stages could

affect human emotions. The execution stage refers to how to achieve an action, while the evaluation stage is the examination of an action's outcomes. Norman further divides these two stages into seven sub-stages, where the user: (1) determines the goal, (2) forms the intention (plan), (3) specifies an action, (4) executes the action, (5) perceives the surrounding environment, (6) interprets what happened, (7) and evaluates the results (Norman, 1988, p. 41). These seven stages can be seen as a quite practice-oriented checklist for the correlation between different stages; in addition, these seven stages provide "a useful framework for understanding human actions and for guiding design" (Norman, 1988, p. 42), partially recalling the cognition-based steps in wayfinding theories that we saw in Passini (1980) and others. In relation to affordance, one could view Norman's action stages as an attempt to re-include cognitive steps and a succession of decisions for pragmatic reasons. In a way, this is the opposite of Gibson's original intention with the introduction of the notion of affordance as a direct and corporeally conditioned enactment.

It is important, not least to studies of wayfinding in a hospital, to view affordance as not merely a "mechanical" function in the environment, or a necessarily enforced action induced by a place or an object, but as an offering of possibilities that speaks to someone and can be turned down. According to the psychologists Rob Withagen, Harjo J. de Poel, Duarte Araujo, and Gert-Jan Pepping (2012), designing an environment or an object "is not merely designing a layout of action possibilities or creating an aesthetic experience" (2012, p. 254); the designer can also create an environment/object that shows "not mere opportunities for action but invitation". In this view, affordances are "action-relevant properties of the environment that are defined with respect to the [perceivers'] action capabilities but exist independently of their needs and intentions" (2012, p. 255). Hence, affordances can also invite to use as well as to a variety of behavior. The environmental elements do not only have a functional use; they also have an emotional influence that increases the possibility of certain behavior (Withagen et al., 2012). In other words, the affordances of a physical element "do not cause behaviour but simply make it possible" (Withagen et al., 2012, p. 257). "Invitations are not causes. An invitation can always be declined" (Withagen et al., 2012, p. 257). This means, for instance, that a physical element such as a work of art could invite (attract) a way-searcher to follow a certain path, but the way-searcher can choose whether to follow this path or not. Expanding on Gibson's original emphasis that affordances exist regardless of whether they are

perceived or not, Withagen, Poel, Araujo, and Pepping (2012) differentiate between affordances (possibilities) and the invitation of an affordance in the sense that, "[a]n affordance can attract or repel certain behaviour of an [observer] if and only if the [observer] perceives this affordance […]. Hence, affordances can exist independently of an actual observer, but for an affordance to invite, such an observer is indispensable" (2012, p. 256).

2.7 Wayfinding and its relation to orientation, familiarity and affordance in this thesis

In this theory chapter, we have seen how the original ideas on wayfinding, based in cognitive models that divide wayfinding into sequential processes of perception, decision, and action, are insufficient as soon as a more complex relation between orientation and movement is acknowledged. In a first take, the three successive steps of the cognitive model could be seen as reduced into a division between planning and navigation. This division between preparing and executing an action also occurs to some extent in the pragmatic, or design-oriented, views on wayfinding, where the line could also be drawn between wayfinding as we perform it, and wayshowing as designers support it. An even more radical reduction was then seen in how orientation becomes a matter of not only strict spatial location, but a more existential way of being in a place. This view of orientation also implied that orientation is an ingredient in perception (and consequently not only a step following an initial perception). With an extended notion of orientation came an expansion of the notion of familiarity, which includes not only mere recognition, but again a sense of being in the environment that depends on emotions. Finally, the concept of affordance is also seen as a reduction into one integrated perception-action that is related to the properties of an environment or an object, and which clarifies how certain actions are possible while others are not. In this thesis, I use the concepts of orientation, familiarity and affordance in order to be able to study also cultural and identity-based features of wayfinding in a hospital environment. The sub-notions of affordance, like misaffordance, false affordance, hidden affordance, and nested affordance, are used to comment on the studies, where participants talk about what they follow in orientating themselves or finding their way. I will use these concepts in the thesis to interpret the way-searchers' experiences and perceptions of the surrounding

physical elements, which are attached to the potential “usefulness” of the interior design elements that contribute to orientating the way-searcher (cf. Ahmed, 2006). The notions of affordance, orientation, and familiarity are activated in analyses of interviewed visitors, with a focus on newcomers in the environment, and also by observing how visitors, patients, and staff in the hospital relate to art objects. In interviews, I also discuss specific professionals’ perspectives regarding the interior design and art, in terms of how works of art and interior elements support orientation and wayfinding, not only as what they may afford, or offer, to end-users, but also how these objects are conceived during the early stages of a design process.

Methodology

3. Methodology

This thesis started with an idea to explore the impact of interior design elements, including artwork, on people's wayfinding at the hospital SUS Malmö. Gradually, during the collection and analysis of research material for the four studies of this thesis, the idea developed to also include issues such as the way-searchers' emotions in relation to their orientation and wayfinding. The four studies developed out of each other, that is, the material that I collected in the first study gave me new ideas that led to the second study, which then led to the third and fourth studies of this thesis. As an example, the information collected through a questionnaire in the first study gave me some interesting insights into issues of concern, which led me to ask additional follow-up questions in the manner of an on-site interview in the first study. The experience gained from these interviews helped me to construct the semi-structured walk-through interviews in the second study of this thesis. The research material gathered from this shift of methods, from questionnaire to interviews, also led me to include an additional notion to wayfinding in my studies, namely orientation. As we have seen in the theory chapter, orientation concerns how people perceive surrounding features in an environment, but also how environmental features influence a way-searcher's orientation in a broad sense, including emotional and culturally-conditioned reactions. This in turn raised new questions regarding the way art and design present themselves in the hospital, which led me conduct a third interview study, this time addressing the perspective of art, design, and architecture professionals. Lastly, I did two on-site observations as the fourth and final study of this thesis; these focused on an overall user perspective and on my own reflective reasoning as an observer.

All four studies of this thesis are based in practical exploration rather than theory guidance (Patton, 1987), even though theories on orientation became more prominent as a backdrop for what was of interest in the studies as they progressed. I have used this pragmatic approach to attain an in-depth understanding of "real situations" (as opposed to controlled experimental situations) based on how my

informants experience them (Salkind, 2010), at the site or through experience in conversation. In this pragmatic approach I have, as described above, taken the liberty of using different techniques for collecting data. I see these different techniques, or methods, as complementing each other, since every technique inevitably has its limitations (Salkind, 2010). This use of a “mix” of methods (cf. Robson, 2011) has enabled me to study a chosen phenomenon by a combination of methods for gathering information, in line with the idea of triangulation, and from several different perspectives (cf. Bekhet & Zauszniewski, 2012; Flick, 2002, p.265). It is on the whole important to point out here that my choice and interpretation of the different methods, perspectives, and informants departed from my own viewpoint and experience as an architectural researcher positioned in a new cultural context (cf. Robson, 2011).

3.1 Methods

As stated in the introduction, this thesis addresses three main questions: 1) What function do the interior design elements, especially the displayed artwork, have in relation to way-searchers’ orientation in the hospital environment? 2) What types of artwork, and what placement thereof, enhance(s) or hinder(s) wayfinding within the hospital environment? 3) How does background knowledge impact the way-searcher’s perception of interior design elements, including artwork?

In order to explore these questions, I have used a mixed-methods approach in the thesis, relying mainly on qualitative studies with some quantitative elements (Brinkmann, 2013, p. 54; Flick, 2002, p.2). In these mainly qualitative studies, I have collected information using methods such as questionnaires, on-site interviews, semi-structured interviews, walking interviews, observations, and photographic documentation. This mixed-methods approach was used to attain a deeper understanding and a diverse knowledge of the role that artwork plays in hospital spaces, especially in relation to visitors’ orientation and wayfinding at three specifically chosen sites at SUS Malmö. Each method, as mentioned above, has been chosen in relation to the four different studies in the thesis (see Figure 4), apart from the photographic documentation (Flick, 2002, pp.148-149), which was used in all four studies to capture features of the interior design and the artwork at each study site. The photographic documentation was intended in part for my own reference, but above all in order to guide and help the reader of this thesis to grasp

the spatial and material appearance and details of the three studied places besides the existing artwork there (see Appendix VI).

The four studies of this thesis include three main different experiencing perspectives: the visitor's perspective, the designer's perspective, and the researcher's perspective (see Figure 4). This tripartition made it possible to investigate how works of art in a hospital relate to visitors' orientation and wayfinding in the hospital environment, as well as the intentions behind the making, selection, and installation of artwork in hospitals. All in all, this allows various opinions on the affordance of art and interior design in supporting wayfinding. The schematic description below (Figure 4) illustrates how the three different perspectives relate to the different methods used. The ultimate interest in the studies concerns the possibility for visitors, especially newcomers, to perceive and interact with the environment in order to orientate themselves. In studies 1 and 2, newcomers were especially invited as informants. In study 3, newcomers were addressed as a topic in conversation, and in study 4, newcomers were observed as related to other, more familiar, users. "Newcomers" here denotes individuals who had never been at the sites of interest at SUS Malmö before, but also specifically, people who had recently arrived in Sweden who were invited as informants.

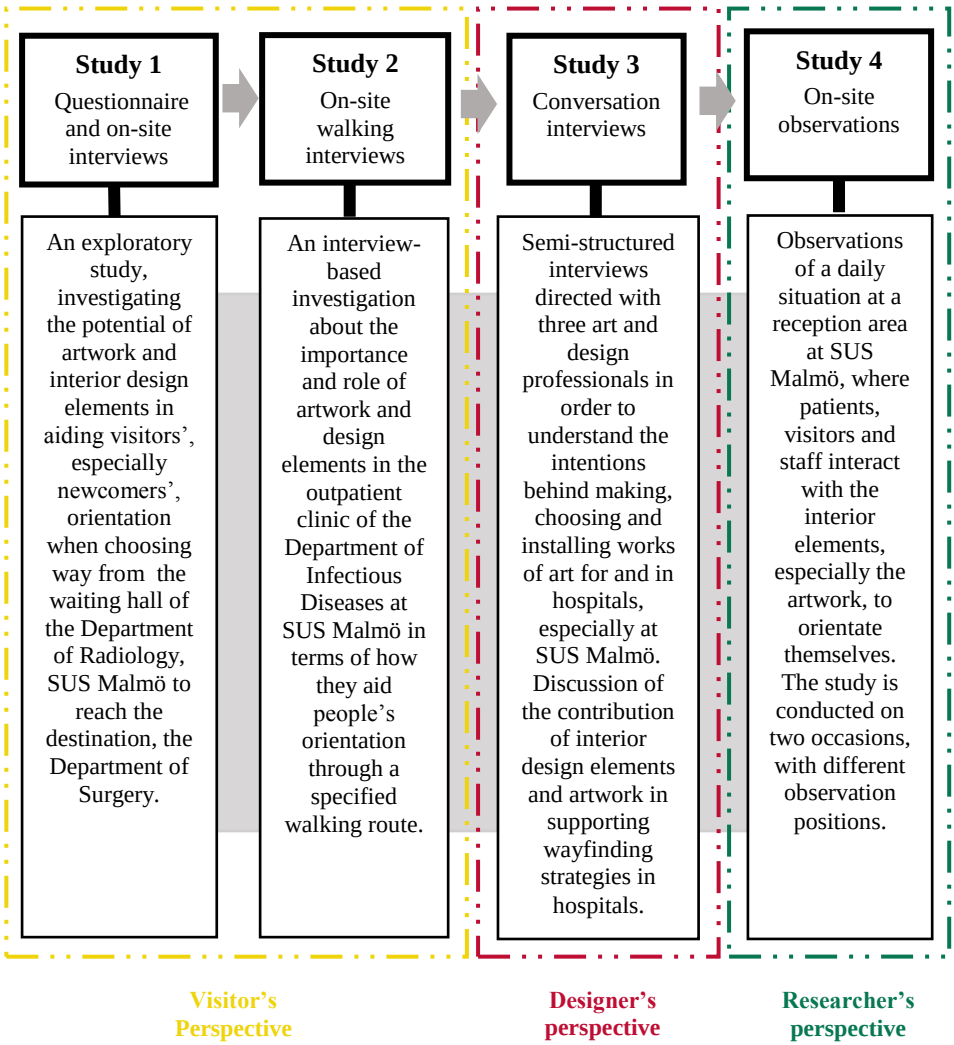


Figure 4. A graphical summary of the four studies of my research.

3.2 A background to the choice to focus mainly on newcomers in the studies

The informants addressed in the questionnaire, the interviews, and in the observations have a variety of educational and cultural backgrounds. However, certain groups are more represented than would generally be expected in surveys that strive to acquire an even spread or a comparative specificity as regards the population participating in the study. In the first study, I strive to focus primarily on newcomers to a foreign language and cultural sphere, and to some extent on people familiar with the Swedish language and culture. In the second study, I focus exclusively on newcomers who do not speak the Swedish language and who are not familiar with the Swedish hospital setting. In the third study, my focus is on art and design professionals, all of whom speak Swedish and are familiar with Swedish culture, and where the issue of newcomers was brought in instead as a topic in the interview conversations. Finally, in the fourth study, the general perspective of different users, both newcomers and familiar users, is in focus. The questions asked in these studies, my role as observer in the fourth study, and my choice of informants in studies 1 and 2, also reflect my role as an architecture researcher who had recently arrived in Sweden and has a background in a culture and language other than the Swedish context of the investigation.

3.2.1 The newcomers

One specific group of informants that appeared as both interesting and socially appropriate for me to approach, as an Arabic-speaking person who came to Sweden from Jordan, were Syrian refugees. Various global crises in the last seven years, some of which are still ongoing, such as the war crises in the Middle East, have forced huge numbers of people to leave their home countries and seek refuge in safer countries where they can keep themselves and their families safe from killings, bombs, torture, and so on. Syria is one of the countries that has suffered most from such conflicts in recent years. The war in Syria started in 2011 as a conflict between the Bashar al-Assad government and the Opposition forces and soon grew more complicated due to other parties' and nations' interest in the country. As I write this, it is still unresolved. This crisis had already forcibly displaced an estimated around 7.6 million people by the 1st of June 2017 (UNHCR, 2017). Neighbouring countries have opened their borders to receive the

Syrian refugees, for example my home country Jordan, Turkey, Iraq, Egypt, and Lebanon. Subsequently, countries in the international community decided to share the burden with these neighbouring countries by allowing refugees to cross the borders and seek refuge, and Sweden was one of them.

At the beginning of my PhD studies in Sweden in 2015, during the peak of reception of refugees in Sweden, I met many Syrian newcomers in the streets who stopped me and requested my help, asking "Do you speak Arabic?" They were lost; they did not know how to buy bus or train tickets, they had just arrived, and they spoke neither English nor Swedish. This was what prompted me to become a volunteer in the project Lund's Refugees – Community and Cooperation [Flyktingar Lund – Gemenskap och samarbete].[1] Our essential aim at Lund's Refugees is to help refugees integrate in Swedish communities. My contribution is to facilitate communication between the refugees and Swedish society, since the refugees and I share a common culture, as well as the Arabic language. From this initiative, I thought it would be fruitful to focus on integration in a wider sense, more precisely to take into consideration the newcomers', or migrants', needs and expectations in built environments. As an architect concerned about the newcomers' welfare, it seemed appropriate to depart from the built environment rather than to engage generally in the problem of social integration. I therefore decided to investigate how one, as a foreigner to Swedish society, interacts with the design of buildings, interiors, and informative signs with neither the proper language skills, nor the general knowledge about how things work or generally look in Sweden. One specific example of this became what is investigated in this thesis: namely, how to navigate the Swedish hospital environment without being able to speak Swedish or read informative signs written in the Swedish language.

Since the Syrian refugees have been displaced involuntarily, they arrived unprepared for the environment, which is an entirely different one in terms of language, culture, climate, built environment, and more. This means that when they approach a hospital, they frequently encounter a totally new world of signs, interior design, and implicit rules. Apart from this newcomer situation as such, I also chose this category of migrants because of the difficult circumstances that they have endured on their journey to find refuge, where the target was to find a new destination. It can be expected that these newcomers to the Swedish culture

[1] http://flyktingarlund.se/

carry the burden of very strong, and traumatic, memories from their own recent history. These specific circumstances, which could be expected to influence how they cope with realities in Sweden, could be roughly divided into three phases: the fear and the pain when they were in their home country; the often complicated and arduous journey to Sweden; and the long and unstable situation of uncertainty while waiting for permission to reside in Sweden. It is indeed hard to imagine the suffering, pain, stress, and fear in all of these three phases, and this kind of painful background is often neglected, or downplayed, in wayfinding studies where a more neutral norm of respondents are sought after. This does not mean, however, that this investigation has a focus on extreme backgrounds, or on the specifically Syrian background – simply that these extreme experiences are allowed to exist by being addressed through the choice of informants in this thesis.

3.3 Execution

3.3.1 The first study

The first study in this thesis is an exploratory study, originally designed as a pilot study investigating the potential of artwork and interior design elements to function as eye-catching elements and wayfinding support. It was carried out in the reception hall of the Department of Radiology at SUS Malmö. I chose this particular site because of its distinctive design compared to the other reception halls in the hospital; the reception hall chosen contains a diversity of interior design elements, especially large-scale artwork, and it is a node place with several exit possibilities after waiting: a place where people need to decide on which exit to take to find their end destination.

In this first study I used two methods: questionnaires and on-site interview conversations (Robson, 2011, pp. 252-260; Kvale, 1996, pp. 19-21; cf. Heft, 1983). I selected these particular methods as the questionnaire offers a possibility to collect information in a quick and easy way. One restrictive aspect of using a questionnaire is that the respondents read and answer the questions differently, based on their own individual understanding of them, and there is no chance to ask follow up questions. The participants recruited for this study kept asking me to explain the meaning of some of the questions in the questionnaire. Because of this, I also decided to conduct additional on-site interviews in order to further explain

some of the questionnaire questions, and also to ask other follow-up questions about some of the participants' questionnaire responses. I took notes during these additional conversations and interviews. The photographic documentation was intended mainly as visual support for the documentation of the study, and has not been included as data material in my analysis.

The questionnaire responses were documented by transcribing them and collecting them in a Microsoft Word document. The additional on-site interviews were documented by taking notes by hand at the interview situation. The questionnaire is written in both Arabic and English; I questioned Swedish speakers in English and Arabic speakers in Arabic. The English responses have been used as they are, and I have translated the Arabic responses to English myself. All of the responses and interview notes were then gathered in a Microsoft Word document. The collected data was analysed qualitatively by classifying the information in a table and looking for both common themes and qualitative differences in the informants' responses (cf. Brinkman, 2013, pp. 61-62; Kvale, 1996, pp. 201-203; Patton, 1987, pp. 149-150). At the outset, the qualitative analysis also had a quantitative aspect to it, in the sense that I counted and compared the informants' responses for each question (for example, how many informants stated that the works of art were the most eye-catching elements; which exit was most frequently chosen by the informants, and so on), but in the end, these numbers were not aimed at any statistical calculation or conclusion, but merely interpreted directly in a qualitative way.

The questionnaire and additional on-site interviews in this study were aimed at investigating the influence of the interior design, including artwork, furniture, plants, skylight, and so on, in the reception hall of the Department of Radiology, on the participants' perceptions, experiences, and wayfinding to a targeted destination – i.e. the Department of Surgery in the same building. The informants recruited in the first study were seven Arabic-speaking respondents whom I had invited in advance (5 males and 2 females) and four Swedish-speaking respondents (1 female and 3 males) whom I invited on-site in the reception hall while they were waiting for their medical appointments. The Arabic-speaking respondents had been living in Sweden for between 1.5 – 2 years, apart from one of the participants, who was actually born in Sweden. For this reason, I later counted her as a Swedish speaker and included her in the group of Swedish-speaking informants during the analysis phase of my study. The two groups of

informants in the first study therefore ultimately, in the analysis phase, included six Arabic-speaking informants and five Swedish-speaking informants.

These two particular categories of subjects were recruited to study the difference in orientation and wayfinding between those who can read the informative signs in the reception hall of the Department of Radiology (which are written only in Swedish) and those who cannot and hence need to rely on asking others for the right way to their end destination, or on the visual cues of non-verbal elements in the hospital environment. Furthermore, at the outset, my idea was to study the potential cultural differences between these two groups of people, in addition to the non-verbal wayfinding capacity of the Arabic-speaking informants compared to the informants who spoke Swedish. However, the number of informants and the collected data did not assist me in distinguishing any general cultural differences between them, although I did find some aspects of the informants' choices when orientating in the reception hall that could be seen as affected by cultural background and experiences such as occupation and aesthetic preferences. A third reason for choosing the Arabic-speaking informants was the large number of people who had recently sought refuge in Sweden from the war crises in the Middle East. This led me to choose participants who actually are refugees from Syria and Iraq, since they represent a group of people that neither speak nor read the Swedish language and hence cannot rely on informative signs (the common strategy to follow when navigating unknown milieus) to find their way in public places in Swedish society; this could be a potential problem for this growing group of people, as well as for society, and thus an important issue to lift in architectural research studies devoted to societal change in the built environment.

The Arabic-speaking people who participated in my study were invited through different activities organized by the project that I do volunteer work with: Flyktingar Lund – Gemenskap och samarbete. When inviting them, I explained that I am a PhD student studying the impact of interior design on people's orientation and wayfinding in the Swedish hospital setting, and asked if they wanted to participate in my study. The Swedish-speaking informants were recruited in the reception hall of the Department of Radiology, where I approached them by introducing myself and asking them to participate in a questionnaire study about how interior design, including artwork, may support wayfinding in the hospital environment. The difference between these two groups of informants is

the degree of familiarity with the language and the culture at the studied site. The Arabic-speaking informants had limited experience of the Swedish hospital setting compared to people who were born and had lived in Sweden for their whole lives. The Swedish-speaking people, on the other hand, could be considered slightly more familiar with the studied site, even if they had perhaps never actually been there before, since they were familiar with the design style of hospitals in Sweden as well as Swedish culture in general. Thus, the two groups also had different starting points, in that the informants in the Arabic-speaking group were recruited on the basis that they should not have visited the study setting before, while the Swedish-speaking informants were already present at the site when I recruited them. Additionally, the questionnaire was conducted on two different occasions for the two groups. The informants who spoke Swedish answered my questionnaire on a weekday, while the informants who spoke Arabic answered the questionnaire on both a weekday and a weekend, since some of them were unable to attend the first interview occasion. The Arabic-speaking respondents were also guided to the studied place by me; this was not the case for the Swedish-speaking respondents recruited on-site. Both of the informant groups were however asked to stay and experience the studied reception hall before responding to the questionnaire.

Since the study is an exploratory and initial study, made for the sake of detecting issues of further interest for orientation and wayfinding while reflecting qualitatively on the answers, this mixed recruitment was determined a valid and easily organised way to achieve on-site response.

I informed the two invited groups before they started answering the questionnaire that all of the material collected would be kept confidential, that I would only use it in my research, and that their names would not be included in the collected material. Before handing out the questionnaires, I introduced my topic to the participants by saying that “I am studying the influence of artwork and interior design elements on people’s wayfinding in the hospital,” and I asked them to walk through and explore the site, then to sit down at one of the tables found there and answer the questionnaire. I sat close by the informants so that I could assist with any queries that they might have, since not all of the participants were familiar with the topic of my research or with architectural terms. Some of the informants’ questions raised my interest, and I therefore decided to do additional on-site interviews in order to reach a deeper understanding of the experiences that

were embedded in their responses. My additional responses and follow-up questions in these on-site interviews could be considered to lead the interview situation in a certain direction. In other words, the informants' responses could be suspected of being biased by my interests, even if my attempt was merely to follow up by offering explanations to their questions. However, I see this possible bias not primarily as a validation risk, as it would be in certain quantitative or structured methods, but as a quality of these studies seeking to interpret a situation with further questioning in conversational form.

3.3.2 The second study

In the second study, I investigated the role and the importance of interior design elements, especially artwork, in terms of how they aided the participants' orientation through a specified walking route in the outpatient clinic of the Department of Infectious Diseases at SUS Malmö. I used methods such as semi-structured and walking interviews (Robson, 2011, pp. 285-287; Flick, 2002, pp. 80-82; Evans & Jones, 2011). Conducting semi-structured interviews is a more flexible way of collecting interview data compared to the structured interview (Robson, 2011). Semi-structured interviews give the interviewer an opportunity to go deeper into the subject of study by expanding the conversation in relation to the interviewees' responses (Rubin & Rubin, 2005). The interview is considered a conversation and a social interaction concerned with behavior, attitudes, and understanding (Robson, 2011). It is also a familiar method for most people. An advantage of using the semi-structured interview method in this second study was its flexibility in relation to the opportunity to find out more by asking additional questions. Meeting people face-to-face offered me a chance to follow up on interesting and unexpected responses that opened up for more in-depth information. A disadvantage of using the semi-structured interview was that it was difficult to rule out possible biases, since the interviewer should be professional in order to be able to maintain a good conversation, and this is dependent on the interviewer's skills and experience (Robson, 2011). The semi-structured interview could also be seen as quite time-consuming (Robson, 2011). Since this was my first time as interviewer, possible biases cannot be ruled out. I have clearly indicated where this is the case in this thesis, and I do not see it as a general problem. I avoided formulating leading questions, both in the written interview form and in the additional, follow-up interview questions to the participants'

responses, and I formulated the interview questions to be clear, simple, and short so participants could understand them easily and without confusion.

The interviews consisted of two parts. The first part was conducted while I walked through the studied place with the participants, and the second part of the interview was conducted while we were sitting in a waiting room at the outpatient clinic of the Department of Infectious Diseases. In the first part of the interview, we walked through the studied place – a reception area with a waiting room followed by a corridor filled with closed or open doors, ending with a closed emergency exit door with a semi-transparent window. I divided the walking path into three sections according to their different appearance. We stopped in each section, where I asked questions regarding the interior design and the artwork at the site in relation to the informants' orientation there. The interviews were recorded using a mobile phone and later transcribed. In the second part of the interview, we continued the interview seated in the waiting area. It was difficult to conduct interviews elsewhere, as the staff in the outpatient clinic had begun following our movements after I had asked the ward manager for permission to photograph[2] some of the works of art.

I invited fifteen informants to participate in this second study. All of them had a refugee background, having come to Sweden from Syria. This time, I decided to only recruit Arabic-speaking informants, since I wanted to investigate the impact of the interior design elements on newcomers who are neither familiar with the Swedish language nor the place itself (the outpatient clinic of the Department of Infectious Diseases), and this particular group has a limited experience of the Swedish hospital setting compared to people who were born in Sweden and/or have lived in Sweden their whole lives. In the end, only eight of these invited fifteen refugees participated in my study. The reasons for this were varied; some were attending Swedish language classes for foreigners (SFI at Komvux); participating in practical internships based on their previous occupations in their home country; unable to pay for the transportion to Malmö; and lastly, some were frightened when they learned that the interview would be recorded, and they therefore backed out.

[2] My request to take photographs was rejected firmly, without negotiation or discussion. Only later, several months after the interviews, could I photograph, after further negotiation between the university and the hospital. See Chapter 5, Section 5.2.4.

The Syrian refugees are relevant as a group in this study for the following reasons: 1) they are not yet able to speak the Swedish language fluently, understanding and using only a few phrases such as hello, goodbye, good, see you later, and so on); 2) they are not familiar with the Swedish hospital environment; and 3) they are accustomed to living in a culture in which there is daily confrontation with existential issues, which is different from the Swedish culture. Taken together, this background promises to provide information about the role of coming from a culture that is different from the cultural context in which this study was conducted, and where orientation and wayfinding was a task. The three above-mentioned points are also considered difficulties that restrict the refugees' interaction with the Swedish community, i.e. encountering a new language, a new culture, and a different environment. I thus consider it positive to highlight these aspects for understanding the refugees' concerns about not speaking Swedish when interacting with the surrounding environment. It also allows me to bring into the discussion the importance of designers taking migrants into consideration when attempting to design a universal wayfinding system.

Before coming to Sweden, most of the Syrian refugees in this study lived in small towns serviced by simple health-care facilities, such as local health-care centres and small clinics with just a few doctors. The buildings in these small clinics are generally well-designed to facilitate visitors' navigation and wayfinding. In addition, these clinics are smaller and the level of complexity lower than the plans of larger hospitals such as SUS Malmö, where my studies were conducted. For the refugees visiting the Swedish health-care buildings, these buildings were new and complex compared to those to which they were accustomed. As an Arabic-speaker from the same region, and a newcomer to Sweden myself, I can understand their reactions and concerns, which gave me an additional communicational advantage as a researcher.

Before starting the interviews, I introduced myself as a PhD student at Lund University and informed the participants that their personal information would be kept confidential, and that the interview would be recorded to allow me to return to the details of the conversation in the analysis phase of my research. It was necessary to inform the participants of this in order for them to feel comfortable with the interview situation and willing to interact with me, especially as some of them felt stressed and fearful about the recording of the interview because of their circumstances and their recent ordeals. I explained that the interviews aimed to

study the role of the physical interior design elements in aiding people's orientation and wayfinding within the studied place. I also informed the receptionist at the outpatient clinic of the Department of Infectious Diseases that I would conduct the interviews without disturbing staff or patients, which was also a prerequisite for permission to conduct the study at the site. Introducing the research topic to the participants could be considered to create bias, but in this particular case, the benefits of being able to explain the topic to the informants beforehand outweighed this drawback. Additionally, I ended up commenting on the informants' responses in order to gain further clarity regarding the study site, which may have impacted the participants' perception of the environment and hence their further responses. However, as I see it, the advantages of commenting on the informants' responses – that is, clarifying the informants' responses and getting more detailed information – outweigh this bias.

The interviews were conducted individually in the Arabic language and recorded using a mobile phone on three different occasions during weekdays (see Appendix III). The recorded interviews were transcribed, first by hand in Arabic, and then translated into English directly in Microsoft Word. I faced challenges when trying to find suitable phrases to translate the Arabic expressions to the English language, and I thus am aware of the possibility that some of the finer nuances may have been lost in translation. After being translated, the informants' responses were analysed by classifying the responses to each question in a hand-drawn table and looking for common themes and qualitative differences among and between them (cf. Brinkman, 2013, pp. 61-62; Kvale, 1996, pp. 201-203; Patton, 1987, pp. 149-158; Flick, 2002, pp. 193-194).

3.3.3 The third study

In the third study, I used semi-structured interviews (Robson, 2011, pp. 285-287; Flick, 2002, pp. 80-82) with three art- and design professionals in order to understand the intentions behind making and installing works of art for and in hospitals. This included an investigation of the roles of collecting, choosing, and distributing artwork, as well as how all of this relates to wayfinding. In the interviews, I also strove to address the role of the architect in designing wayfinding systems in hospitals, and to discuss how interior design elements and artwork may support wayfinding strategies in hospitals. The three interviewed professionals were Monika Gora (artist), Nilsmagnus Sköld (art administrator),

and Anders Svensson (architect). I chose these three art- and design professionals because of their long working experience. Gora is an artist with a landscape architectural background who has designed art for many hospitals in Sweden, for example SUS Malmö. Sköld is a visual artist and designer, and the art project manager for new hospital areas in Malmö, Lund, Helsingborg, and Ängelholm. Svensson has a background as a practicing architect and former CEO of White Architects, a firm involved in several hospital projects.

I opened the interviews by introducing myself and my research to the interviewees (see Appendix IV). This information had also been presented beforehand in an email exchange in which I asked the informants to participate in my interview study. At the beginning of each interview, I informed the interviewees that: 1) I would send them transcript of the recorded interview, so that they could review their responses so as to avoid misinterpretation and confusion; 2) there would be no anonymity in these interviews, since I would be using their actual names and titles in my thesis, in order to be able to mention some of their own known works as examples to help interpret and possibly support their spoken ideas. Two interviews were conducted face-to-face (Brinkmann, 2013, p. 28) – the interview with Gora was conducted in a café, and the interview with Sköld in a meeting room – and the third one, with Svensson, was held via Skype (Brinkmann, 2013, p. 29). I did not experience any significant difference between doing the traditional face-to-face interviews and the Skype interview. The information retrieved in both interview types was equally sufficient and in-depth; therefore, the Skype interview presented an effective alternative to face-to-face interviews, in that travel was unnecessary to conduct it (Deakin & Wakefield, 2013). Furthermore, the questions for each interview (face-to-face and via Skype) had been prepared beforehand, and as is common in semi-structured interviews (Robson, 2011; Flick, 2002), I asked many additional questions during the interviews based on the interviewees' responses. As an example, wayfinding was the main concern in these interviews, but I soon found that another interesting theme that indirectly related to wayfinding were memories.

The interviews were conducted in English. Since neither I, nor the interviewees, are native English speakers, this could result in misunderstandings and misinterpretations. To counter this, I not only sent the transcribed interviews but also the finished analysis and reflection of the interviews, as they appeared in a preliminary version of this text, to the informants via email in order for them to

confirm the correctness of my interpretations and understanding. As a result, I made some changes to the preliminary version of this text to eliminate misconceptions and misunderstandings that had occurred between myself and the informants. I also decided to send four additional questions via email to the informants, asking them to express some thoughts about their design work in relation to refugees as a user group trying to find the way in a Swedish hospital setting. These additional questions were posed since the subject of refugees as way-searchers in the Swedish hospital did not come up naturally in my interviews, nor was it included in my initial interview question sheet (see Appendix IV).

The interviews were recorded using Dictaphone (see Appendix III) and transcribed directly on the computer using the app "Audio-transcription Web app for Chrome," which is easier to control than the record by keyboard shortcuts; it was also easier to write the text without having to switch between the audio player and the text editor. The interviews were analyzed by highlighting the most interesting topics in the interview transcripts (Robson, 2011, pp. 470-275). These topics were both issues that had come up following the structured questions, and subjects that had been further emphasized by additional follow-up questions both during the interviews and afterwards, in the additional email conversations.

3.3.4 The fourth study

In the fourth study, I did observations on two occasions (Patton, 1987, pp. 70-82; Flick, 2002, pp. 135-139) in one of the main entrances of the hospital SUS Malmö (see Figure 23). Being in a real, everyday situation enabled me as a researcher to observe how users interacted with the surrounding context, especially the artwork, to orientate themselves in the studied entrance space. It also offered me a chance to observe the situation and the study site in detail, albeit from a subjective perspective. Furthermore, in this study, hospital medical staff as well as cleaners and patients on their way to or from their clinical destinations appeared in my observations, while in the first two studies I only addressed visitors, and in the third study art- and design professionals.

I chose two different observation positions on two different occasions in one of the main entrance halls at SUS Malmö, a place that includes, or immediately connects to, other facilities like a small deli/kiosk, toilets, informative exhibitions, and a silent room for contemplation. During my two observation sessions, I was

positioned at a slight distance, but still quite close (a couple of meters) to the observed staff, patients, and visitors (the range was 3-15 meters, depending on the studied micro-situation). In other words, study four includes both people familiar with the studied place and newcomers to it. This way, I could remain outside of the action and have a broad view of the surrounding context as well as the possibility to observe all of the prospective interactions between the people and the environmental features of the site, particularly the artwork. I chose this specific entrance area for the two works of art positioned there – a wooden sculpture and a large copper mural – which caught my eye the first time I entered the site. Whilst observing, I documented all the information I registered by taking notes and making sketches to capture the look and the layout of the place to aid my memory later. The notes were analysed in relation to the timeline of three and a half hours of observations in the first session, and more than six hours in the second, with a number of visits before that to prepare my observation approach. I highlighted the most frequently repeated behaviors from all age categories (children and adults) and what could be observed as their purpose for being in the studied place (staff, patients, and visitors). I also interpreted their perception and interaction with the surrounding context from my own perspective, hence I speculated and interpreted the users' interactions with the environment as I perceived them, since I stayed in my position and did not make any attempts to approach them or talk to them.

Observation as a method works well in situations of non-verbal communication, in that it helps the researcher to observe the actual behavior of the users (Patton, 1987, p. 88). However, there is a possibility that I was overly reliant on my own interpretations during the analysis phase (Kvale, 1996, p. 201) of the observation, in the sense that I looked at the observed situation from a personal point of view. In the fourth study, I was unable to perceive with the eyes of the observed persons as I had, at least in some sense, done in the first, second and third studies. Observations thus show only one side of the story, but can on the other hand be more precise as regards what is primarily searched for.

3.4 Reflections on methods and research ethics

Using qualitative methods with a pragmatic approach has helped me gain understanding of the importance of the physical environmental features in terms of influencing the participants' orientation and wayfinding at a given place, in relation to their personal backgrounds including culture, occupation, and memories. Involving a varying set of informants at three studied sites, while also, since I myself participated during the studies, maintaining close interaction between myself as researcher and the informants, has further helped me to capture the informants' unexpected experiences of interior hospital spaces and especially of the artwork positioned there.

The mixed-methods in this study were used to gain a deeper understanding of the impact of the interior design and the artwork on peoples' orientation and wayfinding from three different experiencing perspectives: the visitor's perspective, the designer's perspective, and the researcher's perspective. In the first two studies, the visitor's perspective was allowed and expressed through questionnaires and on-site interviews. In the third study, a semi-structured interview was used to explore art- and design professionals' reflections on art and design for hospital environments, and in the fourth study I let myself represent a researcher's perspective, studying the interaction between the physical interior environment and the various people using it. These methods complement one another in that they provide three different perspectives on the research topic, as well as extract different types of events, stories, and details from what was studied. Furthermore, all of these methods are quite flexible and could therefore be adjusted to accommodate progress as concerns the research questions, by allowing for instance new questions and new ideas to have a part, along the way, based on previous insights. Additional interviews could be used for collecting information to reach a deeper understanding of the studied phenomena, settings, or situations. In my study for instance, the questionnaire method could be combined with additional on-site interviews in order to raise the opportunity to go into the users' experiences of the studied site in greater depth.

The research has been conducted in accordance with Swedish law: The Research Ethic Act "SFS: 2008:192", as well as in accordance with the international guidelines in Declaration of Helsinki (2008), and the policy of the Swedish Research Council (2017). This means that I have assured that nobody was

hurt by the investigations, that all participating and observed persons will remain anonymous, and that the three interviewees who are mentioned by name consented to this beforehand. The interviewees who appear by name also read the transcription of the interviews, as well as my subsequent reformulations of the transcript. In doing so, they were also given the chance to object to, alter, or remove my formulations, or withdraw completely from the investigation.

One ethical dilemma that I encountered during my collection of data regarded obtaining permission to take photographs of the studied places, and of the artwork in them, at SUS Malmö. Taking photographs in Swedish hospitals is strictly forbidden; to do this, I needed to procure permission that would allow me to take photographs to document the studied places and their interior design elements, especially the artwork. I attempted to ask the ward manager for permission, but the standard, polite response was that they are not entitled to grant such permission. Ultimately, I was assisted by one of my informants, the manager of public art at the hospital, who works at Konstservice – which supplies SUS with artworks – in obtaining permission. Permission was granted after I sent an abstract of my thesis and a letter from my main supervisor clarifying that the photos were needed for educational purposes (a doctoral thesis) to the general manager of the hospital buildings.

A second ethical dilemma consisted in dealing with the personal identities of those who had agreed to participate. I had anticipated for instance the informants' worries in studies 1 and 2 regarding their personal information appearing in my thesis, or in the recordings of the interviews. To address this worry, I wrote in the questionnaire that the informants' personal information would remain confidential, and I mentioned at the beginning of each interview recording that I was recording the interview for strictly educational purposes. In studies 1, 2, and 4, all participating or observed individuals are consequently kept anonymous. Regarding the recorded interviews with the art- and design professionals, I sent each of them the transcript of the interview recording, as well as a preliminary copy of the analysis in a theoretical and reflective context (i.e. a preliminary version of this text) to get their approval to use their thoughts and names in my thesis. This draft text was later revised to incorporate the interviewees' suggested changes. Afterwards, I sent them a copy of the final of the text for approval again before the final seminar, as I had made further changes and improvements based on their earlier recommendations.

A third ethical dilemma that I encountered is perhaps the most difficult one, and that is that when conducting interviews – the topic of which was wayfinding while experiencing art – I had not anticipated that the informants would become uneasy. Nevertheless, on some occasions I still affected some of the informants by exposing them to artwork that made them think of the war crisis in Syria from which they had recently fled. It is inevitable for a researcher that an interview situation somehow affects the interviewee as well as the interviewer (Sanjari, Bahramnezhad, Khoshnava, Shoghi, & Ali Cheraghi, 2014), and in hindsight, this has been a sensitive issue, given the background of some of the informants. However, I made sure that at the end of the interview that the participants were relieved from the upsetting emotions that had been triggered by one of the paintings in particular ("the big red painting"): one of the participants cried when he saw it and he could not talk for a while, and another participant initially felt bad, but after talking about her fear and pain, her negative feelings were released and she felt better. Furthermore, I stayed in a continued close contact with the interviewed persons, in my capacity as a volunteer with “Flyktingar Lund”, which reassured me that they did not feel bad about having been exposed to the art or to the questions, even if they continue to have an inner sadness because of everything that they experienced and endured in the war. I have thus acknowledged that it is the researcher’ responsibility to look after the participants and keep them safe from any possible repercussions of their participation (Kvale, 1996, p. 128; Sanjari et al., 2014, p. 4).

Finally, a fourth dilemma could be seen in the risk that my different roles as researcher and volunteer worker could be hard for informants to distinguish between. However, in practice this did not raise as a problem, and since the informants are not in a position where they depend on me, I don't consider this as a point of crucial concern, neither for the informants nor for the outcome of my research.

In the next four chapters, I will move on from overall methodological descriptions to detailed outlines and outcomes of the four studies of this thesis, in terms of how they were conducted, and what knowledge I have gained from them. They will then be followed up by a closing discussion chapter, where the findings from all of the studies taken together will be discussed together with concluding remarks.

First study

Interior design elements' influence on users' orientation and wayfinding

4. First Study: Interior design elements' influence on users' orientation and wayfinding

As we have seen, the term wayfinding has often, according to cognitive theory, been regarded as a description of people's capability to move from a point of departure to a chosen destination without getting lost (Passini, Rainville, Marchand & Joanette, 1998). In recent pragmatic accounts of wayfinding, this emphasis on the navigator's perception of the surrounding context as a purely spatial or structural phenomenon is often maintained to become a working tool in for instance hospital environments (Roux, 2014a). But as pointed out already by Lynch (1960, 1981), wayfinding is also a matter of personal history and identity, which means that previous knowledge and experience, as well as the perceivers' role in relation to others (Ahmed, 2006) and what type of emotions are evoked during the wayfinding process, have an influence on the way we navigate in hospital environments.

Wayfinding in health-care facilities requires extra attention since disorientation may have a negative influence on people's well-being (Lynch, 1960; Carpman & Grant, 2001; Björgvinsson & Sandin, 2017). The elements of the hospital environment that are most supportive in promoting people's wayfinding in it are visual cues such as for example maps, directions, and symbols (Huelat, 2007; cf. Lynch, 1960). However, as Pati et al. recognize, other visual cues can also aid the way-searcher in a hospital setting, and these can be categorized into: primary navigational cues, supporting navigational cues, and familiarity markers (Pati et al., 2015). Examples of primary navigational cues, according to Pati et al. (2015), are maps, signs, and architectural features; supporting navigational cues may for instance be functional clusters, structural elements, and furniture; and finally, familiarity markers can be elements like artwork, informative panels and display boards, fixed furniture, wall color, plants, and vending machines that function as landmarks (Lynch, 1960). Pati et al. (2015) also discern the different

ways in which these three types of visual cues impact the way-searcher: the primary navigational cues provide the way-searcher with fundamental information that requires the lowest level of assistance; while supporting navigational cues activate the way-searcher's memory of similar elements and spaces; and finally, familiarity markers catch the way-searcher's eye as landmarks, especially when s/he passes them multiple times. From this lattermost category, works of art were found, in Pati et al.'s study (2015) to have the highest frequency of use as landmarks or familiarity markers for guiding people's wayfinding in the studied hospital space.

The first study was conducted in 2016 as an exploratory study looking at the potential of artwork and interior design elements in aiding peoples' orientation within the reception hall of the Department of Radiology at SUS Malmö (Alibrahim, 2017). I used methods such as a questionnaire, additional on-site interviews, and photographic documentation as an initial way to address the three main questions of the thesis: 1) What function do the interior design elements, especially the displayed artwork, have in relation to way-searchers' orientation in the hospital environment? 2) What types of artwork, and what placement thereof, enhance(s) or hinder(s) wayfinding within the hospital environment? 3) How does background knowledge impact the way-searcher's perception of interior design elements, including artwork?.

4.1 My personal experience: Selecting the study site

To choose a site for the first study of this thesis, which was designed from the start as an exploratory pilot study, I walked around the hospitals SUS Lund and SUS Malmö. My experience was that when walking through the departments and their reception areas, it was very difficult to orientate myself within the hospital buildings, and following the informative signs was not much easier – which is problematic at node places where the way-searcher needs to make decisions about which route to follow. The informative signs in the different buildings that comprise SUS Malmö are mostly situated in front of the elevators in the different hospital buildings, informing the way-searcher about which floor number they are on and the departments contained in each particular building, but the direction to follow in order to arrive at a specific intended destination is not mentioned there, and all of the informative signs are written only in Swedish. I felt that I was

walking in a maze. Whilst exploring, I also met several Swedish-speakers who stopped me to ask for directions (first they asked me in Swedish and then switched to English, since I don't speak or understand Swedish very well). As I myself was lost, I could only reply that I was sorry, but I didn't know. After a long journey of exploration, I finally decided on the reception hall of the Department of Radiology as my first study site. I made this choice since this particular department has a high level of complexity as regards interior design compared to all the other places that I had seen at SUS Lund and Malmö, and it also contains different types of artwork (see Figure 5.a and Figure 5.b).

4.2 Study site, participants, and methods

4.2.1 The study setting

The site chosen for my first study was the reception hall of the Department of Radiology at SUS Malmö, situated on the ground floor of one of the main buildings (Figure 6, Building **d**). This place was chosen for its capacity as a node place (Lynch, 1960), and for its unique interior design features (see Figure 5.b) and the variety of art objects there that could possibly aid people's orientation and wayfinding. I chose the Department of Surgery as the end destination for this wayfinding task because of the strong medical and spatial relationship between the Department of Radiology and the Department of Surgery; however, the study concerned primarily the initial orientational step: how to exit from the reception hall in order to reach the Surgery Department (Figure 6, Building **b).** The reception hall at the Department of Radiology is an atrium-type room with various types of physical interior design elements, such as artwork, plants, movable furniture, skylight, many different exits, many openings, and a tilted reception counter in the form of a cube, as shown in Figure 5.a. My hope was that the variety of these physical interior design features in the studied site might provide me with greater insight regarding the potential of these interior design elements to influence the participants' wayfinding from the reception hall to the Department of Surgery. Figure 6 shows the main buildings in this part of SUS Malmö (**a**, **b**, **c**, **d**, and **e**), including the study site location and the estimated final destination, the Department of Surgery. Figure 6 shows the entrances.

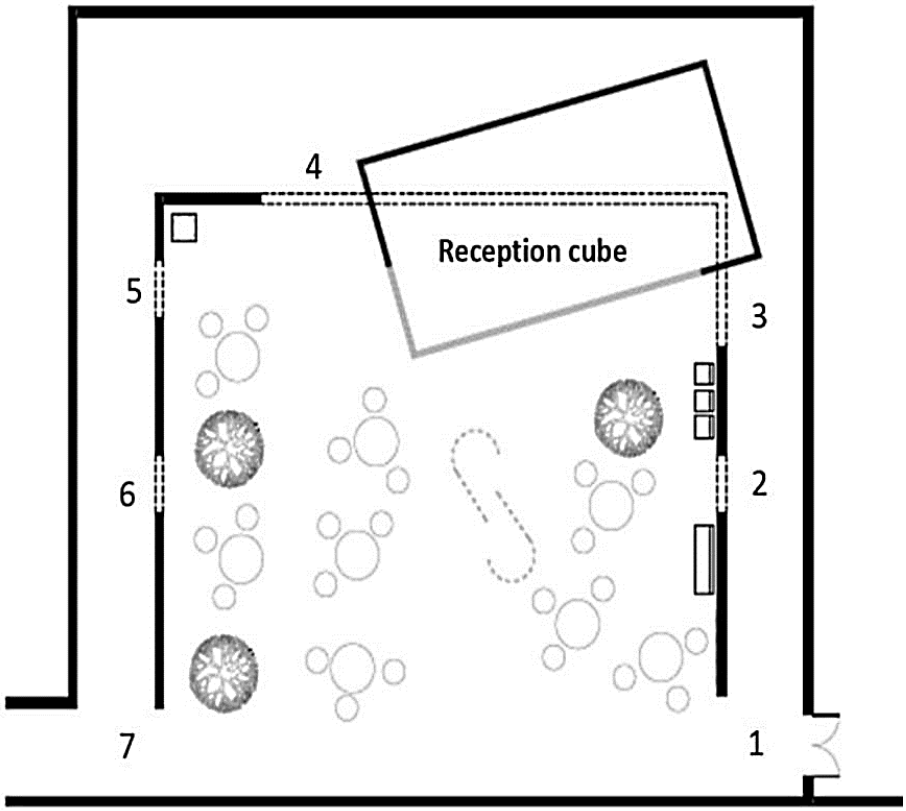


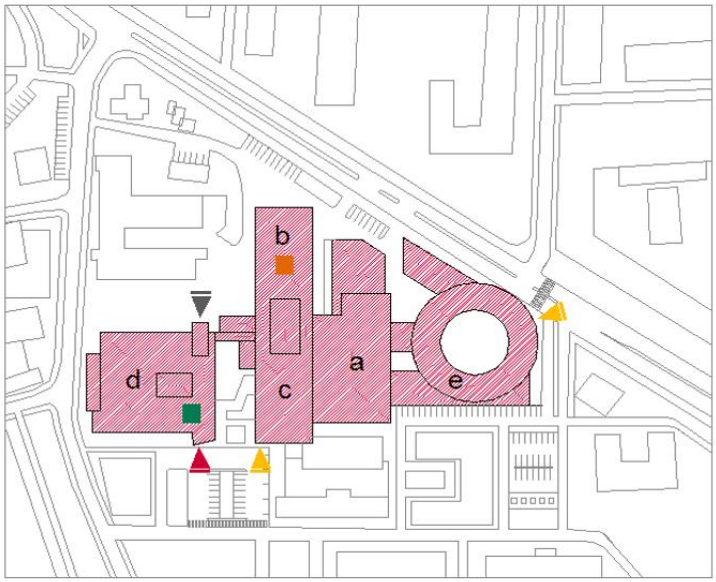
Figure 5.a. The layout and the interior design of the reception hall
at the Department of Radiology, SUS Malmö.

The interior design of the reception hall

Exit number seven on the left and exit number one on the right

The artworks in the reception hall

Figure 5.b. The interior design of the reception hall at the Department of Radiology, SUS Malmö.



The hospital building (a-d) and the emergency care building (e)

Department of Radiology reception (the first study site)

Department of Surgery (the destination in the first study)

Main entrances to the hospital building and the emergency care building

The direct main entrance to reach the reception hall in the first study

The alternative entrance to reach the reception hall in the first study

Entrance to the study site

The hospital building and the emergency care building

Figure 6. The hospital SUS Malmö.

4.2.2 The participating informants

There were eleven participating informants in this study. As explained in the chapter Methodology, six of them were Arabic-speaking. I chose these two groups of informants (Arabic- and Swedish-speakers) to investigate any potential cultural differences between them, as well as how the non-verbal wayfinding capacity worked specifically among the Arabic-speaking informants. Furthermore, these two groups of participants may be considered to have different degrees of familiarity with the studied place, since the Swedish-speaking informants are more accustomed to the design culture of Swedish hospitals, whereas the Arabic-speaking informants had recently arrived in Sweden and could be seen as less familiar with the design of the studied place. The Swedish-speaking informants were invited to participate in the study ad hoc at the very site where the study took place, whereas the informants speaking Arabic had been invited beforehand and then guided to the studied place by me, since they had never been there before.

4.2.3 The questionnaire and the additional on-site interviews

The first study includes a questionnaire, additional on-site interviews and photographic documentation. The questionnaire is a simple method to use for collecting information quickly through both open-ended and closed-ended questions (Robson, 2002). The questionnaire in this first, or pilot, study consisted of three parts: the first part inquired about general information such as the informants' occupation, gender, nationality, and familiarity with art; the second part concerned the participants' experience of the physical features of the reception hall itself, and how its interior design, art, furniture, and exits were perceived; and finally, the third part focused on orientation and wayfinding within the reception hall (see Appendix I).

In order to obtain further insight regarding the participants' perception and experience of the reception hall and the wayfinding within it, I also conducted additional on-site interviews. The interviews were conducted as conversations connecting to, and expanding on, the participants' questionnaire responses, and I was taking notes of these conversations (see the preceding chapter, Methodology). The photographic documentation was merely done to support my memory of the interior design and artwork at the studied site, and has not been included in my analysis of the research material.

4.2.4 Execution

I met the Arabic-speaking participants at the Lund central train station and we travelled together to the hospital SUS Malmö. Since it would have been difficult to travel with all of the informants on a single occasion, I divided the group into two parts and travelled with the first group of Arabic-speaking participants to the study site on a workday and with the second group on a weekend. The Swedish-speaking informants encountered, however, were at the study site only at one occasion – on the same workday as the Arabic-speaking participants in the first group. The main entrance to the study site is closed on the weekend, and the second group of Arabic-speaking informants and I had to take a complicated alternative route to reach the studied reception hall, compared to the easier, shorter, and more direct route used to reach the reception hall from the main entrance on workdays (see Figure 6).

Using the alternative route required further explanation of the situation to the Arabic-speaking participants, such as "because it is the weekend, the main entrance will be closed, and we need to walk a bit longer to reach the study site." The second group of Arabic-speaking participants and I entered the building from the alternative entrance (see Figure 6), headed to the elevator zone, which is located between Building **b** and Building **c**, to go to the fourth floor. We then crossed the bridge linking Building **b** to Building **c** and returned to the ground floor by elevator, walking a few steps to reach the place to be studied. On this journey to reach the reception hall at the Department of Radiology, we passed the Department of Surgery, which is located in Building **b**, but I did not mention that this was the intended final destination from the studied place in the reception hall. On the workday, the first group of Arabic-speaking participants and I entered the building, heading to the reception hall of the Department of Radiology directly from the main entrance (see Figure 6); hence, there was no need for any extra explanation of our route that time. But during both routes I explained my study briefly to the participants, namely that "I [was] studying the impact of the interior design elements on visitors' navigation abilities to find their ways to a given destination (the Department of Surgery)". The same introductory explanation was also given when encountering the Swedish-speaking informants whom I asked to participate in my study at the study site.

In the reception hall, I informed all of the participants that this was the study site, and I asked them to explore the place, and then to sit down to answer the

questionnaire. The questionnaire included both close-ended and open-ended questions. The close-ended questions had a graded rating scale: strongly agree, agree, neutral, disagree, and strongly disagree. The open-ended questions provided me with information about the respondents' feelings, attitudes, and understanding of the studied place. In addition, I also explained and interpreted some of the questions to the participants on-site, since they were not familiar with the subject matter of the requests. While responding to the participants' questions, following up on the questionnaire, I also began to ask them additional questions. These follow-up questions were not initially intended as part of the questionnaire, but the participants' responses raised further interests that led to new questions. As an example, to the question "Which exit from this space would you choose first to reach your destination? Why?" one participant responded that he was used to choosing the exit closest to his right hand without considering or analysing the other available choices. This response aroused my curiosity about this way-searching technique, and I asked him why he used that technique in his navigation. The participant replied that this technique would make it easier for him to return to his starting point if he lost his way. According to the informant, the background for this technique was a habit rooted in his religion (Islam). Conducting the additional on-site interviews while the respondents were answering the questionnaire may have influenced the respondents' answers. However, I think that the deeper understanding and extra information provided by this method outweighs the risk of bias in this study.

4.3 Findings and analysis

As mentioned previously, the first part of the questionnaire inquired into general information such as occupation, gender, and familiarity with art. Gathering this information was not the primary target of my study, it was simply meant to serve as background information. However, some of the participants' responses relating to this part of the study, particularly to the inquiries of occupation and familiarity with art, were interesting, and I therefore decided to add this information to the findings of this study. Furthermore, although my initial intention was to compare the various cultural backgrounds of the two informant groups, this has not been possible to any demographically significant extent due to the limited number of participants in the study. I have however added responses that were clearly influenced by the participants' cultural backgrounds to the findings of this study, since I believe that looking more closely at and analysing these responses could be interesting, even without the comparative perspective.

One of the closed-ended questions in the first part of the questionnaire inquired into the participants' occupation and familiarity with art: "Is your professional activity related to the field of art, architecture, and interior design?" Despite the small number of participants, one can see that the participants' responses to this question divided the participants into four categories that can be labelled "art familiarity categories", since they have to do with previous experience of art, design, and architecture: 1) people whose profession relates very much to art, architecture, and interior design; 2) people whose profession relates to some extent to art, architecture, and interior design; 3) people who are familiar with art, architecture, and interior design, but whose profession is not related to this; and 4) people who are not familiar with art, architecture, and interior design, and whose profession is not related to this (see Table 1).

Table 1. Participants' occupations in relation to art, architecture, and interior design. ("Is your professional activity related to the field of art, architecture, and interior design?")

The four categories	Arabic-speaking	Swedish-speaking
People whose profession relates very much to art, architecture, and interior design	1	1
People whose profession relates to some extent to art, architecture, and interior design	1	0
People who are familiar with art, architecture, and interior design, but whose profession is not related to this	2	3
People who are not familiar with art, architecture, and interior design, and whose profession is not related to this	2	1

4.3.1 Most eye-catching physical elements

My study shows that at the site, the participants found their way to the destination (the Department of Surgery) by perceiving and following physical interior elements of the interior design, and they mentioned for instance artwork, plants, skylight, furniture, wooden materials on walls, and the tilted reception cube (see also Table 2 below).

The participants' occupations and familiarity with art affected their observation of the physical interior elements of the space when navigating within the environment. The participants reasonably familiar with art and design (category two and category three) noticed the artworks immediately, whereas those with a professional relation to art and design (category one), as well as those not at all familiar with art and design (category four), seemed to notice all kinds of interior elements immediately (Alibrahim, 2017). The reason for this perhaps paradoxical finding could be that the people professionally familiar with art require more challenging artwork to even register the art itself as something interesting or meriting attention, but also that they may perceive every interior, or interior element, regardless of whether there is art or not in it, as having art quality, i.e. that the act of perception has a "carried affordance" (Kopljar, 2016), in the sense that potential art quality is brought into the situation by the perceiver. One of the participants who was not familiar with art was a fire engineer, and he mentioned that the wooden materials on the walls of the studied place were the first physical element that caught his eye, because of the safety issues related to the highly flammable building material. According to this informant, wood as an interior building material could help a potential fire spread rapidly through the

other floors, since the reception hall is an atrium that extends up through five floors (see Figure 5.b).

As stated previously, no demographic significance can be claimed in this study regarding differences between language groups, but it could nevertheless be noted that on the whole, artworks were mentioned more frequently as primary eye-catching elements by Arabic-speaking than by Swedish-speaking participants. It could also be noted that two Swedish-speaking participants mentioned that nothing in the interior design caught their attention at a first glance. This can perhaps be tied to an overfamiliarity with this type of hospital environment that makes these informants not notice its interior features, or not regard them as noteworthy (cf. Craig et al., 2012).

Another interesting finding was that none of the participants mentioned the informative signs as a physical element that caught their eyes during their initial exploratory tour within the reception hall (see Table 2 below), perhaps again due to an overfamiliarity with this type of signage in the hospital setting, or perhaps because signage is generally thought of as another category: a piece of information rather than an "element in the place".

Table 2. Eye-catching interior design elements. ("What perceived elements in the place catch your eye?")

Interior design elements	Arabic-speaking	Swedish-speaking
Artwork	3	1
Plants	2	1
Skylight	2	1
Furniture	2	0
Wooden material	2	0
Mentioned nothing	0	2
Tilted reception cube	1	0

4.3.2 Most helpful interior elements in terms of aiding wayfinding

In the third part of the questionnaire, there was an open-ended question inquiring into which elements of the interior environment the participants found most helpful in aiding wayfinding. According to the participants' responses, the most

helpful types of interior elements were informative signs and artwork. Among the participants who stated that the informative signs were the most helpful interior element were four Arabic-speaking informants and one Swedish-speaking informant. The four Arabic-speaking participants stated that the informative signs would be the most helpful element if the signs were written in a language that they could read and understand. Four Arabic-speaking participants from the first and the third art familiarity categories, and one Swedish-speaking participant from the fourth art familiarity category, stated that the signage was the most helpful interior element guiding their way. Works of art were mentioned as the most helpful wayfinding elements in both language groups, specifically by two Arabic-speaking and two Swedish-speaking participants. As with the question about general attention, two participants who speak Swedish, both in the third art familiarity category, stated that they found no particular element helpful in terms of guiding their way (see Table 3 below). Again, this could be an effect of cultural familiarity and inveterate habit.

Table 3. The most helpful interior design elements in aiding wayfinding. ("What elements of the interior environment do you find most helpful in aiding your wayfinding?")

Interior design elements	Arabic-speaking	Swedish-speaking
Signs	4	1
Artwork	2	2
Mentioned nothing	0	2
Plants	1	0
Tilted reception cube	1	0

An open-ended question in the third part of the questionnaire asked "What elements of the interior environment make your wayfinding difficult?" The participants' responses revealed that the furniture arrangements and the many doors were seen as hindering wayfinding within the reception hall. Two Arabic-speaking participants (from the art familiarity categories one and three) found that the seemingly random arrangement of the furniture (round tables with chairs and sofas arranged in groups) made navigation within the reception hall difficult. The numerous doors also made the choice of a specific exit for reaching the intended destination difficult. One of the Arabic-speaking participants, an architect, suggested that it would be better to merge certain exits, for example exits number

two and three, to create a single clear exit, allowing the navigators to focus on their destination, instead of the current situation in which navigating visitors have too many choices, which confuses them when they must choose one exit from many to reach their destination.

4.3.3 Most frequently chosen exits

As stated earlier, the reception hall has numerous exit options, and in the questionnaire the participants were asked to choose one of those exits to reach their destination, the Department of Surgery. The most frequently chosen exits were exit number seven and exit number one (See Figure 5.a). According to the participants, this was related to the surrounding physical features of these doors, which caught the participants' attention. Exit number seven was the first choice for six out of the eleven participants. The main reason given for this was said to be a staircase that is clearly visible from the reception hall, and which leads to the upper floors where the Department of Surgery (the destination) is located. The staircase serves in this example as a clear architectural structural element (architecturally distinguishing characteristic) guiding the participants through the exit to their destination (cf. Beecher, 2004; Li & Klippel, 2010; Pati et al., 2015).

Furthermore, five of the participants chose exit number one as the second alternative when attempting to reach the endpoint, the Department of Surgery. The reasons for this choice are firstly that these participants answered the questionnaire on the weekend, which means that the participants had entered the reception hall from exit number one. Despite having to take a more complicated route to reach the reception hall on the weekend, these participants felt that exit number one led into the hospital more clearly than the other exits. Secondly, there was an exit sign over exit number one. As mentioned earlier, one of the most interesting responses, regarding the choice of exit number one as one of the most frequently chosen exits, was the one Arabic-speaking participant who always chose the exit closest to his right hand regardless of the other options, a choice that was rooted in his religion, Islam. This is interesting, since it shows that way-searchers' religious backgrounds can affect the way they orientate and navigate in the world, up to the point that the physical environmental features are even disregarded.

Five out of eleven participants chose exit number four as the least useful exit. These participants felt that this exit seemed very private (more for staff) and

also that it might lead to a dead end. The participants were confused by and uncomfortable with the seemingly dead end at the other side of exit number four and the impression of being private that it gave them. The reason it looked "private" was perhaps its location close to the reception cube, as well as the comparative infrequency of people using or passing by this particular door.

4.3.4 Artwork and interior design – aesthetical preferences

Part of the exploration in the first study was to see how, and to what degree, appreciation of the art influenced orientation in the hospital environment. Regarding the artworks within the studied reception hall, five Arabic-speaking participants and one Swedish-speaking participant (with an origin in Arabic-speaking culture) responded that works of art were not common features in health-care buildings in their home countries of Syria and Iraq. These six informants were distributed in all of the four different art familiarity categories. Seven out of eleven participants, from the first, third, and fourth categories, responded positively to the question: "Do you think that the interior design elements work well together in this place?" However, six out of these seven participants, from the first and third categories, responded that they disliked some of the artwork in the reception hall. This dislike was expressed partly as due to the material composition of the works – the participants described the material as weird ("it looks like sackcloth") – but also because of the size ("it is big") (see Figure 5.b). The position of these particular works in the hall was also mentioned as confusing for some of the participants' navigation within the studied place; they are hanging from the ceiling and on the wall between exits number one and number two (see Figure 5.b). Two of the Arabic-speaking participants, from the first and third categories, were attracted to the orange color of these artworks. Other interior design elements, such as the wooden material on the walls, the furniture, the skylight, and especially the plants, evoked memories for three Arabic-speaking participants and one Swedish/Arabic-speaking participant. When encountering these interior elements, the four participants came to think of the greenery and the natural environment of their home countries Iraq and Syria. In other words, these four participants experienced feelings of evoked familiarity associated with the greenery back home (Craig et al., 2012; Kaplan & Kaplan, 1989). Two Arabic-speaking participants, from the first and third categories, felt that the reception hall seemed bigger than it is, because of the daylight that entered through the skylight.

4.4 Discussion of the first study

As seen in the theory chapter, the strategies that people follow to find their way are diverse (Mollerup, 2009; Symonds et al., 2016), and actions initially taken can be for instance reading maps, looking at signs, or communicating verbally. When non-verbal or non-intentional visual cues are activated in wayfinding – in other words, when physical features such as artwork, furniture, and other interior design elements are used as wayfinding support in various ways, they might do so either by directly leading the way or by adding to already acquired knowledge, as in "educated seeking" and "inference" (Mollerup, 2009), or when way-seeking based on "intuitive" (Lundin, 2015) path-taking in a hospital environment. In this first study, the participants' straightforward, additional, and intuitive way-searching strategies have been touched upon through inquiries about the main type of environmental cues in different perception situations. As an overall result, it could be said that informative signs were a main visual cue used by the participants when navigating in and when leaving the reception hall at SUS Malmö's radiology unit, but that artwork was also frequently noted, as well as to some extent plants and interior architectural elements like the slightly tilted reception counter. Choosing which particular visual cues to follow was not only a matter of the elements themselves; in my study, this choice appears to be affected by a participant's occupation, familiarity with art, as well as culture and language. The participants who relied on artwork and the reception counter to orientate themselves within the reception hall were quite familiar with art, but interestingly, those with most professional experience in art were here seen as less interested in the art at the site. The issue of the degree of acquaintance with art has previously discussed in relation to preference (Van Paasschen, Bacci, & Melcher, 2015), but not in relation to the issue of orientation.

The participants who found the informative signs and the plants to be helpful visual cues for facilitating orientation were seen here as influenced by their cultural background and their language. Interestingly enough, the interior design elements that caught the participants' eyes first were not exactly the same ones that aided the participants' wayfinding within the studied place. This is especially true for informative signs, which were not even mentioned as eye-catching elements to begin with. This may be because all of the informants in this study are overfamiliar with this type of informative signage in the hospital setting, and thus do not notice it at a first glance. But when deliberately trying to find their way, the

participants sought informative signs to guide them to their destination, since this is what one generally does as a way-searcher in a place such as a hospital. This affordance, which seems to appear when one needs it, presented by the signs, recalls the theoretical debate between Koffka and Gibson (see above in the chapter Theoretical Background), about "demand character." The study conducted here seems to confirm – or at least indicate the possibility – that there is a demand character when it comes to what the signage, as well as some of the non-verbal physical elements afford. The non-verbal elements, and especially works of art, which will focussed on more in the next study of this thesis, revealed themselves in the first study as affording a variety of other things as well, such as relief, distraction, thoughtfulness, etc., that can have an orientating effect in a broader, existential sense. This particular quality of the overall design of the hospital environment, namely that visitors, as well as those who stay longer, such as long-term patients and staff, are able to "use whatever is needed," is an interesting aspect of orientation, and it may even indicate a strategic position in the sense that it suggests that design and art do not need to be spatially dominant, but sufficiently articulated to support recognition as a cue when needed.

In this study, the participants' main languages were Swedish or Arabic. This is one of the main differences that I initially expected would impact the participants' wayfinding in different ways, since all of the informative signs at the site are written in Swedish and were thus difficult for the Arabic-speaking respondents to understand. Interestingly enough, four Arabic-speaking respondents (half of this group's participants), and only one Swedish-speaking respondent (one fifth of this group's participants), stated that the informative signs were the most helpful interior design element in terms of aiding wayfinding. On the whole, the study seems to suggest that signage and artwork are on a similar level when it comes to informing orientation. Even if the sample in this study is a very small one, it can nonetheless be worth noting that the total numbers suggests that the informative sign is the most helpful interior design element for the way-searchers in my study (mentioned five times, as opposed to four mentions of artwork). The reason for this, and for the higher frequency of this answer from non-Swedish speaking informants (despite not being able to read the signs), may be that the informative sign is a very strong cross-cultural reference for finding one's way, which leads people to view it as useful even when in a language that they cannot read nor understand. An explicit signage message could also be a reason to initiate a conversation and receive a verbal explanation as "route following" (Mollerup,

2009) advice from someone else in the environment. In other words, the informative sign could be seen as one imageable element (Lynch, 1960) among others, but one which promises correct information/guidance in the next step. Regardless of whether one understands the message or not, the informative sign itself could, as it were, be seen as something to which one can easily point, and address in personal contact, in order to obtain further information.

Apart from language, the other individual differences such as the respondents' occupations, their familiarity with art, and their more specific cultural backgrounds, can also be considered to impact participants' perception of the surrounding context, and hence affect their wayfinding in the studied place. One example from my study is the participant who always chose the exit nearest his right hand as a religiously-rooted navigational habit. Another example are the participants who perceived the natural materials, the green plants, and the skylight as evoking memories of the greenery and natural environments of their home countries Iraq and Syria; the reason for this could be their need to engage with the pleasant context of nature to release their fear and pain and the negative energy induced by the war, the difficult journey to reach Sweden, and the unstable situation regarding the permit of residence in Sweden. These environmental features evoked participants' memories from various well known experiences and settings from the past (cf. Ahmed, 2006; Craig et al., 2012; (Kaplan & Kaplan, 1989), and influenced their orientation and wayfinding within the site. It can be noted in particular that the broader sense of orientation, where one suddenly finds oneself connected with a familiar/unfamiliar sense of being, was evoked here by plants. In interior design, plants are frequently merely considered pleasant environmental elements, or, for example in the existentially difficult places of hospitals, not considered to contribute anything besides, quite simply, a neutral ambience (Petersson & Sandin, forthcoming 2020) to a place.

The interior design elements that participants perceived as guiding information or landmarks in this first study, such as the informative signs, artwork, plants, and the tilted reception cube, should be seen also in light of the fact that the site of study – i.e. the reception hall – is a node place in the sense of an opening-up space and a space of intersection through which people in this part of the hospital must pass, and where they must choose a direction before heading to their final destination. In other words, the physical elements that attract attention, or what Lynch called imageable elements (1960) in his early texts, and the spatial

differentiation of the surrounding context of the reception hall, promote the legibility of the studied place (Baskaya et al., 2004), and in turn facilitate participants' navigation to their chosen destination (in this study, the Department of Surgery). This first study shows that the spatial constellation, as well as the imageable elements in and close to it, can be considered both aesthetically attractive and unattractive by participants whilst at the same time aiding the participants' wayfinding. For instance, some of the participants perceived the artwork in the studied reception hall as impressive in a positive way, and related this positive impression to the absence of artwork in the hospital environments of their home country, in this case Syria. Conversely, other participants reported a negative impression of the works of art, deeming them huge, ugly, and too imposing, citing the materials used to make them and their size and position in the reception hall. Regardless of the negative impressions of the existent artwork, those same works played an important role as landmarks in orientating the participants, regardless of whether the participants liked them or not. We have seen in the first study that informative signs and works of art are legible elements often relied upon in waysearching (cf. Alibrahim, 2017). This finding itself coincides with several studies, (Mollerup 2009; Huelat, 2007; Hubregtse, 2016; Pati et al., 2015), but here we have also seen that there were diverging opinions regarding the assessment of the art itself and how the sensed quality of the artwork related to the interior design, as well as to the possibility to orientate oneself in the hospital's interior environment. Although the majority of the participants disliked several of the works, this did not nullify their wayfinding function as visual landmarks and memorable elements. During the interviews and in the subsequent analysis, these individual aesthetic preferences opened my eyes to the importance of further investigations of the artwork's contribution to the hospital environment in terms of wayfinding, especially in terms of which type of art could best promote wayfinding within the health-care setting.

In other words, aesthetic preference, appreciation of art, and well-being are phenomena that do not necessarily follow the same kind of spatial and designerly criteria as wayfinding and orientation. Still, when it comes to orientation in the broader phenomenological and cultural sense (Ahmed, 2006), and especially perhaps for individuals in the existential situatedness that a hospital stay offers, there seems to be an interesting crossover between orientation and a sense of appreciation, in the sense that they may stimulate each other. This crossover between the appreciation of a place and a sense of orientation in the same place,

including what impact this crossover may have on wayfinding, was elicited in this first study, but it needs further investigation and will therefore be developed as an issue in the two subsequent studies of this thesis.

Regarding the factors that could impact both information processing and decision-making, the outcomes of my first study confirm the importance placed on some of the cognition- and screen-based theories that claim that the environmental features are highly important influential factors in wayfinding (cf. Chen & Stanney, 1999; Passini, 1981), but this first study also shows that a number of influential factors add to the environmental features' capacity to support wayfinding: the way-searcher's occupation, culture, and aesthetical preferences. It was also seen that feelings of familiarity were evoked by interior elements that somehow relate to previous experiences, but not necessarily previous experiences of the same type of environment (cf. Kaplan & Kaplan, 1989). In other words, we saw examples of what I have here called evoked familiarity, which will also be further followed up in the chapters to come.

Second Study: Artwork stimulating orientation

5. Second Study: Artwork stimulating orientation - a walking interview in a hospital department's transfer spaces

As we saw in the first study, works of art, in addition to other interior design elements and informative signs, have been recognized as important elements that influence people's wayfinding at the hospital SUS Malmö (cf. Alibrahim, 2017). The first study gave me a deeper understanding of the influence of interior design on people's wayfinding. In the second study, I focus primarily on artwork, as it has the potential to catch people's eyes and in doing so impact their wayfinding, but also because it might stimulate other meanings in wayfinding than mere structural or vista-oriented perceptions, such as aesthetic, emotional, and existential meanings (cf. Rollins et al., 2011; Macnaughton, 2007). Following the first study, I decided to go further by testing how the artwork in the outpatient clinic of the Department of Infectious Diseases at SUS Malmö affects people's orientation at the site. In doing this, I wanted to investigate the role and importance of artwork in hospitals in terms of how it aids people's orientation within the hospital environment. The method used in this investigation is semi-structured walking interviews, supplemented by my own photographic documentation. The participants, eight Syrian refugees, responded to questions in an interview situation while we were walking through the studied place. The walking route is divided into three main sections with their respective 'spots' based on their different design features. The first section is in a reception area from which further transport to some of the department's closed clinical functions is possible (laboratories, doctors' offices, diagnosis rooms, the staff lunchroom, a nurses' station, and storage rooms). The second section is located immediately after one leaves the reception area, by a divided corridor space and an adjacent waiting area with seats. The third section is at the end of a long corridor that passes the waiting area and several entries to doctors' and nurses' offices. Along the walk through these sections (with their specific spaces and view ranges), participants experience

the existence of different interior design and different types of artwork that can be viewed and talked about within each section.

5.1 Preparatory exploration of the site of investigation

After the first study of this thesis, I began exploring other places at SUS Malmö at which I could conduct the second study of this thesis. Eventually, I chose the outpatient clinic of the Department of Infectious Diseases for the second study. I selected this particular site from among a number of other visited based on my first impressions when exploring the potential of this department; my experience was different at different locations relating to the different character of the design of the three sections, which I have called spot A, B, and C. Spot A includes the main entrance area, the reception, a public toilet facility, a storage space, and a small waiting area (a row of fixed black seating). The area close to this spot is partly surrounded by colored walls (red and yellowish orange, as well as white), and there is a set of abstract graphic prints [in Swedish: *Grafiska blad*] (see Appendix VI) there. The space at spot A has a dark grey floor with metal marking (for tactile guidance), and an informative sign hangs from the ceiling, telling people to report to the reception. As regards the graphic prints, whilst passing them I noted their similarity to the graphic prints in the corridor outside, just before entering the department (by the same artist; see Figure 7). This repetition of artistic style gave me a feeling of continuation, and the sense that I was on the right track toward further points of visit in the department. I continued through the reception and entrance area until I reached spot B, which is a node place from which one can choose a direction. Here, I found myself in a somewhat “whiter” spot with a white ceiling, white greyish flooring, and bare, white painted walls – with the exception of a single orange wall on the left side as one enters spot B. I later became aware that the colored wall was part of a central nave or node of rotation in this department; all of the walls of this central architectural formation are painted yellowish orange and red in an apparent attempt to support wayfinding. There were some lighting fixtures on the ceiling and two works of art hanging on the orange wall at spot B. On my first visit here, curiosity had prompted me to go ahead and discover more, and after taking a few steps around the colored walls I came upon another, larger, waiting area with a variety of artwork on its white walls and on the orange wall that continues back to spot A. The larger waiting

room immediately adjacent to spot B also had more black fixed seating. When passing this waiting room and moving further into the studied site, the frequency of artwork notably increased; there was a work hanging at every second step, in between the rather large number of doors in the longer corridor leading to spot C that followed. Towards the end of the corridor, I experienced it as a more homogeneous environment, due to the fact that the main interior elements here are similar with regard to the types of objects, shapes, colors, and materials there. The space in this part has white walls, a continuous white ceiling that is lower than at the other two spots, a light greyish floor, and a number of similar doors on both sides of the long corridor. Between the doors there are several wall-mounted works of art, similarly framed but somewhat mixed as regards subject matter, techniques, colors, and sizes. Spot C is brighter than the other spots due to a glass emergency exit door that lets in daylight at the far end of the long corridor. My different experiences of the three different spots in this department inspired me to examine the impact of the artwork and interior design within the heterogeneous as well as more homogeneous zones of this hospital space.

Figure 7. The graphic prints in the corridor outside the Department of Infectious Diseases.

5.2 Research design, information collection and site description

5.2.1 The study setting and its artwork

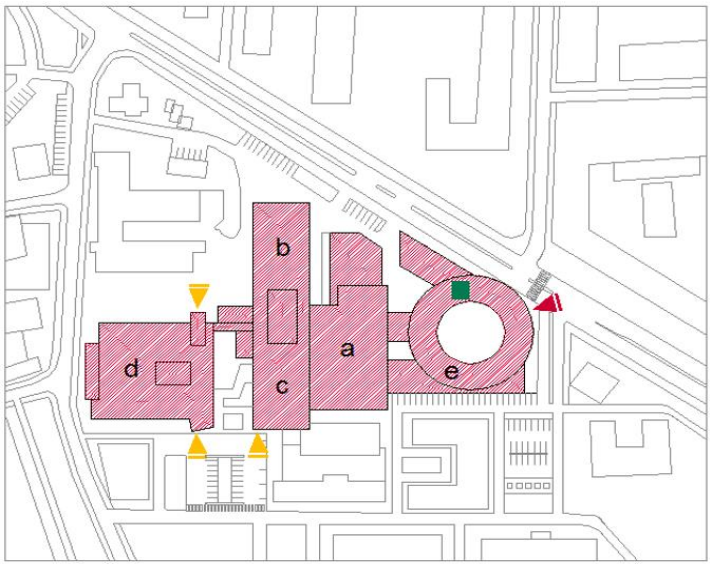
The outpatient clinic at the Department of Infectious Diseases, where the second study was conducted, is a place for diagnosing and treating infectious blood-borne infections, such as tuberculosis, hepatitis, immune deficiency, and tropical diseases. It is located adjacent to the emergency unit in the emergency care building at SUS Malmö (see Figures 8 and 9), as a connected part of the ground floor of the emergency building. In this second study, the participants' task was to walk through the three spots A, B, and C in the outpatient clinic, in order to experience the differences in design between the different spots, as described above. At spot A, in the entrance area with the reception and a small waiting area (see Figure 11 below), there are several abstract graphic prints with basic and flat geometrical forms on the walls (see Figure 14 below), as mentioned above. At Spot B, a node area connecting to a larger waiting area, there are also works of art hanging on the walls, one of which was larger than the others; four of the study's participants dubbed this "the big red painting" (see Figure 12 below). The "big red painting" is an expressive abstract painting that actually uses several colors: red, black, white, and green, although the red color is brightest and occupies the largest part of the surface of the painting (see Figure 15). Spot C, at which one arrives when reaching the end of the corridor, contains several framed works in various techniques, mostly on paper, hanging on the walls leading to the emergency exit door that ends the studied department space (see Figure 13 below).

The focus of the second study are the works of art and their capacity to promote wayfinding and orientation in the broader existential sense, therefore also including the associated and emotional meanings transmitted through these works to people with a different, non-Swedish, cultural background and experience of hospital settings. The theoretical point of departure here was that artwork is generally considered to have multiple functions in a hospital environment. It has the capacity to provide backgrounds and openings towards other types of worlds than the purely medical one (Rollins et al., 2011; Macnaughton, 2007; Sandin & Ståhl, 2011), but might also support navigation, partly because of the type of attention or emotion it may attract or evoke. Works of art might thus also play a

direct part in aiding people's wayfinding in the hospital environment (Alibrahim, 2017), whether they are appreciated for their artistic qualities or not, as seen in the first study of this thesis. In this second part, a more culturally homogeneous informant group was chosen to highlight the newcomer perspective, but also to see the extent to which there are differences as regards both appreciation and a sense of orientation, despite this partial homogeneity.

5.2.2 The participants

The participants in this study were eight Syrian refugees (four females and four males) with a variety of occupations and backgrounds. All of them have or are pursuing a higher education: one is a student at 'gymnasium', two are university students, and the others have occupations such as nurse, schoolteacher, electrical engineer, trader, and architect. Their ages range from 16-42 years. Apart from select words and phrases, the participants could not speak Swedish yet, and they had been living in Sweden for varying amounts of time (between 1.5 and 3 years). Most of them had some sort of experience with other Swedish hospitals. The main conditions that I set up for the participants were that 1) the participants should not have visited the study site before; 2) the participants had to walk through the place and pass through the three spots A, B, and C, and respond to some interview questions that I asked them based on their location in, and experience of, the environment at these different spots.



The hospital buildings (a-d) and the emergency care building

The Department of Infectious Diseases

Main entrances that lead into the hospital building

The main entrance to the emergency care building for reaching the Department of Infectious Diseases (of the second study)

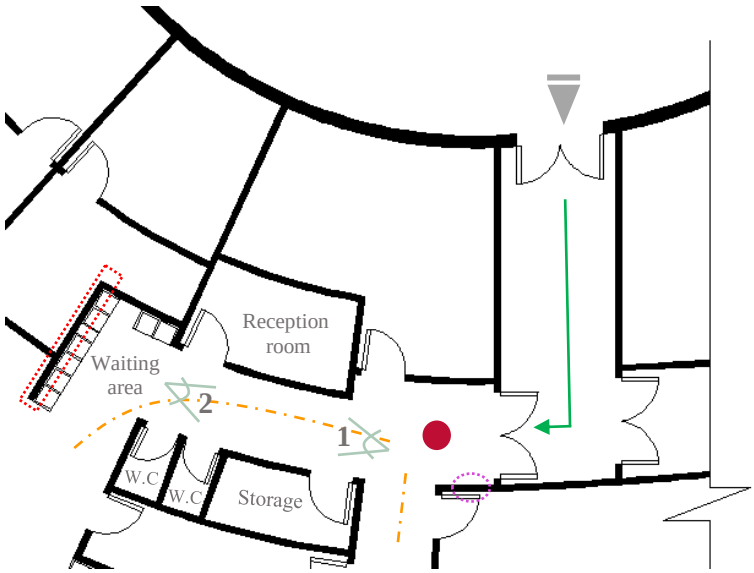
Figure 8. The hospital SUS Malmö.

The main entrance to the emergency care building

The main entrance to the Department of Infectious Diseases

Figure 9. The hospital SUS Malmö, and the emergency care building.

Figure 10. The floor plan of the Department of Infectious Diseases at the emergency care building and some pictures of the three spots (the color of picture's borders correspond to the spot's color).



Main entrance of the emergency care building
Entrance of the Department of Infectious Diseases
Spot A (Location of the stop with the informants)
The angle from which the photograph was taken
The location of the existent works of art
The two possible tracks
Map of the department

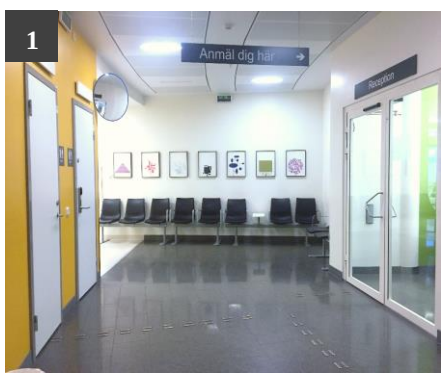
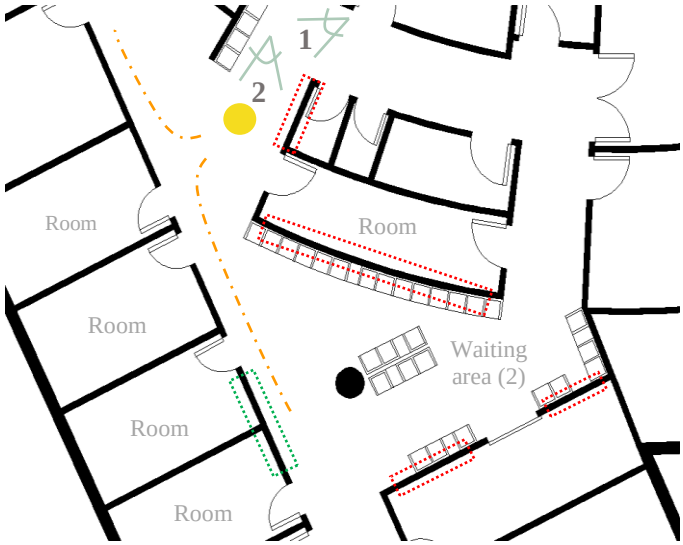
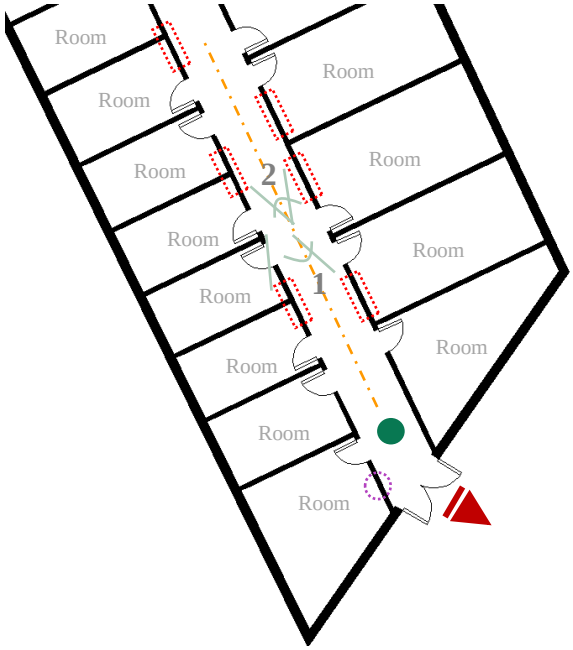


Figure 11. Floor plan and photographs of spot A at the Department of Infectious Diseases at the emergency care building.



Spot B (location of the stop with the informants)
The two possible tracks from spot B
The angle from which the photograph was taken
The location of the existing works of art
The location of the "big red painting"

Figure 12. Floor plan and photographs of spot B at the Department of Infectious Diseases at the emergency care building.



Spot C (location of the stop with the informants)
The angle from which the photograph was taken
The location of the existent works of art
The possible direction
Map of the departmen.
Emergency exit door

Figure 13. Floor plan and photographs of spot C at the Department of Infectious Diseases at the emergency care building.

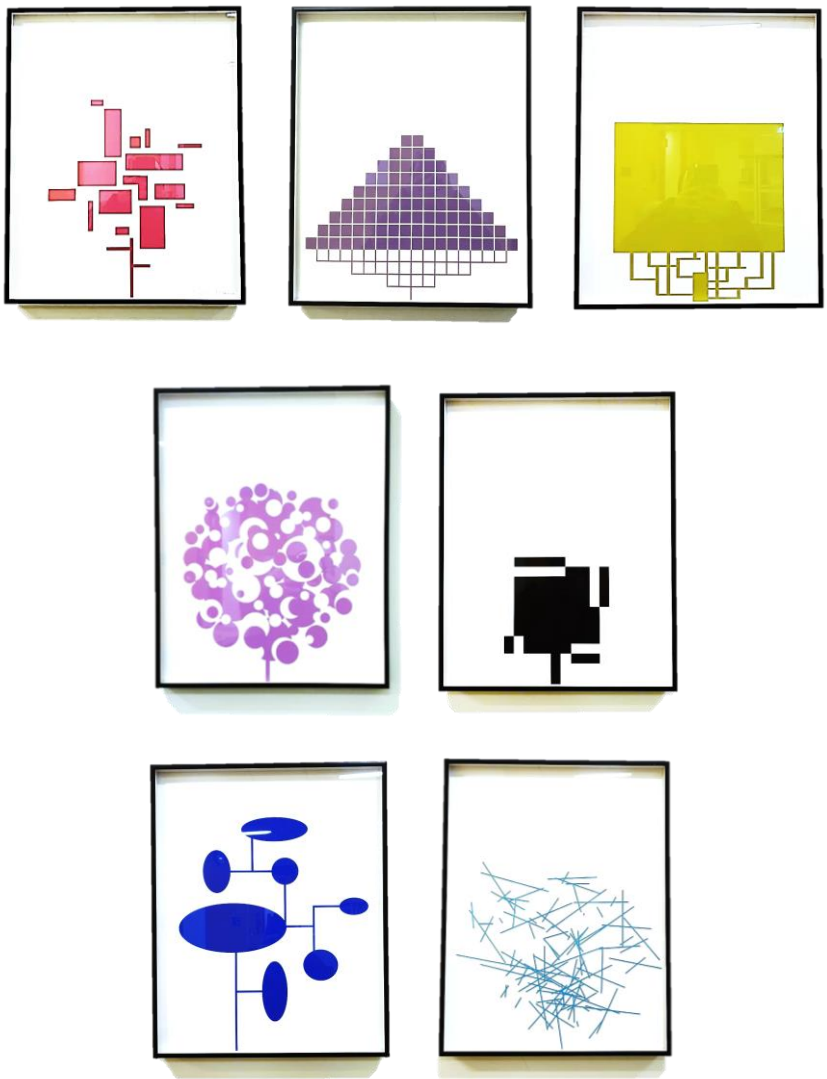


Figure 14. The abstract graphic prints at spot A.

Figure 15. The “big red painting” and its placement at spot B.

5.2.3 The semi-structured walking interview

The semi-structured walking interview (Polson, Lewis, Rieman, & Wharton, 1992) was chosen as a method for this study due to its flexibility (its two-way dialogue), and the possibilities it offers to go in-depth in a directed conversation in order to explore further and to understand the informants' thoughts and feelings. I chose to conduct the semi-structured interview while walking, and recorded the interview during the walk (see also the preceding chapter Methodology). This way, I could capture the participants' immediate comprehension and perception of the environment at the three chosen spots in relation to the interior design elements and the artwork at each spot. With this method, I have been able to evaluate the affordance of the interior design elements in this study, especially the artwork, by studying their influence on visitors' orientation while navigating within some of the transfer spaces of the clinic.

The semi-structured walking interview consisted of two main parts, each of which focused on different aspects of the studied place. The first part of the interview inquired about wayfinding, orientation, and remembrance based on the participants' navigation in the three different spots. The questions of this part were asked while walking around in the place. The second part of the interview concerned the experience of the artwork at the site, and it took place when seated after having walked through the three spots A, B, and C. The interview material was gathered through both closed- and open-ended questions, and the total interview session lasted about 30-40 minutes per individual (see Appendix II).

5.2.4 Execution

The semi-structured walking interviews were conducted over three working days, based on the participants' schedules. I met the participants at a nearby bus/train station, and we walked together to the study site. Before entering the hospital building, I introduced myself to the participants: "I'm a PhD student at Lund University. I'm conducting this interview for educational purposes; your personal information will be kept confidential, and the interview will be recorded so that I can return to the details of the conversation in the analysis phase of my research." This introduction was necessary, and I allowed sufficient time in order to ensure that the participants felt comfortable and ready to interact normally, as some were initially anxious and afraid to record the interview because of their circumstances, including difficulties and terror that they had experienced earlier in their lives. I

then opened the interview by describing the study's aim: "The goal of this interview is to study the role of the physical elements of the interior design at this site in aiding people's wayfinding. In other words, how might the interior design of this place influence your navigation towards specific destinations within this place, and what is your impression regarding the design of three spots that will be highlighted during the tour?" I then informed the participants about the process of carrying out the interview, i.e., walking through the place and focusing on three spots, "I will walk you through the place one by one, and I will ask you to do certain things, such as walking from one spot to another and not moving further immediately but stopping and taking in the environment. I will also ask you to answer a set of questions that are divided into two themes: the first are about orientation, wayfinding, and remembrance of the place, and the second are about how you experience the artwork on display in the place." Before starting each tour, I informed the receptionist that I would be conducting interviews without disrupting the staff's work or disturbing the patients; these were required conditions for allowing me to make the study in this hospital setting. I then asked the participant to move forward to spot A, then asked about the direction that s/he would choose to go further into the studied place. Before moving from spot A to spot B, I asked "What is your impression at spot A?" This was repeated between spots B and C. At each spot, I asked about the participant's impressions regarding the interior design at and the choice of direction for moving on from there.

Most of the participants responded by asking me what I meant by 'interior design,' and I replied that it comprises the structural elements, the architectural elements, and the decorations that include artwork, wall color, furniture, and so on. In addition, I sometimes explained in conversation that elements like these might add aesthetic and supposedly health-promoting benefits to the health-care environment (cf. Huisman et al., 2012). It was necessary to explain some of the questions to participants in order to help them understand the intended meaning behind my questions, and to expose a little bit of my field of research, especially since the participants were from different professional/educational backgrounds. The intention was to introduce the participants into "a field of interest" without leading them to respond in a specific way when it came to their thoughts and preferences.

While I was walking through the studied place asking participants about the interior design, several members of the staff interrupted the interview to ask what

we were doing there; for example, a nurse asked: “Excuse me, what are you doing?” I stopped the interview and introduced myself by name and as a PhD student from Lund University. The nurse replied that she was wondering what I was doing, to which I responded, “I’m studying the impact of the interior design elements, especially artwork, on wayfinding within the hospital setting, and I have permission from the responsible department to do interviews here.” The nurse apologized for interrupting my work, but said that it was necessary for her to check what I was doing there since I did not seem to be a patient. I responded that it was not a problem, and that I understood. This incident in itself showed that in addition to their medical duties, staff members are alert and take notice of people at the department who act differently or who may need verbal contact and possibly also wayfinding support. But from a methodological point of view, this alertness also caused slight difficulties, for instance in maintaining concentration during walks. After a discussion with the ward manager about our presence there, a discussion that also included our possibilities to take photos, the staff started to follow me more intensely and observe my every step. At that point I realized how difficult it was to conduct the full interviews with the participants while the staff was around. I resolved the situation by asking the participants to sit down in the waiting area for the second part of the interview (about art experiences) in order to avoid any unnecessary extra negotiations.

The participants highlighted some of the paintings that attracted them before starting the second part of the interview about the artwork at the site. For that, I documented these paintings so I could later link them to the responses from the second part of the interview; it was then that I decided to ask the ward manager for permission to photograph the paintings. The response was an immediate no, and although I assured him that I would only take photographs of the paintings, and neither of the patients nor staff, and also offered to show the ward manager my photographs afterwards, the answer was still no.

Field researchers often face different ethical dilemmas in their collection of study data, such as, in my case, when taking photos or conducting interviews that may cause a disturbance. The researcher thus must find different ways of dealing with these kinds of dilemmas, whilst also collecting the information needed. At the same time, the researcher is dependent on his/her interpretation of the ethical norms, and cannot disregard the ethical rules (Wood, 2006, p. 385). Generally, taking photos in Swedish hospitals is forbidden, and I was therefore prevented

from taking photos at the studied sites. To resolve this dilemma without disregarding the ethical rules as a researcher, I negotiated the situation with the staff at the studied site, interviewed the informants when seated in a transparent place (a waiting area) where the staff could easily monitor me and my whereabouts. At a later stage, I looked for someone who could help me procure permission to take photographs legally within the studied hospital setting. This was eventually resolved through negotiations on a formal, departmental level between my university department and the hospital's security department, and I received permission to return and take photographs of the interior hospital milieu at the studied places. Close-up photographs of the artwork have also been supplied by one of the informants in the third study of this dissertation, a manager of art display at Konstservice, the organization that is responsible for the art at SUS Malmö.

5.3 Findings and analysis

5.3.1 The character of the art displayed on the walls at the Department of Infectious Diseases

As described above, in the second study, the exposure to interior design elements, specifically artwork, is investigated at three spots (A, B, and C) along a walking path through the Department of Infectious Diseases at the hospital SUS Malmö. The dominant type of artwork differs slightly between the three spots, and these differences, as well as the participants' experiences of them, will be accounted for in the following passages. Most of the artwork at the outpatient clinic is of an abstract nature, with the exception of four small, framed paintings/prints in the long corridor that depict old houses and landscape motifs (see Figure 16).

The works of art at spot A are seven framed abstract graphic prints by the artist Jacob Dahlgren.[3] In each print, one shape is repeated randomly or regularly as an abstraction of a tree in different shapes (Dahlgren, 2010) (see Figure 14 above). The prints were placed there by the commissioner's art administrator Nilsmagnus Sköld[4] and his colleagues, as a continuation of similar, larger-scale works that are placed outside the department at the entrance of the hospital building. The similarity was intended by the managers and the artist Dahlgren to help people recognize continuity within the same building. The elements in these graphic prints are thus thought of as affording guidance for movement, supporting the way-searcher in entering the department, based on a sense of familiarity created through works of art that are similar to those that the way-searcher encountered outside in the entrance area. The equipmentality (Ahmed, 2006) of these works is thus based on the fact that a similarity is created between different locations in that department. Results from the interviews in the second study indicate that it is unclear whether this intended affordance was effective, at least as a main impression, or as a consciously experienced perception, for the participants in the study. The interviews did not directly highlight this spatial connection of

[3] Jacob Dahlgren (born 1970) is a Swedish artist with an educational background from The Royal Institute of Fine Art in Stockholm. (http://www.jacobdahlgren.com).

[4] Nilsmagnus Sköld is a visual and design artist educated at Malmö Art Academy in 1995-2000. Since 2013, he has been working as an administrative official at Konstservice, Region Skåne, responsible for the management and dissemination of the Skåne Region's art collection and for tending to permanent public works. He is the art project manager for the new hospital areas in Malmö, Lund, Helsingborg, and Ängelholm. (Sköld, personal communication, June 20, 2017).

similar abstract motifs, the questions being addressed more generally to see what was primarily mentioned and preferred. However, it could of course be the case that some participants actually recognized the returning abstract patterns without mentioning them. In the interview responses however, it seems as the informants were more occupied with the sense of space at spot A, and to a lesser extent with the motifs (or sensed lack thereof).

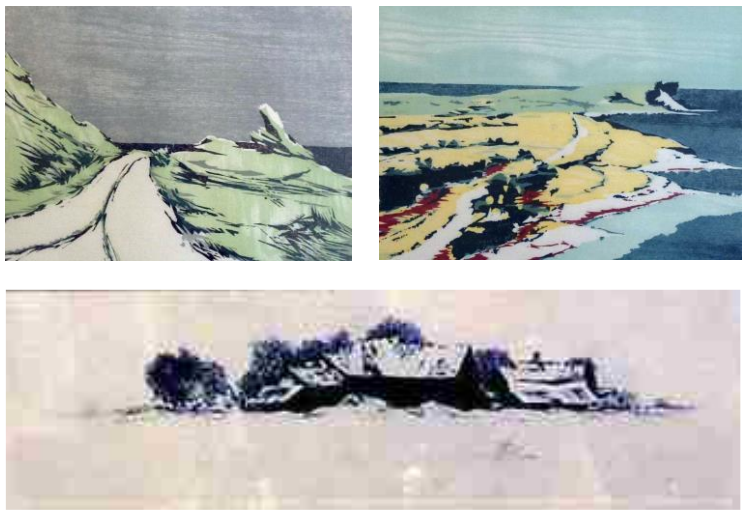


Figure 16. Artwork depicting nature formations and old houses.

The works of art at Spot B are larger in size than those at spot A, some of them mounted on wooden panes without a frame. These works present abstract figurations that are different from those in the works at spot A: they show less distinctly cut shapes, and are composed by overlapping- and mixed colors forming irregular shapes, creating a more mixed sense of depth and figuration. In interviews for the third study of this thesis, Sköld said that these works were placed there partly as a contrast, to add some “stronger” and “softer” artwork to the graphic prints by Dahlgren at spot A. Another intention in placing these works there was to create a concentration of artwork in the middle of the department, in order to attract people to continue toward spot B from the entrance area at spot A. This strategy could be reminiscent of a so-called “nested affordance,” where one affordance serves as a context, or an opener, for another affordance (Gaver, 1991).

The most attractive painting – in the sense of attracting the most attention and the strongest verbal reaction – is the "big red painting." Placing this painting at spot B seems to have worked well in terms of Sköld's intentions of offering something different than the graphic art in the reception area (spot A) and hence catching the way-searcher's attention. However, the study shows that this painting offers something other than just a "softer" ambience, or mere attention-grabbing features, since this painting also evoked very intense and contradictory feelings, to which I will return shortly.

Spot C, or rather the corridor leading up to spot C, contains a larger quantity of artwork than spot A and spot B, since there is a work hanging on the wall at every second step between the doors in the corridor. The space along the corridor has a homogeneous character in the sense that similar doors and similar equipment divide the wall on which framed prints and paintings of only slightly varying size are hanging. All the works in the corridor between spot B and spot C show abstract motifs, with the exception of four that depict old houses or landscape motifs and are thus what is usually called figurative artwork. All of the works in the corridor leading to spot C are framed and have a white background.

5.3.2 The participants' thoughts about and preferences of the artwork at the Department of Infectious Diseases

The participants were asked several questions in relation to the artwork at the Department of Infectious Diseases, for example: "What do you think about the artwork at this site?" "Can you describe the artwork in one word?" and "Why do you chose this description?." In general, the participants' descriptions of all the artwork varies according to each participant's understanding of it in the context at the clinic. For instance, one of the participants – the architect – saw a hierarchy within the artworks; from her perspective, "these paintings are not hung randomly, the person responsible for hanging these paintings studied the place and the paintings very well, based on the hierarchy of the zones within the place". This participant further stated that she liked all of the artwork and acknowledged two types of abstract art, saying "I like these works, I noticed that there are two kinds of artwork; simple abstract artwork and complicated abstract [artwork]". Her professional background as architect probably affected this participant's response. As Sköld mentioned in our interview in study three, working with art and having knowledge about art could affect a person's preferences for art. In this case, the

occupational background had a main role in impacting this particular participant's sensitivity regarding the placement of art, and the type of art, and the connection between the type and placement. Other participants who were otherwise unfamiliar with art considered the same artwork simply as non-expressive or strange, in the sense that it was hard to understand the concept. From a familiarity point of view, one could say that the meaning of works of art such as these depends on a kind of carried affordance (Kopljar, 2016), in the sense it they can only be recognized by people that know how to "read" the artworks and find the hidden message. Hence, the participants' actual familiarity with art, or willingness to see elements of for instance a depicted tree in the abstract patterns, influenced their preferences for certain works (see also Pedersen, 1978; Purcell, 1986; Kaplan & Kaplan, 1989). The possible impact of these works on well-being and, to the extent that emotions hinder or facilitate wayfinding, of how well they work as landmarks or familiarity markers, was thus seen here as a function of how accustomed the visitors are to dealing with or interpreting art as not only an aesthetic element in a room, but as an object that expresses a range of advanced artistic choices.

Two participants liked the artwork at spot C, but they had some preferences, which were revealed by saying things like "[the works] are beautiful, but not all of them" "they did not bore me" "I appreciate some of them more than others" "the paintings that contained houses look cozy" and "these paintings are very beautiful, but I liked the paintings at spot C more than those at spot A, because I don't understand the paintings at spot A." The simplicity, or low-key abstraction, of the works at spot C was calming for one of these two participants. Even though the interior design of the place initially confused her a bit, the sensed inviting gesture of the artwork at spot C afforded comfort for this participant (cf. Withagen et al., 2012). One of the participants mentioned two works that he liked: one of them at spot C, which he liked because of its color, and another at spot A, which he saw as a depiction of a purple flower. The participant perceived the artwork based on personal imagination, which is in line with what Sköld mentions in our interview: namely that the artist builds a story in his/her art following the theme of the building, and that users then find their own version (or interpretation) of this art and make their own stories, without following the intended stories of the artist or the theme of environmental design, but still influenced by both of them.

Four participants did not like the white background wall on which the works at spot C are hung, saying that the white background makes the art

disappear into the wall, with the consequence that the participants did not notice the works at the beginning. This might imply that as way-showing interior design elements, these works carry "hidden affordances" that are not noticed by the perceiver at a first glance (Gaver, 1991), but that might start to work as way-showing elements once the way-searcher has noticed them. One could say here that the works at spot C do not really possess landmark quality, in the sense of leading in a direction from a distance, but they possess a certain quality as a more discrete type of familiarity marker that could lead the way at second or third glance.

One of the participants made a general comment about figurative motifs in art: "I liked that the paintings do not contain figures of humans; the expressions of the human scare me, and I feel that these people in the paintings are staring at me." Two other participants stated that in their views, artwork containing human figures is provocative; they felt that human figures in art, whether paintings or sculptures, were following them. Even if the scary feelings a patient or visitor can get from human figures in artwork could be seen as a "false affordance" (Gaver, 1991), without a real action to provoke the feelings of fear, a general reflection on human figures in art is that it may be difficult to predict the effects of things such as enhanced imagination, leading to stress or unwanted interaction, or just the interpretational difficulty of presenting humans as bearers of social life in a specific place at a specific time.

Two other participants who saw no relation between the artwork at spot C and the location of the spot itself said that they would have preferred another kind of art at that spot, specifically works depicting parts of the human body – the ear, eye, heart, brain, kidney, etc. – that were more reminiscent of medical posters. The participants called these "medical paintings." This preference for medical posters was based on these participants' positive experiences of such posters in certain departments at the hospital SUS in Lund. In this case, such explicit imagery was desirable, and generally speaking, medical images may sometimes lend a kind of professional authority to a department. However, it is not always the case that realistic medical themes in hospital art are appreciated; on the contrary, such realism may also evoke fear (Sandin & Ståhl, 2011). In cases like these, the degree of realism in images reminiscent of medical posters could be crucial for how they are experienced: plausible corporeal motifs with a slight degree of schematic

presentation could be understood as presenting knowledge, but more realistic images of for instance human tissue could be sensed as painful.

The most appreciated works of art in the outpatient clinic were the "big red painting" with its abstract, colorful motif, and the works with figurative motifs, which depicted houses (see Figures 15 and 16). These works were appreciated because they evoked memories, and the legibility (or articulation) of these works' content was considered high; that is, the perceived affordances or deepened interpretations of these works helped perceivers' interaction with them (cf. Gaver, 1991), making them more memorable. The emotions evoked by these works could be seen to direct the perceiver closer to them or further away from them, based on the type of memories that they evoked (cf. Ahmed, 2006). The "big red painting" evoked some participants' childhood memories (a more detailed description of this follows below); that is, in addition to the appreciation of its size, its colors, and its placement in the room, the "big red painting" touched participants emotionally and evoked previous experiences – both good and bad ones. The artwork depicting houses on the other hand was considered more readable, with simple, direct, and friendly messages. In general, the participants preferred artworks that were easily recognizable, and in that way considered "simple." According to the results of my study, such simplicity is something that the participants are seeking, since it facilitates an understanding of the concept, and little mental effort is required to analyze and grasp it. In addition, escaping from life's complications, such as illness, can be another reason for preferring simple and readable artworks in the hospital setting and situation. Such functional or rational meanings of art are quite common in research literature on art in hospital spaces, indicating that art makes a clear contribution, not only as a resource in our daily life, but to improving the healing environment in hospitals (Lankston et al., 2010).

The least preferred works at the site, according to the answers to a straightforward question posed to the participants, were those at spot A – which were frequently described as "unreadable," "ambiguous," "not arousing curiosity," "boring," "doodles," "just lines and shapes," or "children's scratches." Another work to which participants were adverse was the "big red painting," which in contrast was also mentioned as one of the most preferred artworks because of its size, its colors, and its placement in the room. The "big red painting" evoked childhood memories (good memories) for two of the participants, as well as bad memories of the war in Syria for three of the participants (see also the preceding

section 3.2.2). The paintings at spot B (mixed technique on wood paneling, by Cia Mandéus) were not specifically mentioned on the whole; however, the concept of these paintings was unclear for one of the participants.

5.3.3 Comfort and calmness induced by figurative art with nature motifs

Another question that I posed to the participants was: "If you could change the artwork [at the Department of Infectious Diseases], how would you change it? Why?" The participants' responses varied: four participants did not deny the beauty of the artwork at the three spots A, B, and C or the sense of calm that it gave them, but said they would prefer to change the existing artwork to works with landscape or plant and flower motifs, which are more "comfortable" from the participants' perspective, or to subtistutte the existing artwork with living plants and flowers: "I would add plants and flowers, they are more attractive and make you feel comfortable" "I'm thinking to put pictures of plants and flowers, because their colors would give patients a sense of optimism and calm; also, adding green elements would be much better" "first, I would remove the "big red painting" totally, and change the others to landscapes or abstract art that remind of nature; I cannot deny the beauty of these, but I prefer landscape art" and "I would put flowers for serenity, and landscape pictures, which are more comfortable." Artwork with landscape motifs and green elements (plants and flowers) generally evoked feelings of familiarity, recalling the nature of their home country for three of the participants, and this familiarity probably in turn impacted their preferences for wanting to change the other artwork into works with landscape motifs (cf. Pedersen, 1978; Purcell, 1986; Kaplan & Kaplan, 1989). In this second study, two types of visual art – abstract art or art with nature motifs – have been seen to provide the participants with positive emotions, including reducing the sense of stress in that indoor environment by creating moments of comfort and calm. Furthermore, this study has found that occupational background and/or art knowledge matter(s) when it comes to the type of art that is preferred and considered comforting. In line with earlier studies of art in hospitals, this study has also shown that art with landscape motifs and art that depicts natural objects such as flowers or plants, is generally preferred over abstract art (Eisen et al., 2008; Lankston et al., 2010). Landscape motifs and nature scenes are often, but not always, preferred in general (cf. Kaplan & Kaplan, 1989), and in particular in

reference to studies and observations of hospitalized patients in psychological theories that are concerned with emotional responses for improving the environments by making them feel more natural (Lankston et al., 2010). “Contrary to a view which may prevail among some contemporary artists, patients who are ill or stressed about their health may not always be comforted by abstract art, preferring the positive distraction and state of calm created by the blues and greens of landscape and nature scenes instead” (Lankston et al., 2010, p. 490). The participants in my studies were not stressed by illness, but as said, they were stressed to varying degrees by being part of these studies located in a hospital, and, like the patients that Lankston et al. (2010) talk about, they were searching for calmness. Again, these types of feelings, which can also be related to a patient’s preference and familiarity with landscapes and images of landscapes (Kaplan & Kaplan, 1989), are also correlated with the length of one’s stay at a place. In my studies, since it was the participants’ first visit to the place, we saw for instance that temporal orientational unease is also a factor to take into consideration.

One of the participants in the second study said that she would add “more pleasant paintings to make a friendlier atmosphere,” and she would also remove all the artwork made using wood at spot B. Another participant did not like the framed white backgrounds (the passepartouts) of the works, stating that she would like to “cut out the paintings from their white background and hang them directly on the walls”. Regardless of the artwork type, this participant preferred art that adds pleasure in order to experience the environment as inviting, and the depth of these wishes to improve the hospital environment were related to the participant’s familiarity with art, as an architect with an interest in art.

Two participants mentioned that they would like to replace the department’s artwork with works related to the place itself and thus indicate the site-specific function of the hospital. Such artwork could be good for analphabetic people who cannot read the informative signs, or for those who have no interest in art whatsoever. In other words, artwork that says something about the site in which it is placed has perceptible affordances (Gaver, 1991) that can be noticed and distinguished easily.

Taken together, all of these answers indicate that the participants’ art preferences are diverse, even if many preferred what have been called “simple” motifs here. The diversity of artworks in hospitals could, as a quality in itself, impact patients and visitors positively, making the environment more welcoming,

and somewhat improving the patients' and the visitors' moods (Karnik et al., 2014). The investigation did not address the meaning of diversity itself, or richness as regards type of art represented in the environment, to the perceiver, but it is fair to posit that diversity has two advantages: 1) the possibility for many to find something that is appreciated rises; and 2) the contrast between different types of art may in itself convey an increased openness towards artwork and the interior space, since one looks for pleasant experiences or meaning, rather than provocation when one is there, or on one's way to treatment, a visit, or work.

In addition, the participants' were asked: "For what purpose do you think this artwork was created? Why do you say that?" Three participants responded that they didn't know, indicating a hidden affordance (Gaver, 1991) in the sense that even if the works were noticed, they did not communicate well enough with some of the participants to give them the perceptual information needed to identify their "message." In this case, the works were simply deemed unreadable because the participants could not understand their conceptual meaning or their purpose. It could also be the case that these respondents interpreted the question so as to try to understand an original artistic purpose (or message or even desire) that it would be out of their reach to actually know. Some of the participants assumed a purpose with these artworks based on their impressions of them as situated objects: such as hierarchy or guiding people in a sequence in relation to the three spots A, B, and C within the place. Thus, the question could also in itself arouse curiosity, making the participants think deeply to find and analyze the concept. One "purpose" stated was that of allowing reflection, in which each work of art was seen as having more than one meaning from the participants' point of view, and that meaning seemed to be related to the individual's personal experiences and moods. For instance, one of the participants mentioned that "I can read [the artwork at spot A] in two ways; in the first impression I see it as a flower, and in the second impression it is just overlapping circles." This answer suggests a temporal effect leading the interpretation from figuration to abstraction. This effect, and its reverse (abstraction to figuration), could be an effect of interest for further investigation in preference studies, and wayfinding studies relating to art in hospitals.

5.3.4 Art and the emotions

The interview contained the question "How and why is art important in people's lives?" Participants all agreed that the importance of art in one's life is related to

one's individual experiences and emotions. Temporal effects, and temporally grounded or carried affects (Kopljar, 2016), play their part in this spectrum: Art could influence people's emotions negatively or positively, based on how the concept or motif of the artwork relates to previous as well as current situations. How one perceives an artwork depends on what one brings into the situation oneself. The participants expressed several aspects of art's importance in people's lives and particularly in the hospital setting, such as for stimulating feelings of pleasure, warmth, and creativity, making a place more relatable, readable, and livelier, dispelling negative energy, or just for fun: "art gives pleasure and decreases nervousness, and the warmth or the coldness of the colors and the concept of a piece of art can alter people's emotions" "art is creativity, the diversity of creativity could touch people's emotions" "art is life, if a place is without artwork, I feel that no one is living there; art makes places more lively and interesting" "art affects people's emotions" "art is a relaxing element that can impact our emotions negatively or positively based on its perceived meaning" "art is a way of expression, [a way] to release the inner energy in both ways, [whether] practicing or observing" "art is a way to release inner energy, either through creating art or [by] following the work of a specific artist" and finally, "art is fun and it occupies leisure time, and that makes us relax."

These findings align well with the thought that in hospital environments, art can be seen as having a positive influence on the patients' experience (Karnik et al., 2014). They also indicate that art makes the built environment more interesting and beautiful, and that art adds meaning to the environment, which can give people inspiration, happiness, and motivation in otherwise difficult life situations. As an environmental element, art can have emotional influence beyond its functional use (decorative use), which allows particular behaviors to occur (Withagen et al., 2012). Having artwork at home, at the hospital, or in the shopping mall might improve people's daily life, as well as reflect their personalities, their culture, and their history. Art can express people's thoughts and emotions, incorporate historical events or characters. Whilst some of these experiences are "individual," they may also help in overcoming a sense of environmental foreignness, as here in a hospital, where memories can be evoked that bring a sense of familiarity for a newcomer. Artwork may, in other words, in this sense also bridge the gap between cultures (cf. Macnaughton, 2007). From a wayshowing perspective, then, the question is the extent to which this possibility is taken into account when choosing and displaying art at hospitals.

5.3.5 Personal backgrounds guiding preferences

The participants' interaction with the studied hospital environment evoked a variety of memories from their lives, including their professional lives. As an example, the electrical engineer said, "You know that I'm an electrical engineer; because of this, the first thing that I will check is the lighting – if it works well or not. By the way, I don't like the yellow light, I prefer white light," to which I responded that yellow light is more common in Sweden. Here, it appeared that the participant preferred the light to which he was accustomed from his home country Syria, where white artificial light is more common. This participant focused on the lighting in each of the sections at the site (spot A, B, and C). He evaluated the amount of lighting, and how the interaction between his actual familiarity with the yellow light and the evoked familiarity with white light affected his impressions at, and his preferences of, the different spots (cf. Pedersen, 1978; Purcell, 1986; Kaplan & Kaplan, 1989).

According to the architect participant, the first elements that caught her eye were the works of art, the wall colors, and the seating. She said that "the art at the end of the room attracted me, and I want(ed) to go there;" then she walked towards the artwork. In other words, an initial equipmentality of these artworks, based in immediate perceptual attraction, directed the participant to walk towards them (Ahmed, 2006), but then, after a while, she said "I'm wondering why they chose this type of art?" Speaking about spot A, she also added: "I feel a sense of belonging here, because of the design of the room, the colors, and the paintings." This participant's interaction with the environment and its interior elements was probably influenced by her professional background as an architect here, which gave her a sense of familiarity with the place and its interior elements that made her feel at home (cf. Ahmed, 2006). The participant who is a mathematics teacher considered the abstract graphic artworks at spot A the most eye-catching elements, saying: "These paintings consist of basic shapes that I used to teach in mathematics class; the line, rectangle, square, ellipse, and the circle." These basic shapes recalled a specific part of her life that was related to her job as a teacher in her home country.

These reflections point again to diversity, to different ways in which interior design elements can function as meaning-making elements, relating to both common cultural praxis and individual memories. The participants' perception of these meaning-making elements is related to previous experiences, particularly

their occupations in their home country. As we have seen, simple appreciations, as well as stronger emotional experiences evoked by art, can be important from an instrumentality-oriented point of view in the hospital. The lighting, the artwork, the colors, and other interior elements to which the participants react immediately and at a first glance for unpredictable reasons can extend into having functions in the environment as landmarks, or familiarity markers, for wayfinding (Pati et al., 2015; cf. Lynch, 1960). It is impossible to design with the to capture every reaction, but nevertheless important to note that this investigation shows that diversity as regards patients' and visitor's backgrounds and capabilities as individuals and as cultural beings has to be considered. Solutions regarding spatial design, signage, and artwork need sufficient flexibility and resilience to meet these challenges, and artwork is the kind of interior item that is probably easiest to vary and adapt over time. We will return to the issue of art's exchangeability in the third study, by discussing the views of professionals on the issue of interior figuration.

5.3.6 Color contrast and meaning-making

In this study, females expressed more interest in art than males, in the sense that females interpreted the perceived idea in the artistic expressions, and linked their interpretation to their current situation or their profession. One of the females (the architect) stated: "these paintings have more than one message based on the interpreting person's experience". She interpreted the prospective meanings of the colors by saying "these colors are relaxing and calming, even if I'm in a hospital" "I cannot understand the ideas behind these paintings, but I like the colors" and "I liked this painting because of the hue of the purple color; it is beautiful and gives the painting an extra dimension, at least to me." She also criticized the white background of the graphic artworks at spot C; she felt that the similarity of the white background color of the graphic prints to the white painted walls on which they were hung created confusion.

Some of the participants failed to notice these graphic works because of the lack of contrast between their background color and the white painted wall. One could say in this case that the choice of background for the graphic prints reduces the chance of these artworks being perceived as visual cues for orientation and for finding one's way in the department. Even if the graphic prints in this department do not directly lead to any wrong action, one could say that a slight measure of

misaffordance (cf. Gibson, 1979) is the case here, in the handling of art, since the works are present, and in principle ready to work as markers in the environment, but they risk not even being noticed. Here, the participants' experiences indicate how colors in an environment can have a significant influence on what is noticed. Hue, brightness, and saturation of colors could trigger emotions like pleasure and calmness, but also irritation and uneasiness (cf. Lankston et al., 2010).

5.3.7 Preferences regarding the three spots

The participants had the task of walking through three sections to the spots that were chosen based on their difference in design. All the participants in the study liked the whole place (spots A, B and C taken together), and there were some differences in preference of the three spots based on their impressions of each individual spot's design, artwork, colors, and lighting. Two participants mentioned that "in general, no one likes a hospital;" however both of them added that the site was designed differently than what they were used to from their home country. The colors and the artwork gave them the feeling of not being in a hospital, especially at spot A. In other words, the inviting, comforting feelings created by the spatial differentiation of the place gave these two participants a sense of actual familiarity (Craig et al., 2012), even if they had not been to this particular place before.

When asked to rank the appreciation of the parts of the clinic tied to the three stops in the walking interview – i.e. spot A (entrance and reception area), spot B (junction area right before main waiting area) and spot C (corridor area ending with a glass emergency exit door) – spot C was the most appreciated, because of its more figurative and abstract mix of framed prints and watercolors and the incoming daylight, which gave the participants feelings of calmness, happiness, optimism, warmth, friendship, privacy, and relaxedness. Spot B was seen as less interesting than spot C, but more interesting than spot A, in regard to the acquired impressions of the spot. The reasons for this difference in appreciation of the spots, according to the interviews, was that the junction area at spot B has less artwork, many closed doors, fewer colors on the walls (which were mainly white), and more artificial lighting than spot A. Spot A was, as said, mentioned as appreciated because it lessened the sense of being at a hospital, but overall, the participants still regarded it as the least preferred spot of the three; there was some stress because it was the first spot they visited, and also because it

is the spot with the highest circulation. Furthermore, the design of spot A was not considered special because of its the colored walls (red and yellowish orange), the many small graphic prints with white background color, and the narrow entrance. The variation among the environmental features in the three spots impacted the participants' impressions of their inviting character (cf. Withagen et al., 2012), so that the sense of comfort and appreciation varied among the three spots. As an example, the comfortable feelings that participants' experienced at spot C were prompted by environmental features such as the artwork and the daylight let in through the glass emergency exit door at the end of the corridor, which made participants feel that this spot was more spacious and friendly than the other spots, even though it was just the end of a corridor.

5.3.8 Art and changing impressions of spot C

Four participants preferred spot C to the other spots for the above-mentioned reasons. However, four other participants' first impressions of spot C were negative for different reasons: there are numerous similar doors in the corridor; the visual context (with doors, buttons, electric installations, information signs and artworks) was experienced as a complicated feeling of being "within a box," and there were sensations of sickness. When these participants noticed the artwork on the walls at spot C, they found it calming, and their impressions changed in a positive way. One of these four participants said that "spot C has no colors and no paintings." I replied: "That's not so; there are quite a few paintings – you can find a painting every other step." The participant answered with surprise: "I didn't notice them, perhaps because of their small size or their white background that makes them merge with the wall, making them a part of the wall." After discovering the artwork at spot C, the participant changed her mind, saying "when I reached spot C I felt it was the end, and the repetition of the similar doors gave me the same sense of sickness that I got at spot B. But the moment that I noticed these paintings I had different feelings – tranquility and calm – and I forgot the feeling of sickness." Another participant said "spot C has a lowered false ceiling; in general, I feel I'm in a box, but these paintings give the space another dimension, and this relaxes me. But I don't like the white background of the paintings." A third participant's impression was that "spot C has almost the same design as spot B with an increasing number of rooms, no colors, and more paintings that I don't know what they are depicting. But these paintings make me

feel calm." The fourth participant said: "I'm a bit scared, everything around me is white, and also I do not know where I can go [from here]." This participant thought about the place and after a while she added: "If I follow these paintings they could guide me somewhere, and they helped me to calm down, but these paintings are unreadable to me and they have no relation to this place."

These four participants who initially expressed negative impressions of spot C later partly changed their views based on the artwork at the spot, which they had not noticed initially due to the white and indistinct background of these works, which allowed them to merge somewhat with the walls on which they were hanging. As regards what the art offers in terms of extending the possibilities to walk further at spot C, we could see examples of both misaffordance (in the sense that they are there to potentially guide a visitor, but were not noticed), and hidden affordances (in the sense that they provide feelings of calm, and also offer to facilitate finding the way back to the entrance area from which the participants came, emerging only after a while or after discussion) (cf. Gibson, 1979; Gaver, 1991). The paintings at spot C alleviated some of the negative feelings that the participants experienced from the overall architectural design of the spot (sickness, claustrophobia, and fear). These responses indicate that the contribution of visual art to improving the users' experience and sense of well-being in the hospital environment (Lankston et al., 2010) is significant, but also, importantly here, that this impression and sense of well-being is dependent on the interior environment to "put forth" these works so that they are noticed.

5.3.9 Brighter lights, white walls, and closed doors at spot B

Seven participants liked spot B more than spot A. The reasons given for this were that spot B was comfortable, gave a sense of feeling better, and there was more space. Each participant was influenced by the most attractive/unattractive element to him/her. As an example, one participant said that the white walls at spot B made her feel ill, and she also started to notice there that people were wearing white uniforms, which affirmed her feelings of sickness. Four other participants thought that the area around spot B felt larger than it really is because of the increased amount of lighting there. One of these four participants added that he felt better at spot B. When I asked him what he meant by better, he responded "Honestly, I don't know. But I feel more comfortable here." I asked him again: "Is there any element that makes you feel better as you said?" He replied that: "There are fewer

things and fewer paintings, I could say that. Maybe it is the lighting, or I don't know, maybe because it is more spacious than spot A." Using brighter lighting and fewer interior objects and less artwork to give the impression of a spacious room is a well-known architectural solution that seemed to give several participants a sense of comfort in my study. In general, the use of the color white on walls makes a place appear larger. According to the answers and opinions given in this study, keeping the walls undecorated, or hanging artwork in such spaces so that the white background articulates a sense of spaciousness, can be a way to vary otherwise dense or complex parts of the interior environment.

The most confusing feature at spot B were the many similar doors leading in different directions. Five participants got negative feelings from these doors: "It feels more complicated" "I feel I need to ask someone to find my way, because there are many closed doors" "I will get lost" "it is not easy to distinguish the rooms from each other" and "it is not easy to read the context, especially since there are no signs." Despite the complexity and confusion caused by the similar and numerous closed doors, however, the sense of familiarity gained through the more open space at spot B gave the participants comfort as well as enough time, after having left the reception area, to experience the place as evoking memories from different previous experiences (cf. Craig et al., 2012; Kaplan & Kaplan, 1989). One possible explanation for the complex mix of feelings here could be that as a visitor at spot B, one has just left the more uncertain state of the entrance and reception area and entered a more settled part of the clinic where there is more evidence of clinical work, making the participants express both comfort and discomfort with this new situation and recognize it more definitively as a medical clinic. At spot B, one can also sense the adjacent waiting situation, a more spacious area with more seating possibilities than in the first entrance area. Again, we see that time plays a role, and that the longer time one spends there, the more settled one might become as a newcomer to a department like this.

5.3.10 Individual orientation and preferences at spot A

Four participants said they disliked spot A for different reasons: "it is a normal place, nothing new, but it is confusing in regards to which direction to choose in order to go further" "as an entrance area it is small; the paintings there are so numerous and so small and they make the place smaller, [instead] there could be one or two big paintings here and that would make the place feel bigger, in my

opinion at least" "the design is normal, nothing special, but the colors and the closed doors make it feel like a jail" "it is confusing, and it isn't easy for me to decide which direction to follow." Three participants liked spot A for almost the same reasons, however. The first one, the architect participant, mentioned that "when I entered the place I did not feel confused, which I usually do when I'm entering a new place." The participant thought about the place for a while and then said "I get feelings of warmth; I feel like I belong to this place because of its colors and its paintings." Another participant said "it has good, harmonious colors," and the third participant's impression was that "it is a quiet and beautiful place, and its design is elegant because of the colors and the paintings."

In summary, my study shows that spot A was the least preferred spot compared to the other two spots. This was due to its design: it was seen as alternately nothing new and as prison-like, but importantly for this investigation, it was also seen as initially puzzling as regards which further rooms it was possible to access, or what ways to take to get further. Interestingly, some participants liked spot A for the same reasons, and the orientation in this case was not a problem because these participants felt welcomed by the design, reception area, and seating. Again, the study shows that the participants' preferences are based on their professional backgrounds, their experiences, their personal preferences, and differences as regards the evoked familiarity (cf. Kaplan & Kaplan, 1989; Ahmed, 2006; Craig et al., 2012). While individual participants expressed difficulty and unease in the reception area due to the many possible directions in which they could go, several participants found it easy to orientate themselves at spot A, due to what they considered the inviting character of the interior design. In other words, there was a sense of familiarity with the place for the participants who liked the interior design of spot A.

5.3.11 Navigation, orientation, remembrance, and wayfinding

The interview included questions about the participants' navigation within the study site by walking through the three spots A, B, and C, guided by me, the interviewer. Among the questions that I asked at the beginning of the journey, at spot A, was: "Which direction will you choose? Why?" There are two immediate possible directions for moving further from spot A: straight and left. Going straight leads to spot B after passing the reception area and then turning left at the small waiting area with fixed seating along a wall with a row of abstract framed

graphic prints. Going immediately left at the very beginning of the reception area leads instead directly into the larger waiting area located close to spot B, and the corridor leading to spot C. It is in other words a shortcut to the larger waiting area. Given a free, intuitive choice to enter the department, five participants chose to go straight (leading to point B) based on the interior design elements that attracted them to do so. The interior elements that drew participants' attention included two informative signs hanging from the ceiling, one saying *Anmäl dig här* ('sign in here') and pointing to the reception (see Figure 11), and the other saying *Utgång* ('exit'), with an arrow pointing toward the exit; fixed black seating placed beside the reception area; several graphic prints hanging above the fixed seating; and the reception window and counter itself with reception personnel inside. One participant did not rely on any physical elements to find her way. Instead, she chose to go straight forward, in line with a habitual behavior that she always follows when navigating. Two participants chose to go immediately to the left, thus leaving the reception area just after entering it. This choice was also motivated by a habit of following the closest choice to reach their destination, even if it later proves to be wrong. It could thus be proposed that the participants mentioned here belong to two categories: the first category includes participants who are influenced by design properties, and especially the potential of these elements to support one's stay and guide the way (Norman, 1999). The second category includes participants who follow their own personal habits in terms of navigation and wayfinding.

A sub-question regarding the chosen direction at spot A was: "Are there any physical elements in the environment that made you choose that direction?" Five out of the six participants who chose to go straight were attracted by the artwork as guiding elements to aid their navigation from spot A to spot B, more than by the other interior elements, such as metal markings on the floor, fixed seating, wall colors, a small informative screen indicating to patients when it was their turn to see the doctor, an informative sign hanging from the ceiling, and the lighting at spot A. These five participants were attracted by the artwork for several reasons. Some of these reasons have been mentioned previously, for example that the participants were not accustomed to seeing artworks in hospitals and that the artwork evoked a specific memory tied to a participant's life, for example his or her occupation, and other participants just liked art in general. This means that the art played the main role in influencing the participants' orientation when choosing to go straight when navigating from spot A to spot B. In other words, these works

worked as landmarks, or familiarity markers, by impacting the participants' orientation and wayfinding in an environment with which they were unfamiliar (Lawton, 1996; cf. Lynch, 1960; Pati et al., 2015). The works hence afforded the participants possibilities to orientate themselves within spot A, for some participants they even seem to show the way (by being both noticeable and welcoming) more than the other interior design elements specifically delegated to directing the way. (cf. Withagen et al., 2012).

Regarding the participants' navigation within the studied place, spot A was seen as the most legible context from the participants' point of view, because of the richness of guiding elements that impacted the participants' navigation within the studied place. Going further from spot B to spot C was considered more difficult: five of the participants stated that it was more complicated than spot A, citing three reasons: it has numerous doors, less artwork, and no signs. Three of these five participants did not notice the sign hanging from the ceiling, and the other two claimed that the sign was useless because it did not provide the navigators with any information to go further; the only thing written on it was Utgång ('exit') next to an arrow pointing to spot A (see Figure 17). In addition, the many doors confused the participants because there was no difference in their appearance or on their signs to help the participants distinguish the doors from each other during their attempts to move towards their final destination. However, the area around spot B contains, at a slight distance, the larger red painting to which the participants had reacted strongly – both negatively and positively – and in that sense, it has a guiding function, leading the participant further in that direction, as opposed to in the opposite direction at point B, where there was no art at all. As an artistic object with a color and size that can be seen from a distance (cf. Lynch, 1960), the painting invites the way-searcher to approach it and view it more closely from up front for further possible experience of its aesthetic appearance, which could be seen as a nested affordance (Gaver, 1991).

Aesthetic experiences are often separated from mere wayfinding in theory, not least because of art's right to exist beyond the domain of explicated functions. Nevertheless, in study two we have seen possible links between these two domains of experience. This junction is a primary interest in this thesis, and it will be discussed further in the next passage.

Figure 17. The exit sign with a pointing arrow at spot B.

5.3.12 Aesthetic experiences in orientation and wayfinding

After reaching spot C from spot B, the participants were asked to return to spot A. Navigating back to spot A from spot C is a traditional wayfinding task, in the sense that there is a known final destination to be found, in contrast to the first part with its conversational stops, where participants were only asked to choose the probable direction to the next spot in the studied place, without being given a final point to search for. In the interview at spot C, the participants were asked: “Do you think it would be easy to find your way back to spot A from spot C?” Four participants answered that yes, it would be easy; three participants answered that it would not be easy; and the last participant answered that it would be neither easy nor difficult. When the participants were asked why they felt finding the way back was easy, they responded that they had passed through the spots only a short while before; i.e., their actual familiarity with the place helped them to return (Craig et al., 2012). However, the two participants of the four who answered that it was easy had another explanation, saying respectively that “The paintings are noticeable elements, and I will use them to help me get back to spot A” and “First of all, I haven’t walked far; the distance is really a very short one, and I can see the orange wall at spot B, and that will guide me back to spot A.” It is clear from these answers that the equipmentality (Ahmed, 2006) of the paintings and the orange wall played a guiding function leading participants back to spot A from spot C. The participants who faced difficulties getting back to spot A mentioned different

reasons for this, for example that there were no apparent clues to help or guide the way-searcher back to spot A, for example signs to rely on. Another participant who initially claimed that it would be difficult to find her way back thought for a while and then said that the paintings could guide her way. I asked her how the paintings could guide her, and she responded that the paintings were everywhere (at the site) and that she could remember some of them, and could therefore rely on them to get back. Another participant answered neutrally that it would be neither easy nor difficult to get back to spot A. She explained her response, saying "There are some turns, the layout is not geometric, so in that respect it could be a bit difficult, but it is not a maze in which I'll lose my way."

We have seen that participants' responses vary between easy and difficult when it comes to expectations about finding one's way back from spot C to spot A. Here, this is related to the participants' perception of the three spots, which actually do exhibit differences, but they need to be experienced in movement; an immediate overview is not possible. Some participants found it difficult because they could not rely on the guiding clues that they normally used to orientate themselves, that is, informative signage, while the participants who found it easy had different ways of orientating themselves, such as relying on attractive and noticeable interior design elements in the surrounding environment. The interior design elements, such as the works of art and the color schemes, offered participants possibilities to navigate easily and to return to spot A from spot C. The participants perceived the artwork as attractive and noticeable elements; remembered as "landmarks" (Lynch, 1960), or familiarity markers (Pati et al., 2015), these elements could guide the participants toward their destination.

I asked the participants whether they believed it would be easy to find their way to spot A from spot C if they had entered the site from spot C without passing through spot A first. All the participants responded that reaching spot A would not be an easy task if they had entered the site from spot C. Five of the participants mentioned that were are no signs to guide them through the space, and that spot C contains many confusing doors of the same color, and that all of the walls there are white. In other words, the corridor that leads from spot C toward spots B and A is considered a homogenous environment, which makes navigation difficult. The lack of spatial differentiation influences the way-searcher's orientation and wayfinding negatively (Gärling et al., 1986; Baskaya et al., 2004). The other three participants had similar, interesting responses that were related to the artwork in

spot C: the art could help guide them, but the artwork would then have to be created and distributed in such a way so as to actually help people find their way; in other words, the works of art would have to be different from each other to give each spot a special character that distinguishes it from the other spots. One of the participants stated "I will use the paintings as marking points to help myself; the paintings are the only noticeable elements that I can rely on within this white world with its light grey flooring; these paintings could guide me if they were designed to guide the users." Another participant said: "I think if I followed these paintings I could reach spot A, because the paintings are everywhere."

On the whole, we could learn from these answers that an environment that lacks clear spatial differentiation or explicit signage makes orientation and wayfinding confusing, even if there may be differences with regard to sensed familiarity with the interior's objects (Gärling et al., 1986; Baskaya et al., 2004). Art objects may be of help here, as we have seen in the interviews, and serve well for wayshowing in the everyday case, since works of art of reasonable size are easily added and moved, for instance when hospital functions change within the larger buildings, and therefore require some interior renewal. The responses given here regarding the artwork as a guiding element are to some extent affected by the opening of the interview situation, when I introduced myself to the participants and informed them that my research studies the influence of interior design and objects, such as artwork, on wayfinding, with the aim of improving the environment inside hospitals. However, this introduction gave me the possibility to follow up more closely on the role of artwork, and also to actually get advice from the participants in their roles as newcomers and experiencing "experts" (Till, 2005).

From a spatial affordance point of view, the homogenous environment could be considered to stimulate a "correct rejection" (Gaver, 1991) of wayfinding, in the sense that there is a lack of perceptual information for guiding the participants. It appears that for some visitors, the noticeable elements, for instance the artwork, can be seen as hidden affordance that is not immediately perceived as guiding newcomers and visitors, but would still be perceptible, if the paintings were diverse and placed in such a way so as to deliberately guide people. The responses in the second study are interesting, as they express a direct spatial design conception in terms of how the art is chosen and distributed within the space of the department. From a pragmatic perspective, the intended "usefulness"

of the artwork must thus be taken into consideration as part of the way-showing strategies if these works are to be used as guiding elements within the hospital environment.

5.3.13 Guiding others in wayfinding

A final question to the participants regarded their own role as mediators of wayfinding and orientation: “How would you describe this place to a person who was unfamiliar with it?” Six of the participants responded in more or less the same way, namely that it was comparatively easier for them to describe spot A and spot B than spot C for a person unfamiliar with them, the reason being that the homogeneity of spot C makes it difficult to describe. Five of these six participants stated that the artwork at the studied place comprises noticeable elements that could be used as a description for orienting a person unfamiliar with the site, and one of these five participants, who relied on the big red painting as a “landmark” (Lynch, 1960) for orientation, stated that he would give this description: “after entering the place, walk straight to reach the paintings on the wall above the waiting seats, turn left and walk a bit further. On the left hand you will see a big painting with red and black colors; follow that direction, then you’ll need to ask someone to help you continue – I cannot describe it any further, because as you move forward everything will begin to look a bit similar.” I asked this participant why he mentioned the big red painting explicitly, but none of the other paintings, and he responded that compared to the other paintings, it was the most recognizable painting because of its size, its colors, and its placement. Two participants stated that it is not easy to describe the place at all, and that they would advise someone who was unfamiliar with the environment to go to the reception desk and ask for help. Furthermore, these two participants preferred to rely on informative signs or directions such as “straight ahead” “right” and “left” to orientate first-time visitors, instead of relying on the physical interior elements within the place. We can conclude that the physical elements could be used for guiding other people verbally to some extent, but only in the parts of the department where there were clear landmark qualities. Otherwise, signage and direct direction-giving (pointing and straight ahead, left, right) were considered preferable as guiding techniques.

5.3.14 The importance of art in terms of wayfinding

The participants experienced the site while they were being asked several questions, one of which concerned the importance of art for wayfinding in the hospital environment: “Is art important in hospitals for wayfinding?” Three participants responded that art is important in hospitals in terms of wayfinding. One said: “I had never thought about that previously, and had I been asked before this experience, I would have responded that I didn’t think so; however, I realized now how important artwork could be for guiding people.” Other opinions along this line were: “Art is important in terms of influencing people’s emotions, be it negatively or positively, based on each person’s character; furthermore, the artwork could guide people find their way, and my point of view is that a place without artwork is an empty place.” The third participant said: “I’m not sure [that art is important in hospitals for wayfinding], but if the artwork was created for the purpose of guiding people within a place, it could work well, because it helps people distinguish the places from each other and to remember the function of each place based on its art. And don’t forget that artwork gives people a feeling of tranquility and calm.” It is important to mention that the participants who had confidence in the importance of art in terms of wayfinding all had previous personal experience with art through their occupations, having attending art classes at school or developed their own skills through crafts or drawings, and were also interested in specific types of art and the process of producing artwork. This means that perhaps not everyone would find artwork equally helpful for wayfinding, since recognizing its function as a landmark or familiarity marker for orientating oneself in a specific setting might require some previous knowledge of, or at least an interest in, art.

Another three participants had initially stated that they believed that art was important for wayfinding, but those participants later felt that art had no particular importance in hospitals in terms of wayfinding, referring to the fact that the paintings at spots A, B, and C could fit in many different places; they did not feel that the paintings seemed to have the specific purpose of facilitating people’s navigation within the studied place. However, according to these participants, art could have been important if the paintings were different, or if the artwork were perhaps of a different kind, with a specific purpose; that is, if the artwork was designed to achieve an intended purpose – in this case wayfinding. One of these three participants said: “In the beginning, I thought that the artwork was important

for wayfinding in hospitals, but I changed my mind when I realized that the paintings are everywhere. However, if every department has a different collection of artwork with a studied purpose to guide people, the artwork could contribute effectively to guiding people." Other participant responses in the same category were: "No, I do not think so. These paintings could be in other places, meaning that these paintings fit different places, but if they used a different collection of artwork for each place, then there could be a possibility to rely on these paintings as landmarks for recognizing the places from each other." Another participant considered the paintings a "remembrance element": "No, I do not think so, but these paintings could be a remembrance element, not a guiding element." Again, considering the artwork a remembrance element means that it could also be a guiding element (cf. Edward, 2000). In contrast, one of the participants had a more definite answer: "I don't think so. There is no relation between artwork and wayfinding, and artwork is merely an aesthetic element". This response is possibly related to this particular person's experience of art, which included buying and collecting pieces of art. Overall, there can be both ideal and unconscious responses to the direct questions in the interview situations in these first two studies, revealing both prejudices and preclusions about art's impact on our lives.

5.3.15 Remembrance of interior elements

The interior design elements in the studied place stimulated the participants' emotions based on each individual person's character and personal background. The participants' responses showed how their memories affected their responses. One of the interview questions focused on the most remembered elements within the entire place (spots A, B and C): "Do you think that you will remember anything from this place when you get home? What? Why?" All of the participants stated that the artwork would be the most remembered element, followed by the colors of the walls, the lighting, and the fixed seating.

We can see that some answers regarding art as wayfinding support concern distinguishing departments or places from each other, but little refers to paths within each department. On the whole, art is well remembered as an element, but is not always considered to support wayfinding. It can be concluded that the reason why the artwork was regarded as the most remembered interior element on the whole in this study was in part because the artwork helped a few of the participants to find their way, and partly because it alleviated the uncomfortable

feeling of being there trying to orientate themselves, but perhaps mostly because it was a somewhat unexpected and appreciated element, if one takes into account that the fact that the informants were not accustomed to art being displayed in hospitals in their cultures of origin. Again, art's primary status as a remembered object was perhaps also due in part to the fact that it was explicated as an interview theme, and its importance was therefore re-capitulated by the informants, who nevertheless vividly described why it was remembered.

5.3.16 Artwork evoking and provoking memories

Half of the participants considered the big red painting at spot B to be the most memorable artwork of all of the works at the three spots because of its size, its color, and its concept, which provoked the participants' memories (see Figure 15). The reactions to this particular artwork also relate more clearly to the fact that the participants are newcomers to the Swedish culture, and it therefore deserves some extra attention, which follows.

The big red painting elicited reactions from all of the participants, both in positive and negative ways. The painting evoked and provoked memories from the participants' home country, Syria. The painting's large size, its color, and its concept evoked positive childhood memories in some participants, especially memories from school. The childhood memories were related to the type of paintings that the participants had seen at school and which were used as decorative elements in that environment, as well as to projects in school art classes. But the painting had negative connotations for others. The same components that attracted four participants positively triggered memories of the acute and confused situation in Syria for three other participants, who interpreted the color of the painting in a negative way – the red color reminded them of the bloodshed of the war, the black color the destruction and the hatred, and the green and the white colors represented the greenery and the welfare. As an example, one participant who disliked the big red painting said: "It expresses the situation in Syria – blood, pain, destruction, slaughter – and this little green color represents the greenery and welfare in Syria when it was in peace." He began to cry and was unable to speak. Contrarily, one of the participants who liked the big red painting for the same reason that the previous three participants disliked it – namely the war in Syria – saw the painting from a different angle. She felt that "this painting reflects the fire inside me (inner pain), where these raucous colors touched on my

unstable situation in Sweden and my family's suffering because of the war in Syria." The big red painting helped her to start speaking out loud about her memories of war back home and her fear of losing her family, which she said helped her somewhat in releasing the negative energy she was carrying in her body and her mind through simulating her pain and worries. A work of art whose colors agitate viewers could provoke anxiety and stress – this is especially true of the color red, which can be considered one of the colors that can induce a state of anxiety (Jacobs & Suess, 1975), whilst the colors of an artwork that do not agitate viewers and instead give them a sense of well-being could evoke calm (Valdez & Mehrabian, 1994).

One of the interview questions asked was about the type of visual arts that the informants preferred and why. Three out of four males in this study answered that they preferred photographing places and faces, especially for documenting events and comparing how they looked before the war with how they will look after the war. This might be related to the fact that males in such situations become more accustomed to acute life-or-death situations during the war, and often see it as their role to protect women and children and supply their families with food and medicine, and are constantly looking for places to move their families to keep them safe. Based on these difficulties, spending more time in direct war zone situations, males are also more used to seeing the violent destruction of life, bloodshed, and dead bodies, than females are. One participant said "I would like to take a photo of my family before and after the war, to see the missing members of my family." This participant is sixteen years old and living alone in Sweden; all of his family is still in Syria. These participants saw the documentation of faces before and after the war as a way to express and illustrate the extent of pain and suffering that they are going through, and how this suffering and pain are causing them to grow old, even if they still are young. Using art and depiction, in these cases photography, to document what a person loves and likes is a challenge in the surrounding circumstances. It becomes a matter of keeping the previous memories, for example of their families' faces, alive even if they are not. These existential aspects and possibilities of art can also be used in methods such as art therapy, which has the potential to release a person's negative inner energy and to highlight the strong part of our characters: "Art helps people express experiences that are too difficult to put into words" and to "explore the meaning of past, present, and future" (Stuckey & Nobel, 2010, p. 256; see also Puig, Lee, Goodwin & Sherrard, 2006). In the case of the refugees, the role of art and pictures had, in line with how

it can be used in therapy, a direct existential, and commemorative, meaning for them.

5.3.17 Aesthetic preferences and familiarity with the hospital as a workplace

In general, all of the participants responded positively to the question "Do you like the site? Why or why not?" The participants all liked the entire environment (the whole department) with some differences based on personal perspectives and different aesthetic preferences. The actual experience of the environment enabled the participants to gain additional information about it, but it also evoked previous experience, thus the combination between actual and evoked familiarity could influence the participants' preferences. For instance, in the beginning, a participant who had previously worked as a nurse had a different personal experience of the studied department than to the participant who felt sick and stated that "no one likes hospitals." On the contrary, the former nurse liked the environment and described it as "comfortable," relating her statement to the fact that she missed her work and her life in the hospital, where she used to spend most of her days helping the sick and the injured. Regarding the different preferences for art that people can have, and based on her experiences as a nurse, she proposed to "paint the walls and use simple paintings indicating the function of the place; the paintings cannot be scary or provoke users however, and the color coding on walls, floors, and so on should be a supportive element to the paintings to help people's navigation, especially uneducated people who cannot read the signs, and who [might] have vision problems." She added that from her perspective, linking the colors with the artwork could be the easiest way to provide users with an environment that includes both aesthetic aspects and guiding elements. The staff (doctors, nurses, and other employees), who spend most of their days in the hospital with the patients and intimately know the hospital environment, could hence have valuable advice regarding the interior design and the artwork and about how these interior elements could aid orientation in the hospital setting. To some extent, but usually only a limited one, hospital staff can take part in the making and remaking of hospitals and wards. People with experience in the hospital environment, gathered from working there on a daily basis, could thus assist the designers, not only by specifying their own immediate needs, but also determining criteria regarding the environment's way-showing, how obstacles may appear, and giving suggestions

on how to improve the environment to facilitate way-searchers' (patients' and visitors') wayfinding and orientation within it. It might however sometimes also be difficult for staff, who are overfamiliar with a specific hospital setting, to understand the newcomers' experiences of and reactions to the same setting (Cohen & Cohen, 1979). The spatial differentiation (complexity) of a place, such as the colors and paintings in it, could on the other hand affect both those who are familiar with it and those who are newcomers to it, in terms of aiding or hindering their orientation and wayfinding within the place (Gärling et al., 1986; O'Neill, 1992; Baskaya et al., 2004). In the last study of this thesis, study four, the inclusion of staff and its relation to art and interior design will be addressed somewhat more in depth, and thus also the issue of how newcomers in relation to those well acquainted with a place, react to elements of hospital space.

Some of the participants, who had been living with their children in Sweden for two years at the time of the study, were already somewhat accustomed to going to the hospital in Sweden for a variety of reasons, such as visiting an in-patient, for a personal appointment with a doctor, or taking their children to the hospital. These participants mentioned that they noticed some works of art that were related to the place itself, such as artwork depicting a specific part of the human body, that indicated the site's function. One of the participants had had an appointment for her son at the Ear, Nose, and Throat Department to check her son's hearing; in that department, she had seen a special type of poster/artwork used as a decorative, aesthetic element that is also an informative wall element, telling about the ear and its diseases. The participant saw this poster as an aesthetic, intelligent, and informative piece of art that presented information about a specific part of the body and its possible types of diseases in an easy and understandable way. The evoked familiarity (Craig et al., 2012) with such artwork, based on this person's previous experience of a Swedish hospital setting (cf. Kaplan & Kaplan, 1989), affected her aesthetic preferences for a specific type of art in hospital spaces – namely the medical poster.

5.4 Discussion of the First and the Second Studies

5.4.1 Interior design elements that impact orientation and wayfinding

We have seen in both the first and second studies of this thesis that as one interior design element among others in hospital spaces, artwork can make a positive contribution to patients' comfort, as well as facilitate their orientation and wayfinding in the hospital setting. In the second study, the participants considered and relied on the artwork as remarkable elements, guiding elements, and remembrance elements, which could be said to have impacted their orientation at the study site in a positive way, as well as helped them to describe the place for a person unfamiliar with it. In the first study, the artwork was considered one of the most helpful types of interior design elements, along with informative signs for aiding the participants' wayfinding in the studied place. In the second study, the artwork was noted and experienced differently as the participants went deeper into the clinical areas after passing through the entrance area. The artwork was seen as both markers and comforting elements in the environment, but also as lacking marker capacity when the color schemes were too similar to the wall behind them. The sense of comfort expressed by the participants in the second study was partly due to the motifs of the art, and partly due to the color of the walls, or the dimensions of the rooms or corridors, but could also be partly explained by the fact that the space became more settled as a clinical place as the participants went further into the department.

5.4.2 Eye-catching interior design elements

In the first study, the artwork was one of the most eye-catching elements besides plants, skylight, furniture, wooden material on walls, and the tilted reception cube. The participants' occupations and familiarity with art influenced their observations in that study of the interior design elements. One example of such carried affordance (Kopljar, 2016) was the fire engineer, who immediately noticed the potentially highly flammable wood on the walls as a safety consideration. In the second study, the artwork was considered the most eye-catching element besides the colors and the lighting of the place. That could relate to the fact mentioned by the participants, that artwork is not commonly displayed in Syrian hospitals, which were the informants' basic frame of reference. In other words, "[they were] more

sensitive to [certain] features in a strange surrounding than at home" (Light & Smith, 2005, p. 44). Facing an unfamiliar element makes a perceiver pay particular attention to it and its properties (Light & Smith, 2005, p. 44; cf. Haapala, 2005). This was also the case for the participants of the first study, who reacted positively to the artwork in the waiting area at the outset of their exploratory tour. Another reason for the above-mentioned reactions could be that the artwork may provide the participants with perceptual information in steps, as nested affordances (Gaver, 1991) to orientate themselves within the studied places; i.e., besides the perception of its immediate aesthetic features, the perceived properties of an artwork can afford the perceiver to actions, such as orientation and remembrance (Norman, 1988). In my studies, I also found that not only unexpectedness, but the recognition of, or familiarity with, an interior design element or art object caught the participants' attention in both the first and the second studies; this is what happened when the architect, the electrical engineer, the mathematics teacher, the nurse, and the fire engineer specifically mentioned the features that were most familiar and relevant to them from their occupations and their home country.

5.4.3 Different artwork affecting the participants in different ways

Different art has different potential to impact the people that stay for shorter or longer periods of time in the hospital environment (cf. Nielsen et al., 2017). The participants in my second study liked the artwork in the studied Department of Infectious Diseases, stating that it created a friendly atmosphere and an inviting environment. Even so, half of the participants would have preferred to change the artwork if given the chance, substituting it with more clearly articulated works for the sake of wayfinding, but also with landscape motifs in order to create more comfort and calm (cf. Kaplan & Kaplan, 1989) in the hospital setting, which could also be part of how people orientate themselves in the environment. According to Ahmed (2006, p. 7), "The question of orientation becomes, then, a question not only about how we 'find our way' but how we come to 'feel at home'". In other words, the artwork could play an important role as an interior design element in giving the participants a sense of familiarity, even if they are not familiar with the environment as such, and that could have a positive impact on the participants' orientation.

In addition, beside the colors and the lighting, the difference between the works of art in the second study helped the participants to distinguish the three

spots in the studied place from each other. Several participants mentioned that the artwork played a main role in distinguishing them, since the artworks influenced their overall impression of the three spots. However, the participants initially disliked one of the spots, before noticing the artwork hanging on the walls at there; these works led them to change their minds and ultimately to appreciate that part of the clinic most of all the three visited parts. The participants did not grasp the perceptual information of the artwork's affordance at first. In other words, a hidden affordance became a perceptual affordance only after a while, and then facilitated the grasping of the properties of the whole context (Gaver, 1991; Ahmed, 2006).

The appreciation of the three spots in the second study was different in relation to the participants' orientation within them, an orientation brought on by the "legibility" (Lynch, 1981) of the places' respective environmental features, as well as the complexity (the spatial differentiation) of each environment at the three different spots. The readable and noticeable features at the three spots enabled the participants to grasp the affordances of the environmental features, and the heterogeneity of the three different spots promoted the participants' orientation within and between them. The heterogeneous environment could enhance the user's orientation, whereas each noticeable element has its own characteristics that make it distinguishable as a landmark (Lynch, 1960; Mollerup 2009). Some difficulty was presented by the homogeneity at some of the spots in the second study, where the physical features of the environment were repetitive and similar to each other (cf. Gärling et al., 1986; Baskaya et al., 2004). For instance, the numerous doors at a node and corridor space confused participants in study two and made their orientation more difficult, particularly as all of the doors looked the same and there was no signage indicating the destinations to which the doors led. This is similar to the first study in my thesis, where the numerous choices for an exit that would lead toward the intended destination made the participants' orientation within the studied place difficult. In cases like these, the homogeneity of the environment hinders participants in making "correct rejections" (Gaver, 1991) when searching to find their way, since the homogenous environment does not afford the way-searcher the distinction of any noticeable and memorable features that may enable them to orientate themselves easily (cf. Gärling et al., 1986; Baskaya et al., 2004). However, in certain, distinct areas, homogenous environments can have a positive aspect to them, giving visitors a sense of calm and tranquility. Similarly, the negative side of the complex and heterogeneous

environment is the possibility that it may evoke overwhelming and uncomfortable feelings in its visitors.

5.4.4 Positive and negative reactions to the same artwork

In the first and second studies, two specific works of art influenced participants' experiences in both negative and positive ways. These different experiences were based on what the properties of these works afforded in relation to the individual participant's previous experiences from their working life, of art, and of the Swedish (hospital) setting. In addition, participants' interpretations of the artwork were impacted by their current situations and previous memories; backgrounds thus affected how the participants' felt about the works at the time of the two studies. For instance, in the first study, the wooden material on the walls, the furniture, the skylight, and especially the plants, evoked some participants' memories of the greenery and the nature of their home countries of Iraq and Syria. In the second study, a relatively large painting with dominant red colors evoked both positive childhood memories from school days, but also triggered negative memories of the war in Syria with its dynamic abstract forms and colors. The participants' willingness in action of moving towards, or away from, this "big red painting," or the large hanging sculpture in the first study, were thus impacted by the emotions evoked by their perception of these objects and milieus (Ahmed, 2006). Hence, emotions could impact the way people orientate and find their way, including an avoidance of certain objects or environments due to negative associations.

Provoking bad or difficult memories is not altogether negative; it could also have a positive impact on the perceiver by allowing for a release of negative energy, as one of the participants in the second study mentioned in regard to the "big red painting," which evoked and directed this participant's anxiety regarding the uncertainty of her situation in Sweden at the time, as well the fear and the pain from her experiences in Syria.

Complex and negative feelings towards a work of art may make such interior design elements especially memorable, but they also need to be considered in all aspects when designing or displaying the elements. Potentially provocative artwork can be disturbing on the one hand, but it can also be supportive in terms of orientation. This was the case in the first study for example, where participants

deemed the artwork in the reception hall of the Department of Radiology weird and ugly, but because this also eye-catching, and it was thus also seen as helpful in terms of aiding orientation and wayfinding within the place. After experiencing the interior design elements in the Department of Infectious Diseases, the participants in the second study touched on the importance of artwork in the hospital environment for the way-searcher, stating that art could be a guiding element if the right requirements regarding articulation and diversity were met. This can be stated as way-showing qualities: in order to function as landmarks and familiarity spots (Lynch, 1960; Mollerup, 2009; Pati et al., 2015) that guide visitors to an intended destination within the hospital environment, the works of art have to be created and displayed in such a way that they differ from one another, as well as relate specifically to the site in which they are positioned by providing sub-spaces for gaining calm and temporary orientation.

5.4.5 Influential factors in terms of aiding orientation and wayfinding

The findings of the first study showed that visitor's attention to interior elements whilst physically present in a hospital space could be seen as both part of, and as additions to, the recognition in early, cognitive approaches to orientation and wayfinding (Chen & Stanney, 1999) that environmental features have to be considered important. The findings of the second study further emphasize the importance of the environmental feature's role for wayfinding and orientation, where works of art function as one of the environmental features in that they are considered remarkable elements, guiding elements, and remembrance elements. Furthermore, besides supplying visual cues, artwork makes an emotional contribution in relation to wayfinding and orientation. Artwork could hence guide way-searchers toward their destinations, as well as give them a sense of tranquility and a welcoming atmosphere, which might also impact the way-searcher's orientation in a positive way.

The heterogeneity of the environmental features could be considered an additional factor in itself that influences the way-searcher both visually and emotionally. The spatial differentiation (complexity) of an environment, such as the variations in types, shapes, and colors of walls, artwork, furniture, doors, and so on, could influence the way-searcher's orientation and wayfinding, whether s/he is familiar with the environment or a newcomer to it. However, this complexity of the environmental features should be considered and treated well

from the start in design processes, and it should also be manageable in times of change; otherwise, this spatial complexity could hinder the way-searcher's wayfinding and orientation rather than facilitating it. The environmental complexity and the variety and quantity of physical elements that a newcomer to a hospital encounters have an emotional impact and can evoke, as we have seen, both pleasant and uncomfortable memories, which in essence are impossible to foresee, but that can be considered as a possibility. That way, physical elements could be allowed to work not only in terms of their specific direct and explicit functions, but as remembrance elements, guiding elements, and remarkable elements that can ultimately also facilitate wayfinding and orientation.

The investigations of this thesis do not delve deeply into the complex area of aesthetics or the general study of preferences, pleasure and well-being, at least not as theoretical areas. However, insofar as these aspects have a direct or indirect relation to wayfinding and orientation in hospitals, they have been considered aspects that have to be taken into account. A question that arises, then, is the extent to which these quite complex aspects are addressed in the moments and processes when these hospital environments are defined, designed and given their figuration. The interviews in studies 1 and 2 have shown examples of both easy-to-read and almost unreadable design intentions as regards how an interior's complexity is handled in spatial wayshowing. Wayshowing, if taken to mean the intention and the issue of how the environments are conceptualized, conceived of and designed so as to guide wayfinding, is clearly an enormous, complex area, tied to planning and production of buildings, designed objects and art – but in order to still address the issue of wayshowing, we need to at least touch upon the issue of how choices in these matters can be part of professionals' views, especially here regarding the production and placement of artwork in hospitals.

In order to explore how professional artists, art commissioners and architects work with the interior elements of hospital environments, especially in terms of using artwork for showing direction or designing specific departments so that they stand out in terms of having their own theme, I will now turn to the third study of this thesis, in which I have interviewed three different art and design professionals.

Third study
Professionals' perspectives on the contribution of interior design and artwork in hospital spaces

6. Third Study: Professionals' perspectives on the contribution of interior design and artwork in hospital spaces

6.1 Introduction to the third study

The previous two studies have raised several issues regarding how to facilitate wayfinding and how to make spaces that can "respond" to visitors' needs to orientate. So far, we have seen that the order of the space has both a rational and an emotional value for visitors, and the question that arises is the extent to which different art and design professionals' approaches address those values when they design hospital interiors, make artworks for hospitals, or choose and place these artworks in the hospital environment. Important questions in this third study that arose from the first two studies are: What is the relationship between the architect/artist and the end user? Do art- and design professionals address the users and their needs directly during the design process, or do they produce their works based on perspectives relating primarily to projective traditions in a more technical sense? Questions like these returned during the interviews with the visitors in both the first and the second studies of this thesis, as confusion but also appreciation became part of their orientation. I therefore decided to contact three art- and design professionals – one artist, one art administrator and one architect – to discuss the process of interior design and the choosing of artworks in and for the hospital environment.

This third study is primarily concerned with the intentions and views behind making and installing artworks for and in hospitals, including the roles of collecting, choosing, and distributing artworks. The study also touches on the relation between interior design and architectural design that defines the overall interior plan and spatial layout. In order to be able to articulate some relevant issues regarding professional intentions, I conducted a set of longer conversational interviews, which were recorded, then extended/corrected in written

correspondence (see the preceding chapter on methodology). These interviews are presented in three sections, each devoted to one interview, where the interviewees have had the possibility to comment on and adjust my accounts of the original transcript. Along the way, I extend my review of the answers in the interviews into reflections that recapitulate some of the theories about wayfinding, orientation, and affordance that are described in the theoretical background of this thesis. In the beginning of each interview section, I will also discuss what an artist, an art commissioner, and an architect think about their own work and role as maker of art and/or interior environments. While these discussions are to some degree outside of the explicit issue of wayfinding in the hospital environment as such, they are still nonetheless relevant, since they provide insight into the intentions behind hospital art and its relation to other features of hospital environments, which have a bearing on orientation and the effects of well-being on orientation and wayshowing.

The first of the interviewed professionals is the artist and landscape architect Monika Gora,[5] who works artistically by combining aspects of landscape architecture, public art, and building design. The face-to-face interview with Gora was focused on the process of creating and implementing works of art to be placed in hospitals. The second interviewee is Nilsmagnus Sköld, who is a visual artist and designer, as well as the art project manager for new hospital areas in Malmö, Lund, Helsingborg, and Ängelholm. Sköld is the person responsible for collecting and placing the artwork in the Department of Infectious Diseases, which is where the walking interviews in the second study took place. The main topic of the face-to-face interview with Sköld was the collection and selection of artwork for the hospital setting, as well as composing interior hospital spaces, including how that relates to wayfinding. The third design professional interviewed is Anders Svensson, who has a background as a practicing architect, being a partner and CEO of White Architects. Shortly before the interview, he became a professor of the practice in Leadership and Management of Architecture at Chalmers University, and he drew on his long experience as a designing architect when we talked via Skype about the integration of interior design objects within architectural design.

[5] Monika Gora (born 1959) holds an MSc in landscape architecture. She is a member of the National Association of Landscape Architects (LAR, MSA) and the Swedish Artists' National Organization (KRO). (http://gora.se/about-gora)

I will first briefly clarify my use of three terms used frequently in this chapter: "art," "interior design," and "architectural features." These three terms are, of course, impossible to capture in a simple way as traditions, genres and experiences, but it is nonetheless useful to state my approximate understandings of the terms, in order to show that I see them here as having certain mutual relations, spatially and culturally. Since art is of specific importance in the interviews, it should be stated first that art has no standard definition. In his book "Art and the Aesthetic," the American art critic George Dickie (1974) made an attempt to define art in institutional terms and in a classificatory sense. According to Dickie, a work of art "is (1) an artifact (2) a set of the aspects of which has had conferred upon it the status of candidate for appreciation by some person or persons action on behalf of a certain social institution (the art world)." (Dickie, 1974, p. 34). Even if art can be seen as something that has to be socially or institutionally accepted as art, it can also be defined by emphasizing the role of the artist, and that each artist, to a varying extent accepted by "the art world" (Dickie (1974), has a vision that s/he wants to share with the public through the materialized work. In these interviews, I will look at artistic work as the imaginative skills that express an artist's ideas related to common themes, presented as his/her own preferences, in objects affected by the current contextual circumstances. By relating art to its immediate contextual circumstances, such as the built environment, I emphasize the role of artwork as physically situated here. When it comes to design and architecture, I have also limited myself to the pragmatic view of how they appear as environmental features. In this study, interior design is regarded primarily as the preparation and construction of interior spaces and physical objects, usually after the building construction is finished, with the intent to promote certain functions and experiential qualities of the building. Finally, the architectural features are regarded here as the spatial components and qualities of the building structure itself, designed, constructed, and experienced, as built environment.

6.2 The process of creating and implementing artwork to be placed in hospitals

Artwork has various roles to play in hospital environments. It contributes to an overall aesthetic experience (including having a positive or negative emotional effect), but it can also have rational purposes like improving well-being, alleviating stress, supporting wayfinding, and so on. The parts that art plays in hospitals are experienced differently by different individuals based on their occupations, cultures, backgrounds, and previous experience of art and of hospitals. In the two previous studies, I have tried to understand and explain the way-searchers' perspective regarding the artwork displayed in the studied places (the reception hall of the Department of Radiology and the Department of Infectious Diseases) at SUS Malmö. These studies showed that art can be experienced as landmarks, as aesthetic qualities, and as important emotional triggers, but that it can also be ignored or go unnoticed in relation to a way-searcher's orientation. In order to also access the view of an artist who has worked in the hospital context, I contacted Monika Gora, who was commissioned to design a work of art for the emergency care building at SUS Malmö in 2017.

My interview with Gora touched on the following topics and headings: *The meaning of art in hospitals and its importance in our life; Art commission, obstacles and overcoming them; Individual experiences of art; Criteria and limitations regarding artwork in competition and commission situations; Periodic maintenance influencing the installation of artwork; Requirements for a successful artwork that works well in hospitals; Artwork, wayfinding, orientation, remembrance, and communication; Considering the experiences of migrants or refugees in commissioned art works; and Thoughts and criteria for way-showing in hospitals.*

6.2.1 The meaning of art in hospitals and its importance in our lives

The interviews were designed to open with the most general questions, such as those about an interviewee's occupation. When I interviewed the artist Monika Gora, I asked her to define what art is for her. Gora, whose definition is partly based on her experience as an artist and landscape architect, replied that "art is something you cannot grasp at first, something to explore and discover, that catches your attention and makes you want to explore it." Gora's vision is to create

unpredictable artworks of art that spark people's curiosity, and makes them want to explore them, as well as to experience their space and environment. This is also what Gora herself likes to experience when encountering art.

Questions about art may concern art in general, relate to public art or, as in this thesis, be directed more specifically at the relation to public art in hospitals. These three categories are important for artists in their profession, but they also provide three different presentational contexts for "the public," or the receiver: the first approaches by free will, the second approaches as an individual in public space, and the third is situated in the specific context of built facilities for medical treatment. In the interview with Gora, I did not only address art in hospitals specifically; the interview started as a discussion of what art meant to her generally, which brought up the existential and social qualities of art. Gora quoted Winston Churchill: "When Winston Churchill was asked to cut arts funding to support the war effort, he replied: 'Then what are we fighting for?'" It indicates that art can be considered the core of society, and that this has been so for a long time. This impacted Gora so deeply when she first heard it that it moved her to tears, and it is hanging on a whiteboard in her studio. From this quote – which the British historian Richard Langworth (2017) confirms has been ascribed to Churchill – as in many other ways, we know that art can have a deep impact on our lives, not least in terms of the curiosity, relief, or existential thoughts it may spark, which might be of specific importance in hospital environments (Macnaughton, 2007; Rollins, 2011). According to Lloyd, Wong & Petchkovsky (2007), the arts can even have a contribution in mental healing, such as through art therapy. In addition, Lankston et al. (2010) state that art affords better health, well-being and an improved experience of the health-care environment for patients, visitors, and staff. Without going into precisely what it is about art that might lie behind our feelings of well-being when we encounter it, Winston Churchill's quote underlines art's existential and social importance. One could say that art both reflects, and depends on, social situations. Gora furthermore pointed to the possibility that art could be seen as somehow ahead of its time, signaling the development of society, since it reflects what is happening at the moment, and also because it can trigger discussions and actions that might have an influence on the future. Gora feels it is important to create and use art to carry on a discussion regarding our environment. This aspect of taking an active part in reflecting and influencing society, and having an existential meaning, is thus part of what we could say is art's effect, and we could say that this side of art also has the power to

orientate us in the world simply by our experience of it. In a more pragmatic regard to this, Gora also had the general thought that works of art can be physical landmarks: they could be part of an exploration theme, and they can make different places distinguishable, contributing to people's physical orientation within each place.

6.2.2 Art commissions, obstacles, and overcoming them

In Sweden, the most common way to procure public art for hospitals is through competitions or direct purchases from galleries, but there are sometimes exceptions when an artwork is directly commissioned from an artist for a specific location in the hospital. This was the case when Gora did the project La Familia[6] at the entrance of the emergency care building at SUS Malmö (see Figure 18). Gora and three other artists were invited to design different artworks for different places within the emergency care building prior to the building's actual construction. The four artists started their work by entering a dialogue with people who maintain and work inside the building, "So it was a very interactive process," Gora commented. The importance of involving the users in the design process to gain a deeper understanding of their needs and hence make the design more accessible and usable to a wide range of users is still debated (Till, 2005; Hofmann, 2014). However, designing in dialogue with users could still be considered important, since it is difficult for designers to put themselves in users' shoes through mere background research or by relying solely on their own experience.

There are obstacles to overcome in every design project, and at times they are too numerous, and the project is interrupted and even stopped. As an artist with a background as a landscape architect, Gora has a certain ability to deal with obstacles, which is reflected in the La Familia project at SUS Malmö, where Gora was not allowed to plant trees, as she initially had planned to, for different reasons. Gora realized that the commissioner simply did not want any vegetation, and knowing that she couldn't convince the commissioner otherwise, she decided to incorporate this limitation into her work instead of arguing for her case. Gora found that changing the place and letting go of the vegetation-based proposal was a better choice than excluding herself from the project. The final position for the

[6] The concept of La Familia is that of a garden without vegetation embodied in five sculptural elements made of fiberglass-reinforced polyester and LED lighting that welcome and connect people by signalling that no one is alone.

La Familia project was in front of the main entrance to the emergency care building. This place was considered a transit area and a communication point for gathering people coming to and going from the emergency care building, and hence this became the theme when Gora confronted the task of making an artwork for this particular site. Gora mentioned that La Familia is really related to everything living, even if it is made of man-made materials, and her intention was to create a garden without plants, designing and placing her objects as a symbolic garden. Each object is made of polyester reinforced with fiberglass and has a LED lamp inside, so the sculptures can also function as lighting artifacts around which people can gather in the dark hours.

By overcoming the prohibition to plant trees, Gora created a welcoming artwork that can be touched by people. The symbolic nature elements appear above, around, and beside people who may stop for a moment to sit or wait there, and hence one is never alone. The elements thus have a comforting and welcoming function. The comforting and welcoming aspects of art could be considered two of the criteria that hospital environments strive to achieve; otherwise, the environment can be very much devoted to mere physical access and become a quite stressful context. Welcoming and comforting interior design elements and artwork are needed where users (patients, visitors, and staff) need to remain calm and "feel at home" (Ahmed, 2006), and get the sense of familiarity, even if it is their first time there. Even if a visit to a hospital often involves unpleasant experiences, patients' physical and intellectual interaction with artwork can change their impressions in a positive way by making them feel comfortable and welcome in the hospital environment (Karnik et al., 2014). We can suppose that the sooner this possible positive experience can be achieved the better, and welcoming wayfinding elements seem to have an obvious role to play here.

Reflecting on the first part of the interview, we can conclude that the shared quality of the artwork and its placement, such as here in a hospital, depends partly on the differences in perspective of a commissioner and an artist, and that it becomes a matter of the artist's personal and professional experience, as well as, ultimately, a situated experience of the viewer, and that these aspects play a role whenever art is exhibited. The definition and quality of art are grounded in the artist's as well as the receiver's perception, raising the question: To what extent do artists pay attention to the users' needs or comprehension of art, or consider artwork's actual influence on the user?

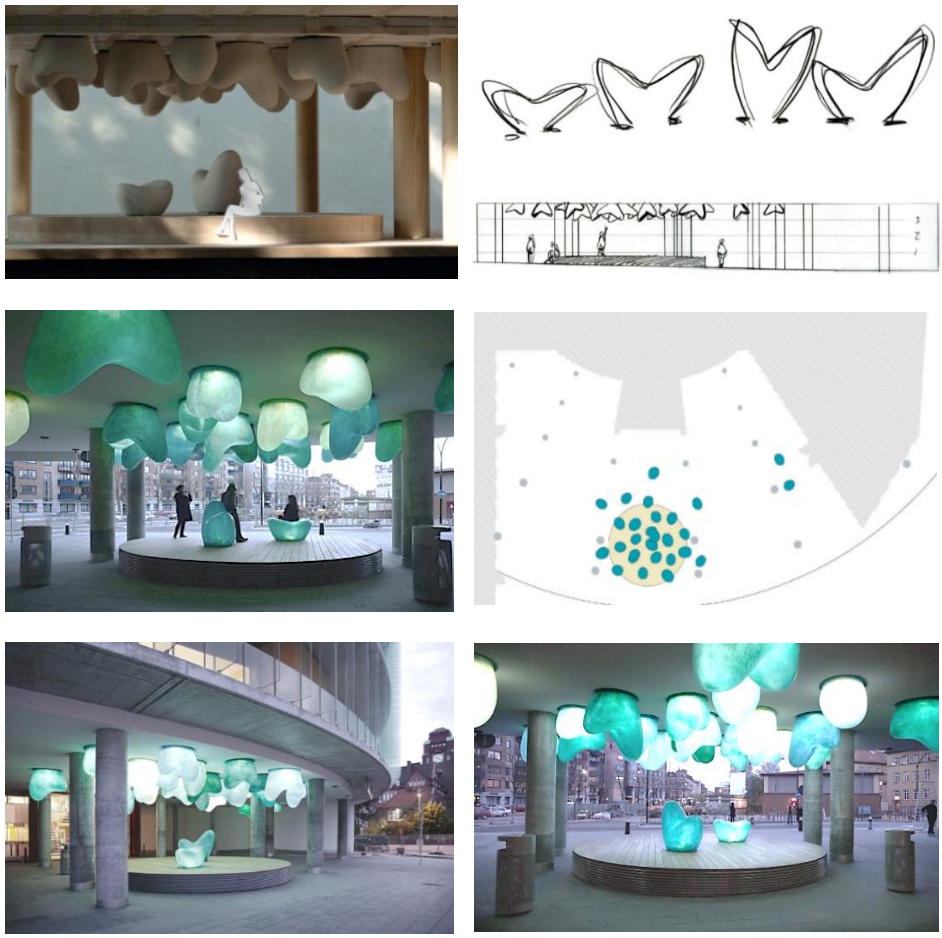


Figure 18. La Familia at the entrance of the emergency building at SUS Malmö:
Photographs by Peo Olsson, illustration and model by GORA art&landscape, sketches by Monika Gora.

6.2.3 The individual experience of art

Regarding Gora's view that art is at the core of society, I asked "how could people experience life through art?" Gora response was that "[art] creates different meanings to different people and evokes emotions and thoughts." She explained with an example: if the artwork is a three-dimensional piece, then each person has his/her own experience of that piece of artwork and its space, and a symbolic sculpture like the workers' memorial sculpture in Malmö's Möllevångs Square (Figure 19) could mean a lot for some people who happen to catch sight of it, but nothing to others who are used to it from passing by it every day. This reflection, in other words, shows an example of overfamiliarity (Craig et al., 2012), which in the case of hospital environments could be a reason for ignoring art, or for seeing it as nothing more than a self-evident part of the interior space, especially when one already knows the way to a destination, but also when a newcomer in a moment of way-searching looks for signage only.

Figure 19. The sculpture at Malmö's Möllevångs Square, by Axel Ebbe.

The different meanings that art has for different people depend on their individual experiences and on the level of familiarity that a specific work of art evokes. This evoked familiarity could in turn be impacted by a person's culture, memories, occupations, and aesthetic preferences (cf. Kaplan & Kaplan, 1989; Ahmed, 2006; Craig et al., 2012). This is also what could be seen from the previous second study, where participants noticed the "big red painting" in the

corridor of the Department for Infectious Diseases: this painting evoked and provoked strong memories for some, but not at all for others. Furthermore, in the first study of this thesis, participants' occupations, their familiarity with art, and their culture of origin impacted their experience of art and other interior elements, which affected the way they searched for their destination within the studied reception hall. How then, can such difference in reception be taken into account already in the phases when art is commissioned to become part of the spaces of hospitals' wards, waiting rooms, corridors, reception offices, etc.? To understand more about that we need to know more about what commissions mean to the artist – commissions sometimes also being the result of official competitions between several artists.

6.2.4 Criteria and limitations regarding artwork in competition and commission situations

The criteria to be fulfilled when artists take part in a competition or a commission situation generally vary from one project to the next, which means that Gora could refer only to the limitations and criteria for the projects in which she has participated. According to Gora, the first step towards winning a competition is to present one's work in an attractive way to the competition committee. There are other issues than attractiveness to be taken into consideration. Gora added, for example, that if the artwork is a public sculpture, such as *La Familia* in front of the emergency care building, it cannot be offensive or directly critical, because it is linked to architecture and located in a public space.

In competitions, a common request from owners and commissioners is a unique piece, but in reality uniqueness is often not treated as a specific criterion in the end, according to Gora. Based on that, I asked: "Do you mean that they put some kind of requirements, but they do not follow up on them? Or is it the case that it is just uniqueness that is requested, but not any improvements of the environment or certain impacts on people?" Gora responded that the commissioner is generally concerned about how the artwork could impact both the public environment and the people using it, but usually with an emphasis on maintenance and safety issues, especially in those cases where the final construction of the artwork might encourage children to play with or on it.

The criteria for outdoor artwork and indoor artwork can be quite different. Enabling and ensuring maintenance is for example the most important criterion for

outdoor artwork, while the criteria for indoor artwork are more tied to specific classifications of materials that can be used together with the type of architecture, fitting the building certification in each case. I asked Gora if there are any concerns or specific requirements regarding the concepts, or the type of artwork, used in indoor hospital spaces, and she responded that generally, the people in charge of the competition or commission might assign a location for the artwork, pointing out for example a wall, a roof, or another part of a room where adjustments or additions could be possible. Gora thought that the project leader's preferences in the commission process influenced the criteria for how and where to place the artwork. In some cases, these criteria, or overall intentions, are fully understood only after the competition has been closed, because they were not articulated clearly beforehand. As always when it comes to art, in these cases it can be hard to know if the project leader or other important individuals in the ownership structure have any personal preferences that they do not, or cannot, fully disclose beforehand. In any case, the user perspective is often of least concern, even though it can sometimes be the case that the artist is asked to work more directly with the users. As Gora said: "usually they [the commissioner] give [the artist] a general idea about the users." Hence, not only is there often an over-generalized view of the user/visitor in these commissions, but the criteria given initially can also vary or be set aside later in the process, and not actually be applied in the produced artwork, since final decisions regarding the installed work are made by the owner of the property where the installation is made.

Regarding the limitations of commissioned art, one is that the artist cannot argue for, or sell, just any concept of his/her work; it needs to be adapted to the specific requirements in each competition. Another stipulation that Gora mentioned is that the artist is not always allowed to work with the whole setting for his/her artwork; s/he is only permitted to work on a specific object to be placed in a specific location within that setting. Gora commented that it could be the case that "they really made a lousy [built] environment, and they want an art piece to save it and fix all the problems as well as making people happy." Gora likened placing an artwork somewhere without knowing much about the environment to putting a souvenir on a shelf; i.e., the artwork will relate to the environment somehow, but will lack a thought-through connection to its surroundings. Gora does not like doing that type of art, believing instead that the artist needs to find out as much as possible about the site beforehand to be able to make a truly site-specific work. On the other hand, Gora also pointed out that placing an artwork in

a specific location without being in perfect control of the circumstances of the place is a challenge as well as an interesting work situation, since the installed artwork is open to several interpretations, and it could also contribute to changing the overall meaning of its surroundings.

6.2.5 Periodic maintenance influencing the installation of artwork

Easy maintenance is one of the most important criteria when suggesting and creating a public artwork. According to Gora, it is also an important issue of concern for the artist after her artwork is installed. Periodic maintenance of public artwork is important in order to preserve it and to assure that the original purpose of creating and placing it is sustained in the environment. This site-specific care could also be seen as supporting the maintenance of the environment surrounding the artwork in a positive way. For instance, the maintenance of Gora's project *Common Ground*[7] at the University Hospital in Umeå (see Figure 20) was successful in that it influenced people's experiences of spaces adjacent to the one where the work itself was placed. People used this place a lot, and Gora received e-mails from patients who told her that the site had helped them heal during their time in the hospital, when they looked out of the window and saw the sculptures. She also received emails from people who worked at the hospital, who expressed their liking for the place and said that the environment influenced them in a positive way. In this case, then, we could say that not only the artwork itself as a physical object, but also the nearby spatial context, became subject to a maintenance that continued to have an effect on well-being and presumably on orientation in that near environment, in that it attracted people's attention.

[7] The Common Ground project consists of seven sculptures with the same shape, made of fiberglass-reinforced polyester and diabase. One of the sculptures is placed in a glassed hall connecting two buildings, and the other sculptures are installed outdoors in a landscape that was remodelled to fit the artworks.

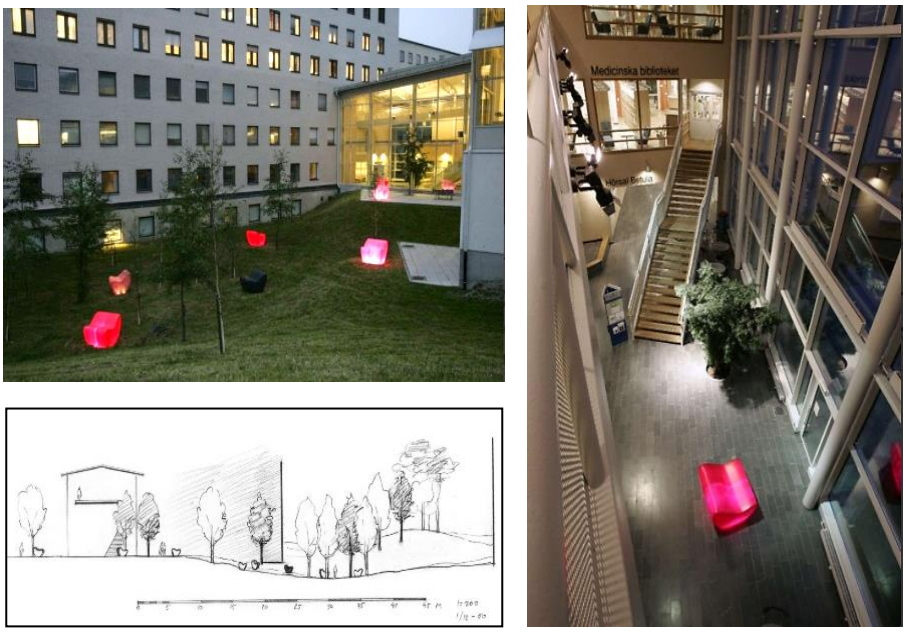


Figure 20. "Common Ground":
Artwork, visualization and drawing by Monika Gora, photographs by Jan Lindmark.

Gora also spoke about a commissioned project at SUS Lund that she done as a landscape architect. She checked up on it 25 years later and found that the interior space had been redone to consist of a group of plants and trees with a surrounding bench, and parts had been replaced with stones, with more ordinary and smaller plants, with toy animals, and with other furniture. Gora felt that the altered place appeared quite messy, aesthetically "looking like garbage," though the intention with the change seemed to be to make the place more cozy. The positive side of this "bad" maintenance is that the people who use the space still seemed to like it.

A lack of maintenance, or cleaning, of art can present problems not only for hygienic reasons, but also for the impression of the art itself. As Gora pointed out, the site for the sculptures of the *La Familia* installation at the entrance of the emergency care building was categorized as indoor space, yet they were never

cleaned, despite an apparent possibility that bacteria from them could enter the hospital. The maintenance also failed to maintain the light in the sculpture, which was off at the time of our interview. Whether this was an energy conservation- or a technical issue, it was amended after Gora contacted the person responsible for the hospital's art. These incidents show that maintenance can be a matter for several people to handle, artists as well as local managers, and for an unforeseeable amount of time in the future.

Gora suspects a lack of maintenance of some of her projects in the long run. As part of a decision to revisit some of her projects to see the changes of these places over time, Gora is also in the habit of documenting her artworks and their settings, not only to reflect the historical development, but to reflect on them from a maintenance perspective.

One question that arises in connection to long-term maintenance is whether changes should be encouraged or not. Most often, art is considered as something to be kept as is, to preserve a work's longstanding idea. But changes could in themselves have different effects for the users. Reflecting generally on this, even if people might have opinions about the look of buildings or art installations in the built environment, especially in their neighborhood, it is also often the case that the majority of people do not have enough time to really follow up on, and take any deeper interest in, changes being made to a place, and especially not in hospitals. One could however presume that people often simply seek pleasant or functional places to be. In hospital environments, the fact that alterations occur now and then can be considered a relief, and increase a desire to take part, or simply cause an arousal of some kind. It is a well-known fact that any small change to an environment can have an effect on those who use the place regularly. From a wayfinding point of view, temporary changes can be seen as making things more difficult, simply because the spatial frame of reference is altered to become not as easily remembered as part of a personal mapping of a place, but the increased attention that follows a change can on the other hand also lead to raised awareness and improvements that makes a place stand out more. Seen this way, changes can be part of an extended view on maintenance, beyond the mere conservation of objects.

6.2.6 Requirements for successful artwork that work well in hospitals

Hospitals are quite anonymous and potentially stressful surroundings; because of this, making hospital users feel welcome and comfortable is especially important. Deciding which kinds of artwork work well in the hospital setting is, from Gora's perspective, quite difficult. She considers the diversity of artworks inside hospitals to be quite important, and also feels that there should not be too many in one place. In Gora's experience, the artwork used inside hospitals is often paintings, and she feels that they should be consistent and harmonious, easy to maintain, and work well together, apart from also, preferably, having a clear meaning and motif. In addition, the artwork in a hospital should be able, according to Gora, to reach out to different categories of people, and that there should be a collection of artwork with motifs that are quite simple in regard to content, so that everyone can easily grasp and communicate with the paintings. Gora said that "everybody loves figurative art like cute animals, especially in sculptures." For instance, she considers the *Common Ground* project a successful artwork in a hospital environment because of its positive impact on the patients' recovery and the staff's well-being. I conclude from Gora's words that satisfaction and interaction with the works are important parts of their success, and that this could be measured by people's reactions and experiences of the artworks, which is for example what happened when Gora received grateful emails from users who expressing their satisfaction with the *Common Ground* project.

Since works of art have the potential to guide patients, visitors, and staff in how to interact with them, their appearance and materiality should be appropriate for the users' action abilities (Warren, 1995). It is not easy to say what type of artwork works well in the hospital setting. However, in their study of the impact of a contemporary collection of art on patients' moods, stress, comfort, and expectations, Karnik et al. (2014) found that patients interacted with and responded positively to the diversity in the collection as well as to different types of art besides that is more commonly favored in research on art in hospitals, e.g. art with a nature motif (Lankston et al., 2010). This investigation thus corroborates Gora's remark that the diversity of art in a collection is important and also that it has to be carefully composed to work well and afford the user the building of his/her own story within the hospital setting.

Consequently, there are no clear-cut requirements regarding genre, aesthetics, materials or motif to follow when choosing works of art to be used in

hospitals; it rather differs from case to case. Nevertheless, as confirmed by Gora, there are certain similarities and patterns when it comes to the technical requirements that appear in different art commissions that can ultimately have an impact on the appearance of the artwork. For instance, the recent renewal and extension of the Karolinska University Hospital in Solna, Stockholm involves a complex system and requires a lot of technical specifications, and a close collaboration between the architects and the artists is required when the new art is integrated with the architecture and its interior design. Gora added that the requirements are mostly technical or maintenance-related, otherwise they can be quite vague; for example, there was a wall between two floors at the Karolinska hospital, and the required artwork was supposed to be a mosaic on that wall. The requirements in this case regarded only the genre of mosaic art; no description was made regarding the theme, content, or color scheme. Gora emphasized that in this case the descriptions were mostly about maintenance. In other cases, such as the *La Familia* project, the requirements were more defined, including for instance that the art "has to be easily maintained, nice, welcoming, be a landmark (visible from a distance), be functional ([possible to] walk through) and safe."

6.2.7 Artwork, wayfinding, orientation, remembrance, and communication

Since the way that interior design can influence a way-searcher's wayfinding and guide the way-searcher to orientate him/herself in a hospital is of interest in this study, I asked Gora if she felt that artwork could help people to find their way in the hospital setting. Gora responded that "It is a nice way of communicating the way inside, it is more identification." Artwork, according to Gora, has the potential to communicate in other ways [than informative signs], ways that can help people to remember a place. The fact that one can recognize an artwork is important in hospitals in terms of wayfinding and orientation, Gora says, because it makes the environment more human, more communicative, more "interesting and more adventurous" compared to signs, since signs do not communicate with people on a deeper level.

Gora's view on the specific ability of artwork to provide communication, orientation, and remembrance corresponds well what was found in studies one and two of this thesis, and also to some theorists' findings. One might for example perceive the existing artwork in the environment and keep it as a "secondary

remembering" (Edward, 2000), retrieving the artwork from the acquired previous content when orientating oneself within the place. This possibility to recall details and physical elements in the interior design can be seen as a slightly delayed rather than direct recognition of "landmarks or other familiar signs that give [the way-searcher] anchoring points" (Ahmed, 2006, p. 1; Lynch, 1960) simply by their uniqueness. This "secondary remembering" may happen when a hospital site is being visited for the first time, and this process of site-oriented remembering may of course also involve the more long-term remembering processes tied to life experiences, when an artwork is experienced as familiar to a way-searcher even if it is the first time s/he has seen it, simply because it evokes memories of earlier events or other similar artworks (Ahmed, 2006).

Gora's opinions regarding which type of artwork is supportive to wayfinding in hospital environments are based on the artwork's location. According to Gora and her team, artwork that looks different from different angles, such as three-dimensional artwork, can support wayfinding both in the outdoor and indoor hospital environments, while the architectural structure of the hospital building is mostly important indoors. The artwork could, according to Gora, be of any kind, as long as it has an element of being unpredictable in the environment: "If you do not know anything about art or are unfamiliar with art, then you still find something interesting, […] something makes sense, something might be special; I really like this unpredictability." In other words, a piece of art may spark the way-searcher's curiosity, making him/her wonder "what's the difference? why is this here?" and thus prompt him/her to go on to explore the artwork, even if the way-searcher is not familiar with art in general. Furthermore, the indoor structure of the building and the colors on the walls could contribute to the way-searcher's orientation (O'Neill, 1992), while the artwork also adds another dimension besides orientation, that is, is to make the environment more interesting and motivate way-searchers to explore it, states Gora. This statement again corroborates what was seen in study two: besides colors on walls, as an interior design element, artwork has a power to "mitigate the numbing effect created by the glut of information [people] are faced [with] […], and motivate people to turn thinking into doing" (Eliasson, 2016).

Located outside the library of Landskrona, *Library Plaza* is one of Gora's works that actively aids wayfinding. Gora designed the whole plaza, including three large perforated metal cones in a row that are lit from within, which changes

the way each cone looks as people walk around it. The cones lead almost to the entrance, and they could be said to frame the entire space, as they are its main compositional physical elements – or as Gora put it: "these cones are really taking care of the entrance from an architectural perspective." The light that comes from within the cones is green at first, and then turns into white. The cone is a very classical element, and Gora's idea here was to create a unique place, a plaza in front of the library that attracts people to enter the library (see Figure 21). In addition, with this site-specific art she sees the work as also addressing a social aspect, since "Landskrona is quite a rundown city that has quite a lot of social problems, such as unemployed people destroying things" and "this project [aims] somehow [at] taking care of this site and make it more special." This artwork thus did not only contribute to aiding wayfinding; according to Gora it also helps in "restoring value and just saying to people that you are worthy." I asked Gora how this project restored people's value and told people that they are worthy, and she explained that by taking care of this site and investing thought, attention, money, care, and love in the design of something special at this specific site sends out the message that it is worth all of these things, for the people who will spend their time in this place. Furthermore, designing this site in a special way gives visitors an unexpected architectural experience to be explored when going through the site, which is something that Gora herself enjoys.

This example prompts reflection on the possibility that placing an artwork in an environment might have extended social effects apart from being a landmark leading the way. One of Warren's (1995, p. 214) proposed criteria for effective design is that "affordances must be designed to complement social pattern of use." The environmental elements do not just have a functional use; they also have an emotional influence that increases the possibility of certain behaviors (cf. Reed, 1985; Withagen et al., 2012). The ambitions with the Library Plaza in Landskrona point to the possibility that artwork designed partly to aid wayfinding could also have other impacts, like prompting social interaction, making people move in new ways, and giving other values to their own home surroundings.

Apart from having these possible general effects on people, we must however also consider the possibility that those effects are highly diverse depending on background, and in order to have some professional reflection on that, the next section concerns possible specificity in experience that migrants and refugees may have.

Figure 21. The Library Plaza artwork:
First and last photographs: Nils Bergendal. Second photograph: Monika Gora, drawing by Monika Gora.

6.2.8 Considering the experiences of migrants or refugees in commissioned artwork

When I asked Gora if she ever thought about newly immigrated people or refugees in relation to her work or design, she responded that she "considers humans in general, [……] but not immigrated people or refugees in particular." She added that migrant or refugees are a part of Swedish society and therefore also a part of the audience of her work, since her artwork is for "most people, including migrants and refugees." In addition, if Gora were commissioned to design a work of art for newcomers, as in migrants or refugees, she would do "as [she] always [does] for any other group of users." In other words, during the process of creating a work of art, she would try to figure out as much as possible about the users' backgrounds and history in order to understand their needs and wishes, and try to "put [herself] in their shoes," since "[users] all have unique needs and preferences." Creating an artwork for newcomers is not a challenge in itself, but it could be a "specific precondition," Gora stated. Furthermore, she does not work particularly with wayfinding and orientation in relation to newcomers in Swedish

hospitals, but she instead again emphasized the importance of understanding users' needs to an effective design. Sometimes it is possible to communicate directly with way-searchers. Gora tends to share her explorations with the users through her work, and she aims at testing her own experience of the work in the way the users could be expected to experience and communicate with it.

Reflecting on Gora's words, we can once again highlight the importance of finding methods for involving users' needs in a broad cultural and ecological perspective that regards differences in capabilities, and which also brings in the idea of more participatory methods in design as well as in research. If implemented as feasible guiding principles in the design and aesthetics of the formation of environments, these aspects can stand a chance to be usable for as many people as possible by allowing a variety of users be involved in the design process and collaborate with the designer. According to researchers who promote "universal design," such broad approaches of involving a variety of specific needs can create a "good design" not only for those with specific needs, but for a wide range of users (Schuler & Namioka, 1993; Connell et al., 1997; Rossetti, 2006).

6.2.9 Thoughts on and criteria for wayfinding and wayshowing in hospitals

On the whole, Gora considers artwork an essential element in hospitals, since these environments are otherwise quite inhuman places, in terms of being very mechanically conceptualized, almost like factories. She admits to romanticizing it, but she think it is necessary to believe that art will increase the humanity of hospitals as well as augment the healing process. Each artist has her own principles and takes them into consideration while designing, choosing, or placing artwork in the hospital setting. Wayfinding is one of the principles that Gora takes into consideration when creating an artwork. She emphasizes that the artwork has to be unique and distinguishable, which can be achieved by working with contrasts, which can be enough to support someone in finding his/her way. The artwork should be clearly visible to support wayfinding, and for Gora, visibility is related to scale. The diversity of artwork in a hospital's art collection may also quite pragmatically have a positive impact on wayfinding, because works of art can then be curated and combined in interesting and effective ways. Gora also mentioned that "it is important that the other interior design elements do not take

over; they have to match the artwork to support artwork's influence on wayfinding."

The features and criteria mentioned in the interview with Gora on the whole align with the findings of Karnik, Printz and Finkel, namely that "art in particular plays a significant role in the health-care setting because it can mitigate the psychological stresses and physical pain associated with a hospital visit or stay, improve patients' satisfaction with their care, provide an opportunity for intellectual engagement, and reduce hospital length of stay" (Karnik et al., 2014, p. 61; Nielsen et al., 2017). Apart from this, it can also be concluded from the interview with Gora that not only artwork itself, but the placement of art and the integration between the interior design of hospitals and the artwork within them is important for the total experience, not least for supporting people's wayfinding within the hospital environment. In other words, art can sometimes be seen as information added intentionally by an artist or interior designer for helping people to identify their position in a place and reach their intended destination (Siegel & White, 1975; Chen & Stanney, 1999); in their role as landmarks, works of art may be placed to offer the way-searcher for instance a possibility to estimate the distance between the point of origin and the end destination.

Speaking about supporting wayfinding at hospitals, I asked for Gora's opinion about the artwork displayed in the Department of Infectious Diseases at SUS Malmö, showing her some recent pictures from the department and its artwork (images from the second study of this thesis). Gora's immediate response was that she did not recognize the Department of Infectious Diseases, despite having a work directly outside of it. In other words, the exterior work did not encourage a visit into the neighboring departments. This confirms what had been stated in the beginning of the interview: that the commission criteria seldom take an expanded environmental impact into account, but are more confined to the technical, safety- and maintenance-oriented issues of the art objects themselves.

In order to gain more knowledge about the process of selecting and displaying art in the hospital environment, and to learn more about how commissions work in practice, I contacted an administrative official from Konstservice, Region Skåne, who put me in contact with their representative and the person in charge of the display of art at the Department of Infectious Diseases at SUS Malmö, with whom I conducted the next interview.

6.3 Collecting, choosing, and distributing artwork in hospitals and composing interior hospital spaces

In the preceding interview with Monica Gora, I investigated the criteria and the limitations for making artwork that will be placed in hospitals, and obstacles that the artist could face in an art commission. The outcome of that interview prompted my interest in the process of choosing, as well as displaying, artwork in hospitals. I thus decided to interview an individual who is responsible for collecting, choosing, and distributing artwork in the hospital environment: Nilsmagnus Sköld, a visual and design artist who also works as a manager at Konstservice, Region Skåne. The interview, accounted for in the following sections, concerned the following areas of interest: *Art: Definition and importance in people's lives; benefits of displaying artwork in hospitals; considerations and the process of choosing and placing artwork in hospitals;About generalizing the type of artwork that works well in hospitals and enhances wayfinding; the handling of artwork in relation to newcomers' orientation and wayfinding; artwork displayed at SUS Malmö; and finally, colors, floor plan, orientation and remembrance: Artists' involvement in wayfinding design.*

6.3.1 Art: Definition and importance in people's lives

As mentioned above, art is largely a matter of subjective judgment, and usually an artist's definition of art reflects that artist's personal preferences as well as the type of art with which the artist works professionally. When I interviewed Sköld, who is an artist as well as a manager at an official service for the display of public art, he defined art from primarily two perspectives: the artist community, and his own perspective. The artist community includes, apart from artists, also art institutions and cultural institutions, and is in line with the so-called "institutional definition of art" (Dickie, 1974), which claims that if the art community considers something as art, then it is art. The definition of art based on Sköld's own interests as a visual artist is that "art is part of a creative process, it is a visualization of the process, and art can be whatever you decide it to be, it could be [expressed as] graphic [art], [an] art movie, art sounds, and so on." Sköld also considers art to be a message: a means to communicate with a given community. Sköld expressed that "art is a process," emphasizing that art is not just a final product on display. Creating a piece of art means an overlapping of several layers such as the artist's

experience, the artist's life, the influences of political, social, and cultural events, and so on. In other words, art is an inner reflection on what is going on in the outside world, from the artist's perspective. An artwork could touch a great number of people, or not, based on the intended message embedded in the artwork by the artist.

From Sköld's point of view, the importance of art in people's lives is based on each person's experience of art; for Sköld, art gives a second inner space of thought and imagination in daily life, including a second interpretation of the world. Art could thus add a second dimension to our lives. Aligning with Sköld's opinion, I can say that one's individual perception of an artwork depends on how we interact with and interpret the work, which is in turn influenced by background, occupation, society, culture, and memories, both individual and collective.

6.3.2 Benefits of displaying artwork in hospitals

The idea behind showing artwork in hospitals, in Sköld's point of view, is to contribute to an attractive environment. For Sköld, art is "a positive distraction" (cf. "soft fascination" and similar concepts, as in Kaplan & Kaplan, 1989, pp. 192-193; KØS, 2017; Nielsen et al., 2017) for sick people waiting in a hospital waiting room or walking through the corridors of the hospital. Artwork can be a distraction from negative thoughts, and it could also provide a new perspective on life, in the way mentioned above, Sköld added. In addition, art in hospitals is part of everyday life as a distribution of culture, and thanks to this, hospital art in Sweden can give a picture of Swedish culture to people who do not usually visit cultural institutions, as well as to people who are unfamiliar with the culture of Sweden in general (cf. Macnaughton, 2007).

According to Ulrich et al. (2004), positive distractions, induced by visual art in hospitals, improve the health of patients by eliciting positive emotions. "Positive distraction is a term used to describe the belief that environmental features can elicit positive feelings, hold attention and interest, therefore, reduce stressful thoughts" (Lankston et al., 2010: 495). Hospital art could elicit positive emotions and reduce stress, which helps the patient by diverting his/her negative thoughts. If the hospital environment lacks positive distractions, this might leave a patient in a state of fear and pain and create stress (Brannen et al., 2009; Malenbaum, Keefe, Williams, Ulrich, & Somers, 2008; Ulrich, 1991). Moreover,

artwork's aesthetic features provide perceptible affordances (Gaver, 1991; Norman, 1988), allowing a perceiver to take several actions; one such immediate effect, appearing before a more complex interpretation of art, can be that the mere presence of art in the environment helps divert negative thoughts tied to a current medical situation.

6.3.3 Considerations and the process of choosing and placing artwork in hospitals

There are different guidelines for choosing the particular type of artwork to be placed in hospitals. The main guidelines with which Sköld is concerned when choosing and placing artwork in hospitals are: the theme of the building, the function of the departments, and the category of users. The theme of the department where the artwork will be placed determines the type of artwork that Sköld and his colleagues from Konstservice will choose. The function of the department in turn determines the type of users that stay there, work there, or visit the department, and the artwork should be suitable for both the theme and the use of the department. As an example, Sköld mentioned that they do not use red paintings at the Department of Psychiatry, because red is generally considered an arousing color (Stone & English, 1998; KØS, 2017); instead, they use blue paintings in this particular department instead.

Konstservice's selection of artwork for use in hospital spaces is divided into two phases: the first phase is choosing and buying artworks from galleries to include in their art collection; and the second phase is taking the artwork out of this stored art collection for placement in a specific part of the hospital. The selecting is done by a group of people who decide which works should be placed in each specific hospital environment. This group usually consists of the leader of current art projects, architects, medical doctors, department representatives, other art project leaders, and a consultant. According to Sköld, at the time of this interview, Konstservice at Malmö SUS did not have any more storage space for new artwork, and therefore now buy works and place them directly in the intended hospital setting instead, or choose them from the previously stored art collection.

The process of taking artwork from the collection to place in a department is somewhat difficult, Sköld said. It entails Konstservice checking the entire art collection to see what is available and picking out the artworks that they think would work well with the theme of a specific department or floor, whilst also

attempting to find a balance between these various chosen artworks. To clarify finding a balance between different artwork, Sköld gave the example that the chosen artworks could be one photograph and two paintings with motifs that were not directly connected, but still somehow share a theme. A balance is always sought between the colors and forms in the artwork on display.

Each department is particular as regards its medical function and the type of patients who stay there or come for shorter visits. This specificity of medical function and the type of patients might, in an existential point of view, be considered more important as a theme than other, added, design themes. Given that the artworks could influence patients' impressions of the hospital environment, it is important that the patients' health has priority over the aesthetic appearance of the department or of the art itself. However, this priority can be fulfilled without neglecting the creation of balance between the artworks selected, where balance does not have to mean a single type, size, material, and so on, but is rather a principle by which the artists of the different works fulfill the patients' need for positive distraction, which in turn may lead to comfort and relaxation in the hospital environment.

6.3.4 About generalizing the type of artwork that works well in hospitals and enhances wayfinding

Generalizing which kind of artwork seems to work well in the hospital is very difficult, since the experience of different artwork is subjective. Nonetheless, Sköld dared to make a generalization about what does not work, saying that "provocative artworks, recalling bad memories or stating political issues do not work at hospitals". Sköld added that the artist should be concerned about who is perceiving the artwork displayed in the hospital. Based on this statement, I asked Sköld if there was a specific type of artwork that he preferred to use more than other types. As an example, I mentioned figurative art and landscape art to him, since these two specific types of artworks were mentioned frequently in my surveys, and likewise appeared as the most preferred types (or motifs) based on the aesthetic preferences of some of the participants in the second study of this thesis. Furthermore, Gora had said "everybody loves figurative art like cute animals, especially in sculptures." Sköld responded that these preferences depend on whether the perceiver knows a lot about art or not. If the perceiver does not work with art or is not acquainted with different art forms, then s/he might prefer

art with a landscape motif, whilst someone who deals more actively with art, and hence has some knowledge of it, might perhaps prefer for instance monochrome paintings, states Sköld. He also mentioned that as art administrators, he and his colleagues use art to "build a story" within each specific place in the departments in which they work, using various types of artwork, where the perceiver can walk around and look at all the art. They can also deliberately place a specifically eye-catching artwork in the middle of a corridor – such as the "big red painting" at the outpatient clinic of the Department of Infectious Diseases that attracted the participants in the second study (see Figure 15). Sköld and his colleagues at Konstservice had positioned that painting in the corridor at a point where it opened up into a waiting area; they wanted something stronger than the other works in the corridor, to create a concentration in the middle that could attract people to it. I asked Sköld whether – based on his experience of choosing and placing artworks – there was a kind of artwork that suits the hospital setting in terms of enhancing well-being and specifically wayfinding. He responded that they look at the whole architectural milieu, the interior design and artwork – how they work together, where the art should be a part of both the interior design and the architecture. In other words, after having made certain initial choices about artwork, Konstservice does pay attention to creating a harmonious display in the environment, but only to a limited extent do they take explicit experiences of the wayfinding and well-being of staff, patients and visitors into account when placing and installing works of art in the hospital setting.

Among the general guidelines regarding the artwork used in hospitals are to rule out the "provocative artworks" and to be concerned about the users. As an example, a work of art could work well within a place, but that does not mean that it suits everyone, as was the case with the "big red painting." The placement of artwork in hospitals is clearly no easy task, and it is likewise impossible to simplify the question about the types of artwork that work well in hospitals. However, the interview also shows that certain discernible strategies behind Konstservice's choices and placement of artworks in the departments at SUS Malmö, such as positioning a more profound painting in terms of size and color centrally in the corridor in order to attract people to walk to where most of the seating is located. Even if Sköld and Konstservice did not have wayfinding as primary consideration in an obvious or outspoken way, the act of choosing a specific place for an "attracting" artwork is an implicit intention of wayshowing.

Asked about the relation between art and wayfinding, Sköld responded that there could be a relation, if this relation is made in the right way. For these issues to be taken into serious consideration, they would have to be worked along the entire design process of the hospital building in order to create an overall effective wayfinding system (cf. Macnaughton, 2007). This would call for an early collaboration between artists and designers even before the building was in use. But the difficult part would be when visitors experienced the environment and understood (or did not understand) how to do it "in the right way" (Ahmed, 2006, p. 51). Sköld mentioned Herlev Hospital in Denmark, which is sometimes called "Denmark's largest work of art", as a good example of artistic decoration and wayfinding, where the massive colorful decoration of the hospital interior could be seen as an artwork that aids wayfinding. While Herlev Hospital has been regarded as a complete integration of art with architecture for some time, the intense and dense presence of colorful art in the building has however also been questioned recently for having a stressful impact (KØS, 2017).

I also asked Sköld to describe a single artwork that, from his experience, facilitated wayfinding within a hospital. The example he chose was an artwork that he had installed in a long corridor for transportation in the Department of Psychiatry at Rättspsykiatriskt Centrum, in Trelleborg, Sweden. The corridor is white and has a bend, or turn, in the middle that obscures the view to the end of the corridor. Sköld sketched the shape of the corridor to show me the position of the painting that he placed at the turn, then he described the painting: it consisted of three shapes placed next to each other so as to insinuate a movement, and the placement of this painting and its moving repetitive shapes indicated a continued motion from this place (see Figure 22 below).

In this text, the specific work described above is considered a type of artwork that influences people's orientation and wayfinding within the given hospital environment. However, the painting is used to indicate where to continue walking, by following the idea of motion represented in the artwork; this information is not given explicitly, but is rather an interpretation of images that not everyone may grasp (cf. Nielsen et al., 2017). Sköld describes how Konstservice is limited in their choice when picking out an artwork from among the existent artworks in their archived collection, or in an art gallery. This restriction then also influences the possibility to guide people to their destination, since they can only choose and place artwork that is already available. Usually, they neither have the

means nor mandate to create a specific work for a given place after understanding the potential of this environment and the potential users' specific needs there. Such considerations could however be taken in art commissions and contests.

Figure 22. The "Movement painting" in a corridor at the Department of Psychiatry at Rättspsykiatriskt Centrum, Trelleborg, and Sköld's sketch of its position (grey dot) to the right.

6.3.5 The handling of artwork in relation to newcomers' orientation and wayfinding

When I asked Sköld if he had considered the specific needs in relation to newcomers' ways of orientating and finding their way in the Swedish hospital setting, Sköld answered that this is a communication issue for the hospital to answer together with him. Regarding my follow-up questions – if Sköld had ever thought about, or considered, newly immigrated people or refugees in relation to the artwork chosen to be placed at SUS Malmö, and what aspects and possible challenges he would take into consideration in regard to newcomers, Sköld answered that generally speaking, he is constrained to follow the Swedish Public Procurement Act (2016:1145 – LOU), since he is responsible for the management and dissemination of the art collection of the public and political organization Region Skåne. This act applies to "all procurement of products, services and works," regardless of who the involved parts are. The Swedish Public Procurement Act includes five fundamental principles: the principle of non-discrimination, the principle of equal treatment, the principle of transparency, the principle of proportionality, and the principle of mutual recognition (Chapter 1, Article 9 of

LOU). These principles entail that discriminating and provocative artworks should be avoided in hospitals, and that the users of a public environment, such as the informants in my research, newcomers as well as familiar users, should be treated equally, and that the design should be accessible and "usable by all people, to the greatest extent possible, without the need for adaptation or specialized design" (Connell et al., 1997). According to the principle of proportionality, where the suppliers should fulfill the mandatory requirement based on the contract, the users (newcomers and people who are familiar with the environment) should be included in these mandatory requirements, for example in terms of considering possible cultural differences among these groups, as well as their different levels of familiarity with the environment at hand. Regarding this principle of proportionality, equal opportunity should preferably also be given to a wide range of suppliers (galleries and artists) to be involved and participate in the process, so that the people responsible for the management and dissemination of the art collection at Region Skåne have a broader range of artwork to choose from. The people responsible for choosing and buying art should also make an effort to buy suitable artworks that reach out to users with diverse backgrounds and cultures (Rossetti, 2006; Schuler & Namioka, 1993). If the process of choosing and installing artwork were be handled like that – going in the directions of both the producers and the experiencers – the principle of transparency could also automatically be followed.

Sköld further mentioned the "big red painting" (see Figure 15) as an example of how the same painting could be perceived and interpreted differently from his perspective and from that of the participants of my second study. Sköld considered that this is a new challenge for the City of Malmö, because even though Malmö was a multicultural city even before receiving a large number of refugees in 2015, it is even more so now, and it is therefore important for him to take in consideration when figuring out "how we shall communicate with art." Correctly handled, this task is crucial for sake of newcomers to integrate with the built environment, and by that it can contribute to enhancing social integration.

6.3.6 Artwork displayed at SUS Malmö

The artwork purchased for the art collection at Konstservice is not been designed specifically for hospitals. They works are created for different purposes and have different meanings tied to the individual artist. They are bought from different

galleries and hence support both the specific artist and his or her gallery. The guidelines for choosing these works are simply to collect contemporary art from the galleries that are known to follow the guidelines set up by the Ministry of Culture [Kulturdepartementet] in Sweden. For instance, if Konstservice requires a specific kind of artwork to suit the "built story" within the theme of a certain place at a given department, it will purchased appropriate artworks from a specific photographer or other artist that they know has the kind of artworks that will suit the theme of the place, as Sköld said. As noted above, there are descriptions, requirements, and guidelines for commissioned art that define what the selected artist can and should do when producing an artwork for a specific location in a particular hospital setting – such as for example in the case with some of Monica Gora's works – but as we saw, these requirements only seldom concern thematic or aesthetic issues.

These two types of processes of choosing artworks for the hospital environment are the reason behind the diversity of artwork at hospitals, according to Sköld. Diversity in the type and style of artworks at hospitals has a "positive impact, because of the differences," in Sköld's opinion. He illustrates his view with the following example: the diversity in colors among different works of art could guide a way-searcher, especially in verbal communication, in that the way-searcher can rely on these color differences as "landmarks" (Lynch, 1960) for distinguishing the divisions of the place by its artwork. Way-searchers and way-showers can thus communicate by phrases like: "when you come to the corner there you will see a red painting; turn right there and walk straight until you reach the green sculpture, that's where you need to go."

Returning to the concept of building a story within the theme of place, I asked Sköld whether he thought that everybody was able to read his [built] story and to follow it. Sköld's point of view was that people would not follow the story that he and his colleagues built, but instead build their own story. The design theme of a place at a given department only works as a framework for Sköld and his colleagues when they choose and position specific artworks there. It is then up to the visitors to form their own meaning from that choice of art and the place's interior environment. Sköld and his colleagues do not even always like all of the works that they choose and place, but they are concerned with the overall impression of the artwork chosen; that is, that the pieces work well together. In other words, they look at the whole rather than its parts. Letting the viewer

compose the theme herself can be seen as different from the quite explicit and figurative themes that Huelat (2007) described as the success of using large well-known images as visual cues and as explicit parts of the larger, designed way-showing framework, which also consists of maps, directions, symbols, and other memorable features of an interior space. Ultimately, we can presume that explicit wayshowing could be a matter of how art is integrated in overall information design, which does not need to be contradictory to the strategy of artwork being hung more freely, providing the works are handled adequately and can provide landmark quality in the overall frame.

Buying art from artists already known to Konstservice will exclude many other artists; as Sköld mentioned, Konstservice supports specific artists and their galleries, which means that they inevitably, if inadvertently, exclude others. Another negative side is that the artwork is stored until it is chosen or an appropriate location is found somewhere; this could be considered wasteful, as the works could be in storage for several years, and must be maintained correctly to be usable later.

6.3.7 Colors, floor plan, orientation and remembrance: Artists' involvement in wayfinding design

Color on walls is one of the environmental elements that could work as spatial information and support artwork's influence on wayfinding in hospitals (cf. Chen & Stanney, 1999). In addition, as in Sköld's perspective, successful wayfinding is fundamentally more dependent on a hospital building's floor plan than on the color on the walls, and on how the artist has taken into account and worked with the floor plan when installing artwork that will support wayfinding. To avoid drifting too far into the issue of varieties of overarching architectural basic solutions, which are not a main interest in this study, during the interview I reminded Sköld that my concerns were more about the physical elements of the interior design and not the site's layout. Sköld responded that there are many different things that he has to take into consideration: there are informative signs, numbers on doors, fire extinguishers, and informative screens, and he must thus find spaces between all of these things when placing artworks in the hospital milieu. Sköld illustrated the challenge of placing artworks in the hospital setting, using the outpatient clinic of the Department of Infectious Diseases as an example. He mentioned the many doors, the floor plan, and the structure of the space.

Konstservice tried to find a rhythm for the artwork within the specific site, and the solution that they found was the best that they could do. The artworks at the outpatient clinic of the Department of Infectious Diseases were not originally designed specifically for this site, but instead purchased by Sköld and his colleagues at Konstservice and selected from the art collection with the idea of creating a rhythm in the corridors of the department.

The theme of the building is one of the things that Sköld and his colleagues take into consideration when choosing and placing artworks in the hospital environment. The building's theme is also considered as a first step in Konstservice's ambition to tell a story within the departments. As mentioned in previous chapters, the artwork in the outpatient clinic of the Department of Infectious Diseases primarily comprises graphic prints. According to Sköld, this choice was related to the fact that the emergency care building "is quite a graphic building." Sköld and his colleagues' vision when choosing and placing these works in this particular department was both to offer a distraction from the hospital visit, and also to guide people to then break this distraction by moving forward. For this purpose they chose Jacob Dahlgren's graphic prints, which are located at spot A (see also the preceding section 5.3.1). These prints show geometric configurations that are abstractions of trees (see Figure 14). Sköld and his colleagues placed Dahlgren's prints at spot A as a continuation of other works by Dahlgren placed outside the department, at the entrance of the building, in order to help users to recognize a continuation into the building, guiding them to go forward. At spot B, they placed a different type of artwork – the "big red painting" – to break up the distraction and guidance brought in by the prints with a graphic motif. This interruption is small, but nevertheless an interruption – which is in line with Ahmed's (2006) argument that to feel orientated, one must first experience how disorientation feels; otherwise, lacking something with which to compare it, one will not realize that one is orientated.

According to Sköld, the artists who work as consultants at Konstservice usually choose art that they sense would look good and function visually in the given place, although they do not always have a clear idea, because usually they consider the whole setting and not only a particular, delimited site.

The artworks at the outpatient clinic of the Department of Infectious Diseases were placed there a long time ago, and the building was already in use. I asked Sköld what he would do if he was given the opportunity to change the

artwork there. Sköld responded that if there were more funds, he would want to buy new art; as of today, there is no artwork in Konstservice's storage that indicates motion in space. In addition, he would like to get rid of the TV screens that show the queue numbers for patients awaiting their turn. If the artist had been involved in the design process from the beginning, said Sköld, s/he could have done work directly on the walls of the waiting area instead of just painting the walls different colors. The artist could also have worked with the lounge as a whole instead of just putting up existing artworks; that is, the artist could have interacted with the environment and the users to create a site-specific artwork that could respond to specific needs and wishes instead of just putting up artwork to fill the empty spaces.

In the interviews that I conducted with the participants in the second study of this thesis, two participants mentioned that they preferred images like "medical posters" that illustrated body parts or certain medical conditions, instead of the existent artworks at the Department of Infectious Diseases. I asked Sköld about this, and he commented that art should be a part of everyday life, and that explaining medical issues to the patients is the duty of the doctor, not the artist. In addition, he said, visual art is not decoration; it is something more than decoration that offers different meanings and interpretations to the viewer. The second study of this thesis showed clearly, in alignment with Sköld's statement, that visual art is also a communication tool and not merely a decorative element. Artwork can have different, and powerful, meanings for different people, and since the interpretations are connected to backgrounds, previous experiences (memories), occupations, and cultural traditions, as we saw in the second, and to some extent the first, study. Despite the dependency on architectural layout and on understanding the range of interpretational difference, the artist's role is usually limited to decorating a site from a purely formalistic perspective at a stage when the hospital is already in use; in other words, the artist has not contributed to the process of designing the hospital building. Recently however, in the new buildings of SUS Malmö, artists have become more a part of the planning and design process, at least when it comes to designing the departments and the patients' rooms, said Sköld. The advantage of engaging artists in the early stages of the planning and design process is that the artists get to work closely with the architects on integrating the artwork with the architectural spaces and thus shape and install them so that they can be used as guiding elements within the building (cf. Lynch, 1960; Warren, 1995; Maier, Fadel, & Battisto, 2009).

In reality, designing in more direct dialogue with the users (Craig at al., 2012) is, as Gora put it in the previous interview, "still far from the norm," even if interest has grown in this direction in recent planning and architecture (Till, 2005). Understanding users' expectations and needs is the trickiest part of the design process, but one way to achieve this would be for the artist to interact with the environment and the users simultaneously. That would present a chance to grasp the interaction between both: what the environment affords, and how the user acts based on his/her perception of the environment.

In conclusion, Sköld mentioned several times that cooperation between the artist and the architect/designer throughout the design process would be beneficial for an effective wayfinding system within the hospital environment. The architectural design of the floor plan, according to Sköld, is considered to the starting point for creating a legible and effective navigation system. This statement aligns with a common opinion in the architecture practice that the floor plan has to be designed in the right way in terms of accessibility, and that physical spaces should be accessible by everyone regardless of age, abilities, and disabilities (Persson et al., 2015). In other words, the basis of effective wayfinding is a well-designed circulation possibility within the building (vertically and horizontally), whilst additional interior design elements can have a secondary and flexible contribution that complements and supports the circulation plan. The same point was made by the third design professional whom I interviewed for this study. Aiming to gain a view of the architect's role in designing wayfinding systems and eager to discuss architecture's relation to interior design elements, including artwork, in supporting wayfinding strategies in hospitals, I contacted the architect Anders Svensson, who maintains that dealing with architectural problems via interior design is not easy, especially when it comes to solving wayfinding systems. According to Svensson, interior design could help somewhat in improving the wayfinding system, but the problems will remain if the circulation is not supported by the architectural design (cf. Mollerup, 2009).

6.4 Integration between interior design and architectural design

Anders Svensson[8] is a Swedish architect who runs his own consultancy in the field of sustainable urban development and is a professor at Chalmers University in Gothenburg. The interview with him touched on the following issues: *ideas on design style and its advantages; the purpose of interior design and special architectural features; "visual noise" – the risk of overloading the interior environment in hospitals; architecture, interior design, daylight and wayfinding; interior design to solve architectural problems in wayfinding; the role of art as an eye-catching element; and designing a project that is concerned about newcomers.*

6.4.1 Ideas on design style and its advantages

Introducing himself, Svensson says that he does not design in a certain style, but that his design style can nonetheless be seen as part of the modernistic tradition, going on to talk about the great variety in the modernistic tradition that started to develop in Europe the 1920s. As an example he names the 1940s and the development of regionalism, a style dealing with local or regional interpretations of the modernistic style, in which "quiet" simple forms were adapted by using regionally-based materials.

Regionalism could be regarded as a good thing for a number of reasons: firstly, using regional materials ties the buildings materially to their context, strengthening their architectural identity; and secondly, it can be seen as more sustainable, economically and ecologically cost-efficient, since the construction materials are not imported from a great distance or from contexts where environmental impact is hard to control. Some variants of regionalism have a "critical" intention (cf. Frampton, 1983), as in being aesthetically modern but maintaining a sensibility towards local materials, traditions and climate; i.e., they are critical of a mere reproduction of old styles, but also of simple industrial fabrication of standard architectural solutions. In line with this, we could also add that the lack of ornament (detailed decoration) in some regional modernism could

8 Anders Svensson has been Professor of the Practice in Leadership and Management in Architecture at Chalmers University since January 2015. He also runs the consultancy CaseLab, which focuses on process management in the field of sustainable urban development. Anders Svensson has been a practicing architect, and partner and CEO of White architects.

be more economical in terms of physical efforts, money, as well as maintenance. Several modern hospitals in Sweden, among them SUS Malmö, have buildings that belong to this tradition; however, the recently built emergency care unit, to which the Department of Infectious Diseases belongs, is a hypermodern circular architectural structure with colorful panes on its façade that make the building stand out in the city and in the hospital area as a landmark in itself.

According to Svensson, the starting point for architecture is the human being: people have to live and stay in the buildings or in the environments that the architect designs. Svensson recalls the old Vitruvian definition of architecture, identifying three essential features of a well-designed building: durability, beauty (aesthetics), and function. Svensson believes that this definition goes very well with the modernistic tradition, since it is concerned with the human being, with durability in materials, with appropriate functions, and with people's experiences of the built environment.

As an architect, I find it quite easy to agree with Svensson on the classic Vitruvian virtues. Today, "function" is regularly understood in relation to users' needs or the utility of the building, and can be formulated as questions that are highly relevant for this study: "Are users' needs met in the building […and] [is] the building organized and arranged to form an efficient framework for its intended purpose?" (Bech-Danielsen, 2013). Vitruvius' third category, beauty (originally emphasizing "proportions") is an aspect of what we might call "architecture's spatial and aesthetic conditions" (Bech-Danielsen, 2013) nowadays. In my thesis I study beauty, or rather aesthetics, as a category that includes the impact of both ugliness and beauty on the physical and psychological aspects of users' experience. Seen this way, the classic architectural virtues are not only tied to the factual lay-out of buildings, but could be said to appear in the preceding studies as ways in which artwork affect people's orientation, remembrance and wayfinding.

6.4.2 The purpose of interior design and special architectural features

The basic structure of building design and the interior design of hospitals can be regarded to include all of these three aspects. Not least, they allow us to regard the interior as contingent upon the visitors, the staff, and the patients; i.e. a modern comprehension of Vitruvian thought works regardless of how well acquainted one

is with the interior space. As Svensson sees it, the purpose of interior design is the same as in architecture in general, namely to create a frame for the activities of human life, such as working, studying, living, and so on. The three Vitruvian components of durability, beauty, and function should thus, according to Svensson, ideally be part of interior design as well as architecture in general, thus also in hospitals.

Since hospitals and their interiors contain societal institutions that must work on an everyday basis, I asked Svensson "Do you think that the interior design has potential to improve the action of our daily life? Svensson's response was "Yes, I'm really convinced. Interior design is a tool for people, as well as it is an experience, and inspiration." Based on this, I asked "How could the interior design inspire people?" Svensson responded that the interior design could add another dimension to "really enhance the function" as well as the users' experience. Svensson gave two examples from the 1990s, when the firm White Architects – one of the largest in Swedish hospital design – was designing schools. One example was a bay window they created in a school; that is, a window that protruded from the façade from which the students could look along the façade as well as straight out into the surrounding milieu. The window niche by a bay window is generally quite deep, so the students could sit there on break and use it as a meeting-place, and at the same time also have a view of the surroundings. Another example was a small greenhouse of about four to five square meters that was built as an attachment to a school building. During the design process, White invited students from the secondary school to take part in the design of the new school. There was one very quiet student who did not make any comments during the presentation of the project, but on his way out he approached Svensson and, standing very close, he asked: "Is there a cafeteria?" Svensson responded affirmatively. Then the student asked again: "Is there a greenhouse?" Svensson responded: "Yes." The student then responded: "Fine, then the school is OK." A greenhouse and a cafeteria can mean a lot for a young child, they were thus also important components for a school and in making it an 'OK' place to be. In the same way, a bay window in an unexpected place with a view of the surroundings, a small niche in the corridor, a sculpture, or a special light or material that is not expected, could make important impact, especially if it fits the users' experience, according to Svensson.

6.4.3 "Visual noise": The risk of overloading the interior environment in hospitals

According to Svensson, architecture and interior design should be inspirational, but there is a limit. When the designer tries to do too much, to call too much attention, the environment will be overloaded with colors and materials made to inspire; in other words, the interior design will turn into "visual noise". He further stressed that the designer should be aware of the risk of overloading interiors, particularly in hospitals, because hospital interiors are already overloaded with medical equipment and technical installations. Everything is already complicated in the interior hospital environment, and if you start overloading that even more, there is a risk of creating visual confusion, Svensson explained. Svensson agreed with me that interior design is to be considered a part of architectural design and emphasized that the integration of the two is important in order to eliminate what he calls visual noise. Svensson also mentioned a good example of an integration of art, interior design and architectural design: the children's hospital Astrid Lindgrens barnsjukhus at the Karolinska University Hospital in Stockholm, "where art is really integrated with architecture, a lot of sculptures and paintings are integrated with the design of the hospital, and that is fantastic."

Less is more, in Svensson's point of view, and the designer has to take care to not complicate the interior design by overcrowding with decorative elements, because that may confuse the users and can cause negative distraction.

6.4.4 Architecture, interior design, daylight and wayfinding

Svensson likes the holistic view of a combination between the two professional disciplines. Architecture and interior design support each other, he says, but in a sense the interior design is more important, since human beings interact more closely with the interior environment of a building than with its exterior. Because of this, Svensson believes it is very important to provide functional clues in the interior spaces so users know what they should do in them. I asked Svensson if he would say that the interior design complements the architectural design. While he concurred that the interior design complements the architectural design, he said that sometimes they do not match each other, such as in cases where the architect and the interior designer have worked separately, and have completely different ideas about what the building should be.

In the interview, I remarked that the differences in the design scale could be one of the reasons for the difficulty in matching the interior design and the architectural design. Furthermore, the interior designer is somewhat by necessity closer to the users and their corporeal sense, considering for instance the corporeal space for furniture or Medical devices. Apart from their inherent differences in professional traditions, having different tasks to handle in commissions, the two disciplines could therefore be concerned with different aspects from a phenomenological space, size- and scale point of view as well.

Interior design is often seen as a complementary step that follows the architectural design. Both support one another, but architectural design is often considered to be the base for good integration with the interior design elements, whereas the interior design does not have a magical potential to remedy all possible architectural problems; effective circulation is necessary on the architectural level, together with helpful interior design features, for the design of efficient wayfinding systems. Focusing on what a place could, or should, offer to its users can facilitate the integration between architectural and interior design. According to Maier, Fadel, & Battisto (2009), "[b]y providing a common understanding of the design process, means of representing requirements, and means of analyzing candidate structure, the concept of affordance can provide a framework to create a more fluid transfer of information through the multiple stages of the design process, and a more coordinated effort in the planning and designing efforts among multiple disciplines" (2009, p. 406).

According to Svensson, it is difficult to say that interior design supports wayfinding, but the interior design should contribute to wayfinding, even though the architectural design has the major role in organizing the pattern of the building, and hence the circulation within it, which is really the starting point for easy wayfinding. The architect has to design a clear and understandable organization of the building pattern, otherwise the (poor) organization of the building will make the interior designer's role difficult in terms of compensating for this deficiency.

Interestingly, Svensson considered daylight to be an essential element for supporting wayfinding within a building by helping people to orientate themselves, since they then can relate to things outdoors. Based on my own experience in hospitals, his response surprised me, and I commented that daylight in hospitals is a complicated matter. Certain departments must be isolated from others due to the risk of contagions, while other departments lack windows for

different reasons related to the type of department and its specific function. Because of this, daylight inlets will not be positioned just anywhere in hospitals. Svensson replied that daylight could be effective in some parts of the hospitals but not in others, and the main idea is to design the circulation within the hospital building well as a starting point in order for it to be sufficient for guiding the users within the hospital.

The notion of integrating daylight by connecting outdoor with indoor light within the wayfinding system is interesting however, and some daylight inlets could function as landmarks on which to rely as reference points when orientating oneself within the hospital building, from Svensson's point of view. Svensson added that from 1960 to 2005, many hospital designs were impacted by the concept of integrating wayfinding with daylight and gardens, such as New Academic Medical Center in Songdo, South Korea; Robert Wood Johnson University Hospital in Hamilton, New Jersey, USA; and the Johns Hopkins Hospital in Baltimore, Maryland, USA.

Well-designed circulation (vertical and horizontal) is the base of an effective wayfinding system, particularly in hospitals, since the hospital as a complex building contains many medical departments with supporting services and facilities. They also include three main circulation lines: staff, patients, and visitors, that should or should not intersect, and the delimitations of each line are different. This complexity must be handled well from the start; otherwise the interior design will not be able to compensate and improve the wayfinding system. Using daylight as a wayfinding element is a very interesting way to create landmarks or nodes in hospitals, even if – when it comes to complex existing hospital structures, or specialist needs in hospitals – it might not be easily or generally applicable, as each department has its particularities (patient type, isolation of possible contagions, and so on). Because of this, hospital design is often concerned with the daylight only in public spaces and in patients' rooms. We can conclude that an interesting task for future hospital design could be to try to integrate daylight more in ways that support orientation.

6.4.5 Interior design to solve architectural problems in wayfinding

In general, the interior designer could face architectural obstacles when designing wayfinding functions. From Svensson's perspective, handling these obstacles

requires the designer to strengthen the tools of wayfinding, i.e., the designer has to work with very clear visual marks and stronger signals in terms of colors, figures, or text. Furthermore, he says, the designer has to work with wayfinding as an essential integrated part of the interior figuration and its elements, not just with wayfinding in the form of [verbal or symbolic directive] signs hanging on a wall.

The design of the circulation in hospitals has to be clear and legible for supporting the interior design early on, otherwise great efforts will be required of the interior designer to improve wayfinding design somehow, without any guarantee that these architectural obstacles can be resolved. As Gora said: generally, "[the designers] really made a lousy environment and they want art pieces to save it and fix all the problems and as well make people happy." As Svensson sees it, the design related to wayfinding could be assigned to an interior designer or an expert on wayfinding, but in some cases it is part of the architect's responsibility. In any case, Svensson sees being a designer as a great responsibility, and feels that designers should put themselves in the position of the patient or the visitor more often.

These general views from an experienced architect raise questions about designers' sources of information about how people orientate themselves in hospitals. The essential point when creating supportive interior design for wayfinding is understanding the diversity of that support, i.e. the diversity of the users' background and culture. It will never be possible to truly build for everyone, but the designer can estimate the most generally suitable design for the broadest possible range of diverse users by designing in dialogue with the users themselves. According to Maier & Fadel (2009), defining entanglement of relationships and the interactions between designers, environment/object, and users calls for a relational concept of design that already exists in the affordance concept (Maier & Fadel, 2009, pp. 19-20; cf. Warren, 1995; Reed, 1985). Today, interactive types of design in dialogue with users, perceivers, or concerned citizens, is considered an advanced, but also necessary, step in design, and the debate about the advantages and disadvantages of this interchange is growing ever more profound (Till, 2005; Miessen, 2010; Hofmann, 2014). If architects and planners discuss this interactive approach to design, we could also ask to what extent artists put themselves in the users' shoes, or speak directly with users, in order to understand and be guided by their expectations and needs. There are individual artists that make interaction a crucial part of their art, such as Apolonia Sustercic (2013), but this "is still far

from the norm" (Craig et al., 2012). Understanding users' expectations and needs is a vital and very tricky part of the design process, because it is linked to the issue of visual perception – in other words, to a diversity of aesthetic preferences as well as to a range of possible affordances. Affordances have sometimes been seen as a utility-oriented "mechanism" (Maier, Fadel, & Battisto, 2009) that connects the environmental features with the users' capabilities, and assists and guides the designer to define possible and probable actions. In a utility view of affordance, undesired actions take place when proper understanding of what may be afforded by a designed environment is not transmitted to a user, or when the design of an environment triggers other, or undesired, types of actions that the designer could not anticipate. To an extent, these "undesired" actions might be reminiscent of what Gibson saw as "misaffordance" (Gibson, 1979), where a given possible effect is not perceived; however, if we maintain a deeper ontological meaning of the notion of affordance, all of the perceptions that cause side effects or non-proper uses are actually action possibilities too. A relevant usage of the affordance concept in a designerly process is to not determine the right or wrong action, but rather to use it as a guiding concept from the very early stages of a design process as well as after completing the project, trying to assess the design when the building is in use. That way, "understanding early information in terms of affordance can help designers determine appropriate measurable goals or hypotheses that may serve as guiding principles in the design process" (Maier, Fadel, & Battisto, 2009, p. 406). Additionally, Warren (1995) states that in designing an environment, architects must focus on both: how to be creators of affordances, and how to imagine how the users perceive these affordances. That way, by being on both sides of creation, so to speak, architects are able to make environments that invite actions based on the users' needs.

6.4.6 The role of art as an eye-catching element

Seen overall, the hospital is built as a technical and rational environment because of hygienic factors, medical standards, and safety issues. It is difficult to design the hospital to be a totally user-friendly place. This makes art a "glowing element" that to some extent softens the technical character of the medical environment, states Svensson. Art is important for emphasizing a human presence and an aesthetic aspect, or as Svensson put it: "the art is essential to provide and enhance the human scale and touch in hospitals." Svensson considers artwork essential for

the creation of unique places that may help visitors and patients, and to some extent the daily working staff, to orientate themselves within the places. This is in line with the research that has indicated that artwork, as particular aesthetic elements of the interior design, has a positive impact on "improved experience for patients, service users and staff alike" (Lankston et al., 2010). In addition, as we have seen, works of art are one of the interior design elements that can directly as well as indirectly support wayfinding (Pati et al., 2015; Alibrahim, 2017).

Svensson has not worked very closely on a design with any artist. The closest thing to a cooperative design process was a work of art that came afterwards; it did not complete the design, but in Svensson's words, it "almost related" to the architectural design that he was part of making. Svensson regards artwork as one of the interior design elements with the most significant impact on wayfinding compared to other design elements, especially in that it creates unique spots in a broader setting. Architectural elements in themselves could have the potential to create unique places, without art, and could be as strong as art in communicating human scale and human experience, according to Svensson; however, he sees the chance to achieve that kind of uniqueness with artwork as greater. In the interview, I commented on this, saying that "not all artworks could play the same role and have the same impact; it depends on the piece of artwork itself." Svensson responded that he is open to any type of artwork, as long as it contributes to the experience of the space, but that depends on its location and its size. "It could be a huge wall painting, a sculpture hung in an atrium, a small sculpture outside in a yard or in a corridor, a minimal thing that is first unseen, but when you get closer you get another experience." Some artworks are more dependent on the context. Svensson stated an example from when he was working with others on the design of a secondary school in Norway, when a "great" artist came up with the idea of making a bronze sculpture of two feet. They were huge feet, around two meters, one standing and one positioned as if just about to start walking. The scale, according to Svensson, "was nice," and it was in front of the entrance of the school, symbolizing students leaving the school to take a step into life. Svensson liked the sculpture; he said it was "the right thing in the right place, scale-wise, material-wise, and symbolically." This shows some of the important criteria for Svensson when it comes to artwork: playing with scale; making a spatial contribution that relates to the architecture; lending additional symbolic value to the place; and presenting a strong material that resonates well with the designed building, but also makes a nice contrast to it. All of these factors add to

the artwork's potential to create site specificity, which is preferred but not always the case. All in all, the art is seen as adding value, but it often comes at too late a stage, after the construction of the building.

Placing the artwork when the building is in use can negatively impact its potential positive influence on both well-being and wayfinding and be detrimental to how well it fits and articulates the surrounding milieu. The effect will then rely solely on the particular skill of those who have overview over the process of choosing and placing the works. A good articulation of artwork resulting from mutual planning and integration between architecture and art display would make a more secure strategy for integrating art that supports wayfinding and orientation, especially in the complex health-care setting where both one-time and regular users can recognize them as having landmark quality.

6.4.7 Designing a project that is concerned about newcomers

Svensson has thought about newly immigrated people on an urban development scale. He was for example involved in designing and planning different areas in Malmö that have long been destinations for newcomers to Sweden and where many inhabitants have non-Swedish ancestry; these areas include for example Lindängen and Rosengård, among others. He has also worked with temporary housing for new arrivals in Malmö. However, Svensson has not worked on a project that specifically deals with newcomers' wayfinding and orientation in the Swedish hospital setting. Asked what he would take into consideration if he were commissioned to work with a project that takes design for newcomers in Sweden into account, Svensson found it "hard to generalize." He prefers to "involve [target people during the design process] in order to listen to the specific needs and desires in the specific project." Furthermore, dealing with newcomers is a challenge, Svensson said, in terms of both cultural differences and economic factors (they generally have less money at hand). We can conclude that from a professional point of view the integration of newcomer's wishes is seen as important, but ideally dealt with as any functional issue in each case, but that it remains unclear in architectural projects how closely the needs can be expressed by the newcomers themselves and identified by designers in direct talks or participatory acts.

6.5 Discussion on professionals' insights

The interviews with art and design professionals with a direct influence on artistic and architectonic environments at SUS Malmö have highlighted several points of interest as regards the purpose and function of art and interior design in orientation and wayfinding. They have also raised attention to involving different user groups in the processes of choosing and making artwork and interior design that will be placed in the hospital environment. While Gora emphasized the need to create unpredictable artworks that spark people's curiosity, making them want to explore both the artworks and their surroundings, Sköld defined art as a creative process of visualization that gives the user access to a second world of imagination that can offer new interpretations of the daily life at hand. Both saw it as important to leave plenty of interpretational space to the perceiver of the art, but also felt that the art has to work on its own premises in order to provide a good ground for such interpretation. Furthermore, the definition of architecture given by Svensson includes users' mental and physical experiences, seen as part of a longstanding tradition in architecture to see to values of both aesthetics and function. The representatives of art and architecture practice interviewed here thus express concern about the user's experience. They emphasize that art and architecture can, and should, communicate to users and furthermore provide them with legible (Lynch, 1960) and adequate (Mollerup, 2009) environmental features that enable visitors and patients to build their own stories with the help of the surrounding context, and with which they can orientate themselves and relax, so as to "feel at home" (Ahmed, 2006). If feelings of being "at home" can be achieved with art, and a sense of familiarity can be gained through the recognition and appreciation of this art, then this should have a part in assisting people in interacting with the environment in order to facilitate their orientation, even if it is their first time in a specific location.

The making perspectives accounted for here point to the fact that art can have different meanings for different people; the same surroundings and the same artwork can evoke quite different individual emotions. As the first and second study of this thesis showed, people's different experiences of art and interior design can be tied to their different backgrounds such as occupation, culture, memories, or acquired aesthetic preferences. These different experiences of certain artworks or milieus may urge a person to move "towards" or "away" from them (Ahmed, 2006), and in some cases they might even constitute a kind of aesthetic

"placebo effect" (Sandin & Ståhl, 2011) by distracting the patients' or visitors' attention from the hospital environment, or even their own medical condition (cf. "soft fascination", Kaplan & Kaplan, 1989, pp. 192-193). Such relief effects are known and mentioned by the professionals as desirable; for example, as commissioner, Sköld considers works of art successful in the hospital setting when they create attractive environments that distract the negative thoughts of patients, visitors and staff and give them an extraordinary experience and further meaning beyond the more ordinary and medical ambience expected at hospitals. The users' satisfaction and their interaction with artwork are actually important indications – as confirmed by Gora and Sköld in this study – of successful artwork in the hospital setting. However, individual preferences and experiences also challenge experts' statements regarding the type of artwork that works well in hospitals. Even if the aesthetic quality of artworks and architecture in themselves, and good aesthetic combinations of them, can be seen as a measure of success of integrating artwork in hospital environments, such as in the children's hospital Astrid Lindgrens barnsjukhus in Stockholm, the actual reaction of a wide variety of receivers cannot be predicted.

6.5.1 The necessity of early co-operation

Another measure of success of the appearance of art and architecture in hospitals confirmed by all three professionals is when they convey a welcoming environment to the visitors and patients. Welcoming elements and environments give patients, visitors, and staff a sense of familiarity and comfort that may extend into a sense of orientation that can be brought along within the environment. Thus, as the art and design professionals in this study also expressed, care for the human being should be a primary step in the architectural design process. If design aims to address the users' needs and preferences in the hospital environment, this should be confronted already in the early stages of the design processes in order to be successful in terms of giving users a sense of belonging and encouraging interaction with the surrounding milieu. In other words, the collaboration between the users and the designers, or participatory design, during the whole design process helps promote the accessibility of physical spaces, which should be accessible for everyone regardless of their age, abilities, and disabilities (Persson et al., 2015).

Likewise, the interaction between architects and artists should preferably be part of the early negotiations, in order to avoid what could be called aesthetic rescue operations, where art is brought in to make environmental repairs to architectonic structures that don't fulfill users' needs. Gora, Sköld, and Svensson all emphasized the importance of collaboration between the artist and the architect in the early stages of the design process, where the interior design elements, artwork, and architectural elements support each other to create a well-designed environment and wayfinding system. Additionally, Sköld named two types of obstacles that could make the installation of artworks in hospitals difficult: the layout of the floor plan, and the structure of the spaces within the department. A floor plan with too many angles or/and curves could complicate the process of creating a rhythm with the artwork being hung. The same goes for the interior design of the space: its materials, colors, informative signs, display panels, and so on can make the installation of artwork a complex task, as Sköld experienced at the Department of Infectious Diseases. This confirms that architectural design is the base for a rigorous integration of interior design and art. Although artwork was considered important, Sköld and Svensson emphasized the architectural organization of basic building patterns like floor plan and circulation as the starting point for a well-designed wayfinding system. To this, we could add Mollerup's wayfinding strategies (2009), where interior design complements the architectural design. The properties of a well-designed floor plan can guide the way-searcher in using it, whereas bad circulation makes supporting wayfinding a much more challenging task for interior design and artwork, since these interior elements must then compensate for misleading architectural design.

6.5.2 Modes of artwork, and their impact

Certain generalizations made by Gora and Sköld give indications of what makes artwork work well in hospital settings in terms of enhancing wayfinding: figurative artworks such as a sculptures of cute animals mostly attracts children, but could be remembered by adults as landmarks. Artwork that depicts motion, or a series of works with a common theme that are hung so that they continue in a certain direction could indicate to the way-searcher to continue walking in that same direction. Similarly, artwork that breaks the pattern with its color, motif or placement can attract people's attention and make these people walk up to it. However, it is only possible to use a homogeneous aesthetics of artwork to

orientate the way-searcher when the way-searcher's preferences and the displayed artworks "fit;" i.e., when the intended and experienced "usefulness" is there (Ahmed, 2006). In this respect, the artwork's theme and motif and the way it is displayed could be approached in more elaborate ways to aid wayfinding and orientation in hospital environments. If a broader view on what orientation means for visitors were acknowledged by decision-makers of the environment, certain artworks – that otherwise might work very well in galleries or homes outside of the hospitals – could be avoided. The acuity of judgment of experts who care about people's reception of art is important here in hindering the unnecessary evoking of perceivers' negative memories and unwanted emotions, or unnecessarily provoking political issues. Furthermore, attention must be paid to unforeseen individual differences among the perceivers when the impact of certain works of art is being considered. Therefore, the installation itself, of artworks, maybe also of design elements, or extreme wall colors, must be allowed to undergo change, maybe even quick change, after their installation; that is, these should not be regarded as permanent aesthetic elements.

There was one interesting and specific element of design that came up in all three interviews: the element of light and lighting, where for instance the use of appropriate lighting that helps articulate artworks, or where intermittent nodes of daylight may support the creation of spatial rhythms. These were considered as factors that have a great impact on user's sense of orientation, as well as offering relief from medical or clinical or otherwise discomforting circumstances. Given that certain functions in a hospital have to rely on artificial light, it is interesting that the importance of light was mentioned by the visitors/participants in the first on-site interviews, as well as by the professionals as part of their working experience.

6.5.3 The choices, and managing, of artwork and its display

There are no explicit requirements for choosing and placing artworks in hospitals, but some were expressed by Gora and Sköld: presenting unique pieces (attractive and distinguishable), caring about the artwork's impact on the users and their environment, striving for easy maintenance, and acknowledging safety. Nevertheless, there are similarities and patterns when it comes to the technical requirements that appear in different art commissions, as Gora confirmed, which can ultimately have an impact on the appearance of the artwork. The interviews

with professionals indicated that requirements regarding choosing artworks might be based on the project leader's personal preferences, or on the building owner's wishes. Local staff or leadership at a given hospital may have a decisive voice at times. We have also learned from the interviews that purely pragmatic constraints, such as what is currently available in the locally stored collection of artwork, could limit the choices.

The existing ways of obtaining artworks in hospitals are: purchasing art from galleries; making commissions by contacting specific artists; and holding competitions. These three ways of collecting artworks guarantee several mediating agents, and this is one of the reasons behind the diversity of artwork in hospitals. In line with what Gora and Sköld expressed, this diversity is important because it has a positive impact on wayfinding and orientation, due to the differences and uniqueness that make the different places within the hospital distinguishable and hence possible to rely on as landmarks (Lynch, 1960) or familiarity markers (Pati et al., 2015). The diversity will thus provide a broad possibility for way-searchers' different needs when orientating, as well as sometimes directly assist navigation, by contributing to the explicit guidance of a way-searcher seeking to reach a certain place – that is, as verbally communicated to someone who knows the way. On the other hand, according to Svensson, overloading the interior design in hospitals with too much artwork will create "visual noise" in the environment. The artworks should thus be curated so as to work well together and to avoid confusing people's orientation in hospitals.

The art impact factor has also to be measured against the possibility that certain way-searchers only look for verbal signage elements and see all other visual design elements (including art, and even "provocative" art) as only disturbing or uninteresting elements, as we could see from the second study of this thesis.

In a sense, the professional objective of interior designers could be said to impact the users' experience more closely than the architects' does, since interior designers are concerned with sensual elements (textiles, furniture, and colors) that relate to the corporeal experience of the people in a room. However, as we have seen, all three professional categories – the architect, the interior designer and the artist – must take users' needs into consideration during the whole process of producing their work, also in the early phases. During the process, they should preferably remain in contact with the staff, patient representatives and hypothetical

new visitors for a deeper understanding of how to fulfill their specific needs, at a specific location, in their design.

6.5.4 Newcomers and the issue of orientation in the production of art and design

The professionals interviewed here expressed that newcomers should be treated like everyone else in their projects. We can say that all three professionals stated, in different ways, the importance of getting to know the newcomers' backgrounds for understanding their needs, and that it is necessary to experience how the newcomer will perceive and interact with the environment, so that the design of art and the environment could fit these users' needs and wishes (cf. Persson et al., 2015). However they had less experience, and different experience with direct consultation of newcomers' needs, especially in terms of orientation and wayfinding. Neither Gora, Sköld, nor Svensson had worked specifically on a project that was concerned with newcomers' wayfinding and orientation in the Swedish hospital setting. However, all of them had in some sense considered immigrated people or refugees in their work: Gora and Sköld by regarding these groups of people as a part of the Swedish society and hence part of the audience of their work, and Svensson through work on several projects (on the urban and building scales) for immigrants in Malmö. As an art administrator in an official institution, Sköld has to follow the Swedish public procurement act (2016:1145 – LOU) regardless of who the users are. Gora and Svensson expressed different views in relation to whether dealing with newcomers is a "challenge" or simply a "specific precondition" in the design work: Svensson saw the different cultural backgrounds and economic constraints (little or limited funds or income) as potential difficulties, while Gora viewed the task more as a specific condition that she would address as part of the work. However, Gora had not specifically worked with migrants as a target group in her projects, which Svensson had; hence, the latter had more experience of relating design work to newcomers, which might be reflected in his cautious answer. In conclusion, we can say that good wayfinding design has to consider the needs of newcomers as a natural part of the task, but also that specific understanding of these needs is necessary.

In this study, I became aware that full collaboration between the users and the development team (designers, researchers in both academic field and design firm, consultants, and so on) could provide the development team with a deeper

understanding of the users' needs and how it relates to their background and culture, which in turn might help designers create a conveniently designed environment for everyone using it. However, as a researcher, I need to conduct further interviews with art and design professionals with specific experience in the field of hospital design, as well as experience designing in dialogue with users, to gather more information about their experiences of designing wayfinding systems in the hospital setting. This information could help me to gain a broader understanding regarding the extent to which users can be involved in the design process, and perhaps even to make guidelines for creating well-designed wayfinding.

In the exploration of the users' perspective in the first and second studies, as well as the art and design professionals' perspective in this third study, various views and preferences on how architecture, design and art relate to orientation and wayfinding have been expressed. These views, I felt, should preferably be weighed against observations of how people act with these elements in a real situation. I therefore decided to investigate the impact of the artworks in a specific hospital setting from a different angle, where my own first-person perspective as a researcher is foregrounded. By observing the interaction between the users and the environmental features in a hospital space and keeping a slight distance to those observed, in the next study I will look at the influence of the environmental features on users' wayfinding and orientation. This final study of the thesis is a review of my own studies in an entrance area and waiting space at SUS Malmö.

Fourth study
Orientation and familiarity

7. Fourth Study: Orientation and familiarity

In this part of the thesis, I will review observations I made of the interaction between some users and their surrounding context at one of the main entrances at SUS Malmö. In the first study of this thesis, I interviewed "newcomer visitors" (i.e. visitors who are unfamiliar with the place that they are visiting in my study) and "familiar visitors" (i.e. visitors who are familiar with the place that they are visiting in my study). In the second study, I interviewed newcomer visitors (mainly refugees unfamiliar with the hospital place, and slightly familiar with the culture), and in the third study, I interviewed art- and design professionals who work with art and architecture about their impressions of the impact of interior design and artwork at SUS Malmö. In other words, in these first three investigations I was trying to understand the respondents' perspective by accessing their opinions through a questionnaire and in interview situations. In this fourth study, I will look at the situation of art's impact on wayfinding within the hospital from a different angle: that is, from a distance and as an observer of everyday interactions between users and their environment. The aim is to see how the environment's physical features could influence users' orientation in the observed place. This observation is divided into two main sessions of about 3.5 hours each in the first focused observation and more than 6 hours in the second, with a number of visits before that to prepare my observation approach. In this fourth study, both newcomer visitors and familiar visitors appeared in the observed place.

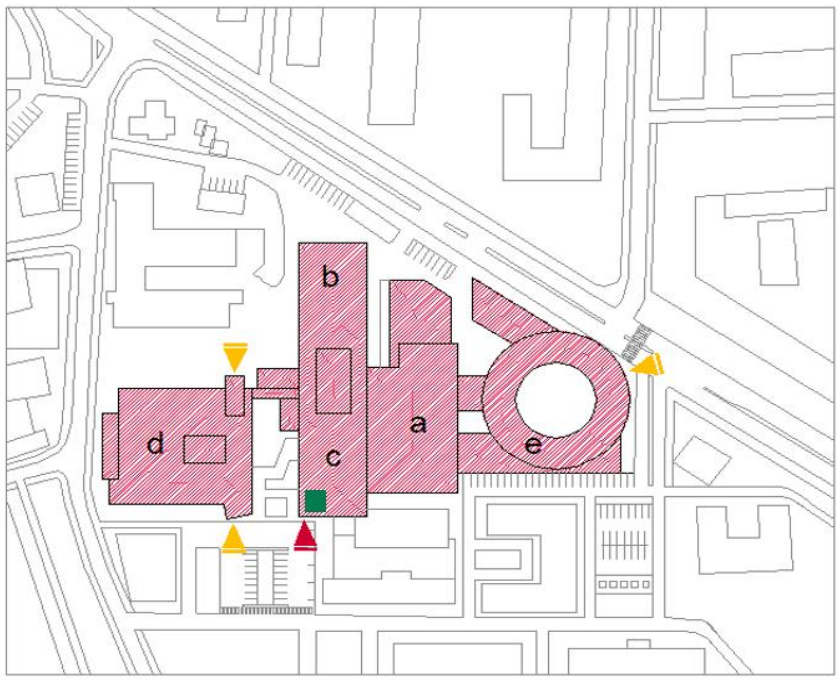
7.1 My personal experience of the studied place and its usage

The first time I encountered the study site was approximately one and a half years before the actual series of my focused observations took place. At the time, I was looking for a site to conduct the second study of my thesis (see Figure 23). When I passed the main entrance of the building for the first time, I caught sight of two

artworks: a wooden sculpture, and a large copper mural. I experienced this as a sudden encounter, but perhaps my immediate notice of it was biased since I was consciously seeking artwork that would fit the target of my second investigation. My intention at that time was to not rely on my own experience to evaluate the impact of the artwork on orientation. Nevertheless, I could depend upon my own experience of seeing that the works of art at this site, which had immediately caught my attention, were attractive elements that might have a potential influence on people's orientation in that environment. I later realized that there are obvious individual variations in visitors' first impressions when entering here, depending on background, occupation, and culture. For instance, the first time I saw the copper mural (described in more detail below), my impression of it was positive. I don't know exactly why; perhaps its clear figural elements gave me a sense of nature. When I was discussing the place and its artwork later with my supervisors as a possible study site, I mentioned how much I liked the copper mural, and one of my supervisors mentioned that this piece of art contains a symbol of bereavement, or of death. In Sweden, the expression "to put (or leave) one's clogs," or one's shoes can be a euphemism for someone dying. The expression does not exist in my home country, Jordan, and it was at this point that I realized how the cultural differences and the various backgrounds could impact our perception of the surrounding context and our reflection on and reaction towards it. During this initial visit, it also became quite clear to me how the artworks could be landmarks (Lynch, 1960), distinguishing a place from other places and helping me to determine my position and how to orientate myself.

In the previous studies, we have seen how the experience and interpretation of a surrounding's visual elements are influenced by the experiences that the individual brings to the place: physical and mental state as well as social and cultural background, play a role. We have also seen that this previous experience and the emotions evoked by it were already mentioned as a relevant factor, but not further developed as such, in early wayfinding studies (Lynch, 1981). In the first study, I found that the participants' background (their occupation and familiarity with art, as well as with their previous and new culture) affected their perception of the studied environment in profound ways, and this carried affordance (Kopljar, 2016) in turn influenced their effectiveness in wayfinding by enhancing and disrupting their wayfinding intentions. This experience factor was confirmed and further developed in the second study, and discussed as an extension of interest in the placement of art in the third study. In the first three studies, the information

was provided verbally by the informants. This also meant that in our conversations, I informed them that interior elements and art were of interest in the studies, which also made the participants focus on such items in the environment and in the conversations. In the fourth study, however, I simply observed patterns of movement and gathering, without informing anyone present, which meant that I could observe users' relation to the artwork in a more unbiased manner.



The hospital building (a-d) and the emergency care building (e)

The entrance zone (the observed place)

Main entrances that lead to the hospital building and the emergency care building

The direct (main) entrance to the observed place in the fourth study

Figure 23. The hospital SUS Malmö.

7.2 First observation session, 28th August 2017

> *"I walk into the entrance zone as the others do, and I try to orientate myself as if I were a newcomer to the place, but I have a different goal as well, as an observer. I feel comfortable because I have been there several times before. I'm looking for the best position for my observation; I decide to sit close to the small kiosk and service shop Pressbyrån to get a broad view, but also a natural position, for watching how people interact with the environment and orientate themselves. It is a very active place; there are a lot of people walking back and forth in white uniforms, while others are dressed in civilian clothes. I spend around three and half hours observing the passersby."*

Many people pass by this place every day: patients, medical staff, visitors or people with a variety of service occupations. The entrance hall is a node place and waiting area that contains artwork and services such as the combined kiosk and service shop *Pressbyrån*, an ATM, a pharmacy, and a silent room, where there are some services for meditation and possibilities for worship or to express farewell to deceased loved ones. When coming into this entrance hall, there are glass-paned walls to the left that make it possible to look out over a green outdoor area (see Figure 24). The waiting area contains two main pieces of art: a colored, figurative wooden sculpture standing in the middle of the room, and a copper mural alongside a wall leading to the silent room. The wood sculpture symbolizes maternity and depicts a woman sitting on a chair, holding a child in her arms. The female figure is surrounded by a cat, a dog, and a bird. The cat and the dog are located under the chair, while the bird sits on the chair behind the sculpted woman. The sculpture's colors are bright: red, yellow, orange, and yellowish beige. When coming from the entrance, a visitor meets it before reaching Pressbyrån and the corridor that leads further into the hospital (see Figure 25). The second piece of art, the copper mural, is hanging on the wall beside a couple of staff elevators. It depicts a beach scene, with elements like sand, small stones, water, with human footprints and a dog's paw prints in the sand that seem to disappear into the sea. A small rectangular section seems cut out from the surface of the mural, and is placed over a marble stand in front of the mural; on this piece are depicted a pair

of wooden clogs of a kind typical for this part of Sweden, seemingly kicked off, and a dog's empty leash (see Figure 26).

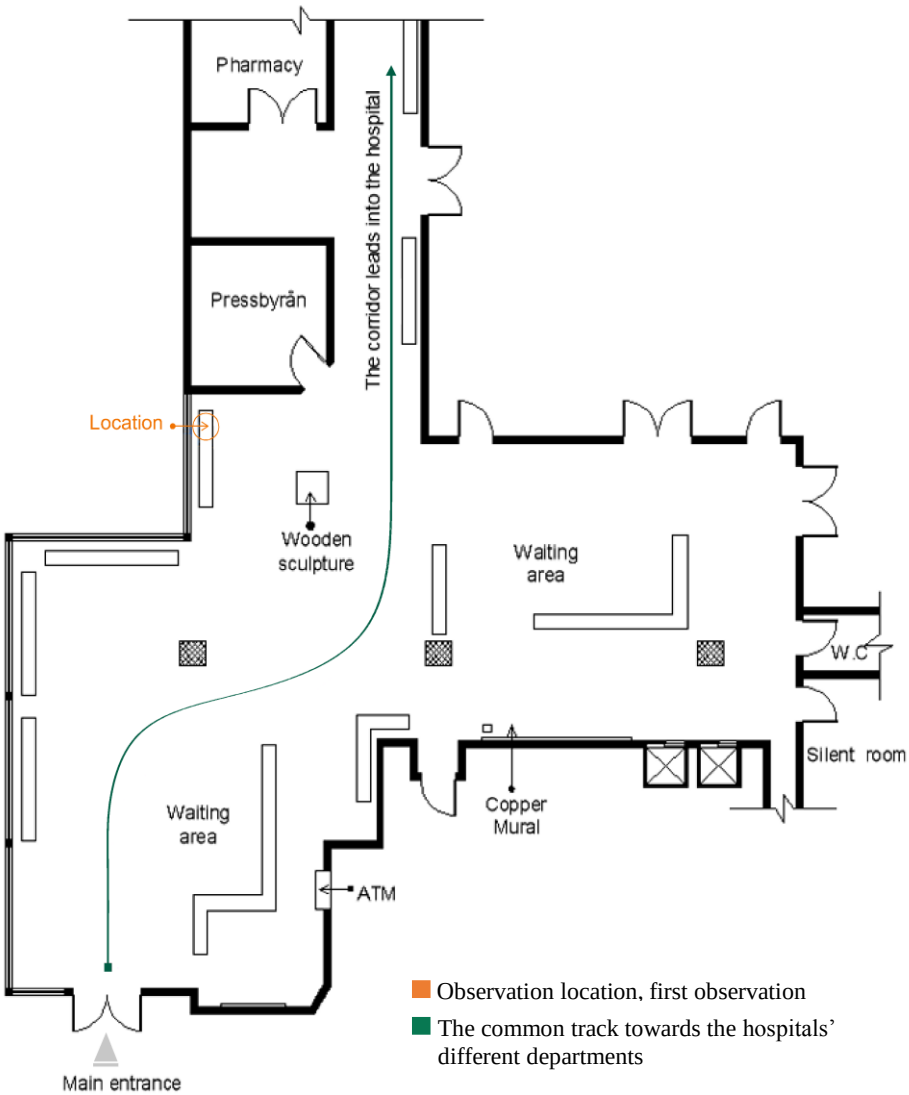


Figure 24. Plan of the entrance and waiting area.

Figure 25. The wooden sculpture.

Figure 26. The copper mural.

The location from which I chose to do my observation in this place is an entrance area close to the store Pressbyrån and the wooden sculpture. In terms of spatial morphology, the position was chosen for having a large isovist factor,[9] meaning that the segment of space that I as an observer could view from this point was bigger than from other points in the room. This also means that the possibility of observing all the prospective interactions between the users and the surrounding context was high, hence also giving me the possibility to monitor the entrance door, the artwork, the sitting areas, the store Pressbyrån, the pharmacy, and the silent room without excluding any one of them from the scene. I positioned myself on a bench, which gave me a natural and thus more or less unnoticed presence in the room while observing.

For the most part, people in this place were passing the center of the hall and walking in two opposite directions, either entering or leaving the place. People who entered were typically heading to specific destinations, most frequently the ATM and Pressbyrån area to buy something, or the corridor that leads to the pharmacy and the departments in the hospital (see Figure 27). Some who entered the place also took the opportunity to rest, sitting down in the waiting area. The people who were leaving the place either left the building to go somewhere else, or just went outside for a while and then returned. The possible reasons for this could be to take a breath of fresh air or to smoke, or for staff or visitors to bring a patient for a short journey to the garden outside.

Figure 27. The corridor that leads into the hospital.

[9] "An isovist is the set of all points visible from a given vantage point in space and with respect to an environment. The shape and size of an isovist is liable to change with position" (Michael Benedikt, 1979).

As people came and went within the place, it was hard for me to know their intended final destinations, because I had decided to stay at my specific position and was not able to follow and see what happened when people continued on their path. Nevertheless, in this limited observation time I could distinguish certain reasons for being there, which I categorized as: patients coming down from upstairs wards to meet visitors or for a change of mood and place; visitors waiting for their turn to visit patients in their rooms; and hospital staff using the place to get food, converse, take a relaxing break, or skim a newspaper. The staff was the most frequent category encountered during my observations.

One of the patients who came down to meet friends had difficulties walking, and he got help from what seemed to be a relative to reach the place. His friends greeted him with smiles and encouragement. I understand basic Swedish, in addition to English and my mother tongue, Arabic, but their communication was clear regardless of the language in which it was spoken; the pleasure in his face was internationally comprehensible when the young man received his visitors, who helped him with a walker to go outside to the garden. After about an hour they returned back to the entrance zone with lots of laughter, guiding him to his room. At that particular moment, the entrance zone had emptied somewhat; staff members in white uniforms had a fast lunch there before returning to work, some patients were outside in the garden with their visitors, other visitors were in the patient's rooms.

Suddenly, ten minutes before the twelve o'clock lunch break, the place filled up: the doctors and the nurses in white uniforms headed to Pressbyrån to buy food, then sat together to eat and talk. They sat in front of the copper mural, but they did not pay attention to it as a piece of art, probably since their daily experience of this environment has created an overfamiliarity with it which makes it "invisible" or not noticeable for the (over)familiar person (Craig et al., 2012). In addition, crowds of visitors entered the place, heading for the corridor leading to the different wards. They did not pay attention to the artwork or other features that could guide them either; they appeared to be familiar visitors, since they seemed to know where their destinations were and how to reach them (cf. Zajonc, 1980; Craig et al., 2012), and they were heading to their intended destination without hesitation. However, a few passersby, which could be counted on the fingers of one hand, stopped at and walked around the wooden sculpture to discover it, but not more than for a few seconds, then continued. This category of passersby

seemed unfamiliar with this place but they were guided by familiar people who appeared to be in somewhat of a hurry. The wooden sculpture seemed to attract the attention of passersby because it was located on their way, unlike the copper mural, which hangs on a wall a slight distance from their transition path (see Figure 25). It could be that the placement of the wooden sculpture influenced the visitors' wayfinding and orientation in the studied setting (cf. Alta, 2017; cf. Alibrahim, 2017). However, those most attracted by this wooden sculpture were children who came with their parents to visit patients. The children were very happy, and circled the sculpture to play with the figurative cat, the dog, and the bird located under and over the chair; this is in line with what Gora said, that "everybody loves figurative art like cute animals, especially in sculptures." In addition, the bright colors of this wooden sculpture could perhaps be considered to attract children in particular because of its primary colors, such as yellowish orange and red, which children tend to prefer more than other colors (Pancare, 2018). The most exciting moments during the observation were when the children started mimicking the sounds of the cat or the dog to try to draw the wooden animals' attention. This situation in itself drew new attention to the sculpture.

During the lunch break there was an Arabic family sitting and waiting in the area. I heard them speaking to each other in what I recognized as a Lebanese accent about their confusion and sadness because their father's condition had worsened after a heart attack. There were around ten family members, visiting two at a time while the others kept waiting in the entrance zone. This family spent around two hours there, sitting and talking about their father's situation. What caught my attention was that they did not pay any attention to the features of the surrounding context, including the artwork. Their state of mind seemed to be related to the confusion and frustration from and with their father's situation, and the atmosphere in the group was colored by confusion, frustration and distraction, regardless of there also being an apparent level of familiarity with the surrounding environment. Members of the group went to Pressbyrån several times to buy food or coffee. There were four children with them, one of whom became attached to the wooden sculpture during my observation, spending the total duration of the family visit running to the sculpture to play with the wooden animals and to mimic their sounds. His mother ran after him to protect him, but paid no attention to this piece of art or to other interior features that attracted her child during the protection mission; this was probably also due to the emotional aspect, that is, concern for her father, or perhaps because she was distracted by trying to hinder

her child from climbing up on the sculpture and thus only saw it as a potentially dangerous object rather than exciting or beautiful. Or perhaps she was simply not interested in art, or felt that the sculpture did not belong to her culture, sensing it as something to which she was unable to relate.

At one o'clock, the place became crowded again for just ten minutes. Some staff members returned to have coffee, and sat to talk with each other, or skimmed a newspaper, returning to the same place as before, in front of the copper mural. At this point, some visitors were heading to the exit, leaving the hospital after seeing their relatives or friends, and some patients came down from their rooms to sit in the waiting area for a change of atmosphere or to read a newspaper. Fifteen minutes later, four people stopped a staff member, requesting assistance in finding their destination. They were standing off to one side, waiting for someone to ask, which they did with shyness and hesitation. This waiting for a moment to ask someone suggests that they preferred verbal communication – in other words social navigation (Mollerup, 2009), even if it is not comfortable – rather than relying on other visual cues such as signs and maps.

Two people sat in the waiting area close to the ATM and the entrance door for around 30 to 40 minutes without doing anything or communicating with others before leaving the place. At two o'clock, the medical staff in their white coats gathered again in the seating area in front the copper mural. They exchanged some words, spending around 30 minutes there. Probably, the inviting features of this environment afforded these two people, as well as the staff, feelings of being at home to relax and spend comfortable time in the waiting area (Ahmed, 2006; Withagen et al., 2012). At that time, when the place was somewhat inhabited, and slightly later when I left the site at half past two, there were three visitors apart from myself, and a small group of hospital staff present in this waiting space. Most of the visitors left after the patients' visiting hours, and the medical staff and the other workers went back to work.

7.3 Second observation session, 22th January 2018

> *"This time I enter the entrance zone with 'different eyes' and a different perspective. I orientate myself as a person familiar with the place, since I have been at this place a number of times, first exploring it as an study site alternative and later, conducting the previous observation session here. In addition, I have now an evident goal and a chosen vantage point from which to do this current second observation. I decide to choose a different location than that of the first observation; this time I will position myself close to the wall with the copper mural. The seat arrangement has changed since the time of my previous observation — and my new position closer to the copper mural allows me a broad view for observing where new arrivals are going, and I can also watch how people interact with the environment and orientate themselves. Overall, the observed place is used somewhat like a semi-public intersection. A massive number of people pass by here: people in the usual white uniforms, people in other types of work uniforms, and people dressed in civilian clothes. I spend more than six hours observing the passersby."*

The second observation was conducted at the same place as the previous observation, one of the main entrance spaces of the SUS Malmö (see Figure 28). Some changes have been made to the interior milieu since my first observation there however: the seat arrangement is new, and other seats have been added whilst others have been removed (those close to Pressbyrån and the wooden sculpture; i.e. the location of the previous observation). In addition, several new works of art have been hung on the wall close to the toilet facilities and the silent room (see Figure 29). In addition, the location that I chose for my second observation in the entrance area is close to the copper mural, a location selected to obtain a wide view of the users interacting with and orientating themselves within the environment. This observation position also makes it easier to keep an eye on where people that enter the building are heading, making it easier to speculate further on their destinations based on their trajectories after passing Pressbyrån. Facilitating this speculation is the fact that there are three initial prospective destinations to be chosen: the pharmacy, the elevators (heading to the departments of the hospital on other floors), and the large door at the end of the corridor that leads into the

hospital's emergency care building and other departments as well (inner entrance, see Figure 30).

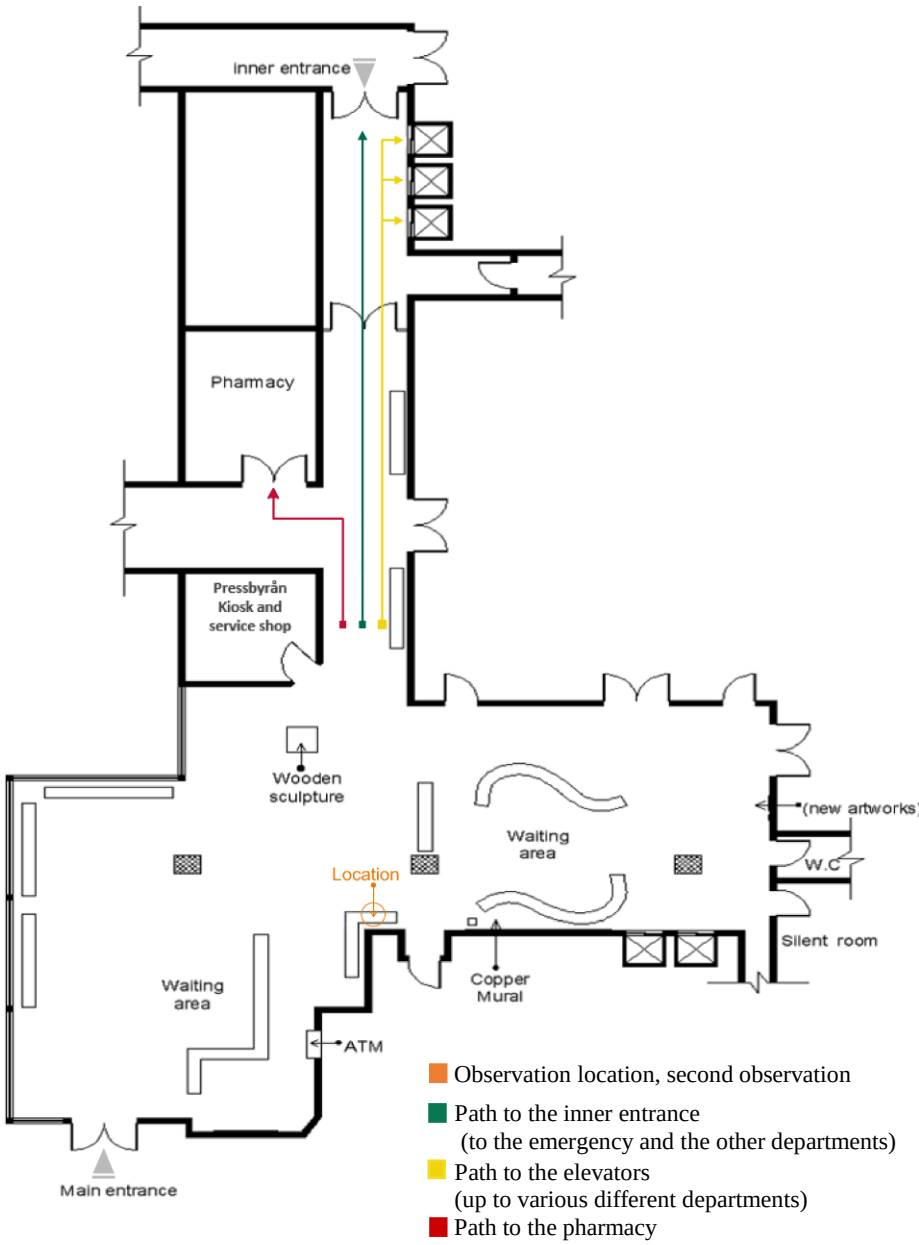


Figure 28. The plan of the entrance area showing the interior design changes and the three prospective destinations.

Figure 29. The two new works of art.

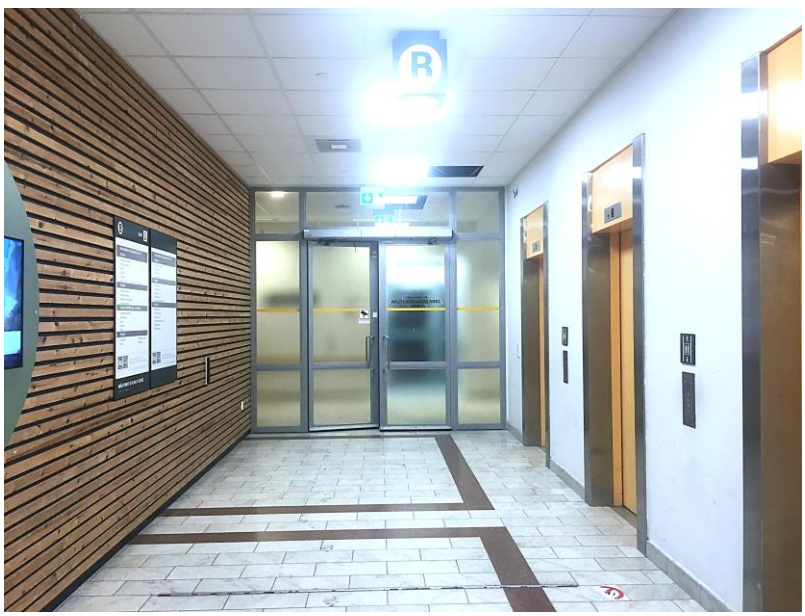


Figure 30. The inner entrance, the elevators, and the informative signs.

At the moment of arrival to the entrance area, there was a person occupying the location that I had chosen for my second observation. I thus decided to wander around the site for a while, exploring and looking at the new arrangement of the seats and making a sketch to document the alterations to the interior space that had been made since the last observation. Ten minutes later, the man who was occupying my observation location left it, and I walked swiftly to claim the seat before anybody else could occupy it, so that I could start observing the interaction between the coming people and the surrounding environment. The impression I had during my preparations to get the right position was that for a node place, the site did not communicate its functions as actively as it perhaps could or should (Lynch, 1960).

At the beginning of the day's observation, there were 11 people in the place: five women (two sitting together and the other three women sitting separately at different locations), a man in white uniform, a man in civilian clothes sitting with his baby on the seats directly next to the copper mural, and an elderly couple on the seats that are facing the copper mural.

A few minutes after starting my observation, two children, aged probably between 4 and 6 years, came into the entrance area accompanied by their mother. The children ran to the wooden sculpture, trying to climb up on it, and their mother, speaking Arabic, called them by their names to come down and to sit next to her. Initially, the children did not listen to their mother, who called them three more times, finally telling them to behave well and stay calm for buying candy when their father came down. As I understood it from their dialogue, their father was visiting a relative in one of the departments. The younger child responded that he wanted to sit on the mother's lap, in her arms, just as the child in the sculpture was sitting, while the older child preferred to keep playing with the cat figure under the chair of the sculpture. Ten minutes later, the father came down and the younger child ran to meet his father, asking when they would buy candy. The father carried him and walked in the direction of the sculpture towards his older child and asked him what he was doing. At this point, the older child asked his father about the possibility of bringing the cat home. The father laughed and responded that he would bring him a live cat instead of the wooden cat. The family left the place and the children were very happy to go to get candy, and excited by the idea of having a real cat.

Meanwhile, when the mother was calling her children to sit next to her, two other people, one male and one female, had entered the place together and headed toward the ATM. After withdrawing money they continued walking toward the pharmacy. Before reaching the pharmacy, the woman became dizzy and the man helped her to take a seat, asking if he could leave her alone for 10 minutes and go buy her medicine. She nodded her head in approval, and he went quickly to the pharmacy. When he returned, he sat down beside her and asked her in Swedish if she was okay. After a short time he helped her up and they walked together to the elevator zone at the end of the corridor. This episode shows a common type of activity here; namely that one person helps another to something. It evokes the thought that besides being a node to be recognized as a way-showing spatial facility, a good common space in a hospital also can be formed so as to facilitate such diverse forms of visitor-patient interaction, staff-patient interaction, or patient-patient-interaction and thus also be recognized as such an area where people can sense a deviation from mere medical care, and that these kinds of interactions can in themselves be seen as part of an act of orientation.

A female patient with an intravenous drip stand was accompanied by two people, one male and one female, from the upper floors via elevator to the entrance area for a break, perhaps for a change of scenery and a breath of fresh air. The two people accompanying her appeared to be her siblings, judging from their similar features. It was very cold outside, and they stood a bit into the entrance doorway, hesitant to go outside. After a while they decided to continue walking inside the place. Her ‘siblings’ helped her by moving the intravenous drip stand, they were walking slowly, talking, laughing together. Around half an hour later, they walked slowly back to the elevator zone, presumably returning to her room. While the female patient and her siblings had been standing in front of the main entrance and discussing whether to go out or not, two young girls came down with their mother in a wheelchair. The mother was completely paralyzed, sitting in the wheelchair placed in the waiting area. The girls chose to sit on the seats located directly in front of the copper mural. One of the girls went out for a few minutes while her sister and mother waited for her in the waiting area, then she returned, holding a small plastic bag in her hand. Then they walked in the direction of the elevators that would presumably bring them back to the patient’s room. In these cases, the patients and their relatives walked and sat in the place without paying any attention to the physical features of the place, thus not to the artwork nearby them either. The critical situation – such as the patient’s poor health – probably

drew their attention away from the surrounding features. During the time of the observation, people who were sitting there for a longer time did not seem to pay any attention to the surrounding context, but were instead reading a newspaper, a magazine, or on their phones.

There were many people coming in through both entrances (the main entrance and the inner entrance) and heading for different destinations such as the kiosk Pressbyrån, the elevators, the pharmacy, and exiting a different way: coming through the inner entrance and heading outside the building through the main entrance, or coming through the main entrance and going into the departments inside the hospital and then continuing towards the inner entrance. The number of people entering the site through the internal entrance was actually quite large compared to the small number of people who entered the place from outside, through the main entrance. The people who entered the place through the inner entrance were thus headed for the different destinations (Pressbyrån, the elevators, the pharmacy) rather than using the place as a crossing zone for leaving the building. The place is thus used mainly as a node place (Lynch, 1960) to which one comes, spends a little time, and from which one leaves again; to some extent however, it is also used as a pure transition space between the two entrances. The majority of the users observed seemed to be very confident and appeared to know exactly where to go and which trajectory to follow in order to reach their destinations; thus, they walked fast and took no notice of the environmental features, such as for example the informative signs. The high level of familiarity with the place, demonstrated in movements without hesitation and without getting lost (Craig et al., 2012), also meant that almost no passersby paid attention to the wooden sculpture installed in the middle of their walkway. The sculpture's presence seemed ignored, not least since it stands close to the newspaper and magazine shelves of the kiosk Pressbyrån, which is a main hotspot judging from the number of people in the place reading newspapers and magazines or eating food purchased there. In other words, the observed people described above, may be overfamiliar with the studied environment (Craig et al., 2012), and this makes them not pay any specific attention to the space itself or its elements (Ahmed, 2006, p. 37). Judging only from my observations however, it is impossible to know whether they actually enjoy being there or not, among the groups of furniture, the art and other elements of the interior design, and thus if these elements actually also play a role in familiar users' (sense of) orientation, even if they do not show it actively.

At lunchtime the pace increased, and a lot of people in white uniforms, ordinary civilian clothes, and other work uniforms entered the place from both entrances. Six people in civilian clothes came in through the main entrance and went to the ATM first, then to Pressbyrån to buy something to eat. The majority of people who came to buy food did not eat the food in the waiting area, but left after making their purchase; this was particularly true of the people in white uniforms. The small number of people in white uniforms who remained in the place to eat their lunch sat on the seats located in the corridor leading into the hospital. Taking place mainly in the corridor-like part of the place, this staff behavior creates a time-space rhythm of the place with some empty and some more crowded moments, also exposing a kind of ownership: external visitors only rarely sit down here. As a force marking this particular part of the place, the time-space rhythm on the way between work and food for medical staff seems to be stronger than the artwork or the interior design.

The people in civilian clothes who ate lunch there mainly chose to sit in the zone in front of the copper mural. An elderly couple entered the site through the main entrance to buy food; the woman stopped just outside the kiosk Pressbyrån, standing close to the wooden sculpture, and waited there for her companion to return from the kiosk. She did not look at the wooden sculpture even once while she was looking around, and after a few minutes, when her husband came out holding two sausage sandwiches and two colas, the two went to sit on the seats facing the copper mural. With the mural directly in front of them, they started eating, drinking, talking, and watching people come and go. There was another elderly couple sitting next to them; this couple had a bag of food and two thermoses and stayed for about two hours. I figured that they must be relaxing; perhaps they were on an excursion of sorts, because they had brought food and coffee from home, and judging from the way they were talking and reading newspapers and magazines, they were enjoying their time. The two couples were enjoying their food and talking together, and they did not care about the surrounding features, such as the copper mural located directly in front of them. It could be that their familiarity with the environment gave these visitors feelings of welcome and comfort; they felt at home and were able to let their bodies inhabit the environment with great ease, to the extent of not noticing the specific features of the place but taking their own identities here as self-evident givens (Ahmed, 2006).

While I kept observing the elderly couple having a good time, another woman came, sat on the seat directly next to the copper mural, and began eating a sandwich. The direction of her seat allowed her a view of the copper mural. After finishing the sandwich, she stood up and looked at the copper mural, then turned and walked towards the new artworks, hung on the wall next to the bathroom facilities, and stopped, staring at them. At first glance, I thought she was interested in the works and curious to explore their meaning, but when she rushed off to the toilets beside the two artworks, I realized that she had been waiting for her turn to use the bathroom. I laughed to myself and continued my observations. At this point in time, a man suddenly stopped in the middle of the corridor, looking at an informative sign hanging from the ceiling that depicted an arrow, the letters B, C, and D, and an elevator icon (see Figure 31). The man kept staring at this sign for a few seconds trying to understand it, in an attempt to orientate himself. He seemed confused however, and then he walked to the elevator zone, where many people were waiting to take the elevator. The informative signs are hanging on the wall at the end of the corridor, opposite the elevators. The hospital building is divided into four parts – A, B, C, and D – each of which contains several departments. The informative sign in question, as well as my observation location, was located in section A of the hospital, and the three letters and the arrow on the sign were to direct people to go further to reach the other parts of the hospital. In this case the traditional signs failed to help the way-searcher orientate himself in order to reach the intended destination. To support wayfinding when traditional signs fail, for example when they are hard to understand, road maps or route maps may work (Mollerup, 2009). In addition, the way the architecture itself leads a way-searcher (Lynch, 1960), or the inviting placement of an artwork, can be seen as a familiar gesture that tells the way-searcher that this is a common route, even for a newcomer (cf. Withagen et al., 2012). We may in other words, as was confirmed in the previous studies of the thesis, see a greater chance to support orientation and wayfinding if there is a mix of elements around, but as the architect in the third study emphasized, not too many elements or too much of a mix, especially not when that mix also includes medical equipment.

Figure 31. Sign hanging from the ceiling, depicting the path to the different parts of the hospital building and to the elevators.

After the lunch hour, the pace of movement pace decreased again and most of the passersby were people in work uniforms and civilian clothes coming through both entrances, using the place as a passing zone, or a node zone (Lynch, 1960), to reach their intended destinations. A few people sat on the seats located in front of the main entrance, waiting for taxis that they had ordered. Usually, the taxi drivers entered the place and called the name of the person who had placed the order. A couple of maintenance workers came in through the inner door and headed into Pressbyrån. They bought coffee and then sat down on the seats, facing the copper mural. They were deeply engaged in conversation and sometimes laughed loudly. They did not pay any particular attention to the artwork in front of them, perhaps due to their overfamiliarity with this environment and its physical features (Craig et al., 2012), or just because they were fully engaged in their talk.

Two hours after lunchtime had ended, the place was almost unoccupied. Apart from me, there were six people in the studied place: five of them sat doing nothing, and one person read a newspaper. After a while, two people arrived in white uniform, one male and one female. They chose the seats directly next to the copper mural, and they were watching something on the female's phone and laughing loudly, while the others in the place were looking at them. After ten minutes the female said "Vi ses!" ['see you later'] and returned to work; the man continued to sit there. The sitting man seemed to have a formal or informal leader position (I dubbed him "the boss" in my notes); he was older than the others in uniform, and during the time that he remained seated there, many young people in

white uniform approached him, seemingly discussing work matters with him. Almost immediately after the first woman left, another woman in white uniform entered the site through the main entrance. The male in white uniform called her to join him. The woman joined him for around ten minutes, then left again. Another male in white uniform also entered through the main door and walked in the direction where "the boss" was sitting and took a seat. They began talking and laughing loudly. From my point of view, they chose this zone (in front of the copper mural) because of the arrangement of seats (its design), which allows people to sit together in groups, facing each other. Due to what seemed to be their overfamiliarity with the design of this environment (Craig et al., 2012), they did not pay any attention to the artwork (the copper mural and the new works), but it cannot be ruled out that the artwork and the design of the environment as a whole afforded them an inviting ambience and feelings of comfort (Ahmed, 2006; Withagen et al., 2012).

A few minutes after half past three, there were only a few people in the place: two males in white uniform; the elderly couple who had brought food and thermoses; three people in civilian clothes – perhaps visitors to patients, or just people who had found a place to rest for a while; and myself. Suddenly, it became noisy; a cleaner had arrived to clean the floor, and it was the floor-cleaning machine. This was a suitable point in time to clean the floor, since the place was almost unoccupied. After cleaning the floor, the cleaner drove off to clean another place, and then I noticed that the elderly couple had left. While it was impossible to say whether the cleaning act had any influence on their leaving, it was in any case interesting to see the place almost empty for a short while. Apparently, hygiene requirements meant that cleaning the place only at night or in the early morning hours was not sufficient, though this may be usual in other institutions. The regularly recurring sound of a cleaning machine can also be a sign that may help orientation (in time), for instance in cases where one has to stay for a long time in the hospital, or when staff feel they ought to return to work.

After the cleaning action, the trajectory between the main entrance and the inner entrance became a bit more active again. A male patient with a movable stand holding a catheter bag and an intravenous drip came down, presumably with his wife, for a change of scenery. They walked in the direction of the main entrance, stopping to stand by the glass-paned wall close to Pressbyrån and the wooden sculpture. They looked out at the workers who were maintaining the

façade of the opposite building and stood for around half an hour, looking out and talking, before returning in the direction from which they had come, their backs to where I was sitting. Their overfamiliarity with the environment, perhaps because of the man's long stay in the hospital, which might be implied by the movable stand with a catheter bag and an intravenous drip, compelled them to find something new to look at for a change of atmosphere. Since the cold weather prohibited them from going outside, they stayed inside and looked out of the window instead. Afterwards, three young males in white uniform joined "the boss" and the other male in white uniform, and two of the three (doctors and nurses) went to Pressbyrån to buy sausage sandwiches and coffee. They then joined their colleagues again. The five males were discussing something that seemed serious, perhaps a work matter, but because of the language barrier I could not understand exactly what the problem was. Suddenly, "the boss" returned to work, but after a short while he came back with two females in white uniform, one of whom had been there earlier. "The boss" asked her to show the others what she had showed him before, after watching it on her phone, all of them laughed loudly and some of them could not stop laughing for some time. As a whole, there are a number of places at the site where people can sit down and talk, but perhaps the zone consisting of the seating in front of the copper mural gave the people in white uniform feelings of comfort and being at home (Ahmed, 2006) to the extent that they gathered there repeatedly, apparently on a regular basis.

A young man entered the place through the main entrance and walked toward the men and women in white uniform in front of the copper mural. Judging from his confidence, he appeared to know them or at least one of them. He approached them, asking for help reaching his destination. The males explained it to him together, and the young man thanked them and left quickly through the main entrance, heading to his destination. Perhaps a preference verbal communication, and a lack of or only vague spatial information made this young man ask these people in white uniform about the destination, instead of relying on signage or other spatial information. A few minutes later, the same young man came back and asked the staff for help again. One of them asked where he was going exactly, and he pointed to the next building. One of the staff explained to him again how to reach his destination. The young man thanked him and headed toward his intended destination through the main entrance. At the same time, all the people in white uniform left the place, probably to go back to work. Their familiarity with the place (Ahmed, 2006; Craig et al., 2012) may have influenced

their description of how the young man should reach his destination, in which they treated him as a familiar person who knows as much as they did. Because of this overconfidence in the young man's familiarity with the place, the directions he received were probably not sufficiently detailed the first time, and he was thus constrained to return and ask for additional help. At times, when verbal explanation is mentioned in relation to wayfinding (Mollerup, 2009), it is somehow taken for granted as a mode of way-showing that will be successful, or that will solve the problem of bad signage, but we should not forget that verbal explanations might also have a lot to overcome before they really become sufficient explanations. On the whole however, it is a bit strange that verbal attempts to find one's way are not mentioned more often and analyzed in wayfinding theory. One reason could be that many early cognitive methods were developed in relation to the newly discovered screen-based environments, where interactive way-searching, such as asking somebody else for directions, was not even on the agenda.

Later in the afternoon, the place became almost unoccupied once again. Apart from myself, there were now six people in the observed place: two people in white uniform sat talking to each other on the seats in the corridor, and a person in white uniform sat on one of the seats directly next to the copper mural, perusing a newspaper. Three old men in civilian clothes sat separately on the seats in the waiting zone in front of the main entrance, doing nothing but sitting, and some people were leaving the building. A man in white uniform came in through the main entrance and caught my attention. I kept my eyes on him, wondering how he could wear just a t-shirt in such frosty weather, while I myself had had to put on an extra jacket. A short time later, an old woman holding a piece of paper stopped him to ask about the address written on it. Walking slowly and close to her, he accompanied her to the elevator zone, where he pressed the button to call the elevator, then continued his own route, walking through the inner door toward his destination. In this case, the way-shower took his time to really see to that the first part of the old woman's wayfinding task was fulfilled, and he even helped her to call for the elevator. Apparently he was very familiar with the environment.

After completing the day's observation, and just as I was leaving the place, a woman arrived with a child of about ten, so I waited for a while to observe how the child would interact with the wooden sculpture by which they would pass. The two passed by the wooden sculpture without paying any attention to it, and the

child kept walking fast with the woman into the corridor that leads into the hospital. The mother was in a hurry, constraining the child from even trying to seek interaction with the sculpture, and the child seemed distracted from a possible attention towards it. This case can be seen, thus, as a social enforcement going on between two subjects, regarding how to act in the place.

After this little social, or intersubjective, incident, reminiscent of how Ahmed describes the forces that are imposed by others on an individual subject (Ahmed, 2006), I terminated my observations. As I was leaving the place, most of the people still sitting there were hospital staff, relaxing, talking, and drinking coffee.

7.4 Discussion of the fourth study: On-site observations of stays and movements

The place observed in study four was used by various people based on their different needs. In other words, the observed users acted based on their perceived potential of the physical environment in relation to their needs. They used the observed place for a variety of activities, such as relaxing, crossing route to another place, eating, drinking coffee, conversing, and waiting. Several of the observed users had to ask for directions to their destination, or sought signs to help them navigate, but most of the users in this study sat down at, or passed by, the observed place in a state of mind and action that made them appear familiar with it. The latter group can be discussed as roughly representing two categories: people familiar with, and people overfamiliar with, the studied place (cf. Kaplan & Kaplan, 1989; Craig et al., 2012).

The majority of the passersby seemed to know how to navigate, being familiar with the culture of navigation, understanding the language and symbols in the signage system. Another group seemed to know exactly the trajectory to their intended destination. The latter group entered the place with confidence, heading to their destinations without hesitation and orientating themselves without relying on informative signs or verbal advice. As overfamiliar (Craig et al., 2012) with the place, they seemed to take no notice at all of the physical environment as specifically interesting, or as evoking curiosity or questions. However, a few of the passersby paid attention to the physical features of the environment, or took a quick glance at the surrounding context, but people in this category of were often later guided by someone else who was more familiar with the place than they were. Some way-searchers stood to the side, waiting for someone to ask, or they headed directly to the staff to ask for help, without first relying on informative signs, whilst other way-searchers looked for signs and tried hard to understand the existent information for their orientation. On the whole, these observations confirm that people’s capabilities and preferences for navigating a place are diverse, including maps, informative signs, environmental features as well as verbal communication. This final category of way-searchers could be too confused or tired to read the signage or recognize the environment. The signage system can also be too complicated for them to understand, or it might be written in a language that they do not speak. Furthermore, it can be easier for some people to

ask others than to make the effort to explore the place physically, or to read the visual cues to orientate themselves by. We have seen several examples of intersubjective orientation in this fourth study, in the sense that people need assistance from others to know, or to move within a hospital environment; i.e., a way-searcher is often someone who needs to communicate with someone more familiar with the place, or simply has more physical strength, in order to find their way.

Only a few people in my observations seemed to be complete newcomers, and their nonetheless fairly confident movements within the studied place could be explained by the fact that they already had seen their destination, such as in this case the kiosk Pressbyrån, when entering the interior space, and hence orientated themselves towards that destination immediately. Generally, Pressbyrån was the main hotspot during my observations. It is also a part of the interior/architectural design that could be considered to work as a landmark (Lynch, 1960) for the way-searcher. In line with the cognitive and screen-oriented streams of wayfinding theory (Arthur & Passini, 1992; Chen & Stanney, 1999), the architectural design elements could offer the way-searcher visual cues with which to orientate without relying on informative signs. It could be said here that when designers or space analysts speak of the interior design, they are generally referring to the (aesthetically consistent) shaping of walls, niches, corridors, etc., but the abrupt spatial element of a Pressbyrån kiosk, without aligning aesthetically or formally with the original architecture, can actually, by standing in contrast to the overall aesthetics, be a stronger “support” for wayfinding.

A particular category of users – children – paid attention to another specific element in the environment observed here: namely the wooden sculpture. With the exception of one, all of the children who passed by the wooden sculpture stopped to explore, climb up, play with, and mimic the sounds of, the wooden animals. In my point of view, the bright colors and the human features of the sculpture attracted the children first to stop, and then to get closer to it, at which point they noticed the wooden animals and spent the whole duration of their stay there, playing with the animals and mimicking their sounds. One child even asked his mother if he could sit on her lap just as the child in the sculpture was sitting. The bright colors (Schweitzer, Ordóñez, & Douma, 2004; Pancare, 2018) and the figurative animals of the sculpture (cf. Serpell, 1999) could be considered to improve the health-care environment (cf. Nielsen et al., 2017), especially for

children, providing them with what could be called art therapy (cf. Bédard-Gascon, 2014). As mentioned in the Gora interview as well, children are often attracted by animals and animal-like figuration, not least since animals – even in our days of cultural and urban forms of life – occupy a big part of their lives: animals appear as patterns on their clothes, as features of their toys, as anthropomorphic heroes in their books, and in television cartoons, as well as in fairy tales and stories of animals (Serpell, 1999). Children's dreams of owning an animal (Serpell, 1999) have been widely used in hospital interiors as an almost obligatory motif. It is however also noted that overly realistic images of animals in hospital environments can be regarded as frightening (Sandin & Ståhl, 2011), which would support the idea that cultivated, abstracted and fairy-tale versions (Serpell, 1999) of animals may be seen as those with the greatest effect as enjoyable objects for both orientation and well-being.

In the fourth study, we also saw examples of how time is a factor in itself, impacting the stay and movement in the hospital environment. The peak of crowding at the studied place was at lunchtime, especially in the minutes when everybody (staff, lay people and workers) came to the hotspot Pressbyrån to buy food. The shop Pressbyrån is a physical environmental feature that contributes to wayfinding as a functional cluster, and it could also be used as an information resource with which people can be orientated verbally (Pati et al., 2015). The staff, which constituted the largest proportion of the observed crowd, gathered for eating, talking, drinking coffee, or browsing a newspaper. This peak crowding coincided with the patients' visiting hours. The hospital staff visited the observed place regularly, but some visitors also used this place several times during the day, as did some maintenance workers. These regular attendants of the place knew how and where to orientate themselves, searching for either calmness or social interaction. We could also see an indication of well-being and a welcoming atmosphere created by this environment and its interior features; the environment affords numerous people to sit there for a long time (30 minutes – 2 hours) without doing anything special or communicating with anyone. My observations in this fourth study show that most of the observed users did not, or could not, pay any specific attention to, or rely on, the surrounding environmental features such as signs, artwork, and so on to get help orientating themselves, at least not in any active or interested way. This could simply be because the users in my observations had already seen the artwork before and were thus no longer curious. Having seen the artwork several times previously enhances the users' familiarity

with the place, enabling them to more or less unconsciously adapt to the surrounding context. We may recall one of Ahmed's notes on familiarity: "Familiarity is what is, as it were, given, and which in being given "gives" the body the capacity to be orientated in this way or in that. The question of orientation becomes, then, a question not only about how we "find our way" but how we come to "feel at home" (Ahmed, 2006, p. 7). In this study, we saw several examples of people treating the place as seemingly comfortable, as if they were at home; however, in this interior public space there are at once possibilities to interact with others, even strangers. Familiarity has a dimension where the familiar users extend themselves to melt into the environmental features and become "unnoticed" as Ahmed (2006, p. 37) puts it. Such ties and familiarity with an interior environment may also support the users' interaction with the surroundings in a way that serves and benefits their goals (Light & Smith, 2005). However, the feeling of familiarity may not appear only in places in which one has been before, nor is it only tied to elements that one has already encountered (Ahmed, 2006). It can also occur, as we saw already in studies one and two of this thesis, when certain artworks evoke certain memories, and appear in settings and in relation to objects reminiscent of some other place or time. The sense of homeliness can further be seen to be both positive as well as negative, depending on the memories that one ties to that feeling, as well as on how much attention one pays to a place or how easily "bored" one is. As a person in a hospital, one can also experience a familiarity in how others use the space; a familiarity to which one does not sense that one belongs (Ahmed, 2006). This feeling can be said to be the very starting point for the will to orientate, but it can also be sensed as a definite state of (dis)orientation.

One explanation for that fact that the users in this study did not pay any specific attention to the artwork could be the confusing circumstances that surrounded their hospital visit, such as sickness or dizziness, being in a hurry, waiting for the bathroom, or looking after a patient or an overexcited child. One of these types of circumstances, or a combination of them, might hinder further thought processes and narrow attention spans. Furthermore, some works of art in hospitals require that a user has the time and interest to actively look for them, walk closer and have a look, even if they are displayed in places that one doesn't need for wayfinding or recreation, or are peripherally positioned, outside of the normal field of vision, such as here the two artworks hanging on the wall next to the bathroom.

An interesting observation on the whole was that users with various intentions for being in the place appeared to like sitting close to the artworks, even though there were benches farther from them. This could indicate that the artwork contributed in some sense by improving the users' experiences and moods and provided them with a sense of well-being due to the welcoming ambience to which the artwork contributed in the hospital environment (Lankston et al., 2010; Karnik et al., 2014; Nielsen et al., 2017).

Discussion of results

8. Discussion of results: Art as an element of wayfinding in health-care architecture

8.1 Summary and methodological reflections

As stated already in Chapter 1 of this thesis, as well as in relation to previous research and reflections on wayfinding in general (e.g. Lynch 1960; Arthur and Passini, 1992; Symonds et al., 2017) and wayfinding in hospitals in particular (Baskaya et al., 2004; Huelat, 2007; Mollerup 2009, Pati et al., 2015), spatial design has to afford relevant movement for way-searchers by presenting spatial layouts with legible elements and subspaces with a clear identity. For hospital architecture to function well requires consideration throughout the design process of what it means to a user to find one's way, but also what it means to get lost. Knowledge about how confusion regarding orientation can create stress and discomfort should preferably be part of the preparation, design, and construction processes. The fact that informative signs are not always effective for preventing disorientation problems is already an argument that supports that sufficient design and the right mix of interior elements might be needed to positively support wayfinding in the hospital environment. In this thesis, works of art have been seen as a particular category of interior design elements that in several ways, also unpredictably, trigger the sense of orientation. They do this in their ability to function as clearly visible spatial markers, but also as items in the environment that can bring a visitor a sense of identity and existentiality, as well as inducing a sense of well-being or comfort. Well-being brought on by art can therefore be seen as important in wayfinding processes. We also saw in the first and second studies of this thesis that works of art that were experienced as less likeable, or that aroused negative emotional feelings, could still have significant wayfinding qualities. These findings point to the relevance of further investigation of wayfinding aspects as they link to emotional and preferential aspects of art, and to art's relation to the interior environment.

Since hospitals are places for treating illness and disease and sometimes handling urgent life situations, strictly medical and clinical health conditions must have priority over the visual appearance of departments, or the art placed in them. From a designerly point of view however, this priority can be fulfilled without neglecting the needs of orientation related to clarity in visual and aesthetic qualities, for instance regarding the balance of the artwork chosen for a department. The balancing of artwork need not be merely a matter of type, size, material, and so on, but can be seen as a guiding principle by which the commissioners and artists of the different works can see to the patients' need for both orientation and positive distraction. My investigation of the reactions to displayed artwork in three places at SUS Malmö was conducted in order to increase the knowledge about the role of design processes and how they are important for increasing people's possibilities to orientate intuitively in hospital environments without relying solely on signage systems. It has been of particular interest to me to acknowledge newcomers' experiences – newcomers here meaning a range of visitors who are unfamiliar or only slightly familiar with the environment in question, or with the language and architectural and cultural traditions that influence the experience and behavior of a way-searcher. In the analysis of the collected information, we saw that when navigating within the environment, the users' perceptions of the physical interior elements of the space were affected by their cultural background and occupation, but also by their familiarity with art, and the surrounding culture.

Throughout this thesis, I have explored this quite complex relationship – between wayfinding, affective aspects of art, and newcomer's experiences in the designed environment. This was expressed already in the research questions: What roles do the interior design elements, especially artwork, have, as objects for way-searchers' orientation in a hospital environment? And what types of artwork, and what placement of artwork, enhance or hinder wayfinding within the hospital? A third question was added in order to address newcomers' lack of familiarity with what one experiences as a way-searcher: How might background knowledge impact way-searcher's perception of art and its presence in the hospital environment?

The mixed-methods approach of this thesis has enabled a diverse and successively deepened articulation of the experienced relationship between situated art and wayfinding, including a deeper knowledge of for instance how

previous personal experiences, or the sense of familiarity, are important aspects when judging artwork's influence on visitors' orientation in the hospital setting.

The three research questions and the mixed-methods approach have guided the development and themes of the thesis, and the result of this process will be discussed here as a final chapter, structured in accordance with what I have seen as the main domains of importance. Before discussing and summarizing the overall relationships, findings, and possible future areas of interest in more detail, a couple of notes about methodology will be made.

8.1.1 Notes on methodology

As stated in the chapter Methodology, the methods used in this thesis are exploratory in that I have started an investigation in one mode, and then moved on into deeper investigations as these were deemed necessary after each study, stimulating further exploration. In the first three studies, the information (or data) was provided by the informants in written and spoken form. This also means that I informed the interviewees about the main interest of the studies (namely the interior design elements and especially artwork) in our conversations, which had the effect that there was a focus on that subject in the questionnaire responses, in the interview conversations, and in the follow-up questions in studies one, two and three. In the fourth study, I simply observed patterns of movement and gathering at the chosen entrance area at SUS Malmö, and impression was there that the content of and the interest in artwork were of minimal importance. Nevertheless, the fact that the artwork in the fourth study existed as interior design elements in the observed space seemed to make people want to rest, play or gather close to them, even if this was also encouraged to some extent by the seating possibilities close to the works. One the whole, the investigation has confirmed what the architect in the third study expressed as the importance of creating nodes in a hospital where art plays the role of catching interest, thus contributing to giving pleasure, causing positive distraction and providing space for temporary contemplation.

Throughout the investigations, I sensed the increasing importance and advantage of involving non-professional users, not only in my own research but also generally in design processes. Another methodological reflection related to this perceived need that can be expressed at the end of this endeavor is that with a greater number of participants, some of the differences and rankings regarding

wayfinding sufficiency and environmental preferences, etc., indicated here could be made with greater validity. In the future, such studies could perhaps also distinguish more structurally between visitors, patients and staff, or, following what I have seen here, between unfamiliar, partly familiar, and very familiar users. However, having said that, I must also say that some of the most interesting results regarding especially newcomers' reactions to hospital environments and their various interior design elements, particularly artwork, could not have been accessed without the explorative mixed-methods approach applied here, with its successive reach of information through a feasible low-key organization of interview settings, follow-up interviews, and observations.

8.1.2 Findings and areas of specific interests

The four studies of this thesis complement each other by giving different areas of interest on how wayfinding and orientation depend on environmental features, especially as related to the existence of art. These areas of interests, which contain the findings of this thesis, are discussed in this final chapter and ordered in sub-chapters as follows: *Architecture as the foundation of well-designed wayshowing; Taking varying user perspectives into account; Sense of familiarity: Recognition and feeling at home; The effect of heterogeneity and homogeneity on a way-searcher's orientation in the hospital setting; The impact of displayed artwork in the hospital environments; Choosing, making, and placing artwork in hospitals; and Domains to be considered when theorizing wayfinding and wayshowing design.*

These areas of interest convey principles for analyzing wayfinding as a multifaceted issue in hospitals, and they could also be considered as guidelines supporting the design of wayshowing in hospital environments.

8.2 Architecture as the foundation of well-designed wayshowing

This thesis has pointed out, and shown both indirectly through the experience of users and directly through the interviews with professionals, that the starting point for well-designed wayfinding systems is the architectural logic that makes different users with varying backgrounds feel comfortable when entering a hospital building. Completely new hospital designs have a better chance to spatially and materially customize and express the overall organization of building patterns with architectural means, and to ensure that the general structure of the building affords natural movement and wayfinding. Rebuilding or structural renovations of older hospitals, which are common in hospitals all over the world, are more difficult in this sense, since buildings originally adapted for a specific department sometimes give way to other types of medical care after some time, and there is a broad range of complications concerning spatial and material use that might follow such a change (Rooke, 2012). In many hospitals, the buildings provide only a temporary place for a specific clinical work, for reasons of political change or other urgent situations demanded by society. Wayfinding and its links to well-being are important issues in all of these hospital situations. In an ideal hospital environment, the logic and complexity regarding wayfinding should be acknowledged in the original architectural design. Since this a dynamic issue however, the building process should also allow for wayshowing to be considered from the first design concepts and to continue throughout building construction and during use (cf. Huelat, 2007; Mollerup, 2009), as was also confirmed by the design- and art professionals interviewed in study three. Pre-existing but less well-designed circulation makes the role of adding interior design elements and artwork to support wayfinding much more challenging, since these interior design elements must compensate for insufficient spatial design. Interior design and artwork can only compensate for a lack of wayfinding logic in the main architectural plan to a limited extent. Signage can endeavor to do it, but an abundance of signage (signboards, arrows and verbal messages) is not a preferable solution because of the difficulty of framing it (Rooke et al., 2009), and because of linguistic limitations; signs are usually written in only one or sometimes two languages, but seldom more. According to the architect Carl-Axel Acking (1980), an abundance of signage can even be seen as an indication of poor quality of the architectural design. Recent studies of signage in wayfinding in hospitals often point to the

confusion caused by overly complex signage (Rooke et al., 2009). In the interviews with the design- and art professionals in study three, there was a clear opinion, gathered from experience, that the basic remedy for this – to support orientation in general, and the different ways that people orientate themselves – is to articulate the affordances of the architectural design from the start, presenting and constructing them as perceivable to potential way-searchers (Warren, 1995).

Importantly, interior design complements the overall more definite and stable structure of architectural design (Warren, 1995; Mollerup, 2009), and its elements afford a certain flexibility when it comes to legibility and guidance in the hospital environment (Arthur & Passini, 1992; Carpman & Grant, 2001). To claim generality, this main idea, forwarded by many researchers, should thus also support way-searchers with diverse backgrounds and different orientation capabilities. Some architectural features seem to be of such a basic kind, transgressing cultural borders of style, information and symbolicity. For example, the properties of well-designed floor plans, such as intersections with clear perpendicular directions rather than multiple angles (Rooke et al., 2009), are effective in impacting the way-searcher's wayfinding in the environment whether s/he is familiar or unfamiliar with it (Lawton, 1996). The architecture as well as the interior objects work in conjunction with what is memorized by the way-searcher. As we have seen in this thesis, in some situations the way-searcher can draw a conclusion based on the basic architecture and added installed navigational cues in the surrounding context, supporting previously acquired explicit information, in what Mollerup calls "educated seeking." The physical and spatial features can also help the way-searcher to personally construe a wayfinding logic based on earlier personl experience through "inference" (Mollerup, 2009). Both of these strategies consist of activating a preconception, in a suddenly reached and actualized step of wayfinding that also recalls the information-processing and decision-making steps of the cognitive models presented in the theory chapter (cf. Passini, 1992; Downs & Stea, 1973; & Chen & Stanney, 1999), showing how people map spatial information and act to reach a desired destination. The "equipmentality" (Ahmed, 2006) of these environmental features, such as interior design elements that are able to remind the perceiver of previous knowledge, depends on what the perceiver brings to the corporeal "meeting" with these features; in principal however, it allows the way-searcher to act based on his/her perception of the spot. The education part of this seeking – whether it is pre-information given explicitly to the way-searcher before the actual perception in the

environment, or if it is self-construed and experience-based linkage back to previous experiences, is also reminiscent of what Kopljar (2016) calls “carried affordance,” namely that an environment offers action based on the kind of previously perceived action potential the perceiver brings to the act of perception in terms of life experience, education, and outer influences.

Creating a well-designed wayfinding system requires supportive interaction between several actors involved in the design- and art commission processes (Warren, 1995). As stressed in the interviews in the third study of this thesis, the artist, the art manager, and the architect should cooperate in the early stages of the design process to produce an optimal environment that promotes wayfinding. The experience of the art manager in the third study confirms what has been said by Mollerup (2009), Heulat (2007), and other pragmatically-oriented theorists: namely that the layout and the structure of the spaces within the hospital environment are the main obstacles that could complicate the installation of artwork. This is not only true in terms of the verbal, informational efficiency, but also when it comes to managing installed art to achieve a level of harmony between the works of art being hung. Supporting wayfinding becomes a complex task if the floor plan contains for instance several paths, angles or/and curves (cf. Rooke et al., 2009). Another obstacle for the installation of art, as well as for the possibility of art to promote wayfinding, appears if the interior spaces – such as corridors – are too segmented, or hinder sightlines in other ways. For instance, in the second study, the numerous doors in the outpatient clinic of the Department of Infectious Diseases at SUS Malmö split the long walls into several smaller areas, making the installation of artwork on these small areas a difficult task. The repetitive appearance of the wall and the many doors also made it hard for the participants in the second study to know which door would lead where, since they all looked the same. Situations like these indicate that architectural design is an important base for well-designed interior design, which can in turn promote wayfinding. As Ulrich (1991) also suggested, if the original architect(s) remain in dialogue with the representatives of clinical, technical, and economical demands, as well as of demands tied to the working conditions for staff and the situated well-being and wayfinding needs of patients and visitors, the architecture itself can also be optimized in terms of future resilience. Before I return to the formation of the hospital setting itself, in the next subchapter I will add some thoughts on the importance of recognizing patients’ and visitors’ desires and needs, and on how user participation could improve the range of perspectives.

8.3 Taking varying user perspectives into account

In several ways, this investigation has touched on and evoked questions about the variation of user perspectives and the importance of making such variation possible in way-showing design. As stressed above, a good working collaboration is necessary between the artist, the interior designer, and the architect in the design process, providing a sufficiently "speaking" environment that meets way-searchers with differing abilities and different orientation needs (Warren, 1995). If we look at the scales in which professionals typically (but not always) direct their work, we could roughly say that the artist and the interior designer often (but not always) work on a more intimate scale, closer perhaps than the ordinary building architect to the users' corporeal and perceptual experience. As is well known however, this scale perspective is not the same as striving for a greater incorporation of a variety of users' stated needs, or of direct contribution from users, as in participatory modes of design. There are several examples of direct participatory contact between architects and users today (Till, 2005; Hofmann, 2014), where the ultimate goal can be expressed as professionals seeing the user as "the expert" and letting the participant be a more active part of the process (Till, 2005). However, if we regard participation more in line with the experience and the opinions of the three art- and design professionals interviewed here, it becomes more a matter of the degree to which professionals consider the needs of users in their work. As this investigation has shown, "taking users' needs into consideration" is seldom self-evident or self-explanatory, because needs can be highly diverse. A further investigation into this area would require deeper involvement in the research area of participation and participatory design, with links to larger societal structures like that of democracy. Such an in-depth study could for instance focus on explicit methods for involving non-professionals as not only passive "voices," but as active participants in design processes. In this thesis however, I have let it suffice to point out that certain groups of users are seldom heard as clients, or experts in their right as users, when it comes to consultation before or during the process of designing and constructing hospitals. Nevertheless, from a methodological point of view, the thesis itself can point out certain possible ways for design projects to include the desires and wishes of users, for instance through similar types of walk-through querying sessions as those in the second study of this thesis. Involving the opinions of non-professionals (in the sense a sufficient range of users) that could be regarded as amateur "experts" on the project in question (Till, 2005) actively in

the design process would improve chances to achieve a goal expressed within the field of universal design: reaching the widest possible range of users in the widest range of situations possible (Schuler & Namioka, 1993; Connell et al., 1997; Rossetti, 2006). One of the challenges of participation concerns allowing the wills and wishes of single individuals (non-designers or designers) to have a direct impact on the design project. As we have seen here, for instance in the second study, a perceiver's perception of physical environmental elements can be highly individual, not shared by others, and therefore cannot automatically be incorporated in the way-showing design of an environment, since it could easily lead to misaffordances for other perceivers and thus conflicts, rather than to broad, good solutions. Incorporating too many needs, or attempting to acknowledge everyone's needs, could in other words lead to projective multiplicity and realization problems (Miessen, 2010) instead of good solutions for all. On the other hand, involving only one group of users is not efficient for a total understanding of a setting either. For example, involving only familiar users, such as the hospital staff and regularly appearing patients, in design processes, no doubt gives a certain rigor in terms of what usually happens at a ward or in a waiting room, but it also entails an overfamiliarity with a specific setting and a difficulty for familiar users to grasp the obstacles that newcomers confront, with the ultimate risk that only familiar users' needs will be taken into account (cf. Cohen & Cohen, 1979). The users that are very familiar, or overfamiliar, with a ward or a department or a hospital, will likely let this familiarity have a considerable impact on their preferences of certain design (cf. Kaplan & Kaplan, 1989). Furthermore, being familiar with an environment also impacts one's regular wayfinding and orientation within that environment (O'Neill, 1992), which can be a reason for resisting change. We may therefore conclude that even if an experienced staff might know a lot about newcomers getting lost, etc., only the newcomers themselves can convey their experiences as input to the design of hospital environments and wayfinding within them. Despite problems such as these, which regularly appear when negotiating common space, many professionals today want to strive for the inclusion of users' needs, as we also learned from the interviews with the art- and design professionals. If such desires, based in professional experience, can be pursued with reason – for example by including results of relevant research – there should be a good chance to create hospital environments that support a wide range of orientation and modes of wayfinding.

In a multicultural society like the city of Malmö, the issue of newcomers' participation becomes a matter of extra urgency, which was confirmed in the situated questionnaire and interview studies one and two of this thesis, as well in the interviews with the art- and design professionals. According to the experience of the art manager and the architect in the third study, in ethnically mixed societies it becomes necessary to try and "get into the newcomers' shoes" in order to reach a deeper understanding of their needs and the cultural and economic issues that they confront. We could conclude from their answers that this also includes the specific issue of wayfinding. Involving and collaborating with newcomers in the design process will enable the designer to create more graspable and usable, thus also more resilient, environmental solutions, that include to the greatest degree possible the average users experience, knowledge, language skills, or current concentration level, as well as their cognitive and corporeal abilities, which could be influenced by their personal histories as living beings (cf. Rossetti, 2006; Persson et al., 2015).

What goes for designers goes also for researchers when it comes to wayfinding as a concept that has a certain range of generality. From study three, we learned that projects involving the presence of an investigating researcher's interest might temporarily have a positive effect on the daily routines of a patient's hospital stay in themselves, but this kind of researcher participation can partly be a kind of induced placebo effect, in the sense that when patients, visitors or staff, receive attention by participating in a research experiment, they may become more hopeful about the possibility to improve the spatial environment (cf. Sandin & Björgvinsson, 2015; Tishelman, Lindqvist, Hadarevic, & Rasmussen, 2016). This hope can, of course, be temporarily satisfying for an individual participant, but it does not mean that any real environmental improvement is guaranteed.

8.4 Sense of familiarity: Recognition and feeling at home

Frequent exposure to an environment, as well as welcoming and comfortable feelings brought on by the interior design of an environment, usually lead to a sense of familiarity. An increase in the amount of experience that one has of an environment also improves one's orientation performance within it (O'Neill, 1992). To be familiar with a place means that one knows how to act there, and that one recognizes the situation one is in reasonably well. An obvious effect of being familiar with an environment is that familiarity facilitates one's orientation and wayfinding within it, but we have also seen in this investigation that different modes of familiarity must be taken into account when wayfinding and wayshowing in hospitals are considered. The observations in the fourth study of this thesis showed, in relation to how staff and regular visitors handled waiting and further movement in the hospital environment, that people familiar with an environment treat that environment with ease and create their own habitual situations in it, whilst people unfamiliar with the environment searched for their ways in it primarily by relying on informative signs or by asking others to guide them. That particular part of the study points to the fact that when one is familiar with a place, it becomes less important to pay attention to its features when one extends oneself in it (cf. Ahmed, 2006; Craig et al., 2012). When a person pays no special attention to the surroundings, its informative signs, its artwork or other physical elements, but uses it solely for his/her immediate needs, it can be a sign of overfamiliarity. Both relatively familiar and overfamiliar users of the space observed in the fourth study (it is not always possible to distinguish between them in an observation like this one) entered the entrance zone with confidence, headed to their destinations and orientated themselves without stopping to look at, or even glancing at, the physical features of the entrance zone. The elements in the entrance zone's interior environment did not arouse any particular interest; however, we cannot exclude that the repetitive, perhaps daily, meeting with these elements also had an impact on those well acquainted with the place, in an existential or comforting sense. It could be of further research interest to try and uncover such hidden, subconscious or unintentional orientation effects by combining observation studies with interviews.

As reflected on in this study, it is not always easy to know if an attitude of disinterest toward displayed art indicates a home-like comfort with its presence, or

simply indifference or even boredom. Furthermore, since familiarity does not necessarily show itself as only a harmonious state (Ahmed, 2006) but can mean struggles even for a frequent user when identifying with a place, it may seem a difficult task to strive for an architecture that provides a sense of comfort. Nevertheless, a sense of feeling at home was emphasized by the professionals in this study as a state worth actively striving for in the design of an environment. In states of shock or urgency, such as in life-threatening situations or when directing a child in danger, the actions of patients, visitors and staff become focused and goal-oriented to the extent that the surroundings may lose their meaning as having specific aesthetic qualities, if they are even sensed at all. Nevertheless, the design must work in these situations as well, and a well-tempered visual articulation of cues like light, signals, and color can play a significant role for the speed with which actions can be taken. Most of the time however, a hospital stay or a visit is a calmer, but perhaps uncertain or tedious way of spending time, and as mentioned by the art- and design professionals interviewed in study three, distraction and relaxation should preferably be intentionally created to render some spots in the environment less clinical. If composed well, it should be possible to experience such niches of distraction regardless of one's level of familiarity with a place and its interior design.

This reasoning about familiarity, as well as recognition and appreciation, but also ignorance, leads also to the issue of how much works of art are noticed in situations when other things or actions in the environment occupy the minds of patients, staff, and visitors. The artworks in study four were seen to be unnoticed when people were sitting or standing quite close to them; they were taken for granted and treated as unremarkable pieces of the interior. An overfamiliarity can also be at play in situations or spaces for self-managing a state of illness as a routine (cf. Nielsen et al., 2017). Here, overfamiliarity may mean that one is satisfied, or feels comfortable, but as we also have seen, not noticing art and other elements, or at least ignoring the immediate presence of them, could also be an effect of more stressful situations, such as dizziness, being in a hurry, or looking after a patient or an overexcited child.

Visitors' and patients' immediate experiences of a new environment can obtain an intense sense of familiarity when previous experiences of other, distant, places are evoked by specific physical elements in acts of what has here been called evoked familiarity (cf. Craig et al., 2012). Evoked familiarity might be

influenced by a user's culture, memories, occupation, and aesthetical preferences (cf. Kaplan & Kaplan, 1989; cf. Ahmed, 2006). Art with such evocative effects appeared for instance in the second study, where a painting that the art display managers saw as possessing landmark quality because of its large size and more expressive painting style than the other prints on the wall, evoked and provoked memories among the participants: positive childhood memories of school days, and negative memories of the war in Syria, depending on how the participants individually perceived the meaning of the painting's concept and its colors. Its potential as a landmark, and thus as a guiding element, attracted several of the participants in study two and led them to approach it by walking towards it. This type of evoked familiarity, creating associations based on previous experiences and cultural background, also appeared in the first study, where the participants' occupations, their familiarity with art, and their background cultures influenced their perception of interior design elements at the studied place, which in turn influenced the way they searched for their destination in the studied reception hall.

If a place provides a dimension of "feeling at home" (Ahmed 2006), it is generally also likely that it gives people a sense of comfort and relaxation as well as a positive sense of familiarity with everything in it (Light & Smith, 2005). Such a place could enable people to extend their bodies to melt in to the environmental features, in which the inviting properties, such as artwork, could work as indicators, letting a newcomer find calm and a feeling of familiarity, even if they have never been in that particular environment before. For instance, four participants in the second study initially expressed feelings of discomfort at a spot at the end of a "foreign" corridor; after a short while however, their discomfort changed to comfortable feelings when perceiving the artwork and the lighting, which made them experience the space as more spacious and friendly. We can conclude that a settled and relaxed situation can occur, offering a short moment of retreat, even if it is, as in this second study, at the end of an otherwise "uncomfortable" corridor. While confusion and stress make the way-searcher's orientation difficult in hospital environments (Mollerup, 2009), we could see in this case that the participants' relaxedness led to an increased sense of orientation, also in the stricter wayfinding sense. We could in other words see that time, or duration, itself has a role to play in turning a negative experience into a positive one that could support further orientation.

Familiarity with an environment could be combined with the user's need to determine which features within that environment will fulfill their current needs. This is for example what happened in the fourth study, where the patients, visitors, and staff acted in the observed entrance zone based on the perceived potential of the environmental features in relation to their needs: relaxing, crossing through, eating, drinking coffee, talking together and waiting (cf. Norman, 1988; Nielsen et al., 2017). Generally speaking, one could consider node spaces as spaces with such possibilities, whereas other spaces such as the adjacent so-called silent room in study four must offer silence and retreat from other activities, but must nevertheless be able to fulfill several needs, such as for instance supporting rituals from different religions (Petersson, Sandin & Liljas Stålhandske, 2016).

On the whole, we could say that familiarity, with all its facets – including recognition and feeling at home, but here especially as the evoked familiarity and overfamiliarity found in the studies – could be considered a discernible influential factor for the way-searcher's orientation and wayfinding besides those proposed by Passini (1992), Chen and Stanney (1999) and Mollerup (2009). The familiarity factor was primarily derived from the informants' experience in the first and second studies of this thesis here, but it was also discussed in the third study, and seen as important in users' behavior in the fourth study. We also saw that time and duration played an important role for the experience of familiarity in the wayfinding situation.

8.5 The effect of heterogeneity and homogeneity on a way-searcher's orientation in the hospital setting

The analysis of the second study, at the Department of Infectious Diseases, showed that the three spots (A, B, and C) at the studied place were perceived and appreciated differently depending on the participants' perception of the homogeneity and the heterogeneity of these spots. On the whole, homogeneous parts of the environment had a negative influence on the participants' perception in terms of their orientation and emotions. Walk-through interviews revealed that the participants' orientation was disturbed or perceived as difficult because the physical features at some parts were repetitive and similar to each other. The repetition of similar spatial elements (doors and technical installations) and small-scale works of art result in a homogenous environment that does not afford newcoming way-searchers to distinguish sufficient noticeable and memorable features to enable them to orientate themselves easily (cf. Gärling et al., 1986; Baskaya et al., 2004). On the whole, the numerous doors at the studied place of the first and the second studies made the participants' orientation difficult, since the doors lack remarkable attributes that could guide the participants to distinguish which door to choose to reach their intended destination. That is, the homogeneity and repetition, in this case of a mix of similar-looking sets of buttons, signs, doors, medical equipment and small art pieces, created difficulties for the participants when making "correct rejections" (Gaver, 1991), due to the diffuse affordances and perceptual information guiding the participants when searching for their way. In addition, the homogeneity of an environment may also become a main obstacle when someone wants to help orientate another person unfamiliar with that place, as stated in one participant's description of the department in study two, because this environment does not include enough noticeable elements that could be used as landmarks to guide unfamiliar people within it. However, if we take temporality and the length of the stay after having entered the place into consideration, the homogeneity at one spot, with similar but also familiar elements, also had a positive side, in the sense that it was eventually also experienced as giving a sense of calm and tranquility. We may reflect on this example by the pragmatic remark that this calm would probably be achieved even if there had been slight deviations from the homogeneity among the artworks, making them still "stay" within the calm spectrum experienced in that part of the department. A certain amount of homogeneity can in other words lead to feelings of relaxation and comfort,

allowing the way-searcher feel less stressed or confused, and can hence be of value for wayfinding, even if heterogeneity is basically required to even notice differences.

One example where the homogeneity of the localities of the Department of Infectious Diseases was broken was by the large, red, abstract painting that appeared alongside several smaller artworks in that department (the smaller works being a mix of both abstract and figurative prints). This larger artwork and its placement had an obvious effect on the participants, by drawing them in and bringing on memories and strong emotions. It was well remembered as an item, or landmark, in the environment by the participants, and in that way, it also had an orientation effect. But it is difficult to say to which extent it had a clear and efficient wayfinding effect. For instance, this "big red painting" attracted the way-searchers from a distance and drew them towards it for closer exploration, which could be seen as a nested affordance (Gaver, 1991). But further investigation would be needed to learn more about how such a "strong" artwork works, concerning the kind of spatial and directional impact this attentive or aesthetic strength has, since it can also "steal" attention from other parts of the interior space. A fair hypothesis is that this kind of landmark and its wayshowing effect would remain strong not only for newcomers, but also for others who repeatedly confront it – for example, for someone who returns to the same department several times.

Generally, a heterogeneous environment, in the sense of containing clearly distinguishable parts related to movement and bodily behavior, enables users to perceive spatial affordances (Gibson, 1979; Norman, 1988; Heft, 2010), which in turn impacts the user's orientation positively. The spatial differentiation promotes the legibility of an environment and contributes to facilitating the user's orientation (O'Neill, 1992; cf. Gärling et al., 1986; cf. Baskaya et al., 2004). The attributes of the environmental elements make them recognizable as landmarks (Lynch, 1960) that enable the way-searcher to distinguish different places from each other. Another contribution of heterogeneity in relation to orientation and wayfinding is that it makes it easier to give a description of an environment that affords various elements (cf. Baskaya et al., 2004). The heterogeneous environment can also have negative aspects and evoke uncomfortable feelings in its visitors, such as shown here in the second study, when the odd yellowish orange color covering some of the walls at spot A led the participants to associate

that interior environment with prisons, especially as the monochrome colored bare walls could be linked to other “prison-like” elements, like the many closed doors and the overall bland design encountering the visitor upon entering the reception area. In this case, from a way-showing point of view, the heterogeneous, or counterpoint type design was therefore to some extent recognized, but also rejected by some. A clear example of an interior way-showing attempt by the use of color was in other words “disturbed” here by the fact that these plain color surfaces could give quite unintentional associations.

The diversity of artwork in hospital environments is itself a heterogeneous quality that can contribute to orientation and wayfinding, where the difference and uniqueness of the works make the environments more distinguishable, hence possible to depend on, when using them as landmarks (Lynch, 1960) or familiarity markers (Pati et al., 2015). However, the hospital environment should not be overloaded by placing too much artwork there, in order to avoid so-called “visual noise,” according to the architect and the art manager interviewed in the third study of this thesis. Both of them mentioned the necessity of creating a balance between the various chosen artworks to avoid confusing people’s orientation. Artwork, then, as noticeable elements in an environment, can afford users guiding information with which to orientate themselves within that environment (cf. Withagen et al., 2012), providing that some kind of aesthetic articulation within a manifold of artworks is at hand when searching for one’s way. This way, we can speak of the “usefulness” of artwork as guiding elements, a usefulness, or instrumentality, that should preferably be taken into consideration during the process of choosing and placing artwork in hospitals. Strategies for doing this can partially be grounded in designers’ experience, and partly in acknowledging research and practices that take into account broad spectrums of perspectives, accessibility and participation, capturing the needs and preferences of ordinary users.

On the whole, we could say that a reasonable spectrum of both homogeneity and heterogeneity can support orientation – “reasonable” here meaning that heterogeneity and homogeneity need each other in the sense of being part of one another in a way-showing environment. We could also conclude that unpleasant homogeneity can turn into pleasant heterogeneity if intimacy in scale and duration of stay allow that to happen.

8.6 The impact of displayed artwork in hospital environments

The traditional wayfinding strategy used by the fairly familiar way-searcher to find his/her intended destination is to turn to the existing signage system (Rooke et al., 2009; Mollerup, 2009). The informative signpost, i.e. the physical signage object itself, is also a very strong cross-cultural reference for wayfinding. It could thus be seen as an imageable element for wayfinding (Lynch, 1960), even if the written message in it is not fully understood. Explicit modes of wayfinding, like reading signage and studying maps, as well as communicating verbally, have remained in the background in this thesis, since the main focus has been on the perception and following of physical features and singular elements of the spatial interior context. For a newcomer to a hospital, and of course especially if that newcomer has difficulties reading the informative signs, verbal communication with staff or other visitors, or reliance on the verbal directives given, or the social navigation acquired when entering, are common ways forward (cf. Arthur & Passini, 1992; Mollerup, 2009; Alibrahim, 2017). But this mode of navigation also requires visual cues in the environment to work as landmarks, unless one is escorted to one's destination. In this investigation, we have seen that the mode by which one chooses to navigate is largely a matter of one's physical and mental state, affected for instance if one is very ill, or a complete newcomer to the hospital or to the culture in which the hospital is situated. Personal background is in other words essential. For instance, some of the people observed in the fourth study preferred verbal communication mode to relying on the informative signs or other visual cues when finding their way.

The works of art in the first and second studies of this thesis were selected by the participants as some of the most eye-catching elements, besides other particular interior design elements such as plants, skylight, furniture, wall materials, and interior formations. In addition to the artwork in the first study, there was a particular interest in the large-leafed plants, the wooden wall panels, and the tilted reception cube. In the second study, apart from the art, specifically mentioned elements were the strong colors on walls, the lighting differences, and the corridor layout. The artwork, however, was consistently mentioned by most of the participants as eye-catching. One overarching reason for the specific attention to the artwork in the hospital environment in this thesis is the fact that artwork is not used in hospitals in all cultures; for example, it is not a common practice in the

home countries of most of the participants in studies one and two. The cultural novelty of artwork in hospitals should be recognized as a factor in this investigation, and being unaccustomed to art in hospitals could actually in itself be seen as a reason for attraction, but also confusion. Not being accustomed to art in hospitals specifically was weighed against the fact that several of the participants, with some exceptions, were quite familiar with design and architecture in general. A certain familiarity with art and other interior design elements in general could thus be something that drew the participants' attention to these items nevertheless. The stated interest in particular objects of the interior design became especially evident with regard to elements that related to the participants' occupations, such as for example when the architect, the electrical engineer, the mathematics teacher, the nurse, and the fire engineer in the first and second studies especially mentioned interior elements that related to their occupations. Furthermore, the participants' backgrounds, experiences, and memories also influenced individual wayfinding strategies. For instance, a participant in the first study used to choose the exit next to his right hand without analyzing the other available options, because according to him, this technique would help him to return back to his starting point if he lost his way. The background to this technique was a habit rooted in his religion, Islam.

The first and the second studies of this thesis, and to some extent also the fourth study, indicate that as an interior design element, artwork has emotional and factual impacts on the participants in the hospital setting, such as reducing patients' stress and directly or indirectly enhancing orientation and wayfinding. Regarding orientation and wayfinding, in the first study, artwork was clearly considered a helpful element for finding one's way. In the second study, the works of art were also used and regarded as remarkable elements, guiding elements, and remembrance elements for orientation and for describing the studied place to a person unfamiliar with the place as such, or to someone in the habit of using art as a part of a wayfinding strategy. In the fourth study, the creation of partitions, or niches, of the semi-public space, that included artwork and benches, became spaces for relaxation and social interaction. At times, the properties of the works of art also encouraged participants to take several types of action: further orientation by moving closer or moving on, making a stop for aesthetic appreciation or contemplation, initiating play, etc. This means that the artwork can be seen as affording several actions of orientation in a broad experiential sense, but also as an immediate or secondary effect in explicit wayfinding actions.

As stated above, the artwork, especially in studies two and four, was seen to give a sense of familiarity, even if the users were not actually familiar with the environment. The artwork at the site, displayed as elements of the interior spatial design, provided a welcoming and inviting environment for the participants, which evoked feelings of being at home (cf. Ahmed, 2006). As we learned from the art display manager in the third study, this welcoming effect was provided to a certain extent by a welcoming and way-showing intention in the types of art that were displayed, and their location in the department. The type of art was also discussed in the second study. To an extent, this discussion confirmed a common opinion of what kind of art is most appreciated, and thus also often implicitly considered to entail well-being. In the second study, participants expressed that artwork depicting landscape motifs induced comfort and calm, and a number of participants preferred them to abstract artwork (cf. Eisen et al., 2008; Lankston et al., 2010). This aligns with the alteration preferences expressed in the second study; one participant said that if given the chance, s/he would replace the abstract artwork with artwork with landscape motifs. Others however also appreciated those same abstract works; this correlated with how familiar the participants were with the world of art and design. As mentioned above, there was also a time factor; the artwork and the motifs were noted and experienced differently after some time.

While art can provoke negative or emotionally upsetting memories, this cannot always be considered a negative effect in itself, since these negative memories can also have the positive effect of helping the perceiver release negative inner energy, in the same manner that art may have a potential to contribute to mental healing in art therapy (Lloyd, Wong & Petchkovsky, 2007; Lankston et al., 2010). However, it is of great importance how this effect is brought to the patient/visitor; i.e., it matters exactly where and how art is installed. As we saw in study two, expressive abstract art can evoke hard-to-predict feelings, but since these kinds of works are also displayed specifically as art, they usually also have art's inbuilt capacity to allow emotional distance. The perceiver can choose to some extent, as it were, to be affected or not, especially when it comes to framed artwork that emphasizes a spectator distance. This kind of choice is harder to make in usual, non-artistic, reality situations. The capacity to maintain a distanced, but also true interest in art, is obviously important in the difference of opinion, also when it comes to art's role in wayfinding between commissioners, managers, artists and common non-experts, but also between, e.g. children and adult visitors in a hospital. The figurative animals and the bright colors of the

sculpture in the entrance zone of the fourth study of this thesis, as a specific type of art, possess qualities that could enhance the health-care environment by providing distraction, especially for children and their caretakers (cf. Serpell, 1999; Schweitzer et al., 2004; Pancare, 2018). The effect could be sufficiently intense to cause a presumably positive distraction for both the child having fun and the parent looking after the child. More generally, we could say that such artwork, which can be touched and climbed, contributes by distracting the users and thus provides them with a sense of well-being and a welcoming ambience in the hospital environment (Lankston et al., 2010; Karnik et al., 2014). We can see a reason here for wanting to come close to works of art, and for promoting such proximity. Corporeal approaches to art were observed especially in the fourth study, also when adult visitors sat on the benches closest to the artwork even when there were vacant benches further away from them. Some of the observed visitors even sat on the benches near the artwork for a long time without doing anything or communicating with anyone.

Furthermore, in the fourth study it was observed that artwork went unnoticed when it was placed outside of the field of vision from the spot most commonly, or most naturally, visited in a room. The placement of art is in other words a matter of articulation of vistas as well as of motifs. This does not mean that all art must necessarily be seen only from a key position to become a way-showing element, but at least that there is a possibility to see it even if one changes position a bit. Even quite remotely positioned art can help create spots of calm or orientation, if that is what a visitor needs.

How a person perceives the properties of an artwork is affected by that person's background, memories, and occupation; hence one's personal background also has an impact on the artwork's wayshowing capacity. In the first study of this thesis, some participants had a negative impression of the artwork in the studied reception hall, considering the works ugly or oversized because of their material, size, and placement. Even so, the works were considered eye-catching, and they could thus function as landmarks aiding orientation and wayfinding. In other cases, in the second and fourth studies, physical proximity to the artwork and previous acquaintance with art were seen as necessary factors to address in wayfinding theory and way-showing design.

8.7 Choosing, making, and placing artwork in hospitals

When investigating the capacity of art to support wayfinding, a question that keeps coming back is that of how and why specific works were chosen, and by whom. There are no general requirements for choosing and making artwork for hospital environments or rules that state what kind of art is suitable. When I interviewed art- and design professionals in the third study, they could point out some general guidelines for the making and selection of art for hospitals, including: to present a unique piece (attractive and distinguishable); to care about the artwork's impact on the users and their environment; to strive for easy maintenance; and to acknowledge safety. Furthermore, in new buildings in particular, there are often certain technical specifications for art commissions, for instance concerning adequate material integration of the new artwork with the architectural and interior design of the environment where it is to be placed, in the sense that the artwork should not destroy or interfere with the specificities of the materials already chosen, or already implemented. Ultimately however, the broader aesthetic requirements for choosing artwork may in fact depend on the expertise and preferences of the project leader, or sometimes, as was also mentioned in the interviews with the art- and design professionals, contingent on the wishes of the owner of the building. Occasionally, local staff or leadership at a given hospital may also have a decisive voice, and can also terminate public art projects even after the works have been installed (Sandin & Pontén, 2013).

Even if there are many commissions for site-specific artworks in Sweden, where a national or regional commissioner searches for artists that can create something fitting for existing or not-yet existing architectural spaces, most of the works of art in hospitals are not created particularly for the places where they hang, but are instead chosen from an archive of artwork by a group of people that can consist of the leader of current art projects, architects, medical doctors, departments' representatives, other art project leaders, and art consultants. Together or in various constellations, these people are responsible for determining the suitability of artworks at a specific hospital location. Such a decision-making process was the case at the department studied in the second study of this thesis, where the works had first been chosen from a large collection of stored artwork that the Konstservice at Region Skåne purchased from different artists and galleries, then selected, presented and discussed before being mounted on the walls in the Department of Infectious Diseases. Depending on the policies at

different hospitals, the staff or the patients can sometimes decide themselves – usually however on a more temporary basis – what to put on the walls of their immediate workplace or room (Björgvinsson & Sandin, 2015). This opportunity for a user to directly influence the choice of art in an environment would clearly be very difficult to pursue as a general strategy for technical and aesthetic reasons. Even if there is some physical interaction with artwork, the possibility to actually choose is hardly even considered for newcomers, and would probably be pursuable only in places where one would be staying for a length of time. Regarded as a wayfinding support, it would be harder still; if used by many, such participatory strategies run the risk of leading to an overabundance of personal markers in the hospital ward. In this thesis, the closest we get an invitation of users of this kind is perhaps the idea that personal documentary photos could be of interest, or that the existing artwork could be replaced by works with a landscape motif. When it comes to wayfinding introduced by the participants themselves, it was rather their own corporeal actions that were seen as directly implemented in the environment, such as the personally developed reminders, mentioned as wayfinding tricks in the first and second studies: to always take the first door nearest one's right hand (mentioned by a participant in study one), and to always choose to go straight (mentioned in study two). This would be a kind of extraordinary, if not precisely artistic, introduction of self-help to wayfinding in the environment.

The two principal modes of choosing artwork at SUS Malmö specifically – Konstservice's archived art collection and new-produced, commissioned art – can be seen as decisive for the diversity of artwork at SUS Malmö. The variation in the type, size, colors, materials, and look of the artworks impacted the hospital environments positively, according to the art- and design professionals interviewed, as the works' differences and uniqueness make the different places in the hospital distinguishable from each other. For instance, the color differences between works could be a guiding element, where the way-searcher could rely on these color differences as landmarks or familiarity markers (e.g. Pati et al., 2015) to distinguish and remember a place by its artwork. Although it differs slightly between individuals, the perception of color differences is transcultural, and color in itself was noticed in the studies of this thesis as a useful visual cue. But since the symbolical meaning of colors and color combinations can be culturally different, attention has to be paid to the kinds of colors used. Color could nonetheless aid the way-searchers' orientation and wayfinding, regardless of

whether these way-searchers are newcomers or familiar users (Gärling et al., 1986; O'Neill, 1992; Baskaya et al., 2004), under the condition that the color is well tempered from the perceiver's point of view, in the sense that it is distinguishable enough to create a sense of contrast to the surrounding environment, but not strong enough to evoke stress. For instance, Poul Gernes's colorful art in Herlev hospital has made important contributions, impacting users' well-being and wayfinding both positively and negatively: the colors in the hospital milieu make some of the users feel cheerful and encouraged, while other users have complained about the overabundance of colors (KØS, 2017).

It became clear from the interviews in the third study that the process of choosing art can involve a number of actors. A multiplicity of actors were here seen as important to consider, both in the phase of choosing artwork or for the themes of the works, as well as in the phase of placing and installing them, especially concerning the issues of wayfinding and the effect it can have on patients and visitors. This is a task for artists, managers and consultants to take on together, to transform and follow up on throughout the building process, as well as after the installation when the site is in use.

Although there are no general requirements, the art manager and the teams buying and selecting art follow certain aesthetic and functional parameters when choosing and placing artworks in hospitals, such as: the architectural theme of the building, the function of the departments, and the expected types of users. While the art manager teams at SUS Malmö do not look so much at the theme of the entire building, they do look at each department separately. Each department has its particularities, which are related to its medical function and the type of patients that stay at or visit the place. The professionals interviewed confirmed that the artwork in each respective department should be appropriate for its purposes and its visitors, patients, and staff. To create a positive distraction that gives users a sense of tranquility and comfort in the hospital setting, making eye-catching stories by using various types of artwork, was also something considered by the commissioning art agent at SUS Malmö. It was also expressed that following a specific intentional story was unnecessary, but that the perceivers should be able to build their own stories based on their individual perceptions of the surrounding environment. Furthermore, the managing and commissioning art agents aim explicitly to take wayfinding into account when choosing and placing artworks in the hospital setting, so ideally, they should look at the whole architectural

environment, the interior design and the other existent artworks, to determine whether they are compatible or not. However, the art managers seldom work explicitly with wayfinding as in a specific guiding track to reach certain spots, as routes and tracks can be different from visitor to visitor; instead, their intention is to position a specific work at a certain location so that it indicates possible continuous movements within that space. This type of art can possess a kind of hidden affordance (Gaver, 1991), in the sense that a certain orientating function is at hand. But this orientating function is not necessarily perceptible by all people at that place, especially not by those who disregard art on the whole, and nor by those who "only" admire the art without linking it to wayfinding. Wayshowing can in this sense be seen as an implicit spatial possibility that could be considered as a hidden intention in an environment that supports wayfinding.

Art is in itself, as a human or cultural artifact, seldom directive. It would be in conflict with most definitions of art if it adapted to act in a rationalist way, or if it had an explicitly functional task in an environment. Nevertheless, the studies in this investigation confirm that an artwork, as the thematic and aesthetic object that it is, still has a functional and purposeful role to play in relation to how we orient ourselves in hospitals. We have seen for instance that repetition can be strategically used as a way-showing strategy, when similar types of artworks, perhaps by the same artist, are displayed successively, such as here for example in the second study, where graphic prints in the reception area recalled the motifs that a visitor encountered right before the entrance to that department. This could be considered an implicit but existent guiding intention, affording a sense of familiarity, simply induced by the continuation of the same type of artwork. This does not mean that the works of art in this case and others capture the attention of every visitor, or that they are looked at only by visitors whilst gaining information about where to go. However, the studies of this thesis indicate that a sense of created familiarity has a tendency to also stimulate a calmer or more comfortable state of mind when orientating.

To conclude on the role of art in hospital design, we could say that in order to support wayfinding, an artwork has to be physically distinguishable, i.e. be in contrast to its immediate surrounding and be of a sufficient size and graphic peculiarity to be visible from a distance. As a whole, the (interior) environment should be reasonable diverse in its displayed collection of artwork, although not excessively, as was mentioned in the first, second and third studies of this thesis.

In other words, the affordance of the artworks should “name themselves” (Koffka, 1935) to fulfill the desired action which is guiding the way-searcher to find her/his way within the hospital setting (Warren, 1995). Importantly, wayfinding is not about the abilities of an ideal, or median, way-searcher, but must be thought of as for a range of way-searcher subjects with different backgrounds that preferably need to be somehow addressed as users, in order for the creators of hospital environments to understand what is at stake when designs and displays of art are experienced.

A couple of general remarks that draw on all the four studies of this thesis could be made regarding artwork that seems to work well in hospitals settings, enhancing orientation and wayfinding. These remarks are not specifically new thoughts in the realm of wayfinding theory, but they deserve to be mentioned as concrete findings here, confirming or emphasizing certain ideas. First, figurative artworks, such as sculptures of cute animals, attract both children and adults, and are easily remembered as landmarks. Secondly, artwork that depicts motion, or series of artworks with a common theme that are hung so that they continue in a certain direction and therefore express a possible motion in the space where they are experienced could give the way-searcher an indication to continue walking further. Thirdly, artwork that breaks with the expected, be it with its color, motif or placement, can draw people’s attention, making a way-searcher continue after having approached the contrasting artwork. As the second study shows, figurative art is not necessarily the only type of art that enhances wayfinding in the hospital setting, since the appreciation of abstraction relates to the perceivers’ preferences and backgrounds, as well as their knowledge of art. However, so called “provocative artworks” should, according to both visiting participants and professionals, be used with caution in hospitals settings, since they may cause harm, negative distraction, or even avoidance strategies, in an already stressful situation. Still, it must be evaluated from situation to situation which works could be considered too provocative, and which could inform the environment with aesthetics that can also have positive distraction effects, or advantages as orientation and wayfinding character.

8.8 Domains to be considered when theorizing wayfinding and wayshowing design

In the theory chapter of this thesis, I discussed a common way to model wayfinding that was derived from among others Passini's (1981) and Chen & Stanny's (1999) ways of describing wayfinding as distinctive cognitive steps supposedly leading a way-searcher to a destination. Such modelling is an attempt to understand what goes on in a wayfinder's mind by presuming distinguishable phases of perception, cognition and action, and it can to some extent be seen as still relevant as a point of reflection, especially in designing wayfinding in virtual environments, and when there is an operative intention to implement wayfinding in relation to how it may work in screen-based media, as they need distinctive steps, and can iterate new decisions with high speed. That kind of segmentized cognitive wayfinding model could roughly be seen as based in two main phases of a general way-searcher's strategy to proceed in an unknown environment: first, a planning phase (figuring out a good way) and then a navigation phase (with explicit motion towards the goal). The first phase includes the information processing and decision-making done before the actual navigating action is taken, and this planning phase could be seen as influenced by personal factors, environmental features, motivations, ability, and experience derived from memories. The second phase, navigation in movement, includes in this type of modelling the execution of the decisions made in the planning phase. In the theory chapter, I made some notes about the limitations of this model if we view wayfinding as a designerly issue that tries to capture the full complexity of how thinking, acting, and feeling mutually influence each other in a person's, or a group of people's, experience of an environment. Another critical remark is also that this type of cognitive model lacks a qualitative account of the impact of materiality and of the multifaceted meaning of aesthetic experience, which might for example be based on cultural background or knowledge of art, when artwork is part of the perceived environment. One of the main problems with this model however is precisely that it induces thinking in phases, in contrast to what we know from both affordance theory and the phenomenological account of orientation: namely that there is a direct relation between a perception and a corresponding action possibility. An object or a situation affording wayfinding can in other words be immediately both perceived and acted upon. Hence, even if the early cognitive model gives a programmatic and comprehensive view of a set of

influential factors, the separated phase structure is hard to justify, and difficult to use in reality, when for instance users in a hospital environment experience several things while walking, as well as when they change their opinions about the environment as time goes by. Furthermore, if we acknowledge Ahmed's phenomenological view that allows for a sense of self and identity to take place, i.e. personal background factors that influence our perception, then we can no longer say that there is always first a moment of perception and then a moment of action, but rather that our actions, and our sense of our self and our emotions, also steer our perception. In studies one, two and four of this thesis, we saw several examples of situations where perception, i.e. what was actually seen, and what was omitted, appeared to be conditioned by the state of mind of the users of the hospital space.

In a reflection on what we have seen in the studies of this thesis, we can therefore conclude that there is a reciprocal, or mutual, influence between a way-searcher's perception and action. This reciprocal relationship, where perception may be considered as containing the background of the viewer as well as the on-going action performed in the hospital environment, can be seen as a relevant basis for wayfinding, to which we can add quite pragmatic factors that we have seen as influencing this pairing. Some of these factors, or pragmatic aspects, have previously been touched upon as environmental features in the existing wayfinding models by Passini (1981), Chen and Stanney (1999), Mollerup (2009), Huelat (2007), and essentially starting already with Lynch (1960). Some of them, especially Mollerup (2009) and to some extent already Lynch (1960), have also emphasized that practical wayshowing is a matter of reducing the wayfinding difficulties that the way-searcher confronts in the hospital setting, for instance by providing the visitors before and during the actual visit with sufficient information on how to reach the intended destination. These accounts, as well as the designerly descriptions of wayfinding that we encountered in study three, also recall the importance of spatial heterogeneity that enhances the legibility of the environmental features to be distinguished as landmarks, making it easier for unfamiliar visitors to orientate themselves within the environment (cf. Baskaya et al., 2004).

The pragmatically-oriented theorists mentioned here have also, in one sense or another, touched on the effect of the way-searcher's background experiences, however then mostly restricted to mean earlier acquaintance with, or previous

presence in, a given place. Here, I have extended this “experience” to include also, more specifically, recalling (sometimes strong) emotional memories, so-called evoked familiarity, as well as familiarity in the sense of feeling at home. I also discussed the role of daily habit, implying that there can be an overfamiliarity with the environment, making the interest of the art and design fade away, but perhaps nevertheless evoking pleasant or unpleasant feelings whenever passed or visited, by for instance staff or patients with stays of long duration. Lastly, I also touched upon how stress, fatigue, or illness may lead the way-searcher to disregard interior design elements, including artwork, in the hospital environment, elements which had they been given more time could actually have helped in the way-finding task. Additionally, I noted, but did not further pursue as a specific issue, that for some hospital visitors, it may be easier to simply ask another person for directions, for example hospital staff, instead of relying only on visual cues in the way-searching task. Sometimes answers to such requests may refer to artwork when someone points out a way. Throughout the studies of this thesis, it has been indicated that art, when used as an important element in the creation of spaces conveying heterogeneity and familiarity, has the ability to connect feelings of pleasure with situations of orientating oneself.

Environmental features – of which we have here focused on the architectural setting and its interior artefacts, especially artwork – influence both action and perception of the way-searcher simultaneously, which means that during orientation and in wayfinding, we can maintain the mutual correspondence between perception and action, similar to what we have in affordance theory (where they are seen as appearing instantly together), but in this thesis, also with more emphasis on individual difference (as in Ahmed’s orientation- and identity-based phenomenology).

I will end my reasoning here by mentioning some factors of special interest that can be seen as specific findings brought to the fore through this thesis. These factors can be seen as informing theorization and research about wayfinding and thus also support processes of design and managerial action aimed at wayshowing: *spatial heterogeneity* (about the making of contrasts within hospital space); *evoked familiarity* (about elements in the hospital space that may bring forth memories); *overfamiliarity* (about place qualities taken for granted due to frequent use); *broad participation* (about consulting a range of users in all stages of realization of a hospital environment); *users’ background* (about considering ethnicity, cultural

knowledge, occupation, and previous experiences of art); and *time- and duration effects* (about acknowledging that perception may change during visits or on longer terms).

Popular science summary

(English, Swedish, & Arabic)

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The Way-Searcher's Journey in a Hospital

In large-scale architectural projects today, particularly when it comes to the contemporary architecture of hospitals, there is a general demand to provide effective services and a range of facilities that can respond to a growing and increasingly diverse population. Modern hospitals are like small cities, with a range of facilities addressing all members of society with their different backgrounds and various life situations. Since hospitals must function in all situations, the architecture must also facilitate wayfinding for patients, visitors and staff, so that the hospital space is not experienced as confusing. Patients and visitors should feel welcome and guided well, and staff must be able to work effectively. Informative signage systems in hospitals are not always efficient at supporting this range of users' orientation, especially when it comes to newcomers with different backgrounds, cultures, and languages. Finding one's destination depends not only on signage and verbal information, but also on a wide range of material and spatial elements in the environment that aid the way-searcher's wayfinding and orientation. Apart from reading maps, looking at signs, or communicating verbally, architectural and interior design as well as the presence of green elements and art have an impact on how we orientate. People who lack experience orientating themselves in a complex building like a hospital might feel as if they are walking through a maze, and they could easily get lost, creating stress and logistic problems. When people get lost, many questions arise, such as "Where am I?" "Where is my destination?" and "How do I get there?" Such situations might cause enough stress to affect people's health and well-being negatively.

In the area of architecture for health-care, the built environment is seen as contributing to healing and well-being; i.e., the physical aspects of the building and the objects and elements in it all play a role in relation to health issues. The physical aspects of this research mainly concern interior design elements,

especially the artwork on display in hospital environments. Since hospitals are places for treating illness and disease and handling urgent and life-threatening situations, strictly medical and clinical health conditions must be prioritized more highly than the visual appearance of departments. However, this priority and effectiveness in treatment also depends on there being sufficient spatial differences and contrasts to facilitate an easy handling of acute medical situations. Such qualities in hospital space include the visual and aesthetic features of the interior design of hospital environments. The inclusion of visual and aesthetic qualities could contribute to aiding people's orientation, i.e., interior elements attract people's attention and might support their interaction with the surroundings in a way that serves and benefits their goals and their attempts to find their way.

This thesis is a study of visitors', especially newcomers', reactions to interior design elements, especially artwork on display, in three places at the hospital SUS Malmö. It also concerns the choices and intentions behind the design and display of art. The different studies engage participants who visited these three places, answering a questionnaire and taking part in interviews. The research also consists of observations of people using the hospital space, in order to gain a deeper understanding of how people orientate intuitively in hospital environments. Some of the participants in these studies are familiar with the Swedish language and culture, while others are newcomers who do not speak the Swedish language and who are not familiar, or only somewhat familiar, with the architectural design and cultural traditions of Sweden. Most of the participants are Syrian refugees, which means that they not only have another linguistic and cultural background, but are also coming from extreme recent living situations. As an trained architect concerned about the newcomers' welfare, and myself a newcomer to the Swedish culture, speaking the same language (Arabic) as these participants, it seemed pertinent for me to investigate this particular group's experience of the hospital, and also to take a particular stance by relating specifically to the built environment rather than engaging generally in the problem of social integration.

Throughout this thesis, I have explored the quite complex relationship that different people have to wayfinding, and the affective aspects of attending to art. The investigation has been conducted using a mix of different methods – questionnaires, interviews and observations – that enabled a diverse and successively deepened articulation of the experienced relationship between existent artworks and wayfinding, including a deeper understanding of how

personal backgrounds and a sense of time and familiarity are important aspects when determining artwork's influence on users' orientation in the hospital setting. People's perception of art and their reflections on and reactions to it could, as confirmed in this thesis, be impacted by their backgrounds, including occupations, culture, knowledge, aesthetic preferences, and memories. Furthermore, properties of an artwork could evoke or provoke previous memories and experiences that affect how people orientate themselves. For instance, one of the works of art on display, called the "big red painting" by the participants, had an influence in a range of emotional ways: it evoked positive childhood memories in some participants and provoked emotions tied to the acute and confused situation in Syria in others. This range of emotions also affected the visitors' movements towards or away from this piece of art, implicating that emotions could play a role in impacting how people orientate and find their way. In this study, familiarity basically means a frequent exposure to the interior design of an environment. To be familiar with a place means that one knows how to orientate oneself there, heading to one's destination without relying too much on physical features and signage systems; i.e., it is a familiarity that also automatically facilitates a user's orientation and wayfinding. However, a sense of familiarity can also be evoked for example when people experience a new environment, or artwork or other interior design elements, that bring back well-known feelings, good or bad memories, or aesthetic preferences.

From a designerly point of view, one can say on the whole that for a wayshowing intention to come through, the organizing of the basic pattern of the building with its floor plans and circulation principles is the foundation for an effective wayfinding system. Such a foundation can facilitate the overall legibility and understanding of the interior space for a user, where the interior design features and works of art contribute by making contrasts, creating harmonious spots, "speaking" to a range of users, and taking different amounts of time to appreciate, all of which should preferably be taken into consideration in design. The focus of the thesis was not to study the effectiveness of architectural organization patterns on wayshowing, but to see how additional interior elements and the implementation of them through the work of architects, artists, and designers, can aid orientation and wayfinding. It was noted that such art- and design professionals could co-operate in producing environments that promote wayfinding, especially if they work together in the early stages of the design process. Furthermore, involving users as active participants by inviting them into

the design process could mean a greater chance to understand the needs of users, especially newcomers, and to reach a deeper understanding of a variety of needs and capabilities. The different knowledge gained here adds valuable input to actual design processes as well as to the design of future studies.

The outcomes of this study showed different areas of interests on how wayfinding and orientation depend on environmental features, especially as concerns the role of artwork and other interior design features. Principles were found that add to the knowledge of wayfinding, and that designers can address when analyzing wayfinding problems in hospitals. At the end of the thesis, I present a list of factors that inform an analysis of wayfinding and thus could also support processes of design aimed at wayshowing: *spatial heterogeneity* (about the making of contrasts between spaces); *evoked familiarity* (about elements in the hospital space that may bring back memories); *overfamiliarity* (about places taken for granted due to frequent use); *broad participation* (about consulting a range of users in all stages of realization of a hospital environment); *users' background* (about considering ethnicity, occupation, and previous experiences of art) and *time- and duration effects* (about acknowledging that perception may change during visits or in stays of a longer duration).

Populärvetenskaplig sammanfattning

Vägsökarens resa på ett sjukhus

I storskaliga arkitektoniska projekt, och särskilt när det gäller samtida sjukhusarkitektur, kan man idag konstatera att stora krav ställs på byggnadernas förmåga att erbjuda logistik, utrymme, service och funktioner som kan svara mot befolkningsökningen i städerna. Sjukhus av idag kan vara som mindre städer, med funktioner som skall vända sig till alla samhällets medborgare, med de olika bakgrunder och livssituationer som följer i spåren efter migration och stadsinflyttning. Eftersom sjukhus ska fungera i alla situationer måste arkitekturen, med dess fysiska utformning och interiöra sammansättning, erbjuda adekvata möjligheter att orientera sig och finna sin väg i sjukhus för patienter, besökare och personal, så att inte onödig förvirring och oro uppstår. Nya patienter och besökare behöver känna sig välkomnade, och få guidning så att de hittar det de söker, och personal måste kunna arbeta effektivt. Existerande skyltsystem är inte alltid tillräckliga för att assistera navigering och orientering i sjukhusbyggnaderna, särskilt för oerfarna eller nyanlända personer med olika bakgrund, kultur och språk. När man försöker finna sin destination är man inte enbart beroende av att kunna läsa skyltar, utan också av att kunna läsa kartor, kommunicera verbalt, och att avläsa egenskaper i själva den designade miljön som kan användas för att orientera sig. Är man oerfaren vad gäller detta så kan det kännas som att gå i en labyrint och man går lätt vilse, vilket leder till stress och logistiska problem. Att börja ställa sig frågor som ”Var är jag”?, ”Vart skall jag”? Och ”Hur tar jag mig dit”? kan kännas stressande, t o m till den grad att det påverkar välbefinnandet och hälsan negativt.

I denna avhandling, inom forskningsområdet arkitektur och hälsa, undersöks vilken roll interiör design och särskilt konstverk har som vägledande element för de som söker sin väg i sjukhusmiljön. Avhandlingen undersöker både besökares och professionella aktörers syn på vägledande fysiska föremål i sjukhusrummet och tar i beaktning hur personlig bakgrund såsom kulturell tillhörighet, yrke, minnen och estetiska preferenser, påverkar intrycket hos den som upplever dessa

element i sjukhusmiljön. Avhandlingens mål är att öka kunskapen om konstobjektens roll i sjukhusmiljön, och hur dessa relaterar till den övergripande designen av byggnaderna och interiörerna. Detta har gjorts genom att studera hur dessa fysiska (konst) objekt framträder på tre olika platser på sjukhuset SUS i Malmö, samt hur de urvalsprocesser kan se ut där beslut tas om konstverkens art och placering.

I ett sjukhus måste prioritet ges åt medicinsk behandling, med de funktioner och avdelningar som krävs för detta, vilket betyder att rent visuella eller estetiska funktioner kan ses på som värden med lägre prioritet. Icke desto mindre så måste visuella och estetiska faktorer, i en bred mening där synlighet och rumsliga kontraster ingår, vara tydliga nog att även assistera vägledning i akuta eller livsavgörande sammanhang. Dessa breda perceptions-kvaliteter bidrar till människors orientering, dvs. interiöra delar och föremål kan vara avgörande för ens möjligheter att navigera, genom att de tilldrar sig uppmärksamhet eller erbjuder aktion på olika sätt, vilket även kan underlätta då man söker efter ett specifikt mål.

Avhandlingen består av fyra studier utvecklade för att komplettera varandra, och dessa studier inkluderar tre olika betraktande perspektiv: besökarens, den professionella aktörens, samt den observerande forskarens perspektiv. Denna kombination av synsätt bidrar till en bred förståelse för olika upplevelser och effektivitet vad gäller vägledande design i hälsomiljö, samt även av de intentioner som ligger bakom tillkomsten och placeringen av konst i sjukhusmiljön, till exempel hur denna konst samlas in, väljs och distribueras. Kvalitativa, dvs. tolkande och beskrivande undersökningar, med vissa mindre inslag av kvantitativa jämförelser, utgör avhandlingens metodik, och de tekniker som används för insamling av data är: enkät, intervju på plats, semi-strukturerad längre intervju, gående-intervju, observation, och fotografisk dokumentation. Detta mixade metodologiska angreppssätt används för att erhålla en successivt djupare insikt i konstverkens och den interiöra designens roll för vägsökning och vägledning, och visar därigenom också på hur forskningsområdet ”wayfinding theory” utvecklats, särskilt då denna teori relaterar till begrepp så som orientering, vägval, rumslig läsbarhet, aktionserbjudanden och bekantskap med miljön (hemkänsla). Dessa teoretiserade begrepp används här i både analys och i beskrivningar av hur vägsökande personer, särskilt nya besökare och nyanlända till den svenska

kulturen, upplever den interiöra sjukhusomgivningen och dess rumsliga och materiella delar.

I undersökningarna studeras uppfattningar och aktioner förmedlade genom besökare till de tre olika avdelningarna på SUS i Malmö: ett väntrum med flera anslutningar, en mottagningsavdelning och dess korridorer, och en större inomhus entréyta. Flertalet deltagare i enkäter och intervjuer gjorda på plats är personer tämligen nyanlända till Sverige och Malmö, med en begränsad förståelse av svenska språket och svensk kultur, inte minst vad gäller hur sjukhus är utformade och inredda. De flesta av dessa nyanlända personer är syriska flyktingar som tvingats bort från sitt hemland på grund av krig, vilket betyder att de inte bara har ett annat språk och kulturell bakgrund, men också extrema och relativt nyligen upplevda svåra livserfarenheter. Det blev möjligt för mig som forskare och som utbildad arkitekt, med omsorg om deras välbefinnande, och inte minst som talande arabiska, att förmedla och ta min roll som fokuserad på denna särskilda grupps upplevelse av sjukhusets rum, dess arkitektur och konst, snarare än att gå djupare in i problem kopplade till social integration i allmänhet.

Studierna pekar på att deltagarnas uppfattning, tolkning och upplevelser av konst i sjukhusmiljön delvis kunde bero på deras bakgrund: kulturell tillhörighet, yrkeserfarenhet, estetiska preferenser och uppdykande minnesbilder. Dessa bakgrundsfaktorer kunde ses som att de har betydelse för hur man orienterar sig, både i meningen hur man navigerar rent rumsligt, men framförallt hur man generellt orienterar sig, situationsmässigt och kulturmässigt, som en upplevande individ. Vissa specifika egenskaper hos konstverk kan provocera eller framkalla helt olika typer av respons, även minnen av negativ karaktär, vilket var fallet vid upplevelsen av en målning kallad ”den stora röda målningen” av flera deltagare. Denna abstrakta målning kunde dels framkalla behagliga barndomsminnen knutna till typen av konst, eller till förekomsten av konst på väggen i sig, men den kunde också hos andra deltagare ge negativt laddade känslor knutna till målningens färgsymbolik som påminde deltagare om den syriska krigssituationen. Det faktum att konst kan väcka väldigt olika känslor och ses på en mängd olika sätt kan hanteras i vägledande design och konst så att man avväger förmågan hos konstobjekt att urskilja sig från omgivningen och utgöra ett landmärke, men också genom att man uppmärksammar att det finns en gräns för vad som på ett positivt sätt kan förmedla orientering.

Känslan av att känna igen sig är viktig för vägledande design. Hemkänsla, eller bekantskap med en miljö, kan existera både som faktisk och som upplevd igenkänning. Studien aktualiserar att viss bekantskap med en miljö blir så vanlig att den, även om stark kännedom om miljön finns, också kan skapa en viss uttråkad inställning till, eller blindhet för, de behov som kan finnas vad gäller vägledning för de som är obekanta med miljön. Också en slags uppväckt bekantskap kan förekomma hos en som egentligen inte är faktiskt bekant med platsen, men som via associationer till dess egenskaper (som t ex motiv, färg och form) kan väcka känslor av igenkänning (”familiarity”).

Från ett designperspektiv, så kan man på det stora hela säga att för att vägledande design (eller ”wayshowing”) skall framträda väl, så bör den grundläggande arkitektoniska layouten, med sina planer för cirkulation i miljön, vara relevant och erbjuda både tydlighet och flexibilitet. En sådan bas kan underlätta en övergripande läsbarhet och förståelse av miljön som sådan, en läsbarhet som kan understödjas av hur interiöra element och konstverk kan skapa kontrast, och erbjuda harmoniska punkter i rummen, för en bred användarskara. Sjukhusdesign och placering av konst bör också förstås så att de fungerar i olika tidsperspektiv. Studierna i denna forskning visade bland annat att inte förrän efter en kort tids umgänge med konsten var etablerat så kunde denna konst och dess placering erbjuda både harmoni och blir föremål för orientering och navigering. Vad gäller personal, men även vana besökare, kan även en längre tids umgänge med konstverk i sjukhusmiljö, till exempel i väntrum, erbjuda välbefinnande och avkoppling, om denna konst väljs och placeras så att den erbjuder återhämtning, t ex nära sittmöjligheter. Då avhandlingens fokus var konstens roll i förhållande till sjukhusdesign, snarare än arkitektonisk grundlayout, så visar den också hur professionell hantering av denna relation kräver samsyn i alla stadier, inte enbart mellan professionella aktörer, men också i konsultation av brukare med mindre erfarenhet av dessa miljöer. Att aktivt involvera icke-professionella brukarperspektiv skulle öka chansen att få en förståelse för bredden vad gäller behov och kapacitet.

Avhandlingens resultat visar på några tydliga områden där vägledning, navigering och orientering aktualiseras, som beroende av rumsliga faktorer, särskilt vad gäller konstens roll i de gemensamma sjukhusrummen. Vissa principer befinns lämpliga att dels addera tydligare till teorin om ”wayfinding” men också som vägledande principer i designmässig och beslutsfattande hantering av

sjukhusinteriörer. Dessa principer, eller faktorer listas i avhandlingen som: *spatial heterogenitet* (om möjligheten att skapa konstrast mellan olika delar av sjukhusrummen); *uppväckt kännedom* (om möjligheten att konst och design kan väcka minnen av igenkänning); *överkännedom* (om möjligheten av, eller risken för, att stark kännedom också kan förblinda för såväl användare som designpraktiker); *bred delaktighet* (om att konsultera ett större spektrum av potentiella användare i alla stadier av designprocessen); *användarbakgrund* (om att beakta etnicitet, kulturell kännedom, yrkesbakgrund, och tidigare erfarenhet av konst); *samt tids- och varaktighetsaspekter* (om att uppmärksamma att synen på en miljö kan förändras både under tiden för tillfälliga besök och under mer varaktig vistelse).

الملخص العلمي العام

رحلة الباحث عن مسار الحركة داخل المستشفى

في العديد من المشاريع المعمارية الضخمة، وخاصة عندما يتعلق الأمر بالعمارة المعاصرة للمستشفيات، يوجد في الايام الحالية طلب عام لتوفير المزيد من الخدمات الفعالة و مجموعة من المرافق التي بإمكانها الإستجابة لأعداد السكان المتزايدة والمتنوعة. تشبه المستشفيات الحديثة نوعا ما المدن الصغيرة، فهي تحتوي على مجموعة من المرافق التي تتعامل مع جميع أفراد المجتمع من ذوي ثقافات متنوعة وظروف حياتية مختلفة. وكما أنه يجب على المستشفيات أن تستمر في العمل في جميع الظروف و الأوقات، فكذلك يجب على العمارة المتخصصة في تصميم المستشفيات أيضًا تسهيل أن تسهل عملية العثورعلى مسارات الحركة للمرضى والزائرين والموظفين المؤدية الى وجهتهم، والتي تقودهم الى مختلف المرافق التي يريدون الوصول إليها، حيث تكون الفراغات الداخلية للمستشفى غير مربكه لحركتهم وراحتهم. بالتالي يشعر كل من المرضى والزوار بالترحيب وبأنهم قادرون على ايجاد وجهتاهم ومسارات حركتهم بشكل جيد وفعّال، ومن جهة اخرى يستطيع الموظفون العاملون في المستشفى قادرين على العمل بفعالية وسهولة اكثر. في كثير من الاحيان قد لا تكون أنظمة اللافتات الإرشادية في المستشفيات فعالة في توجيه حركة المستخدمين، خاصة عندما يتعلق الأمر بالقادمين الجدد الذين لديهم خلفيات وثقافات ولغات مختلفة. لذلك فإن العثور على وجهة محددة لا يعتمد فقط على المعلومات الإرشادية والشفهية فحسب، بل يعتمد أيضًا على مجموعة واسعة من العناصر المادية والمكانية في البيئة التي تساعد المستخدم على إيجاد الطريق والإتجاهات. وبغض النظر عن قراءة الخرائط أو النظر إلى اللافتات أو التواصل بشكل لفظي، فإن التصميم المعماري والداخلي بالإضافة إلى وجود العناصر النباتية الخضراء والأعمال الفنية تؤثر جميعها على كيفية توجيهنا. إن الأشخاص الذين يفتقرون إلى الخبرة في كيفية التحرك في مبنى معقد مثل المستشفى معرضون بشكل كبير للشعور بأنهم يسيرون في متاهة وسهوله أن يضلّوا طريقهم، وهذا بدوره يخلق التوتر والارتباك والعديد من المشاكل اللوجيستية. فعندما يفقد الأشخاص الطريق المؤديه إلى وجهتهم تراودهم العديد من الأسئلة، مثل "أين أنا؟" ، "أين هي وجهتي؟" ، و "كيف يمكنني الوصول إلى هناك؟"، هذه الأسئلة قد تسبب توتراً كافيًا للتأثير على صحة الناس وراحتهم بشكل سلبي.

في مجال تصميم العمارة المخصصة للرعاية الصحية، يُنظر إلى البيئة المبنية على أنها تساهم بشكل فعّال في التأثير على عملية الشفاء والراحة، أي أن الخصائص المادية للمبنى والعناصر الموجودة فيه جميعها تلعب دوراً مهماً فيما يتعلق بالقضايا الصحية. الخصائص المادية في هذا البحث تتعلق بشكل رئيسي بعناصر التصميم الداخلي في بيئات المستشفيات، وخاصة الأعمال الفنية المعروضة. لا شك أن المستشفيات هي أماكن لعلاج الأمراض وأحيانًا التعامل مع الحالات الطارئة، لذلك نجد أن بعض الشروط الصحية الطبية والسريرية لها أولوية على المظهر المرئي للأقسام. وبالرغم من هذا، فإن هذه الأولوية والفعالية في العلاج تعتمد أيضا على حقيقة أن هناك فروقات وتباينات في الخصائص المكانية تعد كافية لتسهيل التعامل مع

الحالات الطبية الحرجه. وتشمل هذه الخصائص في فراغ المستشفى كلاً من الميزات البصرية والجمالية للتصميم الداخلي لبيئات المستشفيات. يمكن أن يساهم إدراج الخصائص البصرية والجمالية في توجيه حركة الأشخاص، بمعنى أن العناصر التصميمية الداخلية تجذب انتباه الأشخاص وقد تدعم تفاعلهم مع البيئة المحيطة بطريقة تخدم وتفيد أهدافهم و تسهل محاولاتهم لإيجاد طريقهم.

من الجدير بالذكر أن هذه الأطروحة تمثل دراسة عن ماهية ردود فعل الزوار وخاصة الوافدين الجدد، ردود الفعل هذه متعلقة بعناصر التصميم الداخلي وخاصة الأعمال الفنية المعروضة في ثلاثة أماكن في مستشفى مالمو الجامعي في السويد، وتتناول أيضًا الخيارات و الاهداف وراء تصميم وعرض الأعمال الفنية. تقوم الدراسات المختلفة في هذه الأطروحة بإشراك المشاركين الذين يزورون هذه الأماكن الثلاثة في الرد على استبيان والمشاركة في مقابلات. يتألف البحث أيضًا من ملاحظات لمراقبة حركة الأشخاص المستخدمين لفراغات المستشفى، و ذلك من أجل الحصول على فهم أعمق للكيفية التي يتوجه ويتحرك بها الأشخاص بشكل حدسي في فراغات المستشفيات. بعض المشاركين في هذه الدراسات كانوا على دراية باللغة والثقافة السويدية، ولكن البعض الآخر كانوا من الوافدين الجدد الذين لا يتكلمون اللغة السويدية و ليسوا على دراية أو علم كالسابقين، أو هم كانوا فقط على دراية جزئية بالتصميم المعماري والعادات الثقافية في السويد. علاوة على ذلك إن معظم المشاركين في الدراسة هم عبارة عن قادمين جدد من اللاجئين السوريين، مما يعني أنهم لا يعرفون تلك اللغة والعادات الثقافية الأخرى، بل أيضا لديهم تجارب حياتية جديدة وقديمة مختلفة تماما. و كمهندسة معمارية تهتم بالوافدين الجدد ومساعدتهم على الاندماج في المجتمع السويدي من خلال عملي في مشاريع تطوعيه، بالاضافة لكوني شخص جديد على الثقافة السويدية وأتكلم نفس لغة هؤلاء المشاركين (العربية)، بدا لي أن هذا كافي في التحقيق بتجربة هذه المجموعة على وجه الخصوص في المستشفى، بل وأيضا ساعد في اتخاذ موقف محدد من خلال ربطها بشكل خاص بالبيئة المبنية بدلا من الإنخراط بشكل عام في مشكلة الإندماج الاجتماعي.

خلال هذه الأطروحة، بحثت في العلاقة المعقدة إلى حد ما بين العديد من الناس وبين عملية العثور على مسار الحركة، والجوانب العاطفية لوجود الأعمال الفنية. وقد تم هذا البحث من خلال استخدام مزيج من الأساليب المختلفة - الاستبيان والمقابلات والملاحظات - التي بدورها مكنت من خلق تنوع وفهم معمق متتالي ومتداخل للعلاقة بين الأعمال الفنية القائمة و عملية العثور على مسار الحركة، وتضمن ذلك فهم أعمق بأن الخلفيات الشخصية للناس والشعور بالوقت والألفة هي من العوامل الهامة عند الحكم على تأثير الأعمال الفنية على توجه المستخدمين في فراغات المستشفى. كما هو مؤكد في هذه الرسالة فأنه يمكن أن يتأثر تصور الناس للأعمال الفنية وإدراكهم وردود الأفعال تجاهها باختلاف خلفياتهم: المهنية والثقافية والمعرفية والميول الجمالية والذكريات. كذلك، فإن خصائص العمل الفني يمكن أن تثير لديهم ذكريات وتجارب سابقة سواء كنت إيجابية أو سلبية، وتؤثر على كيفية توجيه الناس لأنفسهم و تحركهم خلال الفراغ. على سبيل المثال، كان لإحدى الأعمال الفنية المعروضة، والتي يسميها المشاركون "اللوحة الحمراء الكبيرة"، تأثيرًا على مجموعة من الطرق العاطفية: لقد أثارت ذكريات الطفولة الإيجابية لبعض المشاركين وأثارت العواطف المرتبطة بالوضع الحاد والمربك في سوريا للآخرين، و بالتالي أثرت هذه المشاعر على تحركات الزوار واتجاههم نحو هذا العمل الفني أو بعيداً عنه، مما يدل على أن العواطف يمكن أن تلعب دوراً في التأثير على الطريقة التي يتوجه بها الناس في الفراغ ويجدون بها وجهتهم. إن الألفة في هذه الدراسة تعني في الأساس التواجد المتكرر في فراغ معين. أن تألف مكاناً ما يعني أن تعرف كيفية توجيه نفسك نحو

وجهتك دون الاعتماد كثيرًا على الخصائص المادية وأنظمة اللافتات الإرشادية، بمعنى أن الألفة تسهل توجه المستخدم وعملية عثوره على المسار بشكل تلقائي. وبالاضافة الى ذلك، يمكن استحضار الشعور بالألفة أيضًا عندما يختبر الناس بيئة جديدة أو أعمالًا فنية أو عناصر تصميم داخلية أخرى، والتي تستحضر مشاعر معروفة أو ذكريات جيدة أو سيئة أو ميول جمالية.

من وجهة نظري كمصمّمة، يمكنني أن القول عموما بأنه من أجل خلق نية لإظهار طريق أو مسار معين، فإن علاقة النمط التصميمي للمبنى من مخططات ونظام الحركة تعتبر هي الأساس لنظام فعال لتوجيه المسار الحركي. يمكن لمثل هذه القاعدة أن تسهل الرؤية العامة والفهم الكلي للفراغ الداخلي للمستخدم، حيث تساهم خصائص التصميم الداخلي والأعمال الفنية من خلال صنع التناقضات وخلق نقاط متناغمة تخاطب ادراك وثقافة المستخدمين حيث يحتاج كل مستخدم فتره زمنية مختلفة لإدراك العناصر المحيطة، والتي ينبغي أن يأخذ جميعها بعين الاعتبار في التصميم. تجدر الاشارة الى أنه لم يكن تركيز هذه الأطروحة على دراسة فعالية أنماط التنظيم المعماري في إظهار الطريق، بل لمعرفة كيف يمكن لعناصر عناصر التصميم الداخلية، التي يجب تصميمها و تنفيذها من خلال تعاون في مرحلة التصميم والتنفيذ بين المهندسين المعماريين والفنانين والمصممين، أن تساعد في توجيه المستخدمين للعثور على مسار الحركة وصولاً إلى وجهتهم. وقد لوحظ أن الفنانين والمصميمين يمكن أن يتعاونوا في خلق البيئات التي تسهل عملية العثور على المسار، خاصة إذا تم التعاون في ما بينهم في المراحل الأولى من عملية التصميم. كذلك ، فإن إشراك المستخدمين كمشاركين نشطين، من خلال دعوتهم إلى عملية التصميم، قد يعطي فرصة أكبر لفهم احتياجات المستخدمين وخاصة القادمين الجدد، وبالتالي الوصول إلى فهم أعمق لمجموعة متنوعة من الاحتياجات والقدرات. وعليه فإن تحصيل كل هذه المعلومات المختلفة يضيف مدخلات قيمة لعمليات التصميم الفعلية وكذلك لتصميم الدراسات المستقبلية.

وأظهرت نتائج هذه الدراسة مجالات مختلفة من الاهتمامات حول كيفية اعتماد طرق التوجيه والعثور على مسار الحركة بالاعتماد على السمات البيئية، خاصة فيما يتعلق بدور الأعمال الفنية وغيرها من ميزات التصميم الداخلي. تم ايجاد مجموعة من المبادئ التي تضيف إلى معرفة العثور على المسار، والتي يمكن للمصممين أخذها بعين الاعتبار عند تحليل مشاكل الحركة في المستشفيات. في نهاية الأطروحة أقدم قائمة من العوامل التي تستخدم في تحليل مشاكل العثور على المسار، والتي يمكن لها أيضًا أن تدعم عمليات التصميم الحركة: *التباين المكاني* (متعلقة بصنع التناقضات بين الفراغات)؛ *استحضار الألفة* (متعلقة بالعناصر الموجودة في فراغ المستشفى التي قد تستحضر الذكريات)؛ *فرط الألفة* (حول الأماكن البديهية بسبب الاستخدام المتكرر)؛ *المشاركة الواسعة* (حول استشارة مجموعة من المستخدمين في جميع مراحل خلق بيئة المستشفى) ؛ *خلفية المستخدمين* (حول التفكير في العرق والمهنة والتجارب الفنية السابقة) *وتأثيرات الزمن والمدة* (متعلقة بالاعتراف بأن التصور قد يتغير أثناء الزيارات أو على فترات أطول).

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List of figures

Appendixes

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Appendix I: Questionnaire sheet for the first study

Dear participant,

I am a PhD student at the department of Architecture and Built Environment. I am studying the influence of artwork as a wayfinding strategy, with the aim of improving the environment inside hospitals. All information collected will be kept confidential and used only for my research. There will be no connection to you specifically in the results or in future publications of the results. After this pilot study, I might want to come back to you with further questions. So, if you agree to participate in this pilot study, please write you mail address:

……., or your phone number:

…….

Here is an example of the rating scale that is used in this questionnaire:

1	2	3	4	5
strongly agree	agree	neutral	disagree	strongly disagree

Part (1)

1- What is your gender?

Male ☐ Female ☐ Other ☐

2- What is your nationality? ----------

3- Is your professional activity related to the field of art, architecture and interior design?

☐ Yes, my work relates very much to this field.

☐ Yes, my work relates to art, architecture and interior design somehow.

☐ No, I am familiar with art, architecture and interior design, but my work does not relate to art, architecture and interior design.

☐ No, I am not familiar with art, architecture and interior design, and my work does not relate to art, architecture and interior design.

4- I am familiar with this environment.

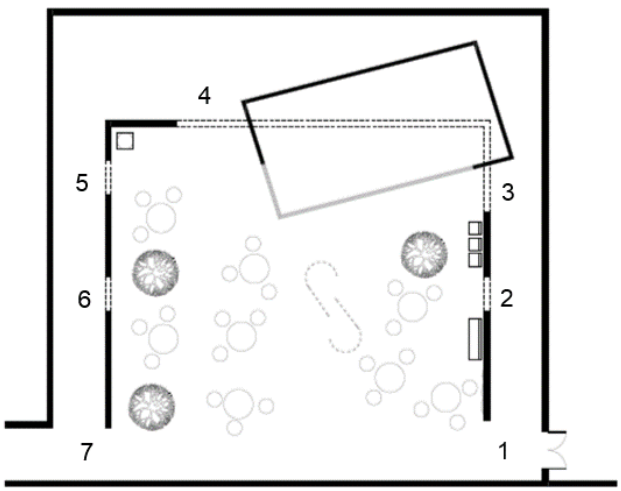
1	2	3	4	5
Strongly agree			Strongly disagree	

Part (2)

1-What perceived elements in the place catch your eye? Why?

2- Imagine that you are going to the Department of Surgery.

Which exit from this space would you choose first to reach your destination? Why?



3- Please, list in order the alternative exits that you would choose?

4- Which exit would you be less interested in choosing? Why?

5- Please, state any other environmental features that touched your emotions (positive/ negative)?

6- Which elements evoke your memories from previous experiences of wayfinding? Why?

7- Do you think that the interior design elements works well together in the place?

8- I like the artwork in the place.

1	2	3	4	5
Strongly agree			strongly disagree	

Part (3)

1- It is easy to find my destination.

1	2	3	4	5
Strongly agree			strongly disagree	

2- What elements of the interior environment do you find most helpful in aiding your wayfinding?

3- What elements of the interior environment make your wayfinding difficult?

4- Write some recommendations that you feel would improve wayfinding in this environment.

Part (4)

1- Did you find something in this questionnaire difficult to understand?

Thank you for your kind participation in my study!

Muna Mohammad Alibrahim

Appendix II: Interview template for the second study (part 1 and 2)

Dear Participant,

I'm a PhD student at Lund University, I'm doing this interview for educational purposes, your personal information will be kept confidential, and the interview will be recorded to make it possible for me to return back to the details of the conversation in the analysis phase of my research. *First I want to thank you to be a part by following up this interview. I want to assure that you will be anonymous and I will not keep your name on the record.*

Part one: Orientation, wayfinding and remembrance of the place (walking interview)

- Which direction will you choose? Why?

  - Are there any physical elements in the environment that made you choose that direction?

- What is your impression of the place at spot A?

- What is your impression of the place at spot B?

- What is your impression of the place at spot C?

- Do you think it would be easy to find your way back to spot A from spot C?

  - Are there any physical elements in the environment that could guide you?

- How would you describe this place for a person unfamiliar with it?

  - Do you like the place? Why? (if no, why?)

- What in this environment catches your eye? Why?

- Do you think that you will remember anything from this place when you get home? What? Why?

- Do you think it would be easy to find your way back to spot A from spot C in case you entered the place from spot C without passing through spot A?

Part two: The artworks in the place (sitting interview)

- What do you think about the existent artworks in this place?

    - Can you describe the artworks in one word?

- Why do you chose this description?

- Do you like any of the artwork? Which one? Why?

- Do you dislike any of the artwork? Which one? Why?

- If you could change this artwork, how would you change it? Why?

- For what purpose do you think this artwork was created? Why do you say that?

- How and why is art importance in people's lives?

- Is art importance in hospitals in terms of wayfinding?

- Which type of visual arts do you prefer? Why?

- What is your personal experience (background) in the arts?

Appendix III: Duration of interviews in Study 2

Interview number	The duration of the interview (part one and two)
Interview 1	30:30 minutes
Interview 2	36:09 minutes
Interview 3	35:43 minutes
Interview 4	37:41 minutes
Interview 5	27:22 minutes
Interview 6	32:17 minutes
Interview 7	30:39 minutes
Interview 8	29:57 minutes

Appendix IV: Interview templates and additional email questions for the third study

The first interview questions:

Interview with artist Monika Gora

Based on your experience as an artist, how do you define art?

How and why is art importance in people's lives?

How and why is art important in a society/culture?

People's experiences of different artworks is subjective, but is it still possible for you to say which kind of artworks that seems to work well/effective in the hospital setting? Why?

From the point of you, which kind of artworks suites the hospital setting? Why?

- Which kind of artworks suites the hospital setting for enhancing well-being? Why?
- Which kind of artworks suites the hospital setting for enhancing wayfinding? Why?

What are the criteria for choosing the artworks that are used in hospitals?

Do you find a relation between art and wayfinding in hospital? Why and how?

Do you feel that artworks can help people to find their way in the hospital setting? Why and how?

Is art important in hospitals in terms of wayfinding? Why and how?

Which type of artworks do you think supports wayfinding in the hospital setting? Why and how?

Could you describe an artwork that aids wayfinding? How should it look?

What are the standard principles or issues that the artist should focus on to produce artworks could contribute or promote wayfinding?

Do you think the diversity of artworks at hospitals have a positive or negative impact on the way people experience the hospital environment? Why?

Do you think the diversity of artworks at hospitals have a positive or negative impact on wayfinding? Why?

Do you take wayfinding into consideration while you are designing, choosing, or placing artworks in hospital settings?

Which interior design elements (wall colour, furniture, placement etc.) could support artworks' influence on wayfindingin hospitals?

What is your opinion regarding the current interior design of the emergency building at SUS in Malmö (CF möller)?

Do you consider the artwork as an essential element or a complementary element in the hospitals' interior design?

Do you have a role in distributing your work, such as La Familia, at Malmö hospital? Or is there a specific organization asking you to use a specific work for a specific purpose? What are these purposes?

Can you describe the process behind the choice and placement of artworks in the hospital environment?

What factors do you take into consideration when choosing and placing the artworks within a specific hospital environment?

What aspects or parameters do you generally take into consideration when creating a work of art?

How does these aspects/parameters relate to the hospital setting, and is this setting different from other settings that you have worked with? How and why?

Part 2: The artworks in the infection department

What do you think about the existent artworks in the infection department?

If you could change these artworks, how would you change them and to what? Why?

For what purpose do you think these artworks were created? Why do you say that?

The second interview questions:

Interview with art manager and consultant Nilsmagnus Sköld

Based on your experience of art, how do you define art?

How and why is art importance in people's lives?

And how and why is art it important in a society/culture?

What are the ideas behind the distribution of artworks to hospitals?

What are the criteria for choosing the particular artworks that are used in hospitals?

The experience of different artworks is subjective, but is it possible for you to say which kind of artworks that seem work well/ effective in the hospital setting?

From the point of you, which kind of artworks suites the hospital setting? Why?

- Which kind of artworks suites the hospital setting for enhancing well-being? Why?
- Which kind of artworks suites the hospital setting for enhancing wayfinding? Why?

Do you find a relation between art and wayfinding in hospital?

Is art importance in hospitals in terms of wayfinding?

Do you feel that artworks can contribute to wayfinding in hospitals?

Could you describe an artwork that aids wayfinding? How should it look?

What are the standard principles or issues that the artist should focus on to produce artworks Do you think the diversity of artworks at hospitals have a positive or negative impact on the way people experience the hospital environment? Why?

Do you think that the diversity of artworks at hospitals have a positive or negative impact on wayfinding? Why?

Which environmental elements or factors (for example placement of the artwork, interior design, wall colour etc.) could support the artworks' influence on wayfinding at hospitals?

Could the type or the placement of the artworks affect peoples' navigation within the hospital?

Which type of artworks do you think works best in supporting wayfinding?

Do you take wayfinding into consideration when you are choosing and placing the artworks within a specific hospital environment?

Can you describe the process behind the choice and placement of artworks in the hospital environment?

What factors do you take into consideration when choosing and placing the artworks within the hospital environment?

Part 2: The artworks in the place

What do you think about the existent artworks in this place?

If you could change this artwork, how would you change it? Why?

For what purpose do you think this artwork was created? Why do you say that?

The third interview questions:

Interview with architect Anders Svensson

What is your design style? (Modern, classic, shapes, colours, …etc).

Why do prefer this style? And what are the advantages of using this style?

What is the purpose of the interior design?

What is the contribution/influence of the interior design to the building's environment and to wayfinding?

Does the interior design support wayfinding? (If yes, how?)

What is the most important factors (the criteria) of designing a places within a hospital that the designer have to concern about? Why?

How could you handle the architectural obstacles that you could face especially in wayfinding?

What is your responsibility as an interior designer regarding to wayfinding?

Do you merely concern about the aesthetical aspects in your design or there are other considerations?

Which interior design elements could support artworks' influence on wayfinding at hospitals?

What is the most important factors (the criteria) of designing a places within a hospital that the designer have to concern about? Why?

What is your opinion regards the current interior design of emergency building (CF möller)?

From the point of you, what are the most effective elements of the interior design elements that have significant impact on both the environment and wayfinding?

Do you consider the artwork as an essential element or complementary element (aesthetical) in the interior design?

If your design including artworks, how do you used to deal with the artworks in your design?

Do you think the artwork as one of the interior design elements has significant impact on wayfinding comparing to other elements?

Which type of artwork do you prefer to use in your design? Why?

Do you look for specific criteria in the artwork to be in your design?

The additional email questions in the third study:

1- Have you ever thought about/considered newly immigrated people or refugees in relation to your work/design? (if yes, describe a case and your experience at that time)

2- If you are commissioned to design a project that concerns newcomers to this country, how would you deal/manage that? What are the aspects that you would take into consideration during the design process in regard to newcomers?

3- Do you think dealing with newcomers in your design is a challenge? Why?

4- Have you considered specific aspects or specific needs in relation to newcomers' ways of orientating and finding their way in Swedish hospital space?

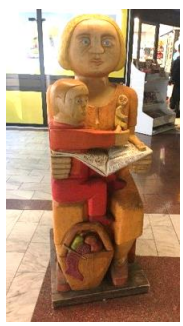
Appendix V: Duration of interviews in the third study

The number of the interview	The duration of the interview
Interview with Monika Gora	1 hour 4 minutes
Interview with Nilsmagnus Sköld	1 hour 48 minutes
Interview with Anders Svensson	56 minutes

Appendix VI: Works of art mentioned in the thesis

	Artist	Study	Photo documentation	Location
1	Eric Grate	The first study		Artwork in the reception hall at the Department of Radiology, SUS Malmö.
2	Mia Olsson	The first study		Artwork in the reception hall at the Department of Radiology, SUS Malmö.

3	Mia Olsson	The first study		Artwork in the reception hall at the Department of Radiology, SUS Malmö.
4	Felix Hatz	The second study		Artwork at spot B, in the outpatient clinic of the Department of Infectious Diseases at SUS Malmö.
5	Kurt Ullberger	The second study		Artwork at spot C, in the outpatient clinic of the Department of Infectious Diseases at SUS Malmö.
6	Kurt Ullberger	The second study		Artwork at spot C, in the outpatient clinic of the Department of Infectious Diseases at SUS Malmö.

7	Örjan Håkansson	The second study		Artwork at spot C, in the outpatient clinic of the Department of Infectious Diseases at SUS Malmö.
8	Jacob Dahlgren	The second study		Artwork at spot A, in the outpatient clinic of the Department of Infectious Diseases at SUS Malmö.
9	Axel Ebbe	The third study		The sculpture at Möllevångs Square, Malmö. Referred to in interview with artist in the third study.
10	Stig Carlsson	The fourth study		Artwork in the entrance zone at building C, SUS Malmö.

11	Rune Säll	The fourth study		Artwork in the entrance zone at building C, SUS Malmö.
12	Unknown artist	The fourth study		Artwork in the entrance zone at building C, SUS Malmö.
13	Lars Erik Holm	The fourth study		Artwork in the entrance zone at building C, SUS Malmö.