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Moving Toward Person-Centered Care: Valuing Emotions in Hospital Design and Architecture

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Abstract

The intangible value of emotions is often neglected in healthcare evaluations; however, it forms an important part of the hospital experience that needs to be taken into consideration to move toward person-centered care. This article conceptualizes how space and architecture may influence patient, family, and healthcare provider emotions. Building upon Gaston Bachelard's *Poetics of Space*, theories on emotional design and architecture, as well as research in environmental design, we suggest several ways to value emotions in hospital design and architecture. The first theme explores several hospital spaces (the waiting room, the hospital room, the treatment room) using Bachelard's phenomenology in order to show how to facilitate emotional security by catering to the individual needs of the user. The second discusses the overall hospital room environment, notably the influence of light, color, and sound on the patient's emotional experience. The third explores architectural theorist Giuliana Bruno's theory of e(motion) to explore the hospital space as *vissuto*, a space of lived experiences, that invites us to rethink the design and architecture of hospital spaces to allow for patient participation. The article also gives suggestions of qualitative, person-centered methodologies that can be used to move forward this debate.

Keywords

wellness, quality improvement, patient room design, patient/person-centered care, participatory design

Introduction

The design of space in a hospital can favor a culture, complementary to or in resistance to a technical culture that can change the experience lived by the user for which the project is designed (Pellerin & Coirié, 2017). By paying attention to spaces and architectures in hospitals, care can become more than just a cure, by permitting persons to take care of themselves and others in a hospital environment (Pierron, 2019). In most evaluations today, however, intangible values have been sidelined in favor of indicators such as efficacy and efficiency (Pierron & Vinot, 2020). This is in spite of studies that have shown the hospital environment to be a significant

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predictor of patient and family satisfaction (MacAllister et al., 2019).

Research in the past decades in neurosciences and philosophy has reconfigured our understanding of emotions, seeing them as intelligent evaluations of our environments (Damasio, 2006; Nussbaum, 2003). They have shown how emotions are concerned with our values and with what we need to live well. In the hospital, and in particular in health economics, we are used to understanding value in terms of cost; however, intangible values, including emotions, are starting to becoming a part of the healthcare conversation, particularly in the patient-centered care (Stone, 2008), and more recently, in person-centered care models (Ekman et al., 2021). Person-centered care models seek to provide a holistic perspective of the illness experience and to integrate them into models of caring. In these conceptions, it is not only a question of improving the patient's experience but also those of the family and healthcare providers. Emotions have been given a place in these conversations to help improve healthcare for all users (Bogaert, 2020).

The aim of this article is to provide a conceptual framework for valuing emotions in hospital design and architectures with a person-centered perspective. It is proposed as a first step to help prepare researchers to prepare empirical research, as well as to inspire hospital decision makers who are interested in valuing emotions in design and architecture. We propose a multidisciplinary framework to achieve this. We will first of all introduce philosopher Gaston Bachelard's ideas on emotions and space, as well as the architects and designers who have given emotions a central place in their thinking. We will then propose three ways of how to value emotions in hospital spaces and architectures with help from these theorists as well as research in environmental design. In a person-centered perspective, the participatory role of healthcare providers, patients, and families in hospital design and architecture will be elaborated at each stage of the process.

Bachelard's Poetics of Space

This section will briefly outline Gaston Bachelard's ideas in his classic work *Poetics of Space* (2014) in order to identify several themes that will be important to our analysis. This section will not seek to provide an exhaustive exploration of his concept but rather to identify the important themes that we will take into consideration.

Bachelard's study focuses on the lived experience of spaces, of the images and imaginary that they conjure, and he has long inspired designers and architects who seek to understand how users feel in spaces. He gives particular importance to how we inhabit these places emotionally, in particular what relationships and emotions we have to everyday objects and spaces. For him, the space is not only an object but a lived experience which matters and gives meaning due to emotions, memories, and associations that have been built during our residence within it. Our feelings about these spaces and objects are linked to images from our earliest memoires, but they are also unconscious, even ancestral. For this reason, spaces can help fulfill some of our deepest needs. He shows, for instance, how the house can not only protect but also give a space for intimacy and privacy, allowing the inhabitant to withdraw into a poetic space of solitude and dreaming. A habitable space for Bachelard, therefore, ensures a certain amount of emotional security. In the vocabulary of Bachelard, this may mean, in particular, designing spaces of *nesting* that can allow greater patient privacy and to feel, to a certain extent, "at home" even in a hospital space.

Within his phenomenology, Bachelard also pays particular attention to the miniature worlds created by everyday objects, such as drawers and small corners, which may take on a large significance for the person as they enable feelings of intimacy and security. These private spaces represent a refuge from the outside world, one where the person can feel emotionally secure. When Bachelard discusses these spaces, however, he is not only considering physical spaces but also other forms such as those created by audition. Bachelard emphasizes, for instance, that sound creates a miniature world which allows the person to live a space orally. We will discuss the importance of the miniature worlds of audition in the context of the hospital room with help from environmental design.

A final element in Bachelard's phenomenology is his conceptualization of how we feel spaces vertically. He describes, for instance, in a house how we may be afraid of the cellar but dream in the attic. As our feelings toward these spaces are largely unconscious, based upon ancestral memories, we are not necessarily aware of how we feel about this verticality. Having briefly introduced Bachelard's link between emotion and space, let us now discuss how emotional architectures and designers can help us to move further in this discussion.

Emotions in Architecture and Design

Architects and designers have long recognized the importance of health, safety, and welfare as part of their mission, including designing spaces and architectures which engender positive emotional responses from its users (Dannenberg & Burpee, 2018). This section will review the movements in architecture and design that value emotions in order to identify a number of themes important to our discussion.

Emotion in architecture has already been seen from the 18th century with French architectural theorists such Nicolas Le Camus de Mézières (1721–1773), who believed that buildings could evoke human sensations as they can speak to the mind and move the soul; or with Etienne-Louis Boullée (1728–1799), who advocated that architecture can communicate moral principles by modulating the lives and emotions of its inhabitants (Pelletier, 2006, p. 2).

The emotional architecture movement, instigated by Mexican architect Luis Barragán and the sculptor Mathias Goéritz's 1953 *Emotional Architecture Manif*esto, continues this tradition. They claim that the modern man has been crushed by an excess of functionalism. Arguing for an architecture that could move its inhabitants, their creations seek to stimulate emotion and involve the user as an active participant.

Since Barragán and Goéritz, minimalist architect Peter Zumthor et al. (2006) has been in the forefront of conceptualizing the link between emotion and architecture. For Zumthor, as for Bachelard, our emotional connections to a building are related to the user's imaginative appropriation of the space. For him, it is not a question of trying to stir up emotions in persons via buildings, as Barragán and Goéritz suggest, but rather allowing emotions to emerge in the interaction of the building and the user given their singular relationship.

Other architects and designers have brought new understandings in the link between emotion and spaces. The architectural theorist Giuliana Bruno (2011) has notably conceptualized the link between (e)motion and architecture. She claims that architectures are the *vissuto*, the space of lived experiences, traversed by the histories of its inhabitants and transient dwellers, one where the space is both emotional and in motion. Buildings for Bruno are lived (e)motional spaces that are inherently dynamic, crossing the line between dwelling and travelling. Therefore, paying attention to (e)motional design also means conceiving of user participation, in particular by designing spaces that incorporate the possibility for activity.

Furthermore, from the design side, building upon extensive research in neuroscience and philosophy, Norman (2005) has given a prominent place to emotion in his theory of design. In order to produce a positive emotional impact on the user, he advocates that a designer can tailor his product using three levels of design: visceral, behavioral, and reflective design. These different levels of emotional design are interrelated: while visceral is meant to reflect the immediate reactions we may have toward something, behavioral how we evaluate its use, and reflective design the long-term evaluation we have about the object in our lives. These different levels of emotional design are interconnected and help understand how the user will feel about an object in both the immediate and long term.

In summary, several important elements can be retained from these diverse movements and inspirations for the purposes of rethinking hospital spaces and architectures to value emotions. First, Zumthor and Bachelard remind us that our connections to spaces are involved with imagination, in a complex relationship which involves our need for emotional security. Second, following Norman's reflections on emotional design, we can see the way that we feel about objects evolves in different temporalities: It includes our initial

attraction or repulsion (visceral design) to an object but also how they are used and lived (behavioral and reflective design). Third, following Bruno, Barragán, Goéritz, and Zumthor, we can see that an emotional approach involves participation. It means incorporating the possibility of movement within these spaces.

With these inspirations in mind, let us now make some preliminary proposals on how to value emotions in hospital spaces and architectures. As stated in the Introduction section, these are ideas that can be further explored through empirical research. At the end of each section, we will therefore make some suggestions of how to move this debate further.

Inhabiting Spaces by Facilitating Emotional Security

In this section, we will explore how hospital spaces can help patients and families feel greater emotional security and better inhabit the hospital space. We will in particular discuss how to value emotions in the hospital waiting area, in the individual patient room, and in treatment rooms.

The Hospital Waiting Room

This section will discuss how to personalize the hospital waiting area for the emotions of its users. Douglas et al.'s (2018) redesign of a public waiting area outside an intensive care unit for families and friends at Auckland City Hospital in New Zealand is a good example. The original waiting rooms were located at the center of an overbridge connecting two buildings, were dark or isolated without windows, and had uncomfortable chairs and couches. The traffic through these spaces, as well as the lack of light or contact with the outside world, was shown by them to exacerbate the negative emotions (stress, anxiety, and fear) felt by loved ones awaiting news. Taking into account these needs, the design team reimagined the waiting area as a hybrid space. The space now includes both zones of privacy but also common spaces allowing for movement and interaction.

Their example shows how temporarily lived common spaces can be designed in the hospital to value the individual's emotional needs. For some users, it was necessary to create a space in which they could feel a sense of intimacy and security in order to help mitigate negative emotions experienced by waiting; for others, it was necessary to create an environment that enabled interaction with others. The hybrid space therefore allowed both spaces for privacy to allow for quiet contemplation (following Bachelard's ideas on *nesting*) but also for activity and interaction between users when needed (Bruno's ideas on *vissuto*). As Zumthor has advocated, it remains vital not to impose certain emotions on the user but rather to provide a facilitating environment. By designing a hybrid space, it was for the user to inhabit it as they wished, desired, or needed. This example helps us understand how we may be able to personalize the space by valuing the users' individual emotional needs.

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Emotions in the Patient's Miniature World

Taking these ideas further, what can be done about those patients who have a prolonged stay and spend most of their time in a hospital room and most likely in a hospital bed? Here, Bachelard's distinction on miniatureness and vastness remains important to better understand the patient's habitable space during this time. For the patient who is bed-bound in a hospital, their room is temporarily their whole world. Within these spaces of limited movement, the vastness of the hospital is almost unimaginable. The corridors, closed and open rooms, numerous reception, and waiting areas that are humming 24 hours a day are largely inaccessible to the person who only sees fragments of this world in quick journeys from their room to the treatment room, corridors, and waiting areas. These spaces are immense and to a certain extent, *unimaginable*, for the person when their mobility and movement is restricted. With Bachelard, we can better understand how the vastness and inaccessibility of the hospital may

increase the patient's fear and anxiety. Because of this, the hospital room may take on increased significance, as it represents their miniature world, their "nest" from which they experience the hospital space. This world can either be threatening if it adds to the fears and anxieties of the patient, or it can help facilitate feelings of calmness and reflection if the patient can experience it as secure.

In valuing these emotions in the hospital room, there is no need to idealize this space, which represents an unstable space for intimacy and privacy for the patient due to its functional needs. First of all, it is accessible at all times to healthcare staff. It is also in many cases a shared space with other patients. Therefore, these spaces will never fully represent a home because of their functional needs. However, as NoorMohammadi (2015) has shown, when we experience a place that does not relate to our values of being (for instance, if it is too cold, too modern, without light or color), we may not feel emotional security. Thus, it is worth exploring how hospitals may help facilitate these feelings for the patient.

One of the ways to facilitate emotional security in this space will be to take a person-centered perspective to better understand what they see, feel, and use these spaces. For instance, in the hospital room, the closet and/or the drawers are mostly seen in a purely functional capacity as the place to keep personal affairs and to reduce the possibility of theft. However, when thinking with Bachelard, who gave importance to small corners, and the intimacy permitted by personal objects, it is possible to understand these objects' symbolic importance to the patient, as it gives a means for privacy in these times of emotional upheaval. If these objects can help them feel more emotionally secure, it will help reduce their fear and anxiety of the hospital experience. While these kinds of "inconsequential" objects or small spaces may not seem important in the context of increasingly expensive and technical healthcare acts, they may indeed take on an importance to the person and help them inhabit these miniature spaces, even if in a short term temporality.

Furthermore, Daniel Norman has proposed to take into consideration the different levels of emotional design (visceral, behavior, and reflective). By applying his ideas, we can better understand that well-designed objects in the hospital room will not only bring short-term pleasure to the person whose whole world is the hospital room but also serve their functional purpose for the user by being both accessible and useful. Therefore, what we can retain from Norman's proposal is the need to better understand how users feel and use these objects in different temporalities. The best way to do this may be through qualitative research, in particular by soliciting patient experiences on how they feel about, use, and appropriate these objects, in particular during different temporalities of their hospital stay.

Placement of Treatment Rooms in the Hospital

Taking these ideas outside of the hospital room and into the vastness of the hospital, Bachelard's reflections on verticality may also help us better understand how to reduce the patient's fear of certain procedures. It notably means paying attention to where healthcare acts take place. Bachelard says that in a house, the basement or lower floor of a hospital may conjure fear, while the higher floors may help the person feel calm and reflect. Therefore, if technical and/or painful medical acts such as diagnostic and treatment procedures take place in a basement, we can see that they may increase the patient's fear of the procedure. On the other hand, placing these procedures on higher floors may help reduce the patient's fear. Paying attention to verticality and our unconscious feelings about where certain treatment acts take place could help mitigate the patient's fears of certain procedures. This issue will be worth exploring through empirical research to test Bachelard's proposal in the context of the hospital, in particular with qualitative methodologies which can help patients speak about their healthcare experiences in their own words.

Emotional Design: Paying Attention to Sound, Light, and Color

In recent years, evidence-based design has been helping make hospitals safer for patients, families, and staff by taking into account factors such

as lighting, contact with nature, and noise. This has helped to reduce medical errors, hospital-based infections, and improve treatment outcomes (Ulrich et al., 2008). While these measures prioritize safety and decreasing medical errors, designers are increasingly recognizing the importance of taking into account how to create *healing spaces* that take into account other needs, including emotional needs (DuBose et al., 2018). Therefore, let us now discuss the influence of sound, light, and color on the patient's overall emotional experience in these spaces.

The Auditory World of the Patient

Research in emotional design has also shown that sound, when used properly, can be emotionally satisfying and informationally rich (Norman, 2005). However, it can also be a source of emotional stress. In the hospital, sounds that are conceived of as disturbing or annoying can dominate patient experience (Oleksy & Schlesinger, 2019; Xyrichis et al., 2018). If there is limited auditory privacy in the hospital room, for instance, due to another patient, it may aggravate the emotions the patient is experiencing. While hospitals generally may provide short-term functional solutions such as foldable screens or curtains to facilitate visual privacy, auditory privacy in these spaces has been largely understudied and is notoriously difficult to measure. However, as Bachelard reminds us, in audition we experience an immense miniature world. Abrasive sounds may put the patient in a situation of increased vulnerability and increase their fear and stress by focusing their world on these invasive sounds.

Finding ways to minimize abrasive sounds may help assuage these kinds of negative emotions. However, while this would suggest that noises in general should necessarily be eliminated, creating silence alone may not necessarily create a positive emotional environment for the person. As Mackrill et al. (2013) have shown, it is the person's overall emotional response to the *soundscape* which will help to better understand the user's emotional experience. For instance, some sounds in the hospital environment, such as the "gentle hum" of people doing things, can reduce isolation; while too much quiet may interfere with the patient's feelings of privacy. Better understanding the overall soundscape in these spaces from a person-centered perspective will help hospital designers and administrators decide what sounds which should be minimized or eliminated. As Xyrichis et al. (2018) explain, "patients and relatives are rarely involved in this research; they are seen as passive recipients of the hospital soundscape rather than active participants in its creation . . . future solutions should be based on a careful assessment of each hospital environment, and designed with input from all stakeholders, particularly patients and families." Studying the overall soundscape will also be a part of evaluating the emotional well-being of the healthcare worker, as it has been shown that noise pollution leads to stress and burnout among healthcare staff (Topf, 2000; Walker & Karl, 2019).

Light, Color, and the Emotional Experience of the Patient

In addition to sound, light and color impact our emotional experience in hospitals. Colors have been shown to convey emotions and affect the space, making the person feel sad or fearful, calm or agitated. Research in environmental design has emphasized how natural light can create an emotionally smoothing environment and facilitate the circadian rhythm. Ulrich's (1984) seminal article showed how having a window view of a natural setting had restorative influences on surgical patients and increased their satisfaction. Likewise, recent studies have shown that the patients' length of stay may be shorter for those nearer to a window (Park et al., 2018). Too much light, however, can also aggravate negative emotions, as a hospital that is always bright does not necessarily allow comfort for the patient in need of rest and reflection. As Bachelard has shown, shadow is also a way of inhabiting a space and may provide emotional security for patient, family member, or healthcare worker. Soliciting user experience, for instance, by using self-report questionnaires (Lindahl et al., 2021), may help to understand how to tailor light and color to the individual's emotional needs.

Better understanding user experiences are is vital in developing areas, such as in smart environments research. This field is developing methodologies to adapt spaces to induce positive emotional states in their users through technology. Fernández-Caballero et al. (2016), for instance, have shown that it is possible for a sensor to detect an emotional state in persons by analyzing their physiological signals, facial expression, and behavior. The sensor will then adapt to the person's emotional state by providing an emotion regulation through music and color/light in a given space. It can be questioned whether emotions can be detected accurately via facial expressions and whether different persons will necessarily be affected in the same way by different colors, lights, or sounds. However, it also raises other issues, in particular how the use of sensors may affect the user's overall emotional experience. While the current discussion mostly focuses on ethical questions, such as whether users are willing to accept the gathering of personal data, such as images, temperatures, and facial expressions, the debate can go farther by prioritizing emotions from a person-centered perspective. We can notably seek to better understand whether these technologies facilitate or exasperate the user's emotional security in these spaces before deciding whether to roll out this kind of technology in the hospital space. Once again, qualitative methodologies are best suited to these task as they allow users to openly discuss and debate how they feel.

Rethinking Hospital Spaces for Activity and Interaction

Finally, let us explore some ways of finding equilibrium between rest and activity in other hospital spaces following Bruno's reflections on *vissuto*. According to her, an attention to (e)motional design will need to incorporate both the possibility of rest but also a space for activity, interaction, and movement for its users.

Hospitals are dynamic spaces. Encounters between hospital staff and patients form the lived experience and the (e)motions lived in these encounters. Healthcare providers and their support staff are constantly moving between patient rooms, staff rooms, and places of technical acts, discussing with patients and being discussed by them. Patients are shuffled by healthcare staff between their rooms to spaces where technical analysis and treatment awaits them. Families, friends, and other visitors are those transient dwellers who come to visit and wait with patients and often interact with healthcare staff.

However, patients in a hospital are often confined to a bed and often have limited capacity for movement. While being in the hospital room can help create the miniature world of nesting in the Bachelardian sense, it can also become an oppressing space for the patient due a lack of human connection. While there are often common spaces in long-term care facilities such as in retirement homes or reeducation centers, there is very little space designed for patient activity in the hospital service. Providing such a common space may have multiple benefits. First of all, it may help patients appropriate more spaces in the vast world of the hospital by permitting interaction with visitors or other patients and by these means reducing their isolation. These spaces can also be designed to value emotions through arts methodologies. Giving patients individual emotional spaces for remembering and reflection, should it be journaling, art, or music, may be another way to value emotions in the hospital space. However, it must be noted that while we have centered this discussion on how to provide overall emotionally healing spaces, providing a common space also facilitates functional healthcare outcomes. Indeed as Feenstra (2021) has shown, introducing new rhythms of activation, relaxation, and sleep can help change the hospital experience from almost completely passive to one with periods of activity and by these means help patients toward recovery.

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Providing a respite or creative space also extends to healthcare workers. Healthcare providers may need to voice their emotions in a safe environment, away from public spaces or from

the eyes of patients. Indeed, as Gregory (2021) has shown, providing respite rooms for healthcare providers is needed for clinical well-being and resilience. Developing such spaces—be it through artistic expression or discussions such as Balint groups—are further ways to value their emotions in these hospital spaces.

To close this discussion, enabling e(motion) in hospitals also extends to how and for whom we make decisions on the design and architecture of these spaces. If they are designed without the active participation of its current and future users, we risk to make them uninhabitable for patients, families, and healthcare providers. Valuing emotions in hospital spaces, therefore, also means valuing the active participation of its users, be it from the design of "inconsequential" objects such as hospital closets to the redesign of waiting areas, hospital rooms, and gardens. To do this in a practical way, van Oel et al. (2021) have proposed that we take into account the differing ways of communicating in design decisions between hospital users (mainly verbal or written expression) and architects and designers (mainly visual expression). Likewise, Devlin et al. (2016) have shown the importance of qualitative approaches to better understand how hospital design, in particular in the hospital room, affects patients' well-being and satisfaction. We have given suggestions throughout this article on ways to test the proposals suggested here, in particular through qualitative methodologies, which allows users to describe and elaborate these ideas in their own words. However, whatever the method finally chosen, we have advocated taking a person-centered perspective. In particular, hospital administrators, designers, and architects will need to work *with* patient groups, patients, families, and healthcare workers to design appropriate person-centered methodologies in order to capture how these spaces are lived emotionally.

Conclusion

This contribution has advocated taking seriously how spaces and architectures are lived emotionally by patients, families, and healthcare providers. Gaston Bachelard's *Poetics of Space*, input from emotional designers and architects, as well as research in environmental design have helped conceptualize ways that we may value emotions in hospital spaces. Some of these proposals may involve an investment in redesigning hospital spaces and architectures to make these spaces more habitable, such as common patient rooms in a hospital service. However, many of these solutions may be simple and inexpensive, such as adapting the patient's soundscape to make these spaces more emotionally secure. However, in all cases, design decisions will include the active involvement of patients, families, and their healthcare providers. Valuing emotions in hospital spaces are, therefore, part of the means to move toward the realization of person-centered healthcare systems.

Implications for Practice

- Hospital spaces and architectures can be designed specifically for the individual emotional needs of patients, families, and healthcare providers.
- Facilitating emotional security in hospital design and architecture can improve patient, family, and healthcare provider experiences.
- Involving users in the design and architecture of hospital spaces will give a new means of participation in a person-centered care perspective.

Author's Note

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