

Form, Atmosphere, Rhythm : A Qualitative Semiotic Study into Spiritual and Affective Experiences of Non-Figurative Light-and-Shadow Installations

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Abstract

This study examines how non-figurative light-and-shadow installations elicit spiritual perception and affective responses through the coordinated interaction of *form*, *atmosphere*, and *tempo*. Employing a qualitative approach that integrates visual analysis with semiotic interpretation, the research systematically interprets representative cases by drawing on high-quality images, curatorial texts, and critical reviews. Findings indicate that, even without religious iconography or architectural semantics, coherent and well-structured configurations of geometric order, material surface, illuminance contrast, color temperature, and temporal rhythm can reliably elicit experiences characterized by calmness, contemplation, and a sense of sacredness. Building on these ideas, the paper suggests that a three-part structure functions similarly to the “semiotic triangle”: visible shapes are signs (form), the perceptible spatial climate is the referent (atmosphere), and temporal modulation is the interpretant (tempo), which helps people make sense of their experience and evoke feelings. This structure directly links controllable design parameters to anticipated experiential outcomes, providing an operational basis for prototyping and evaluation. In general, the study comprehensively clarifies the mechanism by which non-figurative light and shadow installations produce spiritual and emotional experiences, while also providing practical guidance for art creation and exhibition practice.

Keywords: Light-and-Shadow Installations, Spiritual Perception, Emotion, Visual Language, Semiotics

Introduction

In recent years, light and shadow have increasingly become the core media of contemporary installation art. More artists like to build works centered on light. Beyond simple visual aesthetics, design an immersion experience that can arouse the audience's emotional resonance. In this light and shadow space, the audience is no longer a passive spectator but a spectator of light and shadow interaction. They can feel the changes in light and shadow, as well as the positive effects of light and shadow.



Figure 1 Heli

Source: Wood (2020)

This experience and sense-oriented artistic creation reflect a core problem of contemporary Art: how to awaken emotional resonance and spiritual consciousness in the materialistic era? Since ancient times, light has been closely related to religious symbolism and philosophical meditation and is the carrier of non-verbal meaning. Without depending on the concrete image, light can indicate purity, sanctity, or inner clarity. On the contrary, shadow increases the complexity of the work through the connection with mystery, meditation, or absence. It is precisely this symbolic language, articulated through the subtle interaction of light and shadow, that can profound emotional responses in the viewer.

Despite the growing attractiveness of light and shadow spaces with the development of artistic media, academic research has often prioritized technical aspects or built environments, paying relatively little attention to audience responses on an emotional and spiritual level. Therefore, this study aims to explore how contemporary light and shadow devices operate as symbolic and emotional spaces. It focuses specifically on: (1) the compositional elements of the work, such as light, shadow, material, and spatial rhythm; and (2) how these elements influence spiritual perception and emotional arousal in audiences.

In this paper, “non-figurative light-and-shadow installations” denote works that avoid religious iconography, narrative symbols, or representational figures, but instead employ geometric order, material texture, and rhythmic light organization to elicit spiritual and affective engagement.

To address this gap, this study employs a framework combining aesthetic principles and semiotic theory. It focuses on the theoretical shortcoming concerning how non-figurative visual forms convey symbolic meanings and emotional experiences. At the same time, we expect to provide aestheticians, curators, researchers, and related workers with some valuable insights to have discussions on the pure significance of light, and the spiritual view caused by energy.

Research Objectives

The primary objective of this paper is to prove how contemporary light-and-shadow installations, which employ non-figurative formal language, may arouse the spectator’s perception of spirituality and his emotional responses to it. Unlike former research that concerns itself mainly with

technical construction or light-and-shadow relations in religious architecture, this paper focuses on the psychological and perceptual subtleties of suffused, luminous environments. To achieve these general objectives, the specific objectives of the study are as follows:

1. To identify those critical visual and spatial components in non-figurative light-and-shadow installations which enable spiritual experience, such as geometrical order, light distribution, and spatial composition.

2. To examine the processes of response which unfold within viewers when exposed to light-and-shadow installations, with special attention paid, among other things, to the effects of color temperature, illuminance, material properties, and spatial placement on emotional states.

3. To elucidate the pathway of meaning construction, demonstrating how viewers pass from visual forms to psychological explanation and finally down to deep layers of emotional and cultural import.

Literature Review

Since antiquity, light and shadow have served as powerfully symbolic media in art, conveying not only visual contrast but also profound emotional and spiritual meaning. In modern installation art, their role has evolved from decorative effect to a central carrier of emotional experience, capable of instantly shifting a viewer's mood and prompting deep contemplation, allowing for an internal perception of the work (Bishop, 2005). This section reviews recent studies that examine how the composition, integration, and experiential nature of light and shadow art shape personal perception on emotional and symbolic levels.

1. The Symbolic and Spiritual Functions of Light and Shadow



Figure 2 Ibaraki Kasugaoka Church Light Cross

Source: Bergmann (2006)

Light has long been linked to divinity, transcendence, and revelation in both Eastern and Western traditions. About the shadow, it usually means mystery, melancholy and reflective (Chernyshov, 2008). The symbolic use of light often conveys spiritual purity and sacred presence, as evidenced by effects such as halos, centralized illumination, and radiating symmetrical compositions.

Immersive light and shadow environments are more capable of evoking spiritual functions. For example, in Tadao Ando's *Church of The Light*, the architect combines a minimalist space with cross-shaped beams of light (Figure 2), allowing the viewer to have a spiritual experience and inner contemplation that transcends the everyday under the guidance of light and shadow.

Orr (2008) conducted research on semiotic theory, notes that viewers often interpret non-figurative light forms, such as gradients, light spheres, or halos, as symbols of “inner balance,” “wholeness,” or “sacredness.” The *Semiotic Triangle* helps us understand how light and shadow go beyond what we see to include spiritual and cultural aspects. The cultural mechanisms that are built into the human brain are what make this process happen. The *Semiotic Triangle* is made up of three parts that work together: the visual (Sign), perceptual response (Interpretant) and symbolic or emotional meaning (Referent).

2. Light, Emotion, and Affective Atmosphere

“But also, with regard to their symbolic meaning, light and shadow influence, as a matter of pure sensation, our emotional condition.” Mostafavi et al. (2024) contend that the light of illuminance, color temperature, and dynamic modulation are particularly significant regarding audience response. Their experience of working with media art installations shows that clean, warm, soft light tends to make you feel relaxed or intimate. In contrast, high-energy, cool-toned, and high-contrast light is more likely to keep you alert and focused, tensed up.

These results are in line with aesthetic atmosphere theory, especially Böhme (2017) assertion that light is not just a physical condition, but a spatial atmosphere-generating property. Also, Tavani (2018) theorizes that the affective atmosphere of light-and-shadow installations is lived through the spectator's corporeal activity and spatial disposition. The audience is therefore not passive receivers but rather play an active role in a meaning-making process, co-constructing meaning in a cooperative relationship with the work.

This singular location serves to cite Brady (2003) belief that in immersive aesthetic environments it is the spatial, sensory, and perceptual properties, as opposed to representational content, which primarily determine aesthetic experience. Here, emotional meaning frequently emerges not in sweeping narrative or iconography, but rather through suggestively coded systems such as the dissipation of light, rhythmic distortion, and the reflective effects of materials.”

3. Light and shadow Installations and Contemporary Semiotics

In recent years, light-and-shadow installation art has gradually moved away from religious imagery, now using non-figurative compositions to direct spiritual contemplation through form itself. Common strategies include concentric structures, circular apertures, and gradient color schemes, which together generate atmospheres of “transcendence” and “sacredness” within non-figurative environments. These approaches are regarded as a visual language of the “post-image era,” in which an open-ended symbolic system strengthens meditative experience by blurring explicit narrative.

Ogden & Richards (1923) stressed in their theory of the semiotic triangle that meaning is always based on cultural context, even though these symbols don't have any inherent figurative meaning. Even in installations without any figurative shapes, people's cultural backgrounds can influence how they perceive light and shadow shapes as mental or emotional references. And people's different cultural backgrounds may bring about different feelings. This shows how closely visual forms, cultural backgrounds and perceptual experiences are linked.

4. A Comparative Analysis of Semiotics and Atmospheric Approaches

A comparative analysis reveals both tension and complementarity between semiotic and atmospheric theories. Semiotics (Ogden & Richards, 1923) offers a structured view of light as a sign but may overemphasize cultural coding, while atmosphere theory (Böhme, 2017; Tavani, 2018) captures embodied experience but lacks structured interpretation. Bridging this gap is essential: the “sacredness” perceived in non-figurative installations emerges from atmosphere yet is interpreted through cultural frameworks. This synthesis frames audience experience as an active process intersecting embodied effect and cultural meaning, directly informing our research question.

5. Research Gaps

Although existing research has provided an important foundation for understanding the perceptual of light and shadow art. But most studies still focus on religious architecture. This has led many people to attribute the feelings brought about by light and shadow to religious graphics, or architectural spaces. For non-traditional, temporary, or gallery-based non-figurative environments, particularly those lacking figurative imagery or explicit narrative, there is still little systematic exploration of how such works evoke emotional and spiritual experiences. In response, this paper will integrate semiotics, aesthetic atmosphere theory, and affective psychology to reveal how non-figurative configurations trigger sentiment and spiritual perception among their audiences. It will furthermore propose an interdisciplinary explanatory framework aimed at filling this gap in current scholarship.

Research Framework

This study analyzes chosen representative examples of contemporary light-and-shadow installations, wherein sensory perception and emotional response serve as the primary media. To explore how pure formal configurations affect spiritual and emotional experiences, works with figurative imagery or explicit narratives are intentionally excluded. The chosen cases highlight the outstanding works of James Turrell, Olafur Eliasson, Anila Quayyum Agha, and TeamLab. It’s a common sentiment that these pieces possess aesthetic qualities that can provoke thought, instill calmness, or inspire awe. Photographs from the exhibition, curatorial insights, and critical examination (Lee, 2022) are employed as primary sources for analysis.

This research develops a “Form – Atmosphere - Tempo” model by integrating semiotic theory, aesthetic atmosphere, and affective perception with literary analysis and systematic visual interpretation. Within this framework, Form includes the arrangement of the structure, the texture of the material, and the arrangement of light and shadow, all of which give clear visual cues. Atmosphere is the feeling conditions that come from the setting and physical nature of space. Tempo refers to the intensity, direction and dynamic organization of light, which determines the audience's perception rhythm in the time flow. Operationally, these dimensions are analyzed through specific variables: Form (Geometry, Materiality, Illuminance Contrast), Atmosphere (Spatial Scale, Color Temperature, Perceptual Quality), and Tempo (Light Sequences, Duration, Rhythmic Patterns). Through semiotic interpretation and visual analysis of the selected cases. This study reveals how these three dimensions jointly promote emotional response and mental participation. On this basis, the corresponding design strategies and theoretical contributions are put forward.

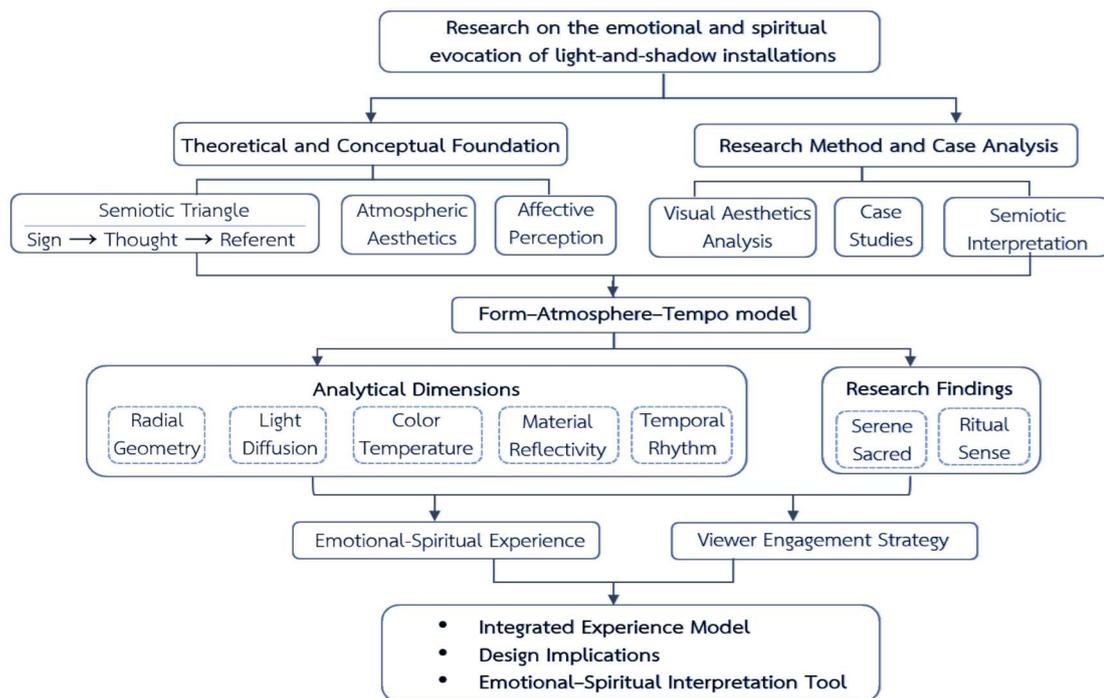


Figure 3 Research Framework

Research Methodology

This study examines several representative instances of modern light-and-shadow installations, wherein the principal medium is emotional response and sensory perception. This study employs a qualitative research methodology that integrates semiotic interpretation with visual analysis to examine how non-figurative forms in contemporary light-and-shadow installations elicit viewers' emotional and spiritual responses. Using literature-based analysis, the research focuses on representative cases to enable systematic visual interpretation. It includes curatorial texts, secondary interviews with artists, high-quality images, and critical reviews. To ensure analytical rigor and mitigate potential single-source bias, a triangulation approach is applied by cross-referencing these diverse secondary sources, which are prioritized from peer-reviewed publications and established critical reviews.

This analysis is based on Ogden & Richards (1923) “semiotic triangle” model and follows revision of the model for modern era by examining the connection between visual form and emotional cognition. It focuses on how installations are perceived (Sign), how viewers respond psychologically (Thought), and what spiritual concepts are suggested (Referent), including wholeness, sacredness, or states of contemplation. At the same time, Böhme (2017) theory of atmosphere is applied to investigate how light intensity, direction, diffusion, material, and spatial structure collectively generate immersive emotional experiences, thereby revealing how light and shadow in non-figurative installations function as channels of affect and symbolism beyond language. The integration of semiotic and atmospheric frameworks allows the qualitative evidence from the sources to systematically deepen the interpretation of the cases, demonstrating how non-figurative elements convey complex meanings.

Results

Research results indicate that: (1) Form elements of light and shadow establish the foundation for spiritual and meditative experiences. (2) The interaction between Atmosphere and Tempo collectively stimulates and modulates viewer’s emotional experiences. (3) The Form - Atmosphere -Tempo mechanism guides the transition from visual perception to psychological interpretation, ultimately reaching deeper emotional and cultural dimensions.

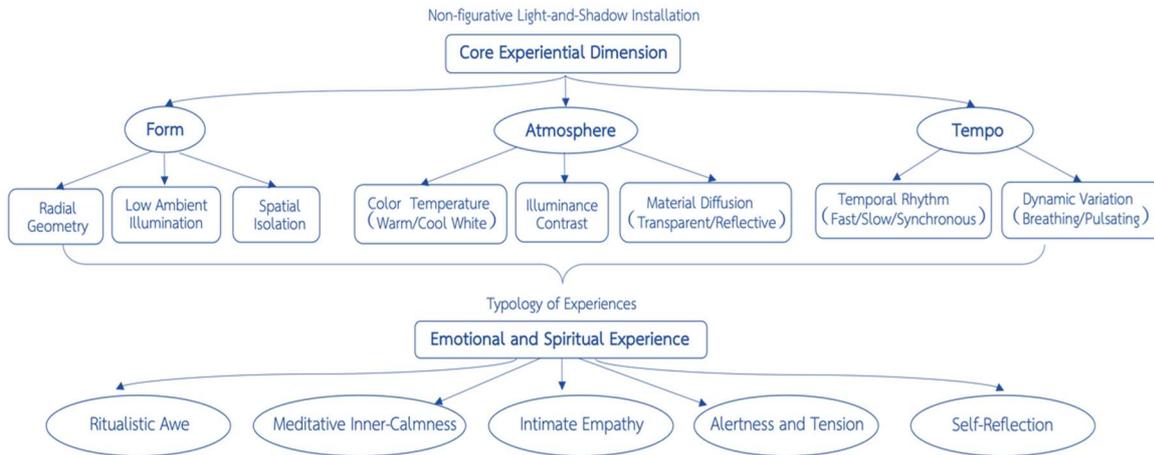


Figure 4 Operational Framework of The Form - Atmosphere - Tempo Mechanism for Audience Experience Generation

1. Constructing Spirituality and a Meditative Atmospheres



Figure 5 Aten Reign
Source: Turrell (2013)

Despite the diversity of things everywhere, there remains a constant visual-symbolic technique common to them all. From Figure 5, in James Turrell's *Aten Reign* (Turrell, 2013), concentric light bands gradually fade outward from the central region, creating a ritual-like transition into illumination that draws the viewer’s gaze to the focal point. Many viewers describe the experience

of *Aten Reign* as akin to entering a “temple of light,” where the boundaries between space and body seem to dissolve. In teamLab's *Sphere* (teamLab, 2020), polyhedral light sources composed of luminous planes hover in space (Figure 6). Their overlapping and fading surfaces continuously change the volumetric perception of the environment to create a dynamic “architecture of light.” Some viewers felt that this was not a visual experiment, but a spiritual experiment. And during the visit, all sense of time is lost, making people completely immersed in it.

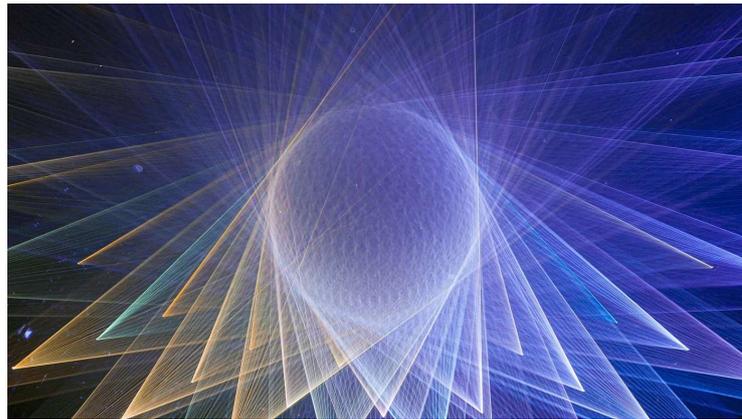


Figure 6 Sphere

Source: teamLab (2020)

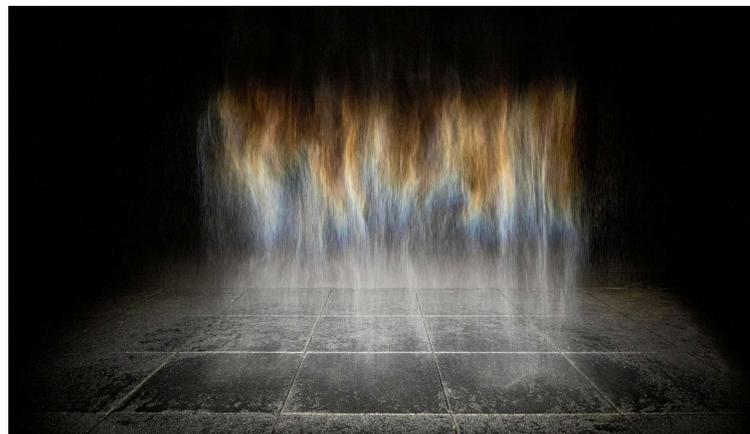


Figure 7 Beauty

Source: Eliasson (1993)

From Figure 7, Olafur Eliasson's *Beauty* (Eliasson, 1993) uses a similar method. The installation uses a fine mist and an adjustable spotlight to make multicolored bands by bending light through water droplets. People can only fully enjoy the bright field by moving around it. There were no clear religious symbols in this setting, but people often called it “ritual” or “a sacred space.” As one commentator said, “You do not just look at light; you are inside it as if in a sacred chamber.” This phenomenon demonstrates that even in the absence of figurative narrative, one-figurative forms

themselves can activate culturally embedded associations of the “sacred” (Böhme, 2017). The study found that radial Geometry, low Ambient Illumination, and spatial Isolation are particularly important for creating a spiritual and meditative atmosphere. Psychological theories of “contemplative space” align well with these experiences (Lee, 2022).

2. Regulation of Emotional Experiences Through Color and Rhythm

The findings indicate that the color temperature of light substantially influences mood tone. Warm white light (about 2700 - 3000K) is usually bright white or yellowish in tone. This usually makes people feel close and comfortable. Cool white light (above 5000K) usually has a light blue tint that makes people feel more awake and focused (Prasetyo et al., 2025), but it also makes them feel a little detached. At the Tate Modern Art Museum, Olafur Eliasson’s *The Weather Project* (Eliasson, 2003) often makes people feel like “time is ticking” and “they are surrounded by light.” These experiences are frequently linked to introspection and a feeling of mental calmness. And using the right colors of light can make that feeling even stronger.

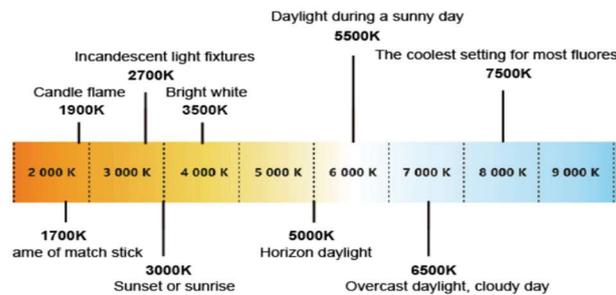


Figure 8 Color Temperature

Source: Health & Life (2525)

The light’s temporal rhythm is another important part. People often compare slow changes in brightness (about 20 to 30 seconds per cycle) to “breathing,” and they help people relax and think about themselves. Faster pulsing rhythm (about 2 - 5 seconds per cycle) can quickly grab attention and give a short thrill, but they are not as good as a “heartbeat.” In Rafael Lozano-Hemmer’s Pulse Room, sensors turn the heartbeats of people who are watching into light pulses. Many people said they felt like they were in sync with their own physiological rhythms (Lozano-Hemmer, n.d.).

These kinds of examples show that color temperature and rhythm can go from soft to violent, which has a big effect on how people feel. Any combination or bright setting should work because it gives designers a lot of ways to shape emotional experiences, from cozy and private to anxious and alert.

3. The Efficacy of Highly Transparent Materials

In the case study, material selection is found to be crucial for the emotional impact of shadow walls. Nearly all representative works employ highly transparent or reflective materials to strengthen the visual extension of light and to heighten the immersive qualities of the environment (see Table 1).

Table 1 Key Parameters of Representative Light-and-Shadow Installations

Artist / Work	Color Temperature (K)	Ambient Illuminance (Lux)	Lighting Rhythm (Cycle/sec)	Material Used
James Turrell/ Aten Reign	3000 - 6000	80 - 150	Static	/
Olafur Eliasson/ Your Uncertain Shadow	2800 - 3200	100 - 200	Slow Pulse	Glass, Aluminum
Anila Quayyum Agha/ Intersections	2700	60 - 100	Static	Laser-cut lacquered steel
TeamLab/ Forest of Resonating Lamps	3200	90 - 180	Dynamic Pulse	Murano glass
Random International/ Rain Room	6000	150 - 250	Reactive/ Variable	Water, Lighting Grid

Sources: Lee (2022); Turrell (2013); Eliasson (2010); Anila Quayyum Agha (2013); teamLab (2016); Random International (2012)

For example, in TeamLab’s *Forest of Resonating Lamps*, cylindrical acrylic elements employ high transparency to refract and diffuse light, creating a continuous “field of diffusion” that effectively blurs the boundary between objects and space (Rose, 2016). Similarly, polycarbonate maintains transparency while introducing slight diffusion, rendering the light field softer; transparent resin encapsulates the light source and produces a warm glow, intensifying intimacy and affective resonance for viewers; and frosted glass or frosted acrylic provide uniform scattering that generates a mist-like ambiance, thereby guiding experiences of meditation and spiritual stillness (Table 2).

These results indicate that, in addition to their role in how light and shadow are physically represented, material factors also have a direct effect on how an emotional atmosphere is created. Materials that are very clear or see-through create contemplative and immersive spaces by using diffuse, refractive, and halo effects. When used with reflective materials, they make spatial interactivity better by adding the viewer’s physical perception.

Table 2 Common Light-Transmitting Materials and Their Optical Characteristics

Material	Transparency Level	Optical Characteristics
Glass	Very High	Clear light transmission, stable refraction
Acrylic (PMMA)	High	High clarity, strong edge light conduction
Polycarbonate (PC)	High	Stable transmission, slight diffusion
Transparent Resin	Medium-High	Encapsulates light, warm glow
Transparent Silicone	Medium	Flexible translucence, localized soft focus
Frosted Acrylic/ Frosted Glass	Semi-transparent	Soft light diffusion, misty ambiance
Transparent PET Film	Low-Medium	Thin, slightly reflective, smooth transmission

At the same time, reflective materials also play a significant role in several cases. Polished glass, mirrored acrylic, or metallic films can, at certain angles, produce instantaneous highlights and fragmented reflections that incorporate the viewer’s own silhouette into the visual field of the work. This “flash effect” not only emphasizes physical presence but also compels viewers to alternate between the states of seeing and being seen, encouraging a reconsideration of the relationship between space and self. Highly translucent materials have high light transmission and create immersive properties of light. Reflective materials, on the other hand, reflect light as well as the viewer, so it emphasizes interaction and self-awareness. When the viewer’s image is refracted or shattered in the art installation, the space transforms from a unidirectional sensory environment into a medium of reflexive experience that involves the viewer’s journey (see Table 3).

Table 3 Common Reflective Materials and Their Optical Characteristics

Material	Transparency Level	Optical Characteristics
Glass Mirror	Very High	Sharp imaging, directional precision
Polished Stainless Steel	High	Multi-directional reflection, strong feedback
Mirror Acrylic	High	Clear but slightly distorted reflections
Polished Aluminum	Medium-High	Uniform cold-tone reflection
Metal Film (Aluminum Foil)	Medium-High	Localized bright reflection, slight scattering
Pearlescent/Metallic Paint	Medium	Soft particle-based diffused reflection

4. An Integrated Form, Atmosphere, and Tempo Mechanism

The results indicate that form, atmosphere, and tempo are the three primary elements affecting the audience's experiential response. Be careful arranging and crafting light and shadow installations, designers can create spaces that fit with your design goals and make people feel a range of emotions, from ritualistic awe to sympathetic immersion.

To clarify their internal mechanism, this study proposes situating key design variables within a tri-axial space isomorphic with the semiotic triangle. In this framework, tempo is the interpretant. It is shown in the way light is organized over time, including cycles, transitions, and synchronicity. It helps people change their emotions and make sense of things. The atmosphere’s sensory context of meaning is shaped by elements like color temperature, brightness, diffusion, and reflection. Also, form gives us readable visual cues like the texture of the material, the way the shapes are arranged, and the way light and shadow work together.

Interestingly, it is empirically noted that stable immersive effects are typically achieved on moderate to high balanced mixed-impedance layouts. In short, this model not only provides a systematic bidirectional mapping between the design parameters and the semiotic roles but also an operational model for prototyping, for experience prediction, and for performing a reproducible evaluation. This integrative process of thought reveals a specific way how non-figurative light-and-shadow installations, with their interrelations of form, atmosphere, and tempo, build up aesthetic experiences in which spiritual power and emotional depth are merged.

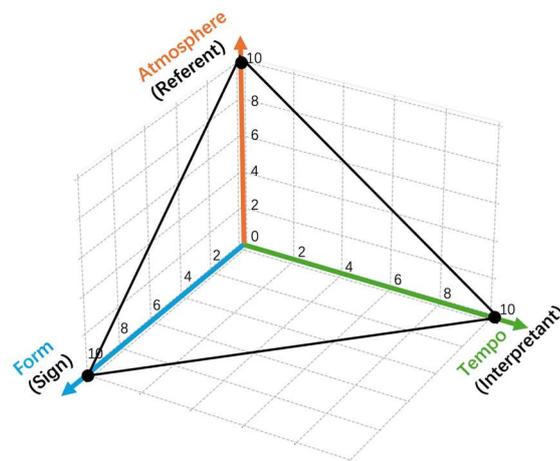


Figure 9 A Semiotic Triaxial Model of Form, Atmosphere, and Tempo in Light & Shadow Installations
Source: Zhong et al. (2025)

Conclusion and Discussion

1. Conclusion

This study proves that installation art based on light and shadow not only has visual beauty, but it is also a medium conveying spiritual meaning and affective resonance independently. A precise combination of geometrical composition, choice of materials, and rhythm of the dynamic in a sort of sacred and all-encompassing space, which means the poetic sentiment, the intensity of ritual, and personal nuance.

In this article, the proposed integrative model serves not only as an explanatory lens for academic study but also as practical guidance for design work. Overall, light art grows beyond the purely aesthetic level to the level of the generally valid cultural design strategy which corresponds with the inner perception of the audience.

2. Discussion

This study expands the understanding of immersive light-and-shadow art and achieves a new level of theoretical integration and refinement. Previous studies have generally emphasized how crucial architectural context and lighting are to establishing reflective environments (Lee, 2022), as well as how color temperature and rhythm greatly influence audience emotions. The present study demonstrates, however, that even in fully non-figurative compositions devoid of religious or architectural semantics, the coordinated organization of form, material, and temporal rhythm can effectively evoke spiritual experiences of “sacredness” and “stillness.” This finding resonates with Böhme (2017) theoretical claim that atmospheres possess a symbolic structure, while also addressing current gaps in the study of non-figurative perceptual mechanisms.

In terms of theoretical contribution, this study advances a three-dimensional model of form, atmosphere, and tempo to explain how affective experience is generated in non-figurative light-and-shadow installations by fusing semiotic structures with affective psychological pathways for the first time. The study demonstrates that symbolic geometric configuration, including halos and concentric circles, when integrated with materials and temporal rhythms, can evoke complex emotional trajectories that span from tranquility to resonance. This model gives designers a clear way

to intervene by finding a balance between being able to explain things and being useful in real life. This is different from earlier models that tried to separate form and affect. By carefully adjusting things like symmetrical, color temperature, brightness contrasts, and rhythmic cycles, one can make installations more immersive and spiritually powerful.

This research is founded on exhibition texts, artist interviews, and audience feedback. Despite their wide reach, these sources are still a little subjective. In the future, if the addition of physiological data like heart rate variability and galvanic skin response to the studies would strengthen the empirical validity.

Recommendations

1. Research and Expansion

The “Form - Atmosphere - Tempo” model gives us a new way to think about the spiritual and emotional meaning of light and shadow installations that don’t have any figurative graphics. It is advised that practitioners amalgamate insights from design theory, psychology, and curatorial studies. Exhibitions can use techniques like spatial narrative design, audience flow management, and rhythmic display arrangement to make the model work. These techniques make the audience feel more involved and give them deeper experience. This kind of cross disciplinary collaboration can lead to a systematic and useful framework for guiding light and shadow art practices.

2. Future Research

Empirical testing of the model could be conducted in further research by measuring audience physiological states and tracking behavioral data while viewers are emotionally engaged watching light and shadow installations.

Cross-cultural comparisons could test the validity and generalizability of the current study, and the same principles could be adopted in other settings, including public art installations, therapeutic spaces, and digitally immersive art, to broaden the conceptual and practical horizons of light and shadow art.

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