Imagineering Healthcare:

A Healing Environment Design Model based on

Experiential Design, Authenticity and Disney's Design Approaches

by

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ABSTRACT

Healthcare is one of the most personal and complex services provided, and as such, designing healthcare environments is particularly challenging. In the last couple of decades, researchers have concentrated their efforts on exploring the elements of the hospital environment that affect patients' health and in finding ways to apply that knowledge in contemporary healthcare design. But despite the growing body of research, there is an element of utmost importance to healing environments that has not been studied very extensively: the patient experience. The interaction of patients with their environment shapes their personal experience, and inversely, focusing on designing experiences rather than services can inform the design of successful healing environments.

This shift from designing services to designing experiences has deep implications in healthcare settings because of the stressful situations that patients have to go through; memorable experiences have a positive influence on a patient's emotional health because they help minimize stress and in healthcare environments this translates into improved outcomes.

The concept of assembling experiences is not new, especially in the entertainment industry; it was, in fact, the underlying principle behind the creation of the first theme park more than fifty years ago: Disneyland. Today, Disney is an entertainment industry leader and their design concepts and practices have been perfected to achieve the

Company's main purpose: to immerse Guests in a happy, unforgettable experience.

This research study focuses on examining the principles used by Disney designers –or Imagineers, as they are called within the organization- to generate memorable experiences, and how those theories can be adopted and adapted by healthcare designers to create better healing environments. However, Disney's Imagineering is not the only approach considered in this research. A thorough analysis would not be complete without delving into the concept of experiential design as a design process and from an economical perspective, as well as without analyzing recent notions about the importance of authenticity in businesses and its implications on design. This study, therefore, suggests a new healing environment design model based on a comprehensive review of the literature related to three main design approaches: Disney Imagineering, experiential design and authenticity.

DEDICATION

To Yolanda, partner in crime, inspiration

and guardian angel.

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Thank you Mom and Dad for your unconditional support and for teaching me that I can accomplish everything I set my mind to through hard work and positive thinking. You are the reason I am where I am today.

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Chapter 1

INTRODUCTION

"Without a doubt, healthcare represents the most personal and complex service provided: intimate personal information must be shared with strangers; complex and often frightening and painful tests and procedures must be performed; life-and-death decisions are constantly made; the staff speaks an entirely different language; and the buildings are daunting and difficult to navigate" (The Center for Health Design, 2008). Consequently, healthcare organizations have had to learn important strategies to provide the type of environments that customers expect (Fottler et al, 2000).

1.1 Background

At the beginning of the twenty first century, the world economy started shifting from a service economy to an experience economy. The firsts to introduce this economic theory were authors Pine and Gilmore, who believed that companies are 'staging' an experience every time they engage customers and connect with them in a personal, memorable way. Furthermore, according to Pine and Gilmore, with this change came new business expectations: the old standards of offering good quality services and products became insufficient for consumers, so much that a competitive advantage could be gained only by providing unique, memorable experiences (Pine & Gilmore, 1999).

Almost ten years later, with the publication of a second book, 'Authenticity', Pine and Gilmore introduced a new economic theory where they contended that after the evolution of the experience economy, a new need emerged amongst consumers: the need for real, authentic offerings. This, however, is not exactly a contradiction of their previous theory, but they do caution against the over-use of staged encounters and emphasize the need for personalization, for they believe that authenticity comes from reaching consumers in a "inherently personal way" (Gilmore & Pine, 2007).

All these new consumer expectations triggered changes in many disciplines, including architecture and design; among the new design approaches emerged the concept of experience-based design. Experience design can be defined as "a design approach that focuses on the quality of the user experience during the whole period of engagement with a product, [service or environment]: from the first impression and the feeling of discovery, through aspects of usability, cultural relevance and durability, to the memory of the complete relationship" (Philips Design, 2001).

The notion of designing experiences rather than just services or products, however, has a deeper connotation in the design of healthcare environments because of the stressful situations patients face constantly. An experience-based design approach, then, can positively influence those taxing situations by anticipating and shaping the patient experience through the use of design elements, especially

those that involve the five senses. Furthermore, memorable experiences stay in patients' minds long after they are discharged from the hospital, and extraordinary experiences generate *loyalty*. Hospitals can not offer what other service providers can -sales, or special discounts, or frequent buyer perks-, so the only way they have to create loyalty, is through the patient's personal experience, or what they say about their visit. If the only real source of loyalty for hospitals is the patient's experience, and the only test of that experience is what patients say about it, learning what creates the best experience for a patient should be the primary goal of every hospital (Lee, 2004).

The concept of designing experiences may be new to economic theory and to healthcare, but it is not new in the entertainment industry; more than fifty years ago, Walt Disney opened his first theme park with the purpose of immersing their guests in an unfolding story. Disney has since become the industry leader in creating experiences, and as such, their design concepts and principles may have valuable insights to be used in healthcare design. Designing a Disney Park is not the same as designing a hospital, but the fact is that many of the elements considered by Disney designers for creating memorable experiences can be of great benefit to patients if transferred to the design of healthcare environments. In fact, from an experiential design perspective they are not so different, for while Disney World provides a stage to facilitate the experience of fun, a hospital provides a stage to facilitate the experience of healing (Lee, 2004).

This research study focused on exploring the design principles that Disney applies to create environments that incite memorable experiences and in examining strategies to adopt and adapt them for the design of healthcare environments that stimulate the experience of *healing*.

1.2 Significance of the study

The concept of healing environments can be traced back as far as Hippocrates, who referred to the environment as the fourth most significant factor in the healing process, after the disease itself, the patient and the physician. Despite this wisdom displayed by ancient civilizations, most of the hospitals built in early Europe were extremely unsanitary and presented dismal conditions for patients. It was not until the nineteenth century that nurse Florence Nightingale transformed healthcare with insightful observations that advocated natural light, airflow, quietness and other elements to support the healing process. This knowledge notwithstanding, after the discovery of viruses and bacteria that cause disease, hospitals evolved into stark, sterile facilities that gave little thought to the physical environment and the healing process (Stichler, 2008).

In the last couple of decades, however, this issue emerged as a concept of interest between healthcare stakeholders –from researchers and designers to administrators, providers and patients-, and a mounting body of research has now established that the design of the healthcare environment influences patient improvement.

A healing environment as mentioned in this study is a space designed specifically for the practice of healthcare that helps minimize some of the negative feelings that patients may experience so they can heal faster. Similarly, healing environment design models are those philosophies that inform the design of healing environments providing elements for consideration (Schweitzer, 2004).

Research has established that healing environments have a favorable influence on hospitalized patients, therefore, much of the existing studies have focused on recognizing which elements optimize those effects and on analyzing how they impact patients. What has been less recognized is that healing environments are only as effective as how patients *experience* that environment and because of this "healthcare organizations must focus greater attention on making patient care a more *memorable experience* for their customers if they are to be successful in today's changing marketplace" (Gilmore, 2007).

The significance of exploring new strategies for the design of memorable experiences is twofold: first and foremost are the potential positive connotations it has on the emotional health of patients, helping minimize stress and improve outcomes. Secondly, growing market choices are forcing healthcare organizations to consider the implications of a wider patient choice, which means that if customers are dissatisfied with any aspect of their experience they may choose to go somewhere else to receive healthcare. Because of this they need to

be pragmatic and not just meet, but also exceed patients' expectations (Bate & Robert, 2007).

1.3 Problem statement

In a system that is constantly changing and that it's more demanding every day, finding innovative ways to provide better service and improve patient outcomes is of utmost importance. Humans are complex organisms that thrive in the delicate balance between body and emotions. Research shows that the anatomical and cellular organization of the brain, which receives sensory input from the environment and translate them to physical responses, do shape the characteristics of emotion (Sternberg, 2001). Since the information that shapes human emotion comes from the environment, the next logical step in the healthcare design industry is to explore new design models that inform healing environmental design, especially those that focus on how to engage patients on a personal level, so they remember their journey through the healthcare system in a positive light.

This research study analyzed three main theories: the concept of experiential design from two different perspectives, as a design approach and an economic theory; the Disney approach to designing memorable experiences; and the notion of authenticity and its implications on experience design. These three theories were examined and compared carefully against each other with the purpose of discovering which elements from them could be adopted and

adapted to healthcare design, and with that knowledge propose a new healing environment design model.

1.4 Justification

Of the three models studied in this research, the most analyzed in the existing literature is without a doubt 'the experience economy', although not many of the sources discuss its implications on healthcare design. Similarly, Disney as an entertainment industry leader has inspired many other industries, including healthcare, but most efforts have been focused on learning their customer service strategies and very few sources relate their design principles to healthcare design. Meanwhile, authenticity is a more recent concept although perhaps it is the less recognized of the three theories; consequently, there is even less literature pertaining authenticity in the design of healthcare environments. The methods used in this research study of comparing the three different theories and proposing a model based on them is, therefore, a completely innovative approach.

1.5 Methods

The methodology used in this research study was an in-depth review of literature related to experiential design, Disney's design principles and authenticity. Once a thorough understanding of each concept was achieved, the next step was to examine and interpret the information and analyze it in relation to healthcare design to propose a healing environment design model based on the three theories.

Disney’s design principles for creating memorable experiences were used as the main structure for the construction of the model, which was then enriched by experience-based design theory and elements of authenticity.

1.6 Scope of the study

This research study analyzed the concept of healing environments and how they relate to human health, as well as the physiological processes that occur as a consequence of stress exposure. The study then focused on three different perspectives for designing experiences, which were analyzed and interpreted with the purpose of applying them in healthcare environments.

Chapter 2

LITERATURE REVIEW

2.1 Introduction

This review of the literature concentrates on identifying and providing a background description of all the elements that were part of this research, and it is in many ways its main foundation.

This chapter starts by exploring the notion of healing environments and giving a condensed report of the existing research, focusing on which elements in the environment have been found to affect patient outcomes and how. The next section explains the internal processes in the human body when emotions happen, and it focuses on how the physical environment and more specifically stress can affect health. The following part explains the concept of experience-based design from a design process perspective, while the part after that explores the economic incentives of generating experiences as a business imperative. The next part delves into Disney's design approach, concentrating on the elements that Imagineers use to design memorable experiences, and the last section of this literature review focuses on the issue of authenticity as a new economic offering.

2.2 An exploration of healing environments

"The notion that physical environments have the potential to contribute to healing is not new, and in fact, it is as old as antiquity. Hippocrates referred to it as the fourth most significant factor following

the disease itself, the patient and the physician" (Stichler, 2008). Despite this, however, most healthcare facilities "developed in early Europe were anything but hospitable and were noted for their unsanitary, dismal conditions and were hotbeds of infections that quickly spread from patient to patient" (Stichler, 2008). It wasn't until the nineteenth century that nurse Florence Nightingale transformed the concept of healthcare by advocating theories learned by her own experiences, about how natural light, airflow, cleanliness, quietness and order supported the healing process. Nonetheless with the discovery of viruses and bacteria that cause disease, a desire for sanitation forced hospital leaders to create policies and procedures that limited family involvement in patient care and where patients had little to no control over their surroundings. Hospitals became stark and sterile environments, in which appearance had a low priority in the healing process (Stichler, 2008).

For years after this, healthcare design "has emphasized concerns such as functional efficiency, costs, and providing effective platforms for medical treatments and technology" (Ulrich, 2000), but as a consequence, the "psychological and social needs of patients have been largely disregarded. In spite of traumatizing hospital experiences and major stress from illness, little priority has been given to creating surroundings that calm patients, or help to strengthen coping resources and healthful processes. Rather, the functional emphasis

often produced environments now considered starkly institutional, stressful, and detrimental to care quality" (Ulrich, 2000).

For the last two decades, an international awareness has emerged among healthcare stakeholders of the need to create environments that are both functional and centered around the patient's needs, with supportive elements that help them cope with the often-overwhelming stress that accompanies illness. The factor motivating this movement in facility design has been the mounting scientific evidence that proves that environmental design characteristics have an effect on patient health outcomes (Ulrich, 2000).

For the purposes of this research study, the healthcare environment includes anything inside a healthcare facility that can affect a patient through his or her senses. According to an extensive research by Schweitzer et al., 2004, current studies have focused on the study of the following physical parameters and how they affect patients.

2.2.1 Personal space (single room versus multi-bed units)

Studies show that single-bed rooms are better for operational purposes of improved communication between patients and providers, minimization of the number of transfers, fewer medication errors, improved infection control, patient privacy and comfortable inclusion of family members (Schweitzer et al., 2004).

However, another body of evidence suggests that patients who share a room provide each other with social and emotional support, thus enhancing the healing process (Ulrich, 2000).

2.2.2 The sensory environment

The sensory environment is everything around a patient that is captured through his or her five senses and translated into positive or negative emotions. Existing research has focused in the following elements of the environment that are absorbed through the senses, studying how they affect patients:

Smells. Some evidence suggests that pleasant aromas can help decrease anxiety in certain stressful medical procedures, reduce blood pressure, slow respiration levels, and create lower levels of pain-perception in some patients (Schweitzer et al., 2004).

Sound/noise. Noise is a negative environmental element that increases patients' perception of pain thus raising the levels of pain medication usage, as well as being a contributing factor to sleep deprivation; it may even cause patient confusion and disorientation. Some research suggests that noise may also contribute to increased lengths of hospital stay. Noise has also been linked to increasing blood pressure, elevating heart rate, and reducing patient satisfaction levels. Among the negative consequences of this are that people become less interpersonally engaged, less caring, and less reflective, cognition is hindered, and patients show a tendency to give up easily when addressing complex tasks, seeking simple solutions. Some other sounds such as natural noises have been found to have a calming, relaxing effect on a group of surgery patients, improving sleep quality (Schweitzer et al., 2004).

Temperature. There is little research on how temperature (either high or low) affects patient outcomes and perceptions, although some studies have shown that uncomfortable ambient temperature can cause sleep disruption in some patients (Schweitzer et al., 2004).

2.2.3 Environmental complexity

Some studies have linked environment complexity with greater cognitive function in elderly patients, as well as providing beneficial physical activity for this patient group. Having diverse environments has also been associated with reduced depression, social withdrawal, confusion and hallucinations in patients with Alzheimer's disease. At the same time, building occupants prefer to have sensory variation in ambient conditions such as light levels and temperature between spaces. Other evidence suggests that a variety of spaces and multiple sensory retreats are important for emotional and cognitive functioning and may affect the immune-system function (Schweitzer et al., 2004).

2.2.4 Fresh air and ventilation

There is little to no research on the effect on health outcomes in hospitals with operable windows, though theoretically, operable windows would avail the room occupant with smells, breezes and all the sensory stimuli of an open environment. There is an argument, however, that while appropriate ventilation is desirable, allowing immediate airflow directly from the outdoors may increase the risk of hospital acquired infections. In addition, advocates of sustainable

design argue that natural ventilation can increase energy efficiency on buildings as well as improve indoor environmental conditions (Schweitzer et al., 2004).

2.2.5 Light (natural and artificial)

"The differences between natural and artificial light are significant, including levels of illuminance, uniformity, and diffusion of the light, variation of time, color and amount of ultraviolet radiation" (Schweitzer et al., 2004). There is a significant correlation between natural sunlight and healing. There are two pathways through which light has a biological effect, the skin and eyes. Skin exposure is related to the production of vitamin D by the body, and visible light has an effect on both systemic and physiologic responses and moods, as well as on visual needs. A large part of light research has focused on circadian rhythms, establishing that a natural circadian rhythm of light exposure influences health by regulating melatonin production and influencing biochemical and hormonal body rhythms. Simultaneously, it has been implied that insufficient light exposure can cause of sleep fragmentation, suggesting that daytime light exposure has an impact on nighttime sleep quality and consolidation (Schweitzer et al., 2004). In addition, some patients with depression have had shorter stays if assigned to a sunny rather than non-sunny room, implying that sunshine has the capacity to alleviate depression, which may explain the results of another study that found that patients exposed to sunny

critical care rooms had lower mortality rates than those assigned to north facing dull rooms (Ulrich, 2000).

2.2.6 Color

There are studies that suggest that different colors affect moods and behaviors. Some colors are said to encourage activity, while others promote passive behavior. Most research in this area is still undeveloped, although using color as a treatment modality is a rapidly growing area of experimentation, including ocular light therapy, in which light is projected into the eyes through colored filters to treat stress, anxiety, insomnia, fatigue, headaches and depression (Schweitzer et al., 2004).

2.2.7 Views of nature

In several studies, patients have rated having a window as a highly desirable feature, preferably with a view of a natural setting. Most of these studies have focused on critical or intensive care units, and results have linked the lack of windows with high rates of anxiety, depression and delirium (Ulrich, 2000). Having a view of nature has been also correlated with shorter postoperative stays, higher satisfaction levels and decreased use of analgesics compared to patients with obstructed views. Roger Ulrich's studies have demonstrated that the lack of windows may negatively affect patients by reducing positive stimulation and aggravating the negative effects of sensory depravation, especially in a clinical environment with conditions such as repetitive sounds of respirators. He has also found

that natural views can reduce anxiety and pain and have a restorative effect on patients (Schweitzer et al., 2004).

2.2.8 Arts, esthetics and entertainment

The effect of the arts in hospitalized patients is assumed to be a lowering of stress and anxiety levels, as well as mood improvement.

Visual arts (sight). Studies have revealed that patients with access to nature images have less anxiety and require less pain medication. However, too much visual stimulation may produce the opposite of the desired effect, an increase in anxiety levels. Similarly, abstract art may be more detrimental to recovery outcomes than viewing no pictures at all, and in fact, is consistently disliked by patients. Ulrich suggests avoiding "ambiguity, uncertainty, emotionally negative or provocative subject matter, surreal qualities, closely spaced repeating edges, forms that are optically unstable or appear to move, restricted depth or claustrophobic-like qualities, close-up animals staring directly at the viewer, and outdoor scenes with overcast or foreboding weather" (Schweitzer et al., 2004). Reduced anxiety has been linked with pictures depicting landscapes with green vegetation and flowers, including scenes with positive cultural artifacts, garden scenes, or if it is figurative art, including emotionally positive facial expressions like friendly group scenes or nurturing relationships among people with a prominent natural background (Schweitzer et al., 2004).

Music. Exposing a patient to music at times of high stress has a calming effect, resulting in increased patient comfort and higher endorphin levels, lowering of heart rate and anxiety and reduction of the need for anesthesia. Music has also been linked to decreased use of analgesics and hastened recovery time from surgery, as well as with a significant reduction in the amount of perceived pain and decrease in the level of stress hormones in the blood. In neonates, it has also proven to promote weight gain and reduce stress, with shorter length of hospital stay (Schweitzer et al., 2004).

2.2.9 Positive distractions: humor and entertainment

Several studies have documented the health benefits of having a good laugh, including greater optimism, socialization and cooperation among patients, and decreased dependence on tranquilizing and pain-relieving medication. A study of bloodstream chemicals after subjects were exposed to a humorous video found decreased levels of epinephrine, a hormone that raises heart rate and blood pressure. One other technique used to alleviate negative chemotherapy effects is virtual reality (Schweitzer et al., 2004).

In a review of the existing literature by Johns Hopkins University researchers, the patient outcomes affected by the previously mentioned elements of the environment are physical, anatomic or physiologic health; diagnoses or diseases; patient's perceptions of their own symptoms, functional status and well-being; and patient evaluations of the healthcare environment (Rubin, 1998).

According to Schweitzer et al., 2004, most research studies specifically mention outcomes in medication use, length of hospital stay, patient and provider satisfaction, well-being, mental status, anxiety and depression scales scores, pain self-rating, sleep scores, hospital-acquired infection rates, stress behaviors, weight gain (especially in newborns), patient comfort, and physiologic indicators such heart rate, blood pressure and respirations.

2.3 The science behind emotions and stress exposure

Intuitively, most people recognize that there is a clear connection between the information a person gathers through their five senses and their emotions, but because of their complexity, the actual physiological processes that transpire inside the body when experiencing emotions are not easily understood. In her book 'The balance within: the science connecting health and emotions', Sternberg, 2001, explains that in modern medicine, it is not difficult to distinguish all the physical organs and their functions, except when it comes to emotions and thought, both happening inside the body's most enigmatic organ, the brain.

Thanks to modern technology, it is now possible to see the ways in which all of the body's organs connect with each other, especially "how tightly the nervous and immune systems are linked through many interwoven strands of nerve pathways and communicating molecules" (Sternberg, 2001). Once this relationship is fully understood it is impossible not to recognize that what affects one

system directly affects the functioning of the other. New technological advances have allowed doctors and scientists to see the complicated workings of the human brain, and it is by a combination of these tools that scientists can now explain the ways the brain receives signals from the outside environment and how these signals are interpreted and turned into perceptions and emotional responses. Similarly, with advances in other areas of science such as in cellular and molecular biology, it is now possible to piece together how the nervous system and hormonal changes affect susceptibility to disease (Sternberg, 2001).

According to Sternberg, new discoveries point out that while feelings do not directly cause or cure disease, the biological mechanisms underlying them do have the possibility of contributing to illness. In fact, many of the nerve pathways and molecules inherent to both psychological responses and inflammatory diseases are the same, making a predisposition to one set of illnesses likely to go along with a predisposition to the other.

Inversely, scientists are also learning how signals from the immune system can affect the brain and the emotional and physical responses it controls - the basis of feeling sick. This means that there may be new ways to treat diseases that have not been previously explored, and it provides scientific proof that a person's interaction with the stresses of his or her surrounding environment has a direct effect on their health.

2.3.1 The origins of emotion

Sternberg describes that, for many centuries, the workings of the brain remained a mystery to anatomists because it was impossible to observe how it worked from pure anatomical observation. The creation of the microscope allowed scientists to see brain tissue closely, but it was not until the invention of chemical dyes to paint fabrics, that they were able to see the brain cells' outlines in sharp color. Histologists added these dyes to thin slices of brain or nerves on their microscope slides and were able to see that brain tissue was composed of nerve cells linked to one another through a myriad of connections. Nonetheless this level of understanding still did not explain how thought and emotions were created inside the brain; it was with the discovery of electromagnetism that, in the late nineteenth century, a neurophysiologist proved that all those nerves signal each other with moving bursts of electrical charge.

According to Sternberg, the triggers that set off these bursts of activity in a sensory nerve cell are the thousands of stimuli to which a person is exposed during every moment of their lives. The body receives all these sensations through different specialized organs, instruments specifically designed to collect a diversity of signals and transform them into a common code of electrical impulses. It is through such sensory organs – the eyes, the ears, the nose, the taste buds, and the skin – that the brain keeps constant vigil on the ever-changing world around the human body, and it is through the tangle of

nerve pathways along which the impulses run, that the brain and nervous system can receive incoming signals and then direct the body to respond to each stimulus.

With today's imaging technology, it is possible to see how the many parts of the brain are tightly linked and work together to produce the constellation of perceptions, feelings, and actions that constitute the emotional responses. Depending on the type of stimulus -something seen or heard or thought- and the emotion evoked, the signal bounces back and forth from each separate structure in the network of patterns. The emotions that are ultimately felt by humans grow from the almost infinite number of possible combinations of activation of these different brain regions in space and time (Sternberg, 2001).

2.3.2 The workings of the immune system

With the invention of the microscope scientists discovered that the world is filled with microscopic creatures of all shapes and sizes: viruses, bacteria and pollen. With this knowledge also came the realization that these foreign agents could cause disease when they enter the organism, so they concentrated their efforts for treating disease on learning how to keep these invaders out of the human body and on developing new chemical ways to kill them (Sternberg, 2001).

Sternberg explains that for decades scientists' attention remained solely in the things that caused infections, rather than the body's response to them, loosing sight of the important role of the

body in defending itself against them. Disease is not only caused by these microscopic invaders; it is also caused by how the body reacts to them. This is the natural way that the body protects itself from these invasions; if the immune cells did not respond to the invader, the bacteria or virus would grow unheeded, disseminating through the bloodstream throughout the entire organism.

According to Sternberg, the immune system responds differently to different stimuli in different timeframes. From the moment they are exposed to a foreign protein, immune cells take on new characteristics –characteristics that take time to develop and that evolve as the immune cell matures to its fully specialized function. At the time of injury, the immune system releases cells that progressively become an immense army of growing active cells, churning out proteins and antibodies, chewing up bacteria, and clearing carcasses of dead and dying cells. In this moment, a perfectly timed signaling between the cells is essential. However, the organ that turns off the reaction before the cells turn on the body's own tissues is the brain. It was the discovery of the between-cell signaling molecules, the interleukins, which gave scientists the tools to prove there could be invisible ways not only for immune cells to signal one another but also for the immune system to signal other organs, including the brain (Sternberg, 2001).

2.3.3 The discovery of stress and how it affects the body

The concept of stress was established and popularized by Hans Selye, whose theories of stress and its effects on health turned the

scientific community in the 1940s and 1950s. While experimenting with rats, he noticed that when injected with contaminated material, they developed enlarged adrenal glands, shrunken thymuses and stomach ulcers. Later, he experimented by exposing the rats to a wide variety of stressful stimuli, and he noticed that the common pattern of illness occurred in animals exposed to any sort of chronic stress, from whatever cause: crowding in the cage, noise, fighting with cage mates. Eventually, if the stress went on long enough the rats lost weight, seemed to become more susceptible to infection, and finally died if the situation persisted. On autopsy, these rats, like the ones injected with extracts, had enlarged adrenal glans and enlarged pituitary glands, shrunken thymuses and stomach ulcers (Sternberg, 2001).

In her book, Sternberg mentions that there is overwhelming evidence that the hormonal stress response plays a significant role in either predisposing or protecting from inflammatory diseases. However, the brain not only controls the immune system through the hormones of the stress response, in fact, there are many ways in which the brain talks to the immune system, sending a variety of chemical and nerve signals. Each alone, and all as a whole are critical in the body's ability to defend against disease.

2.3.4 The consequences of stress exposure

As soon as a stressful event occurs, hypothalamic, pituitary and adrenal hormones are released -this is the brain's stress response. It also triggers the release of epinephrine (or adrenaline) from the

adrenal glans, and the adrenaline-like chemical is squirted all over the body by the sympathetic nerves, nerves that wire the heart, gut and skin. However, if the stress is prolonged, by being unable to control it or if it is too potent or long lived, these hormones and chemicals will continue to be pumped out from nerves and glands, and the same molecules that at first mobilized the body will start debilitating it. As hormonal levels increase performance improves, but then it peaks, slides over the top, and starts descending until performance fails. The nervous system reacts to a stimulus in milliseconds, seconds or minutes. It takes much longer than two minutes for immune cells to respond to an invader, so the effects of short-lived stress are minimal on immune responses. However, if the stress exposure continues, then the immune defenses begin to be impaired. While being subjected to prolonged stressful stimuli, stress hormones and chemicals continue to be released; immune cells floating in blood or passing through the spleen that are exposed to these chemicals can never recover from the unabated rush of cortisol. Cortisol shuts down the immune cell's responses, so they are less able to respond to foreign triggers, so in the context of continued stress, the body is unable to defend itself and fight against new invaders (Sternberg, 2001).

Sternberg goes on to explain that chronic stress is cumulative if there is no time to recover from one stressful event to another; unless the body is given time to recuperate, the effects of stress hormones build up. Some of the stresses that can diminish the body's will to fight

disease are: chronic illnesses, psychological stresses, strenuous and prolonged physical strain or chronic psychological stresses, such as prolonged lack of sleep or food. All these deplete the stress hormone reserves.

Something that Sternberg also mentions is that, for every individual exposed to an event, there is a different interpretation of how stressful it is; a person's perception of stress and their response to it is constantly changing and depends largely on the circumstances. It depends on previous experience and knowledge, as well as on the actual event that occurred. It also depends on memory. While a memory is not a threat, it can trigger the stress response just as easily as the original event that is being recalled because there are many nerve pathways leading from the brain's memory centers to the hypothalamus, which ultimately triggers the stress response. Sternberg emphasizes that memories can be incredibly powerful; in fact, people spend more time in their mind than they do in their world around them. The things that are familiar in that territory feel safe, while shifting scenes are usually frightening. An unfamiliar environment is a universal stressor; the anxiety of new environments that keeps a person alert to their surrounding is controlled by two parts of the brain, the part that integrates memory of the spatial world, the hippocampus, and the part that controls anxiety, the fear center deep within the brain, the amygdala. Both are connected to the brain's stress center.

2.3.5 How the five senses work

Humans are connected to their world through all their senses. Each adds a new layer of richness and depth to the emotional reactions that the world evokes in them. Signals are received through each sense and then humans use each of those senses to send signals to others. It takes many different kinds of sensory signals and a full range of emotions to create bonds to other people, and it takes memory too. Relationships are built in the mind of a person as a series of moments that the mind pulls out from where they are stored in memory, moments and memories that come with emotions attached. The reason relationships are pieced together this way is a result in part of how the regions of the brain that control memory work. The front part of the brain, the one that keeps track on a daily basis, is a bin into which the person reaches and pulls out bits and pieces of memories that then are stringed together to create a whole. However, those bits and pieces come from different places in the brain that have received these signals first, those parts that are the direct receivers from each sense: vision, hearing, touch, smell and taste. Other bits come from emotional centers that have added pleasant or unpleasant charge. Neurologist Joe LeDoux found that when people hear a fearful sound or see a fearful object, part of that sound or image gets sent to the amygdala, where the brain processes fearful emotions. This happens almost immediately, before the full image or sound is reconstructed. Nerve pathways lead from the amygdala to the

hormonal stress center in the brain, the hypothalamus. As soon as a person experiences fear, stress hormones start pouring out, sympathetic adrenaline-like pathways are activated, the flight-or-fight response kicks in, and the person is ready to either fight or run. The opposite of the amygdala, the part of the brain that processes pleasurable stimuli is located deep within the brain. Less is known about this positive side, but it is likely that it has similar connections to sensory and stress centers as do fear pathways. This means that powerful, pleasurable signals can also activate the stress hormones and parts of the brain that control heart rate and breathing. It is through these hormonal responses that people's immune responses and their health can be affected by their thoughts and emotions (Sternberg, 2001).

2.3.6 How the physical environment can have a positive effect on health

According to Sternberg some feelings are learned by association, which means that people learn them after repeated pairings of the stimuli. For instance, a workplace environment can elicit a positive set of physiological responses if it is supportive, nurturing or rewarding, instead of hostile and unsupportive. The common factor that can affect someone's health is not the actual physical or psychological stimuli, but the body's physiological response. These learned associations change the body's nerve and hormone responses, which ultimately affect how immune cells work.

This is especially appropriate for healthcare environments; when a patient enters a health facility their immune system is already compromised. Theoretically, health environments should be the last places to elicit negative physiological stress responses, but the truth is that patients are continually exposed to different sets of stressful situations. A possible strategy to minimize the harm caused by these circumstances is through the physical environment, offering a supportive atmosphere with the purpose of eliciting positive physiological responses that benefit health, instead of making an unpleasant situation worse.

2.4 Experience-based design in healthcare environments

The purpose of establishing the negative effects that stress can have on the human body is to explore how the outside world, especially complex environments and situations, can affect people's health. When a patient enters a medical facility he or she is immediately immersed in a complicated process that often involves long periods of waiting, dealing with large numbers of strangers, loss of privacy, contact with intimidating technology and equipment, painful tests and procedures and difficult decision-making; add to that the uncomfortable feelings of sickness, pain, anxiety, and fear and the combination is one of the most stressful situations a person can experience. Given these conditions, it is imperative to look for alternatives that can turn such adverse elements into an overall positive experience for every patient.

"Experiences are one of the most valuable memories we have… successful experiences are valuable both financially and emotionally and the more we learn about how to create them (whether through approach, process, understanding or specific criteria), the better the experiences we can create and the more enriching our lives can become" (Bate & Robert, 2007).

2.4.1 The meaning of experience

"Experience is that evanescent flux of sensation and perception that is, in some sense, all we have and all we are" (Davis, 2001). The various elements that make up an experience are reflection and awareness, sensation, perception, thought, memory, imagination, emotion and expression, desire, volition, and action (Bate & Robert, 2007).

2.4.2 The experience-based design process

Authors Bate and Robert define experience-based design as a user-focused design process that has the goal of making user experience accessible to designers, changing their mindset to design experiences rather than services. This is achieved by identifying the main areas where people come into contact with the service; this is where their personal experience is shaped and where it is possible to gain a sense of control over the experience, so this is where the desired emotional and sensory connection needs to be established. Only then can one begin to design human experiences, rather than just products or services (Bate & Robert, 2007).

This concept also changes the traditional way of seeing the user as a passive recipient of a product or service, and brings forth a new view of users as co-designers, for they become intrinsically involved in the improvement and innovation process.

Most healthcare organizations are beginning to realize the implications of having a wider patient choice, just as any other organization; growing market choices mean that a customer that was not happy with any aspect of his or her experience can, and often will, change their loyalties to any other provider. However, economic incentives are not the only reason why healthcare needs to consider a more conscious and committed move towards a more user-centered design approach. There are other considerations that are far more powerful, such as the human and cultural elements that are part of all healthcare environments, especially because in this context people are not there for pleasure or enjoyment, but for essential, clinical reasons that sometimes mean life or death (Bate & Robert, 2007).

An experience-design approach encourages companies to seek how to exceed their customers' expectations, an outlook that has the potential to be extremely beneficial in healthcare institutions because of the many stressful situations that patients may face. It is also a logical step in the culture of continuous improvement that many healthcare organizations have been trying to establish within their walls in the last couple of years (Bate & Robert, 2007).

"Many aspects of experience – those affected by people's internal states, moods and idiosyncratic associations or by context – are independent of designers' control. But experience is also influenced by factors that designers do control: the formal sensory qualities, sound, feedback, rhythm, sequence, layering and logic – all the expressive qualities inherent in the products, environments, media and services" (Bate & Robert, 2007).

2.4.3 Targeting experience

Bate and Robert explain that to design services, environments and processes that are specifically targeted for the human experience means that the entire design process should be rearranged to focus around patients' experience goals, which should be equally influential as process and clinical goals. The purpose is to understand their experience of care at a deeper level, considering that their experience includes all the physical, sensual, cognitive, kinetic, aesthetic and emotional elements that are inherently tied to it.

In healthcare facilities, the focus is to design experiences that at least do not induce fear, anxiety, confusion, uncertainty or panic in the user, and at best are smooth, natural, trouble-free and look and feel good. In this context, there is nothing beyond that experience, nothing more valuable than the way that interaction feels. "The lesson for designers is that they need to be designing not only a product or a service, but a total cognitive-emotional experience, which requires cultivated insight into, and appreciation of, people's

fundamental human needs, hopes, fears and aspirations" (Bate & Robert, 2007).

The main challenge of experience-based design is to progress from learning or sharing an experience to deriving concrete knowledge about how that particular experience will be improved the next time someone encounters that situation.

2.5 The experience economy

More than ten years ago, authors Pine and Gilmore established an economic theory that by their definition, applied to every business industry, including healthcare. Their ideas were published in their book 'The experience economy: work is theatre and every business a stage' in which they proposed that experiences are a fourth economic offering, one that could add a new source of value to goods and services.

According to them, "when a person buys a service, he purchases a set of intangible activities carried out on his behalf. However, when he buys an experience, he pays to spend time enjoying a series of memorable events that a company stages – as in a theatrical play – to engage him in a personal way" (Pine & Gilmore, 1999).

The concept of creating experiences is not new in the entertainment industry and throughout time, it has evolved to encompass many new experience options. The beginning of this phenomenon can be traced back to the first theme park idea and its creator: Walt Disney. Rather than creating another amusement park, he conceptualized the contemporary theme park conditions, which

immerse guests in rides that not only entertain them, but also involve them in an unfolding story; his main purpose was to create a memorable experience for both children and adults, and throughout the years, Disney designers have become experts in the subject, constantly innovating ways to materialize their ideas into unique experiences. Likewise, with the development of technology other new and improved genres of experience have emerged, such as interactive games, Web sites, motion-based attractions, 3D movies and virtual reality - in fact, creating immersive experiences is the driving force of the computer industry. There are also many other industries that are becoming experiential; theme restaurants such as Hard Rock Café and Planet Hollywood are specifically geared towards engaging customers by providing an entertaining experience, and retail stores like FAO Swarz and Niketown drive consumers by providing fun activities and promotional events (Pine & Gilmore, 1999).

Authors Pine and Gilmore believe that companies stage an experience whenever they engage customers, connecting with them in a personal, memorable way. Businesses should not only perform a function; they should go beyond that function and compete on the basis of providing an experience, and even the most mundane transactions can be turned into memorable experiences.

According to Pine and Gilmore, the world's economy started morphing into an experience economy for two main reasons: the

introduction of technology that enables creating new experiences, and the increasing competition that drives the constant search of being different.

In this new economic model commodities are fungible, goods tangible, services intangible, and experiences are *memorable*. "Buyers of experiences value being engaged by what the company reveals over a duration of time. The company no longer offers goods or services alone, but the resulting experience, rich with sensations, created within the customer" (Pine & Gilmore, 1999). All previous economic offerings had been external to the buyer, but experiences are inherently personal, they occur within any individual that has been engaged on an emotional, physical, intellectual or spiritual level. "As a result, no two people can have the same experience; each experience derives from the interaction between the staged event and the individual's prior state of mind and being" (Pine & Gilmore, 1999).

There are some people, however, that may disagree, saying that experiences are only a subclass of services, not valuable because they do not prevail after they are produced, but Pine and Gilmore argue that the value of the experience lingers in the memory of any individual who was engaged by the event. "While the experience itself lacks tangibility, people greatly value the offering because its value lies within them, where it remains long afterward" (Pine & Gilmore, 1999).

The authors advice against concluding that shifting the progression of Economic Value to staging experiences means only adding entertainment to existing offerings, simply because there are

many examples of staged experiences in the entertainment industry. Doing this would be a gross understatement; staging experiences is not about entertaining customers, is about engaging them. Pine and Gilmore explain that an experience may engage guests on any number of dimensions. The most direct dimension is the level of guest participation: there is *passive* participation where customers do not directly affect or influence the performance, and at the other end of the spectrum there is *active* participation, in which customers personally affect the performance or event that yields the experience. A second dimension describes the kind of connection or environmental relationship that unites customers with the event or performance. At one end of this spectrum lies absorption, occupying a person's attention by bringing the experience into mind, and at the other end immersion, becoming physically part of the experience itself.
The combination of these dimensions defines the four realms of an experience – entertainment, education, escape and estheticism – mutually compatible domains that combine to form uniquely personal encounters (Pine & Gilmore, 1999).

Figure 2.1 presents these two dimensions (level of guest participation and the kind of connection guests have with the environment) as the two main axes in the graphic, and it indicates the resulting four realms of the experience.

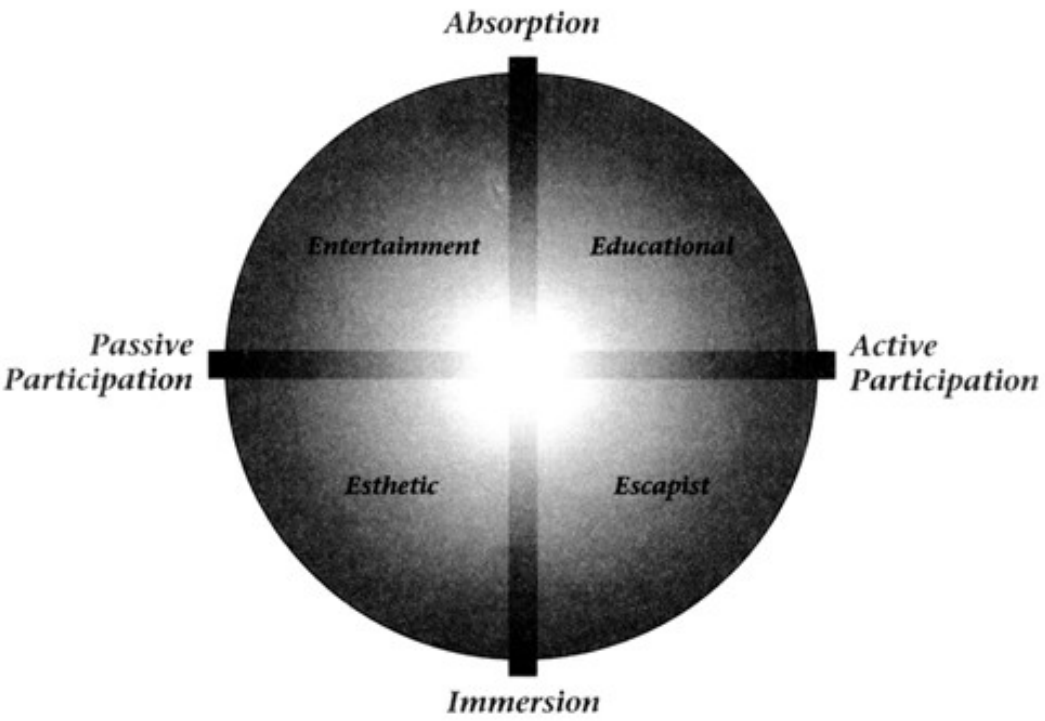

Figure 2.1

Experience Realms (Pine & Gilmore, 1999)

The experiences that people think of as 'entertainment' occur when they passively absorb the experiences through their senses, such as viewing a performance, or listening to music, and it is one of the oldest and most developed forms of experience. In the 'educational experiences', the guest absorbs the events unfolding before him, but it involves the active participation of the individual. The 'escapist experiences' involve more immersion than the entertainment and education experiences. The guest of the escapist is wholly immersed in it, an actively involved participant, such as in theme parks or casinos. In the fourth experiential realm, the 'esthetic', individuals immerse themselves in an event or environment in which they have little to no

effect on, leaving the environment essentially untouched, such as when visiting a museum or art gallery (Pine & Gilmore, 1999).

Pine and Gilmore also mention that the best experiences include aspects of all four realms -to design a rich, compelling and engaging experience, it is necessary to creatively explore aspects of each realm that might enhance the experience that is being created. "When all four realms abide within a single setting, then and only then does plain space become a distinctive place for staging an experience. Occurring over time, staged experiences require a sense of place to entice guests to spend more time engaged in the offering" (Pine & Gilmore, 1999).

2.5.1 Themed experiences

The first step towards staging an experience is envisioning a well-defined theme; a poorly conceived theme gives customers nothing around which to organize their impressions, and then the experience is not memorable. Indeed, Walt Disney created Disneyland with the idea of creating a 'cartoon that immerses the audience'; this developed into an orchestration of theme rides, within theme areas within the first theme park in the world – its first brochure called it 'a new experience in entertainment' (Pine & Gilmore, 1999). In 1953, Disney's proposal to find financial backers said: "the idea of Disneyland is a simple one. It will be a place for people to find happiness and knowledge. It will be a place for parents and children to share pleasant times in one another's company: a place for teachers and pupils to discover greater ways of understanding and education.

Here the older generation can recapture the nostalgia of days gone by, and the younger generation can savor the challenge of the future" (Pine & Gilmore, 1999). These simple words conjured up such lovely images that he quickly found financial backers, and in less than two years, the first themed park opened to far more visitors than anyone had imagined. Pine and Gilmore believe that companies staging experiences have to seek equally adequate thematic constructions. "At its best, theming an experience means scripting a story that would seem incomplete without guests' participation and each experience has to have the appropriate theme" (Pine & Gilmore, 1999). There are five principles that are paramount in developing a theme that is both compelling and captivating. First, an engaging theme must alter a guest's sense of reality; second, the richest venues posses themes that alter one's sense of reality by affecting the experience of space, time and matter; third, engaging themes integrate space, time and matter into a cohesive, realistic whole; fourth, themes are strengthened by creating multiple places within a place; and finally, a theme should fit the character of the enterprise staging the experience. An effective theme must be concise and compelling, and it should not need to be articulated for its presence to be felt throughout corporations. All the design elements and staged events should lead towards a unified storyline that captivates the customer: that is the essence of themes (Pine & Gilmore, 1999). Pine and Gilmore also argue that for an experience to be successful, it must leave indelible

impressions; "companies must introduce cues that together affirm the nature of the desired experience for the guests. Each cue must support the theme, and none should be inconsistent with it" (Pine & Gilmore, 1999). The purpose of these cues is to trigger impressions in the customer's mind that fulfill the theme that is being created; similarly, unplanned or inconsistent visual cues can confuse a client, and too many cues put together in a disorganized way can ruin an experience.

2.5.2 Engage the five senses

Sensory stimulants are one of the most crucial elements to consider when creating a themed experience – an experience is more memorable if it effectively engages the senses. Indeed, services can turn into engaging experiences when layered with sensory phenomena by designing the right sensations into cues that convey the theme. A simple cue can heighten an experience through a single sense, but a single, simple sensation can also fully detract from an experience. In fact, to create a coherent theme that thoroughly engages the senses, experience stagers often develop a list of impressions they wish guests to take away and then think creatively about different themes and storylines that can bring these impressions together in a cohesive narrative. After this, they focus on the animate and inanimate cues that could connote each impression, accentuating the positive and eliminating the negative; with this, they map out the effect each cue will have on the five senses taking care not to overwhelm guests with too much sensory input (Pine & Gilmore, 1999).

2.5.3 Customizing services

Another serious consideration is that the services provided by any company are among the most essential components of the customer experience. Their more lasting recollections are from the quality of the service they received; poor service becomes associated with an unpleasant memory, while good service can be used as a tool to stage a positive experience. As a rule, people find it easier to remember poor service as an unpleasant experience, so it is necessary to make efforts to improve the way services are provided (Pine & Gilmore, 1999). In healthcare, the surest way to provide poor service is to treat individual patients through impersonal activities that sacrifice patient needs to improve staff efficiency (Pine & Gilmore, 2001). A strategy suggested by Gilmore and Pine for providing good services is customization - they believe that customizing services to cater to customer needs creates a unique value that would reach individual customers more effectively. Such customer-unique value should have three characteristics: it should be *specific* to individual customers; it should be *particular* in its characteristics, meaning that is being designed to meet individual needs; and it should be *singular* in its purpose to benefit each customer, not more or less than what the customer desires. Ensuring these three points is the first step toward creating memorable interactions that stand apart from routine transactions (Pine & Gilmore, 1999).

2.6 Disney's Imagineering

Designing a hospital is not the same as designing a Disney park; "customers are far more difficult, the environment is much more riskier and situations cannot be standardized. At Disney, customers are happy and not in pain, so waiting in line is so much easier. At the same time, the healthcare industry is facing many obstacles: hospitals loosing money, staff shortages, unaffordable insurance, reimbursement is constantly adjusted downward and the costs of drugs and technology are rising alarmingly" (Lee, 2004). Despite all these issues, however, there is sufficient evidence to suggest that change is necessary and that finding innovative design approaches is of utmost importance.

It is not the objective of this study to imply that hospitals should be designed to look like a Disney property, or that Disney is the only corporation that can provide insightful information to healthcare design. Disney is, however, the industry leader in creating memorable experiences, and for more than fifty years their designers have been developing, testing and perfecting methods to generate new and improved experiences for their visitors. Disneyland's initial concept was to create "a place where adults and children could experience the wonders of life and adventure, and feel better because of it" (Hench, 2009). Walt Disney believed that people would feel better by using their imagination, and he wanted people to leave his park "feeling more self-assured, stronger, alert and much more alive" (Hench,

2009). With this purpose in mind, Disney gathered a group of cartoonists from the animation studios that he called 'Imagineers', a made-up word that merged the words 'imagine' and 'engineering', and defined by one of their own as "the blending of creative imagination with technical know how" (Malmberg, 2010). Nowadays Imagineers are an interdisciplinary team of creative people that design and create three-dimensional stories, using a unique blend of art, science and innovation to design memory-making experiences (Malmberg, 2010). This research study is focusing on learning the design concepts or principles that Imagineers apply strategically to bring those memorable experiences to life, with the purpose of analyzing if some of them can be adopted and adapted in healthcare settings to provide the best emotional experience for patients.

More than fifty years after the opening of their first park, Disney has become its own brand; it has grown and evolved as a "destination of the imagination that appeals to the heart, mind and soul" (Malmberg, 2010). It now includes several parks throughout the world, hotels and resorts, a cruise line, retail shops, and many other environments that are intrinsically associated with Disney. What distinguishes their product is their fundamental decision to put creativity and story first and to infuse innovation into everything they do, establishing their design team of Imagineers as leaders in destination-making and memory-making processes (Malmberg, 2010). Similarly, they have succeeded in establishing a high parameter in the

service industry by applying specific customer service strategies. One of the simplest and more successful of those strategies is referring to their customers as 'Guests', a word that implies a more personal relationship between the company and their clients; similarly, their employees are 'cast members' because they are part of the unfolding story.

It is highly likely that what makes this company so successful is the unique combination of all these policies and strategies that originated with Walt Disney and that have been perfected throughout the years by the creative minds of the corporation.

2.6.1 Mickey's ten commandments

Imagineers are storytellers whose medium is the three-dimensional world, often breaking the established rules of design and development and creating new ones. As a result, Disney parks and resorts are constantly evolving, and so are their design strategies (Malmberg, 2010). A good example of these are 'Mickey's Ten Commandments', a set of ten key principles of leadership called by the International Amusement Industry Association 'the industry's best guide to the creation of themed entertainment'. These Ten Commandments were developed and established by Marty Skylar throughout his thirty years as creative leader of Walt Disney Imagineering, and they are as follows (Malmberg, 2010):

Know your audience: identify the prime audience for your attraction or show before you begin design.

Wear your Guests' shoes: Insist that your team members experience your creation just the way Guests do it.

Organize the flow of people and ideas: Make sure there is a logic and sequence in your stories, and in the way Guests experience them.

Create a wienie (visual magnet): Create visual targets that lead visitors clearly and logically through your facility.

Communicate with visual literacy: Make good use of all the non-verbal ways of communication – color, shape, form, texture.

Avoid overload-create turn ons: Resist the temptation to overload your audience with too much information and too many objects.

Tell one story at a time: Stick to the story line; good stories are clear, logical, and consistent.

Avoid contradictions-maintain identity: Details in design or content that contradict one another confuse an audience about your story or the time period it takes place in.

For every ounce of treatment, provide a ton of treat: Walt Disney said, you can educate people–but don't tell them you're doing it. Make it fun.

Keep it up! (maintain it): In a Disney park or resort, everything must work. Poor maintenance is poor show.

2.6.2 Design theory

Projects created by Imagineers are always a combination of storytelling, innovation and Guest expectations. Over the years, they have developed ideas about creating seamless, immersive experiences. Every project team takes into account these basic notions:

Remember, we are here for our guests

The Guests are the Imagineers' first priority when designing and building attractions. Safety and reliability are nonnegotiable, which means that everything they design must meet extremely precise specifications; they have so many Guests visit every year that systems need to be sharp and easy to maintain. Another consideration is accessibility: every environment should be accessible, from being easy to enter a ride vehicle, to playing a game, finding a restroom or transportation, and easiness in moving around in the environment. Attractions must be culturally accessible too, so Imagineers work with local communities and research the language, character and even cuisine to make the whole family feel comfortable (Malmberg, 2010). Imagineers also design by thinking intuitively, creating simple park layouts and clear, informative signage, as well as by thinking inclusively, making sure to bring in many points of view and work with designers from different parts of the world to accommodate cultural preferences both domestically and internationally (Malmberg, 2010).

They also believe in the importance of listening to their Guests, so they are continually researching blog posts, releasing satisfaction surveys, walking the parks asking informal questions, and even going so far as to eavesdrop on Guests' conversations to judge their reactions. Armed with that knowledge they act accordingly.
One of Walt Disney's main purposes was to create a park were both children and adults could feel comfortable, so all activities are carefully

planned to be age appropriate; in this instance technology is also a significant consideration because different generations interact with attractions and the technology included therein in unique ways (Malmberg, 2010).

Start with a great story

The group of Imagineers is comprised by people from many disciplines, from architecture to electrical engineering to hydraulics, but they all have one thing in common: they are storytellers. Imagineers are expected to use their own individual skills to create another exciting story. Once the story is established, the next crucial step is matching media with the story, blending technology, artistry, engineering and environment. Imagineers must select the best way for that story to be portrayed and experienced; it can be a show or a ride, an individual exploration or a large-group experience, a poem, a piece that simply evokes a mood, or something that involves speed and fun. Any of the techniques from classic storytelling can be applied to their designs (Malmberg, 2010).

Create an immersive and intriguing world

From the master plan to the tiniest detail, the project designed by Imagineers must immerse Guests in a particular world where everything has to be designed to contribute to the experience and the suspension of disbelief, a crucial element of the immersion (Malmberg, 2010). To create this immersive experience they make use of themes that help inform every aspect of the design; in the environment

nothing should break the mood of the story and even the most mundane details are cautiously considered in both design and function. Detail is considered a powerful instrument because it contributes to the suspension of disbelief, despite being a passive tool; details can overwhelm the senses, defeat defenses and they help provide a seamless environment, telling or reinforcing a story (Malmberg, 2010). The desired mood of an attraction dictates the layout, structure, architecture and color scheme. Mood is created by orchestrated and intensified stimuli of color, sound, form and movement. Every detail creates a feeling of comfort and intimacy. To design an enhanced reality, all the visual elements of storytelling are intensified, and key sensory details are heightened (Hench, 2009). Color theory is used in both its scientific and psychological applications and it can be used to set a mood or telegraph a story; it establishes the identity of character and story, and controls mood and atmosphere in each setting. Color helps guests make decisions about what to experience when they move through the park; in a themed park there is nothing seen in isolation so the relationships between adjacent attractions is carefully coordinated. Designing a park is creating related experiences of color everywhere (Hench, 2009). For Disney designers everything that a Guest can see, hear, feel, touch, smell, or taste is considered 'onstage' and all the technical spaces that are necessary for the functional operations are 'offstage', carefully hidden from the Guests. All of these

immersive principles bring visceral depth to the attractions and make them more appealing to the Guests (Malmberg, 2010).

Be unique

Thinking outside the box is in the job description for Imagineers, and throughout the years, they have become a force for invention, creating projects that are unique, pushing ideas further, combining disciplines and tapping expertise to deal with new assignments. Many of their projects present challenges in construction and installation, and since every assignment has different parameters, they have to be constantly coming up with new ideas (Malmberg, 2010).

Make it magical

Since they are in the entertainment industry, Imagineers have to ensure that everything they design is easy and fun, thinking everything that the Guest will go through so they can enjoy the environment effortlessly. For this purpose queue design is thoroughly planned to make waiting seem like a pleasant experience instead of a hindrance. Some queues are designed to immerse guests in and orient them towards the story, while other attractions use them to entertain Guests while they wait (Malmberg, 2010). The overall effect of the experience is also considered: they contemplate the spaces that guests will travel through within the attractions and between them, as well as the time it will take them to do so. This allows them to account for the element of time, as far as designing considering the time it will take to give guests an experience, as well as what other experience

may precede or follow it, and how does one form affect another. This creates a cohesive experience where every detail on a larger scale is thoughtfully organized (Hench, 2009). Every place and attraction can change and grow, or react and engage with Guests. Part of the 'magic' is for Guests to interact with the characters, story or environment, so they become a participant in the story (Malmberg, 2010).

Ideas and inspiration are everywhere

Imagineers not only have to walk in their Guests' shoes, they also have to be a step ahead of them. They continuously revisit projects to see what works and what could be better next time, they rethink approaches to their ideas, and they branch out professionally to keep their discipline fresh and relevant. They must remain open minded, collaborative, and nurture creativity (Malmberg, 2010).

Research enriches storytelling

Disney designers need to make the incredible look and feel easily believable, so they thoroughly research the subject until they become experts enough to do so. They travel the world and learn whatever is necessary to be able to represent those explicit and implicit sensations in the environments they want to create (Malmberg, 2010).

A very special approach to quality service

Disney's four areas of quality focus, in order of priority are safety, courtesy, show (everything that makes a sensory impression) and efficiency. Since these are clearly prioritized, every employee

knows what is expected of them whenever they have to make a decision. In a Disney Park the primary focus is safety, but a safe experience is not something that people notice unless something happens to make them feel unsafe; the significant aspect of this list is that their second priority is *courtesy*, even before efficiency. Courtesy is directly related to the quality of the service received, so it is an integral part of the experience; by prioritizing this, Disney is putting corporate values in line with what their customers want and need, creating satisfaction and loyalty. The surprising thing is that by placing courtesy and service first, efficiency rises considerably, improving communication and teamwork between departments. (Lee, 2004).

Disney also understands that measuring satisfaction levels is not enough and that satisfaction does not necessarily translates into *loyalty*; if a person does not remember anything memorable from their experience, they can still be satisfied, but it takes something memorable to turn an ordinary, satisfactory experience into something special. Loyalty is generated by those things that happen that the client did not expect; it takes one brief experience for someone doing something special and beyond what is expected to create loyalty, but the opposite is also true, it only takes one brief comment or moment to ruin the experience. Disney's business model focuses on how to improve the Guests' experience instead of how to provide better service; there is an importance difference. They realize that Guests do not talk about the services they received, they talk about the

experience they had, and that poor service is the surest way to turn a service into a bad experience (Lee, 2004).

However, what separates Disney from other experience-makers is not their unique knowledge of what customers want; it is Disney's consistency in the day-to-day execution of those shared values and commonly desired behaviors. Disney does the same things that everyone else in their field does, but Disney does them more consistently, especially under pressure and over long periods of time (Lee, 2004).

2.7 Authenticity

While designing a patient experience is a powerful tool, for it to be truly effective it has to be authentic. With the publication of their book 'The experience economy' in 1999, authors Pine and Gilmore established an economic theory that translated to many disciplines, including healthcare design. However, in 2007, the same authors published a second book, 'Authenticity', where they emphasize "now that the experience economy has reached full flower, issues of authenticity bear down on not only all experience offerings, but across all of the economy" (Gilmore & Pine, 2007). Bishop, 2008, and Kobus, 2008, believe that this came in light of an increasingly number of industries overdoing the themed experiences concept, but consumer experiences and authenticity are not necessarily opposite concepts. It is, in fact, possible to create an authentic experience, and in their new book, authors Gilmore and Pine make a case for "creating memorable

events that engage [consumers] in an inherently personal way" (Gilmore & Pine, 2007). That is what makes an experience authentic: personalization.

In their new economic analysis, Gilmore and Pine, 2007, argue that people "increasingly see the world in terms of real and fake, and want to buy something real from someone genuine. Goods and services are no longer enough; what consumers want today are experiences – memorable events that engage them in an inherently personal way. People now decide where and when to spend their money and their time – the currency of experiences. But in a world filled with deliberately and sensationally staged experiences, consumers choose to buy or not buy based on how real they perceive an offering to be. Business today, therefore, is all about being real" (Gilmore & Pine, 2007). Gilmore and Pine further explain that authenticity is the new consumer sensibility; in the course of economic progress, new consumer sensibilities constantly arise and businesses must develop new competencies to ensure continued success. Nowadays, the management of the customer perception of authenticity is the primary source of competitive advantage, and as thus, it is the new business imperative. "Every person is unique, intimately aware of and valuing his own uniqueness. Therefore, to availability of commodities, cost of goods and quality of service, businesses must add authenticity of experience as something to be managed" (Gilmore & Pine, 2007). This means that these days consumers are not content with what is available, affordable and of excellent quality; they now

look to purchase offerings based on how well those purchases conform to their own self-image -what they buy must reflect who they are in terms of how they see themselves in the world. According to Gilmore and Pine, "to succeed, managers across most all industries must have […] an understanding of what their consumers consider real and fake, or at least which elements influence such consumer perceptions, about their company's offerings" (Gilmore & Pine, 2007).

Almost ten years after their 'Experience economy', the authors found that global economic activity had shifted towards experience-based commerce, including often contrived and sometimes gratuitous experiences; this forced them to ask themselves what constitutes a real experience, and how to render authenticity in a world saturated with paid-for experiences. They believe that consumers will continue to purchase from others what they once did for themselves, and more of what they have never before experienced, but in that loss of self-sufficiency, people will seek a self more aligned with who they want to be, conforming to they own self image (Gilmore & Pine, 2007).

In addition, they mention that all this over-use of staged experiences has left many consumers wishing for less-contrived encounters, and the way to help individuals create their own self-image is to let people define and even create their own offerings. Offering a platform instead of a finished product shifts attention to a buyer's self-defining pursuits, making the consumer take control of what they want and making them feel less manipulated. Also, this

technique could provide management with unique insight into their customers' personal preferences. Gilmore and Pine clarify that there is no need to avoid staging experiences now that authenticity is the foremost consumer sensibility. They believe that much opportunity lies in helping people fashion their own experiences, and thereby, their own self-image.

Another concern raised by the authors of 'Authenticity' is the influence of baby boomers in contemporary commerce; they have been the bulk of consumer demand for almost twenty years, since they represent a majority of the US population. According to their research, boomers "choose brands they want to experience – not simply have or use in order to employ those brands in the processes of becoming or actualizing the real self – the authentic self" (Gilmore & Pine, 2007). This is not only a 'boomer' trait; according to the authors every twenty years or so people tend to question and redefine their personal identity; they examine their lives and their relationships, and reject what they view as fake, holding to what they perceive as authentic. What businesses must understand is "consumer perception of what is and is not authentic changes over time, based on life stages, personal experiences, and changes in brands and offerings they habitually use. Businesses must manage the ongoing relevancy of their offerings for their ever-changing, always-aging set of customers" (Gilmore & Pine, 2007).

Several authors agree with Gilmore and Pine on the increasing need for authenticity. In her article 'Popeye's chicken, design and other five senses', Bishop, 2008, expresses her concern for the overdoing of themed experiences in healthcare environments. The trend of 'theme-ing' the architecture and design of healthcare facilities grew from the concepts expressed by Gilmore and Pine on their book 'The experience economy', but they have been taken, perhaps, too literally. Bishop offers some valid arguments regarding the over-use of themes in health environments and suggests that perhaps the urge for authenticity is a consequence of all these artificial experiences. She proposes that in general, good design should be true to itself and touch the senses; it should have rhythm, harmony, proportion, scale and balance. For healthcare, good design should be real and true to itself. It should be thoughtful but purposeful, and while it could be expressed in different styles, finishes, colors and details, it should always be authentic and true to the needs of its users. It should embody the original concept of form and function as one, support users and not confuse them, and it should inspire, not overpower. To do this, Bishop proposes five senses that should be incorporated in all healthcare projects (Bishop, 2008):

Design to include a *sense of place*, connecting the real environment in the facility with its mission and purpose, and reflecting the values, goals and culture of its users.

Design to introduce a *sense of life*, incorporating art, nature and natural light, considering the healing process and including spaces that lift the spirit.

Design to provide a *sense of community*, with areas that facilitate interaction but also respect privacy, and including spaces for reflection.

Create a *sense of security*, by ensuring personal security, personal privacy, and the privacy of patient information too.

Design including a *sense of compassion*, providing patients control of their environment whenever possible, supporting family members and respecting the environment.

Kobus, 2008, agrees with Bishop's assessment and mentions that there is already too much drama in most patients' and families' healthcare experiences; what they need is authentic experiences in a healing and nurturing environment. He proposes that the basic design principles of composition, proportion, cadence, scale, color, craft and texture are the building blocks of good design and that health facilities should be intuitive, easy to use and minimize unnecessary disruptions. The offering and the experience should be clearly aligned by creating an identity through materials, details and color; successful facilities have high fidelity between the promise and the experience, and are supported by a unique environment that reflects the institution's identity (Kobus, 2008).

Nonetheless, good design should relate to all building types, and while designing a hotel and a hospital is different, good design should be common to both (Thompson, 2008). The challenge is to honor the patient experience while still incorporating the needs of patients, families and staff in a project that is true to good design.

Chapter 3

METHODS

"As the healthcare industry continues to encounter sensitive and complex issues, professionals will continue to search for ways to make the healthcare experience more effective for patients and families" (Taylor, 1999/2000).

3.1 Introduction

The main goal of this research study was to analyze three different approaches to experiential design and adapt some of those theories to be applied in the design of supportive, healing environments. There were three steps to this research: the first was to select the theoretical approaches that would be examined and analyze them within their own framework; the second step was to explore each theory and how it relates to the design of healthcare facilities; the third was to apply that knowledge into the creation of a healing environment design model, a set of ten recommendations to inform the design of future healing environments.

3.2 Research design

This exploratory study was grounded in three theoretical perspectives: 1) experience design as a process and an economical movement, 2) Disney's design approach and 3) the theory of authenticity.

The methodology consisted on an extensive review and interpretation of available literature, including but not limited to books, journals and magazines, both in printed and digital formats.

This approach to research is recognized as secondary research; the purpose of secondary research is to assess existing knowledge and generate a new way of thinking about this knowledge. A literature review surveys scholarly articles, books and other sources (e.g. dissertations, conference proceedings) relevant to a particular issue, area of research, or theory, providing a description, summary, and critical evaluation of each work (UC Santa Cruz, 2010).

A literature review is typically developed in four stages: the first is establishing the topic of interest; second, finding materials that are relevant to it; third, determining the literature that has made a significant contribution to the understanding of the subject; and finally analyzing and interpreting the findings and how they can be applied to the situation.

3.3 Research process

The first theoretical perspective in this study analyzed experience as a design process and from an economical perspective, focusing on experience-based design principles and the theories of authors Gilmore and Pine published in their book 'The experience economy'. In this book, Gilmore and Pine demonstrated that the world's economy was shifting from services to experiences, meaning that customers expected to receive an experience along with the product or service they were purchasing as an additional source of value.

The process of specifically designing the experience for customers was an approach brought to economics from the entertainment

industry. Therefore, the second perspective in this research study considered the industry leader in the creation of memorable experiences: Disney. The notion of learning Disney's design approaches and applying them in the design of healthcare facilities does not mean that every hospital should look like a Disney park, or that characters and other elements representative of Disney should be present inside a facility. The purpose of studying this company was to learn from the design principles and processes that they use to bring experiences to life and adapt them to design memorable experiences for patients.

The third approach of this exploratory study was based on recent literature that suggested that the experience movement has been somewhat out of control and that current economical forces call for more authentic experiences in the providing of services in general.

The three perspectives were analyzed within their own subjects and then they were compared to contemporary healthcare design, drawing implications from the application of each in healthcare environments, as well as from their effectiveness in the healing process.

Finally, from that analysis the researcher created a design model of ten recommendations based on the connection between the three perspectives and the elements necessary for the creation of healing environments.

Chapter 4

ANALYSIS

4.1 Introduction

This chapter examines the different theories from the literature that is part of the content analysis and discusses those concepts compared to contemporary healthcare design. The first section is a discussion of the concept of experiential design from a design process and economic perspectives; the next section delves into the Disney design model and presents a hypothetic scenario where Imagineers' design concepts are applied to the design of a hospital; the following section regards the issue of authenticity and how it affects design; the final section combines the theories that can be adopted and adapted in healthcare design, all this with the purpose of creating a new healing environment model that focuses mainly on improving the patient experience.

4.2 Designing experiences

The stressful situations usually associated with healthcare environments raise the issue of analyzing new strategies to improve the patient experience and reduce the negative connotations that a stressful environment can have on health. In this research study, the concept of focusing on creating experiences is explored from two different standpoints: as a design process and an economical incentive.

First, from a *design process* perspective, experience-based design is defined as an approach that focuses on the quality of the user experience during the entire period that a user comes into contact

with a product, space or service (Philips Design, 2001). This concept is examined in this research study based on the ideas of authors Bate and Robert, published in their book 'Bringing user experience to healthcare improvement'.

In a traditional design method, users are regarded as passive recipients of products or services, but the concept of experience-based design aims to change this view and turn users into co-designers, becoming involved in the improvement and innovation process (Bate & Robert, 2007).

Experience-based design also seeks to change designers' mindsets from designing services to designing experiences; Lee, 2004, believes that when a hospital's staff views their work as engaging the patient in a memorable experience instead of just trying to give excellent service, a paradigm shift occurs that turns hospital work into theater, in which the goal is to engage all the guest's senses in an experience in which each performing member of the cast conveys a message congruent with conscious intentions that are being discussed, internalized and rehearsed. Actually, "script development is really akin to designing and mapping clinical processes. Desired outcomes (experiences) determine what events (scenes) need to take place in what settings (stage) with what people (performers). Within each scene, careful attention is paid to everything that is done to move the patient's experience along to a successful conclusion" (Lee, 2004).

The first step towards experience design is to identify and focus on the areas where users come into contact with the service because that is where their personal experience is shaped. It is in these specific points where the emotional and sensory connection has to be established, and it is there where designers have the ability to influence users with factors such as sensory qualities, sound, rhythm, sequence, layering, logic, and others (Bate & Robert, 2007).

An experience-based approach to healthcare design is particularly valuable because of the human and cultural elements that are the main components of healthcare, and especially because in these environments users are there for necessary reasons, not by choice. The theory of experience-design indicates that businesses should exceed customers' expectations, something that can have infinite value in stressful environments. However, while it is true that patients do not choose to be sick, in most cases they do choose where to go to receive treatment; most healthcare organizations have realized that with growing market choices come greater expectations, if patients are not satisfied with their experience, they can easily change their loyalties to another provider (Bate & Robert, 2007). Unlike other service companies, hospitals can not offer better prices, frequent buyer perks or special discounts and sales, so they have only one way to create loyalty – the patient's personal experience, or what they say about their visit (Lee, 2004). For this reason, considering the

market advantages of designing experiences is something that needs to be analyzed.

The second point of view of the experience analysis is the *economical* perspective. Within this mindset, authors Gilmore and Pine illustrate relevant arguments regarding the importance of creating experiences for customers from an economic perspective, referring to experiences as a fourth economic offering that can add a new source of value to goods and services. They examined experiences as a notion that reaches customers in a deeply personal way by generating in them a positive memory, and it is because of this that the authors associate regular work with theatre and compare the idea of business with theatrical stage. From this perspective, businesses stage experiences every time a customer is engaged on a personal and memorable level, and it is something that can give them competitive advantage and that can be applied to even the most common transactions.

This approach to staging experiences with the purpose of attracting customers is not new, it has been the basis of the entertainment industry for many years, and it has progressed along with technology to generate innovative methods for bringing those experiences to life. However, authors Gilmore and Pine are abundantly clear that staging experiences is not about entertaining customers; the purpose is to *engage* them, and the resulting product lies in the combination between the level of guest participation and the way customers connect or relate to the environment.

Nonetheless, the most compelling element in Gilmore and Pine's theory is the concept of themed environments, especially since it is a notion commonly used in contemporary healthcare design. They introduce this topic as the first step towards staging an experience, impressing that envisioning and defining a theme is what makes the customer experience memorable, comparing the theming of experiences to scripting a story that is only complete with the customer's participation. The purpose is to captivate consumers through a single, unified storyline, in which all design elements and events lead to that central story. One of the most effective tools to accomplish this is using sensory stimulants. Indeed, engaging the human five senses seems to be a fairly good parameter to measure how memorable the experience can be, the more the five senses are engaged the more memorable the event. Establishing the impressions that need to be made and how to put them together in a cohesive narrative is a common strategy used in the creation of themes.

Although it is clear that the purpose of designing experiences in businesses is not precisely to entertain customers, many of these principles are taken by authors Gilmore and Pine from the Entertainment industry and applied to economic theory; Disney is constantly referred to as leader and expert in the creation of experiences and their ideas are used to exemplify many of the authors' suggestions. This leads to the next section of this research study, an

exploration of Disney's design considerations as they relate to customer experience.

4.3 The Disney approach

With the increase in healthcare design research in the last few decades, it has now been sufficiently proved that a patient's emotional state has a direct influence on his or her health, but along with this realization came the issue of how best to approach this patient need; addressing this concern is exactly the reason why learning from a company that excels at creating happy experiences can be infinitely useful. Studying Disney's approach with the purpose of applying it to healthcare design does not mean that their own concepts are perfect or that every hospital should follow them faithfully; it also does not mean that designing a hospital following their concepts would physically resemble a Disney property. It is, however, fascinating to recognize some of the similarities shared by these two remarkably different environments, the main one being that they are both in the business of creating experiences, for while Disney World provides a stage to facilitate the experience of fun, a hospital provides a stage to facilitate the experience of healing (Lee, 2004). Walt Disney believed in the power of imagination to the point that he wanted people to leave his park feeling "more self-assured, stronger, alert, and much more alive" (Hench, 2009). These words may be overly optimistic, but if that were the spirit of more healthcare organizations then perhaps clinical outcomes would be much more positive. The following is a

hypothetic scenario of the considerations that would be applied to healthcare design if Imagineers were involved in the design process.

4.3.1 Remember, we are here for our patients

Designing for the patients would be the main priority, ensuring safety, consistency, efficiency and accessibility: finding the different areas and moving around the hospital would be easy. The environment would also be culturally accessible, so designers would work with local communities and do research to make the patients and their families comfortable. They would also think intuitively; layouts would be simple and clear and information and signage would be easy to understand. Designers would listen to their patients and make decisions according to their research, analyzing patient satisfaction surveys, talking to patients personally and even immersing themselves in the hospital experience to have a better grasp of the situation.

4.3.2 Start with a great story

Hospitals, unlike Disney attractions, are not representations of a cartoon or historical event, but they do portray a story, the story of their organizational culture, of their patients, and their community. A hospital designed by Imagineers would establish those parameters and blend technology, artistry, engineering and environment to portray that ‘story’.

4.3.3 Create an immersive and intriguing world

The hospital would immerse patients in a world that encouraged the healing process, the five senses would be engaged, and every

detail would be carefully considered since it all contributes to creating a seamless environment. Moods would be wisely planned and orchestrated by using stimuli of color, sound, form and movement, creating comfort and intimacy. Everything that the patient would see, feel, touch or smell would be in a clear 'onstage' area while all the processes and unpleasant activities would be conducted in an 'offstage' area, helping maintain a more satisfying environment. The hospital would also have a theme to inform every aspect of the design, and every environment would respond to it; this theme could be anything from a specific color scheme to a set of values that the hospital wants to represent through their environment. "Different kinds of experiences rely on different kinds of impressions. At East Jefferson General Hospital in Metairie, Louisiana, just outside of New Orleans, CEO Peter Betts and his management team redesigned the hospital around the impressions of warmth, caring, and professionalism. They convey these three key impressions by means of having team members wear easily read nametags that list professional titles and degrees and knock before entering a patient's room, among other things. The hospital designates any area accessible to guests—which include not only patients but family members, clergy and any other visitors—as onstage and all others as offstage. It then confines unpleasant activities (such as transporting blood) and 'hall conversations' to offstage areas, while carefully crafting all onstage areas with appropriate cues that enhance the experience. Toward this

end there are painted murals on the ceilings of rehabilitation rooms where patients frequently exercise on their backs, and different kinds of flooring to identify locations" (Pine & Gilmore, 1999).

4.3.4 Be unique

Every project is distinctive because every organization is different, so if Imagineers were designing a hospital they would try to bring creativity to every assignment, coming up with innovative ideas to solve problems and give each design its own identity.

4.3.5 Make it magical

Imagineers would think of the hospital as a cohesive experience, considering everything that the patient would go through so that the environment is supportive of the process and as little disruptive as possible. The overall effect would be measured, taking into account the element of time, from how long each step of the process would take, to what experience precedes and follows another, and how does one form affect the other. From transportation, access and waiting, to diagnostics, medical interventions and recreational activities, everything would be as affable as possible, given the circumstances.

4.3.6 Research enriches storytelling

Disney designers would research the elements they needed to apply in the environment as much as possible, until they were experts in the subject. They would then apply that expertise in the representation of the explicit and implicit sensations thy wanted to create in the environment, allowing them to design a superior experience.

4.3.7 A very special approach to quality service

In hospitals, priorities are not always clear and there is usually conflict between courtesy and efficiency, in fact, most employees always will choose efficiency over courtesy (Lee, 2004). If Disney was designing a hospital, the areas of quality focus would be clearly defined, being in order of priority: safety, courtesy, show (everything that makes a sensory impression) and efficiency. The hospital would also be focused on how to provide memorable experiences, rather than services, to create *loyalty*, because patients do not talk about the services they received, they talk about the overall experience they had, and they choose to come back or not based on those impressions. In addition, they would follow these strategies consistently, representing those values and desired behaviors in their day-to-day processes.

4.4 But it has to be authentic

It is clear that considering the patient experience is a significant aspect of design, but it is also true that for that experience to be effective it has to feel authentic. In 2007, authors Gilmore and Pine published a second book titled 'Authenticity'; following their previous theory of 'The experience economy', they now expanded on the necessity of those experiences being more real, creating memorable events that engage consumers on a personal level (Gilmore & Pine, 2007). This is perhaps a consequence of more than ten years of too many sensational experiences, and this over-use of theatricals has now produced a need for less manufactured encounters and products

that are more true to who consumers are or want to be. In healthcare design, however, authenticity has different connotations because the patient journey is already an experience in itself; as designers, there is only the option to try and improve that experience, including offering authentic, personalized encounters. Gilmore and Pine also mention that there are considerable opportunities to help people fashion their own experiences, which is precisely one of the principles of experience-based design, viewing users as co-designers and following their lead in what they want and need. Nevertheless, there is one element of 'the experience economy' theory that perhaps has been over-used by healthcare designers; according to Bishop, 2008, the indulgence in theming healthcare environments has been such that there is now a need for less artificial spaces. Good design should be real and true to itself; while it could still be expressed in different styles, finishes, colors and details, good design should be true to the needs of its users and support and inspire them (Bishop, 2008).

According to the principles of good design, Bishop proposes five *new senses* that should be incorporated in every healthcare project: one, design to include a sense of *place*; two, design to introduce a sense of *life*; three, design to provide a sense of *community*; four, create a sense of *security*; five, design including a sense of *compassion* (Bishop, 2008). These five senses are certainly accurate and a fair assessment of the present situation, however, using a theme is not necessarily harmful in every scenario. A theme is created

to inform design, and as such it can be anything, like in the case of East Jefferson General Hospital, which was redesigned based on a theme of warmth, caring and professionalism, making every design decision based on those concepts.

Kobus, 2008, alludes to the excess of drama in patients' healthcare experiences. He mentions that facilities should be designed using the basic design principles of compositionand that they should be intuitive, easy to use and minimize disruptions. Hospitals should also be transparent, providing exactly what they promise, supported by an environment that reflects the institution's identity (Thompson, 2008).

The challenge, then, is finding a balance between designing a memorable experience for patients and still maintaining the principles of authenticity and good design that should be inherently related to all building types.

4.5 Proposing a new design model

A healing environment design model refers to all those models and philosophies that inform the design of healing environments, especially in healthcare settings, providing elements for consideration (Schweitzer, 2004).

The purpose of this research study was to analyze the theories of experience-based design, Disney Imagineers and authenticity to propose innovative and creative considerations for the design of healthcare environments. The following is the proposal of a healing environment design model, a set of ten recommendations based on

the combination of those principles that could be adopted from the disciplines considered in this study and adapted to healthcare design.

Create an immersive world

Design the world within the hospital in terms of what the patient should experience. Define a 'theme' that represents the mission and purpose of the organization, reflecting the values and culture of its users, without literally staging a theme making the environment look like something it is not. Engage the five senses to connect with patients emotionally and promote healing. Consider that moods can be set and influenced by the design principles of composition, proportion, cadence, scale, color, craft and texture and use them accordingly to create good design. Separate 'onstage' from 'offstage' areas to define and clearly separate patient areas from operational ones; many of the necessary processes in hospitals do not have to be seen by the patients, blending the two can even have a negative effect on their overall perceptions of the hospital.

Make it magical

Contemplate the hospital as a cohesive entity, thinking of the patient experiencing each environment in relation to others, accounting for the element of time so that functional processes and the environments flow together in one seamless, cohesive experience.

Don't be afraid to be innovative

Each project is different and presents different challenges. Those problems can be solved with creativity and innovation, giving each design an individual image.

Design intuitively

Layouts should be simple and clear, information and signage easy to understand. The purpose is to create facilities that are easy to use and minimize disruptions that could hurt the patient.

Start with a great story

Every hospital has a story to portray, the story of their organizational culture, their patients, their community; that story is their identity and it should be portrayed clearly.

Research enriches storytelling

Do research. Become an expert in the topic that is being designed to portray sensations accurately.

Never forget that patients are human

Courtesy, compassion, respect, privacy and dignity are just a few of the words that reflect the needs of human beings, and the environment has to respond to those necessities, supporting activities that reach and lift the human spirit.

Design for and around the patient

Patients' needs should be the priority. Ensure that environments are safe, consistent and easily accessible to patients and their families.

Involve patients in the design process

Patients should be part of the interdisciplinary design team, and research methods should be created or modified to accommodate them; patient satisfaction surveys, personal interviews and immersion in the environment are only a few of the methods that designers should use to clearly understand the patient experience.

Always go beyond what the patients expect

Exceed patients' expectations to create memorable experiences; people remember the things that positively surprise them and this, in turn, creates consumer loyalty.

The following is a graphic representation of the model where each relationship between the concept and its implications is easily identified as well as their influence on the healing environment.

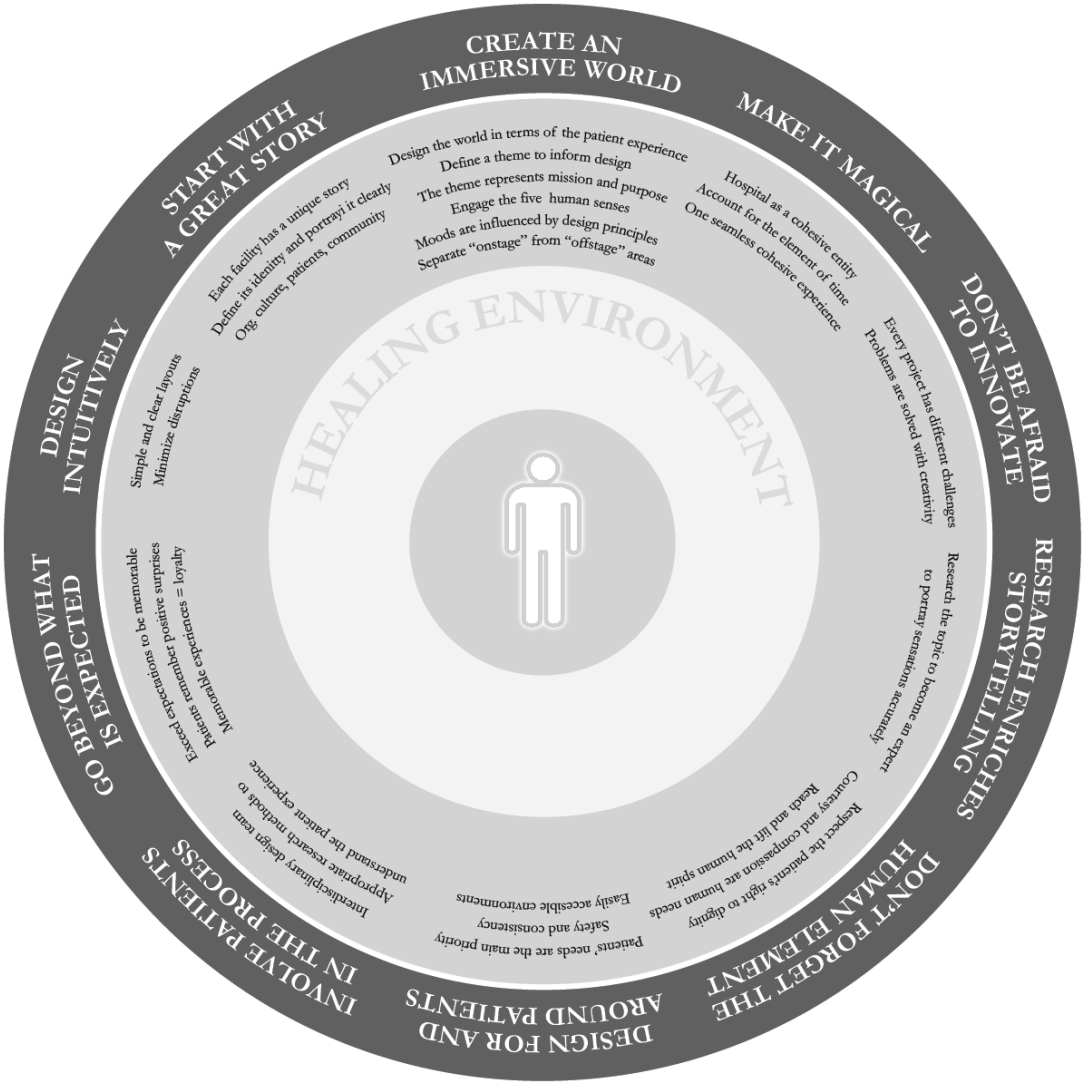

Figure 4.1 Healing environment design model

In this figure, each one of the ten design recommendations is established in the outer dark circle, starting by 'create an immersive world' and moving forward in any direction. In terms of designing experiences this is the most significant element for consideration, but a good design of healing environments would consider all of them.

In addition, the circle can be rotated in its entirety so that priorities can be established depending on the specific needs and objectives of each design project.

The considerations for each main recommendation are represented in a second lighter circle underneath each category. This inner circle can also be rotated separately from the main circle. In this case, each set of considerations takes a new meaning if contemplated under a different category, providing diverse combinations that can be significant and relevant to different healthcare projects.

In the center of the model is the patient, and surrounding him or her is the healing environment; the structure of this diagram is specifically designed to represent the effect that each recommendation has on the environment that patients perceive through their senses, and to provide elements for consideration of how each combination can shape the patient experience.

Chapter 5

CONCLUSIONS AND IMPLICATIONS

5.1 Introduction

This research focused on the concept of healing environments and the importance of the patient experience as an element that can help minimize stress in healthcare facilities. It explored three different approaches to designing memorable experiences: experiential design, Disney's design concepts, and authenticity; based on that analysis this research study also suggested an innovative healing environment design model. The research was organized into three sections.

The first section introduced the concept of healing environments and explored the physiological processes behind emotional responses as well as the human body reactions to stress exposure. It also presented the idea of focusing on the design of experiences rather than services as a strategy to minimize stress in healthcare environments. This section explored the definition and process of experience-based design and presented the theory of experiences being a new economic offering, adding new source of value to goods and services. Additionally it delved into Disney's design principles as an entertainment industry leader in creating experiences, studying the design processes used by Imagineers to provide memorable experiences. Finally, this section considered the most recent economical theory of consumers wanting authenticity and how this can influence experiential design.

In the second section of this research, each of these approaches was analyzed in relation to the healthcare industry, considering the implications that each one of them represents for the design of healthcare environments. This section was divided in three categories: designing experiences, Disney's Imagineering and authenticity.

In the third section, these findings were related to healing environments by suggesting a healing environments design model of ten recommendations based on those theories. The model was then presented as a diagram that illustrated graphically how each of the ten recommendations and its own implications can affect the design of healing environments.

5.2 Limitations of the study

There were limitations in regard to the approach used in this study. First, there were three main theories related to experiential design selected for the creation of the model, and material was recovered from existing literature, printed and digital information that had been published by the time of the research. This means that there may be other publications that could provide further considerations affecting this study.

In addition, by limiting this study to a theoretical analysis, the knowledge and personal expertise of professionals related to the healthcare industry was not considered, unless their ideas and opinions were published. This limitation exists because a combination of the three theories involved in this research is not something that is

normally practiced by industry professionals. However, now that there is a model proposal based on the review of the literature, said model could be further improved by adding the expert opinions of healthcare stakeholders –patients, providers, administrators and designers-.

The outcome of this study, the healing environment design model, is a suggestion based on the analysis of three different theories that affect healthcare design. There are many other elements and theories that could be considered; however, this model intends to offer a set of recommendations to improve the design of healing environments by focusing on the patient's experience. The model has never been tested, and because the healthcare industry is constantly changing, the application of these recommendations in practice would likely be different and would be determined by specific circumstances.

5.3 Research problem and implications

This research focused on analyzing the concept of experience from different perspectives and then adopting some of those theories and adapting them to healthcare design. It offered a look into how the combination of these approaches can inform the design of healing environments for the benefit of patients. The information collected in this research could be used in different ways, including: changing the way healing environments are designed to focus in how the patient will experience those environments; it could also change designers' mindsets to consider the element of experience in every environment, not just the services that will be provided therein; in addition, it could

modify current approaches to healthcare design instruction to include lessons learned from other industries that can be adapted for the benefit of patients. Furthermore, the recommendations suggested in this research could be applied to existing design processes in order to create successful healing environments, as well as support the creation of new design methodologies to incorporate patients' perspective into the process.

5.4 Recommendations for future research

This study initiated research on combining perspectives from different approaches and adapting them to the design of healing environments. Future research could include analyzing other theories, searching for elements that can contribute to designing better environments for patients. This research was based on Disney because they have been successful in the creation of memorable experiences for many years, but there are other companies and even other industries that may be using design approaches that can be adopted and adapted by designers to create environments that minimize stress and promote healing.

Generalization of future research would increase the significance of the model suggested in this study. This could include incorporating opinions of practicing design professionals and healthcare providers, as well as testing the model by incorporating it in the design process of a particular healthcare project. Additionally, more in-depth qualitative and

quantitative data collection such as interviews, focus groups, surveys and patient outcomes could enrich the model and give more validity to results.

5.5 Conclusion

This research began to explore the combination of different approaches to experiential design and how they could be applied in healthcare environments. Based on the analysis of these theories, this study suggested an innovative healing environment design model comprised of ten recommendations to inform the design of future healing environments.

The elements suggested for improving the patient experience and the way they affect the healing environment relate not only to patients but also all users of the facility: hospital staff, families and visitors. The healing environment is to the benefit of all, and every element within relates to all the people involved in the process of healthcare.

Healthcare design is an ongoing learning process, one that is especially challenging because the healthcare industry is constantly changing and innovating. This research sought to analyze a different strategy for designing healing environments in hopes that, in the future, all designers will be interested in exploring innovative approaches that enhance the design of healthcare facilities.

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