

Speculation on the Mechanism of Interior Space Construction and Emotional Recovery in the Context of Environmental Psychology

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Abstract. Environmental psychology has developed the research field of how an indoor environment affects emotions and stress-relief in people. Based on the circumplex model of affect, place attachment theory, biophilic design and neurophysiological approaches to environment-emotion interaction, this paper investigates the connection between the creation of indoor space and emotional recovery. Interior Spaces do not only offer a background for people's lives but also influence their emotions through changes in levels of arousal, valence, perceived control and a sense of belonging. The four reasons for emotional relief through the space are: a decline in physiological arousal; distraction of attention; sense of place belonging; and sensory harmony. Based on research in environmental psychology, it also puts forward design suggestions and offers a speculative system for understanding how interior spaces can be designed to be emotionally nourishing in daily life, healthcare, and work.

Keywords: Environmental psychology; Interior space design; Emotional recovery; Affect regulation; Place attachment; Biophilic design; Healing environments.

1. Introduction

The life of emotions for people is also closely related to their surroundings. People do not just inhabit spaces; they react to them, learn from them, and are quietly or significantly altered by them. The rooms, corridors, workplaces and other places where we live and do daily life are all responsible for determining the level of emotional stress and stress recovery. However, the reasons why interior construction can help people feel better have been studied less, especially outside of healthcare design.

The following address all of these issues. As a field that studies the connection between people and their surroundings, it has put forward some ideas for exploring why some places are peaceful and others are stressful, and why some interiors make us feel safe while others cause anxiety. Some theoretical systems of environmental psychology are used in this study to explore how the arrangement of indoor space relates to emotional health. How do certain spatial and sensory attributes in indoor environments affect people's emotions, and why does this happen?

Foundation and Design Implications of the Paper. After building the emotional dimensions of interior experience with the circumplex model of affect, it explores physiological, cognitive and social mechanisms such as place attachment, biophilic cues and sensory organisation, and finally proposes speculative design principles for emotionally restorative interior construction.

2. Theoretical Frameworks in Environmental Psychology

2.1. The Circumplex Model of Affect and Interior Experience

At the bottom of the circumplex model of affect, Russell's model provides the basis for explaining how environments influence emotions, and it separates these two dimensions independently: valence (pleasant-unpleasant) and arousal (activated-deactivated) [1]. Generally speaking, when a person is emotionally recovering from distress in this model, there is a move from high-arousal negative emotions, such as anxiety or tension, to low-arousal positive emotions, such as calmness, contentment and peace. Both of these can be caused by the internal environment; a noisy, messy and unpredictable

place will keep people in a state of high arousal with negative emotions, whereas an organised area that is quiet, well-lit and orderly will make people feel peaceful and happy.

Bower, Tucker and Enticott applied the circumplex model to the research on interior design and reviewed neurophysiological and subjective evidence for the emotional impact of built environment design on interior occupants [2]. Through a series of studies, some researchers have now uncovered the ways in which colour, space organisation and light affect the autonomous and central nervous systems. Based on the above research, we believe that interior construction is not emotionally neutral. Research has shown that some colours, especially those in the blue range, can change parameters of the autonomic nervous system and cortical oscillations in response to emotions [2].

2.2. Place Attachment and Emotional Bonding

Beyond fleeting emotions, one's environment can form a profound sense of belonging through the concept of place attachment, which is the affective bond between a person and a significant place [3]. Attachment is composed of three parts: knowledge of a place, caring for it, and behaviour guided by it. When people are emotionally attached to a place indoors, they are more likely to feel that the space is safe and comforting, thus creating a sense of emotional healing through memories, associations, etc.

Research on place attachment in built environments has shown that design features which promote a sense of safety, coherence and personal relevance are linked to a higher degree of attachment and, thus, to good mental health [3]. A stronger sense of place has been associated with greater mental health in the elderly and young children. Therefore, the aim of emotionally restoring interior construction is not to reduce sensory input but to build a space where deep connections with one's environment can form and endure.

2.3. Biophilic Design and the Nature-Emotion Connection

Biophilic design is adding natural elements and patterns to buildings and living spaces, and is now regarded as a practical application of environmental psychology [4]. Based on the evolutionary hypothesis that humans have a natural affinity for nature, biophilic design is now known to create environments indoors that incorporate natural light, plants, organic shapes and other natural elements to help people feel better, reduce stress and improve concentration [4]. The above effects are in line with attention restoration theory and stress-reduction theory, and a natural environment is considered an ideal setting for recovery.

According to research by others, biophilic design in hospitals can reduce stress and improve mental well-being for patients, thus shortening their stay in the hospital [4]. For all kinds of internal space applications, even small-scale biophilic design can be employed to reduce stress and have a calming effect on people's emotions. Biophilic Design can provide an accessible way for the built environment to support the mental health of the elderly.

3. Mechanisms of emotional recovery in interior settings

3.1. Physiological Down-regulation

The first type of emotion reduction in a domestic environment is physiological. Environments with low noise, moderate light, thermal comfort and non-threatening space cues can reduce autonomic nervous system activation and, as a result, lower heart rate, blood pressure and skin conductance [2, 5]. A change in the body's state can help us feel better; when we are less stressed physically, it is easier for our minds to relax, feel good, and be cheerful.

Acoustic Design of interior space construction can directly promote this mechanism. Reverberation, noise from ventilation equipment in the area, and a lack of sound-absorbing materials are typical problems of institutional buildings such as hospitals and open-plan offices [5]. Reduce the above

stress factors through surface treatment, space organisation and noise masking to help people relax mentally. Add these measures to reduce the intensity and colour temperature of light to prevent glare and high-arousal effects, and keep the temperature in a relatively comfortable range; it should not be too cold or too warm.

3.2. Attentional Displacement and Cognitive Relief

The second is attentional displacement; that is, soft-to-stimulate factors in the indoor environment can draw one's attention away from ruminating or stressful thoughts [1, 6]. Rumination is a repeated focus on one's problems that causes negative emotions and is related to anxiety and depression. When the interior is soft and pleasant, such as dappled light, moving plants, layered textures or gentle art, there is no need to pay much attention because it is not repetitive.

It is related to, but not the same as, attention restoration theory. Restoration refers to the recovery of depleted directed attention, and attentional displacement relates to moment-to-moment regulation of emotional states via environmental cues. Soft fascination and visual coherence are often used together in practice to offer the mind an alternative source of attention and, at the same time, provide a resting place for directed attention. The design of gradually changing focal points can be created in the areas for waiting, resting and informal gatherings [6].

3.3. Place Bonding and Felt Safety

A third way is that a sense of safety can also be felt in a well-organized and meaningful place. When people are in a place that is familiar and controllable, and in line with their values or sense of self, they are more likely to feel safe [3, 6]. Safety is not absence of risk; rather, it can be a sense of security achieved when we feel safe and feel happy by belonging to a group or society. Therefore, the interior space should be warm and respectful to bring about emotional healing for the people living there.

Bonding develops gradually as a result of repeatedly positive experiences in a certain place. Therefore, the direction of interior construction should be considered: Features that allow for personalisation, change gradually with light and shadow, and can be used in many ways without adhering to a single style of life will be more conducive to creating a sense of safety and belonging. At the same time, if the environment is too rigid and lacks symbolism, people will be unable to develop a strong sense of belonging.

3.4. Sensory Coherence and Environmental Legibility

A fourth is sensory coherence; that is to say, how well the different sensory channels in an interior, such as sight, sound, touch, temperature, smell, etc., communicate with each other and present a unified or discordant image [2, 5]. A lack of sensory consistency; in a brightly lit, harsh-light environment, the soft furnishings and a high-noise situation may cause perceptual dissonance and thereby increase a person's level of stress. At the same time, the interior will use all five senses to make it feel warmer, softer and more pleasant, and thus more harmonious and relaxing.

Neurophysiological Research Supports the Necessity of Sensory Coherence. Research on colour and built environment emotions has shown that the uniformity and intensity of the colour in the surroundings affect both people's eyes and the autonomic nervous system, such as changes in skin conductance and breathing rate [2]. Therefore, emotional recovery is not the result of a single type of sensory input but rather the whole of coordinated experience formed by many different kinds of stimuli, so careful design of all interior systems is required.

4. A speculative Framework for Emotionally Restorative Interior Construction

4.1. From Mechanisms to Principles

The four mechanisms mentioned above are physiological down-regulation, attentional displacement, place bonding and sensory coherence; thus, these design principles for interior construction aimed at emotional recovery can be applied. These ideas are, in a sense, speculative because they extend the available evidence into the area of deliberate design intent and use environmental psychology to propose how interior spaces can be actively constructed as emotionally restorative environments rather than functionally neutral carriers.

First of all, the foundation is the conditions of sound and heat. First, there should be no stress in life from the internal environment. Therefore, the preconditions for emotional recovery are to reduce noise, temperature and air pollution. The second is a relatively low-complexity visual arrangement. The inside should have some different levels of stimulation that are not too eye-catching. Natural elements, dynamic light and well-distributed points of interest serve this purpose [4, 6].

4.2. Place Compatibility and User Participation

The third is suitability of place: The space should be in harmony with the users' life and culture. Thus, the design of the spatial and material conditions of life is based on a participatory model that involves the people living in the building. When users believe that a certain place has been arranged according to their demands, they will be more inclined to form a sense of place and feel safe. A space with a foreign or institutional style may be technically sound but lack emotional appeal [3, 6].

The fourth is change in time and experience. Emotionally Restorative Environments are not immutable. They change with the time of day, season and use. This difference should be designed on purpose: Lighting that transitions from energetic to calming, spaces that can be rearranged according to the mood one wishes to feel at that time, and material selection that can age well and build a sense of history together. The time dimension of the evidence-based Design is often ignored, and only a single space is considered.

4.3. Limitations and Future Directions

The following are the serious deficiencies in this speculative framework. Most of the empirical evidence for environment-emotion interaction comes from controlled or laboratory conditions, and it is not known whether these results will hold true in complex, real-life interiors [2, 5]. Individuals have various differences in sensory sensitivity, culture, past experiences and mental health; therefore, a single interior design will not be conducive to relaxation for all people. Moreover, there is a scarcity of studies on the prolonged impact of emotional disturbances in residential areas.

In the future, research will focus on long-term studies in real-life interior environments, develop validated indicators of emotional recovery that are not limited to brief changes in mood, and explore the influence of various factors in life, such as age, gender, and health conditions, on this recovery [5-7]. Participatory evaluation methods for the people who have been intervened with can also reduce the difference between controlled experiments and real-life application by evaluating their emotional effects.

5. Design Implications for Practice

The new speculative system will also have some applications. Emotionally restorative spaces in the design of healthcare can be created by combining acoustic buffering, biophilic elements, access to natural light and areas for both solitude and social interaction [4-7]. Patient rooms, waiting areas and staff break rooms all have different emotional requirements, so their design can be different. First, identify the primary emotional stresses in an area, and then based on this information, develop a corresponding non-generic design response.

The emphasis in the interior of work and school may be more on attention diversion and sensory organisation. Acoustic zones, visual diversity and biophilic elements can be added at all levels of space to create more emotionally restorative open-plan environments. The provision of quiet retreats, adjustable lighting and personalised areas can help people relax during their working days without extensive renovations of the building [6, 7].

Domestic Interiors are generally concerned with people's sense of home, security and self-expression. According to research by environmental psychology, people's homes that are in line with their own ideas of who they are are generally felt to be more emotionally supportive. Therefore, designers of domestic environments have two problems: how to create technically convenient places for life and how to respect the emotional and cultural meanings that people attach to these places. In all circumstances, the best way to address emotional recovery is likely to be a design feature that is treated as a main goal from the very beginning of the brief, not merely an added element.

6. Conclusion

Theoretically support the research on how environment modification can affect the emotions of people living in a certain space. Through the investigation of mechanisms such as physiological downregulation, attentional displacement, place attachment, and sensory coherence, it can be agreed that general declarations of well-being are lacking empirical support, and design measures specifically targeting these processes need to be established for emotionally restoring environments.

The speculative framework in this paper proposes that emotional recovery is not created by any single design feature but arises from the integrated effects of space, senses and society. Interior construction, when considering environmental psychology, can serve as a way to promote mental health and improve the quality of life; thus, both the physical environment and the emotional needs of a space need to be taken into account by designers.

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