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Examining the Compatibility of Ramachandran's Neuroaesthetic Rules with the Rules Governing Elements, Identifiers, and Design Principles of Iranian Architecture

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ABSTRACT

This study examines the views of V.S. Ramachandran, a leading figure in the field of neuroaesthetics, to investigate the relationship between nine neuroaesthetic principles and the design concepts of Iranian-Islamic architecture. Drawing on a review of relevant literature, Ramachandran's well-established theoretical framework is employed as the basis for analysis. The study outlines the connections between his neuroaesthetic principles and the core design features of Iranian-Islamic architecture, which are presented in a comparative table.

Key words: Compatibility, Ramachandran's Nine Neuroaesthetic Laws, Iranian-Islamic Architectural Design Rules

INTRODUCTION

The visual and aesthetic dimension is widely recognized as a vital component of urban environmental quality, encompassing both natural and built environments (Sadeghi et al., 2014). A historical review of urban design across various periods indicates that formal and physical attributes have consistently served not only as central pillars of urban space design but also, arguably, as its most influential aspect. Among these attributes, the physical configuration of streets and urban squares plays a critical role in defining the aesthetic character of the urban landscape (Pourjafar et al., 2018).

The aesthetic qualities of buildings play a vital role in shaping human experience. In the twentieth century, increased attention was given to the visual and sensory dimensions of the built environment. Modern building science, however, concentrated primarily on improving functional aspects such as fire safety, cost-efficiency, and space optimization. This focus reflected a broader philosophical shift in Western architecture that emerged roughly a century ago, when the concept of the building as a machine prompted architects to emphasize measurable and mechanical attributes over traditional aesthetic values, such as ornamentation and the representation of human form. The resulting minimalist approach, grounded in principles of reduction and clarity, gave rise to a new aesthetic ideal—one that sought to transcend mere functionality and redefine the architectural vision. Research has shown that the aesthetic characteristics of architecture can significantly impact mood, cognitive performance, behavior, and even mental health (Adams, 2014). This growing body of evidence reflects an increasing interest in the interdisciplinary field connecting neuroscience and architecture (Robinson & Pallasmaa, 2015). Architectural neuroscience, which investigates the neural

foundations of aesthetic experiences associated with beauty and art, provides a framework for examining how such experiences arise within the built environment (Qaragozlu, 2020).

Conversely, visual character arises from the interplay between the constructed environment and the aesthetic qualities of the natural landscape. The visual identity of the built environment is intrinsically connected to that of its natural context. In utilizing technology as a means of visual expression, it is crucial to remain within the bounds of harmony with creation. When technology oversteps these boundaries—manifesting in impersonal, towering gray façades—it results in what may be termed *visual violence*. This concept encompasses various phenomena, including the geometric rigidity of the International Style in elite architecture, the systematic rejection of ornamentation, excessive minimalism, detached objectivity, and the visually sterile modularity that often characterizes contemporary high-design architecture. Such approaches may ultimately promote a form of visual nihilism. Any architectural element that induces psychological discomfort or fails to meet visual and emotional needs—particularly through the use of uncontrolled, decontextualized, and identity-deficient technological tools—is understood as an act of visual violence. Given that neuroaesthetics fundamentally investigates aesthetic perception by examining how both sublime and contemporary visual elements influence neural responses, this study seeks to explore the extent to which Ramachandran's neuroaesthetic principles align with the aesthetic principles, visual identifiers, and design elements characteristic of Iranian-Islamic architecture.

Ramachandran's Viewpoint and Theory (A Knowledge-Based Approach to Art and Beauty in Cognitive Neuroscience)

1. **Brain Physiology Related to the Research Topic**

The human brain comprises approximately one hundred billion nerve cells, or neurons, which form complex networks capable of processing vast amounts of information. These neurons connect in patterned ways, creating circuits that underpin cognitive functions and physiological processes. Structurally, the brain is divided into two hemispheres, each covered by the cerebral cortex—the principal center of higher-order cognitive activity. Each hemisphere consists of four main lobes: the occipital, temporal, parietal, and frontal lobes. The occipital lobes, located at the back of the brain, are primarily responsible for visual processing and are subdivided into around 30 distinct areas, each specializing in specific visual tasks such as color, motion, and form recognition. The temporal lobes support higher perceptual functions, including the recognition of faces and objects, and work in tandem with the amygdala to associate sensory input with emotional responses. Additionally, the left angular gyrus plays a role in abstract calculation and various aspects of language processing, including word retrieval and the comprehension of metaphors (The Talkative Brain, pp. 50, 58).

Canonical Neurons

Canonical neurons are specialized brain cells that become active not only during the performance of a specific task but also when merely observing stimuli related to that task. These neurons are involved both in action execution and in the perception of corresponding visual or contextual cues. Their activity is closely associated with the human capacity for symbolic thought, myth-making, and imaginative visualization. Uniquely among species, humans possess the ability to create and manipulate symbolic visual representations within the "mind's eye," allowing for the construction of novel combinations and narrative forms. For instance, humans can conceptualize fantastical hybrid beings such as angels or centaurs—creatures with a human upper body and a horse's lower body. Such imaginative capabilities are thought to arise from the functional properties of canonical neurons (The Talkative Brain, pp. 95–96).

2.Review of the Visual Perception System

Vision does not occur in the eyes but in the brain. The human visual system includes approximately 30 distinct visual areas, encompassing both complex visual and visuomotor regions in which abstract and meaningful features of an object's form are encoded by canonical neurons.

Although visual perception appears as a unified and coherent image, it is in fact the product of distributed activity across these multiple cortical areas, each responsible for processing specific aspects of the visual input.To fully understand perception, it is essential to recognize that once light is transformed into neural signals at the retina, the brain no longer treats visual information as a literal image. Instead, it interprets these signals as symbolic representations of scenes and objects. The brain does not reconstruct a photographic replica of the external world; rather, it uses a kind of neural "alphabet" to encode the various attributes of visual stimuli—such as shape, color, and motion—into symbolic formats. While this symbolic encoding process begins in the retina, it is primarily in the brain that these signals are analyzed, integrated, and transformed across a network of visual areas, ultimately enabling object recognition and meaningful interpretation (The Talkative Brain, pp. 102–103).

In the context of vision, three key phenomena have been identified. First, perception cannot be equated directly with the retinal image, as the retinal input may remain constant while perception changes dramatically. Second, the reverse is also true—changes in the retinal image may occur without significantly altering perception. Third, perception itself appears to unfold over time, requiring a temporal interval to determine how it will ultimately adjust (The Talkative Brain, p. 103).

The amygdala functions as the brain's emotional center, transmitting signals to the hypothalamus, which regulates hormone secretion associated with a wide range of emotional responses. The amygdala is activated not only through the primary visual pathways but also via the third visual pathway, which is specifically implicated in emotional processing.

The fusiform gyrus plays a central role in face recognition. It is the initial site where visual information related to objects—including faces—is identified. Once processed in the fusiform gyrus, this information is relayed to the amygdala through the third visual pathway. In the amygdala, emotional significance is assigned to the recognized object, and appropriate emotional reactions are generated. Thus, after the brain recognizes an object, emotional impulses are initiated and corresponding affective responses are exhibited. When a viewer encounters an emotionally charged visual stimulus, the amygdala activates the hypothalamus to coordinate a physiological emotional response (The Talkative Brain, pp. 128, 129, 135).

Visual pleasure is inaccessible to individuals with Capgras syndrome. Studying this disorder provides valuable insight into the fundamental cognitive basis of aesthetics and helps us understand the neural foundations of our aesthetic experiences (The Talkative Brain, p. 138).

Table (2.1) The Nine Laws of Aesthetics and Art According to Ramachandran

Grouping	Peak shift	Contrast
Segregation (Separation)	Visual Echo (Reflection)	Aversion to Suspicious Conformity

Order	Symmetry	Metaphor

2.1) Color Grouping = Spectrum of a Specific Color

Grouping is formed to overcome camouflage or concealment and to recognize objects within cluttered scenes. It helps us detect a lion hidden behind tree leaves and mentally complete its full shape. Grouping also serves to coordinate and unify related visual elements, such as matching a red scarf with a red skirt. It is considered a fundamental principle underlying brain organization (ibid., p. 358).

Recognizing the pattern of the lion beneath the leaves illustrates the law of grouping. Once features are grouped into a complete object (in this case, the lion), the corresponding neural spikes become fully synchronized. This precise timing and coordination of spikes signal higher brain centers that these components belong to a single entity—the lion. These synchronized spikes allow coding that produces a coherent output sent to the brain's emotional core. The result is the recognition that all these parts form one object, triggering a neural impulse that excites you, causing your eyes to widen and your head to lean forward in attention, identification, and subsequent action. This effect is what artists and designers harness when applying simple grouping techniques.

The brain's initial use of the grouping law serves human survival and biological functions. When the brain completes shape recognition through grouping, the brain's reward system provides a pleasurable response. This pleasure reflects the fundamental role of problem-solving processes essential for human survival (ibid., pp. 356, 361, 362).

Four Gestalt Principles Used in the Grouping Law by the Brain:

1. **Principle of Good Continuation (Good Continuity)**: Perceptual grouping, known as good continuation, states that graphic elements showing continuous visual boundaries are grouped together. The mind enjoys grouping and experiences a pleasant feeling of completion and shape clarification. The neural pathway mediating the grouping law is the "how" pathway.
2. **Principle of Proximity**: According to the second principle of the grouping law, forms are created by connecting boundary lines of geometric and non-geometric patches and shapes.
3. **Principle of Closure**
4. **Principle of Similarity**

The brain applies various principles and laws—such as the laws of grouping, contrast, and symmetry—to distinguish objects from their environment, including all rules related to the grouping law (ibid., p. 359).

2.2) The Law of Peak Shift

The peak shift effect describes how the brain responds to exaggerated stimuli, which, when taken to extremes, results in caricature. This law operates through effective neural training and stimulation. In the study "Introduction to Ramachandran's Nine Neuroaesthetic Laws and Their Derived Rules," this concept is explored in detail.

For example, when an artist recognizes the differences between men and women and identifies femininity as a defining characteristic, they may depict women with exaggerated features—extremely slender yet sensual

figures, with emphasized breasts, hips, and a narrow hourglass waist—illustrating the peak shift effect. This effect embodies an idealized femininity, which, if overly exaggerated, becomes caricature (ibid., p. 365).

In essence, peak shift involves exaggeration of stimulus features processed by the nervous system. The visual system has evolved to rapidly and efficiently identify objects with minimal cognitive effort—whether to recognize, avoid, consume, capture, or mate with them—often taking shortcuts to reduce cognitive load (ibid., p. 368).

Through the law of peak shift, the brain forms an average facial pattern after seeing many faces. This average is created by measuring distances between facial features and updating the pattern by subtracting unique features of each new face, highlighting distinct individual traits. Facial differentiation thus depends on these unique features. If these features are exaggerated, the resulting image resembles a caricature. This explains why Iranians may have difficulty distinguishing Chinese faces: due to limited exposure, they lack a stored average facial pattern for Chinese faces, making differentiation challenging (ibid., p. 373).

The essence of abstract art lies in creating a human-made visual supernormal stimulus (the artwork) that strongly activates specific visual neurons in the brain compared to real images—this is the peak shift effect in art.

2.3) Contrast

The reason why high color contrast in a beautiful artwork attracts greater attention can be traced back to our evolutionary origins. For example, trees and their backgrounds are predominantly green, which makes their red fruits stand out prominently to attract humans, animals, and birds.

The practical difference between contrast and grouping lies in their application: a fashion designer uses highly contrasting colors to emphasize the edges and make them more prominent, while for distant areas, similar colors are used to create grouping.

The key factor that distinguishes an object from its background is strong contrast—the greater the contrast, the more visual cells in the human brain are activated.

2.4) Segregation or Separation (Color, Line)

Art involves creating images that intensify activation in the visual areas of the brain and evoke emotions related to these visuals. However, many artists will tell you that a simple design—such as Picasso's doves or Rodin's nude sketches—can be far more effective than a full-color photograph of the same subject. This is because the artist emphasizes a single informational source, such as color, form, or movement, while deliberately omitting or downplaying others. This phenomenon is described as the law of segregation (ibid., p. 387).

A simple sketch works well because neurons in the primary visual cortex—the brain's first stage of visual processing—respond primarily to lines. These neurons react to boundaries and edges but are less sensitive to areas without such features. Circuits in this area predict that an outline alone should suffice, acting like an effective silhouette or a black-and-white reproduction (ibid., p. 388).

A simple sketch is also more effective due to the brain's limited attentional capacity—you can only focus on one aspect of an image at a time. Although the brain contains around 100 billion neurons, only a small subset can be active simultaneously. Stable perception of one image typically suppresses the perception of others, as overlapping neural activity patterns compete for limited attentional resources. Thus, when viewing a full-color image, your attention can be overwhelmed by textures and details. In contrast, a sketch allows you to

focus solely on the basic outline—the initial linear representation where the core visual action occurs (ibid., p. 389).

If an artist wishes to evoke the peak shift effect through supernormal stimuli in color—focusing on color rather than lines—it is beneficial to reduce or omit outlines. This decreases competing stimuli for attention, allowing the brain to concentrate on color space. This approach is characteristic of Impressionism, as seen in the works of Van Gogh and Monet, where space is defined by color rather than line. Great artists intuitively apply the law of segregation, a concept supported by neuroscience (ibid., p. 389).

2.5) Perceptual Problem Solving

Art involves the hyperactivation of visual and emotional areas in the brain. Consequently, a fully exposed woman or man is often perceived as less sexually attractive compared to more mysterious and enigmatic images. This preference for concealment stems from our inherent desire to solve puzzles—perception operates more like puzzle-solving than the straightforward process most people assume. The pursuit of solving a particular problem—whether mental (such as crossword puzzles or logic riddles) or visual—is inherently pleasurable and rewarding.

When observing a simple visual scene, your brain continuously works to resolve ambiguities, test hypotheses, search for patterns, and compare current objects with memories and expectations. Visual processing in the brain is hierarchical but does not strictly follow bottom-up or top-down pathways. Contrary to common belief, the boundaries between perception, illusion, and imagination in visual processing are not sharply defined (ibid., pp. 398–400).

2.6) Definition of Perception from a Neuroaesthetic Perspective:

Perception is essentially the selection of an illusion that best fits the incoming data, which is often incomplete and fleeting. Real perception emerges from the coordinated action of a consistent set of processes. A key distinction is that the stability of external objects and events helps reinforce their perceived presence. Building on this model, I propose that each time a partial match is found, a small “aha” moment and sense of surprise are triggered in the brain. This “aha” signal is transmitted to the limbic reward structures, which then seek larger and more significant “aha” moments until the entire scene or object is fully recognized.

From this perspective, the purpose of art is to create images that generate as many mutually compatible small or large “aha” moments as possible, thereby stimulating the visual areas of the brain. In this way, art can be seen as a form of visual love play culminating in object recognition. The law of perceptual problem solving gains deeper meaning here—perhaps it has evolved to make the search for visual solutions inherently pleasurable rather than exhausting, which explains our persistence. This also accounts for the allure of a nude figure partially concealed by sheer clothing or the enigmatic appeal of smoky blue water lilies. The parallel between aesthetic novelty and the “aha” and surprise signals generated by problem solving is striking (ibid., p. 400).

2.7) Aversion to Suspicious or Specific Fit, Preference for General Fit

Consider an image where, between two conjoined mountains forming a V shape, a palm tree grows exactly at the central junction. The brain finds this precise and suspicious fit unsettling. This is because a path running between two mountains is more readily accepted—it is logical, common, and frequently observed—whereas a tree positioned exactly at the central junction is illogical, as the brain rarely encounters or models such a specific angle.

As a result, the brain rejects this unnatural fit. However, if the tree shifts slightly toward one side of the

mountains—an angle more commonly seen and experienced—the brain accepts the image (ibid., p. 405).

FIGURE 8.2 Two hills with a tree in the middle. (a) The brain dislikes unique vantage points and (b) prefers generic ones.

Figure 3: The Talkative Brain, p. 405

2.8) Order

Our brain has an inherent need for order and predictability. The more predictable a visual scene is, the more attractive it becomes to the brain because it is easier to process. This principle is closely tied to our appreciation for visual repetition and rhythm. For example, when you observe floral patterns in Indian art or Iranian carpets, both display a high level of predictability at an abstract level.

This need for order reflects a deeper requirement of the visual system for efficiency in processing. Artists carefully balance the use of floral motifs in Indian art or Iranian carpets to avoid extremes: too much order can be monotonous, while complete chaos abandons order altogether. This balance facilitates easier processing, which the brain finds more pleasurable. Thus, the attraction to order—manifested as rhythm and repetition in artworks—arises from this fundamental aspect of our visual system (ibid., pp. 407–408).

2.9) Symmetry

By presenting undergraduate psychology students with random sequences of faces exhibiting varying degrees of symmetry, it was found that, generally, the most symmetrical faces are rated as the most attractive. This is unsurprising—no one expects the twisted face of the hunchback of Notre Dame in Victor Hugo's novel to be perceived as attractive. Interestingly, even minor deviations from symmetry are often intolerable. The surprising explanation for this relates to parasites. Parasitic infections can severely reduce fertility and reproductive success, so symmetry serves as a valuable indicator of health and mate quality. If infection occurs early in fetal or infant stages, one of the most apparent outward signs is a loss of minor symmetry. Therefore, symmetry functions as a marker of health, which in turn signals desirability. This biological reasoning explains why our visual system finds symmetry attractive and asymmetry disturbing or unpleasant (ibid., p. 409).

Due to this importance, parts of the occipital lobe in the human brain (the visual cortex) have evolved specifically to recognize symmetrical patterns. For this reason, even human infants respond to symmetrical inkblot patterns. The significance of symmetrical patterns for survival, combined with the pleasure elicited by viewing such patterns in the brain's reward system—particularly in the amygdala and orbitofrontal cortex, which are primary and ancient pathways for neuroaesthetic perception and pleasure—has also influenced the creation of art. From classical painting to sculpture and architecture, across eras and cultures, the universal attraction to symmetry is clearly evident.

2.10) Metaphor (polysemous, layered meanings, meaning within meaning)

Visual metaphor is likely understood by the right hemisphere of the brain well before the left hemisphere—which is more literal and logic-based—can articulate the reasons behind it. Often, there is a barrier to translation between the propositional, language-centered logic of the left hemisphere and the imaginative, intuitive thinking of the right hemisphere. Great art sometimes succeeds in bridging this gap (ibid., p. 412).

2.11) Visual Echo or Reflection

The slanting effect of italicized letters produces a humorous yet pleasant impression. This brings us to a distinct neuroaesthetic principle known as visual echo or reflection. In this phenomenon, the visual echo between the concept of the word "slant" and the actual slant in its letterforms blurs the boundary between concept and perception. Words like "fear," "dread," and "trembling" are often depicted with wavy lines, making it seem as though the words themselves are trembling—a highly effective effect. The wavy lines spatially mirror the trembling sensation associated with fear. Notably, your reaction time to recognize the word "fear" printed in wavy letters is significantly shorter than when it is printed in straight letters (ibid., p. 414).

2.12) Primary Layer of Brain Processing

Steve Kasselin and Farah used brain imaging techniques to demonstrate that creative visual imagination likely involves the medial ventral prefrontal cortex. This brain region has reciprocal connections with areas of the temporal lobes associated with visual memory. Initially, a crude pattern of the intended image is activated through these connections. Reciprocal interactions between this pattern and the evolving artwork—whether painted or sculpted—lead to gradual ornamentation and refinement, producing multiple small "aha" moments step by step, as discussed earlier.

When these self-reinforcing echoes between layers of visual processing reach a critical threshold, a final, significant "aha" moment is triggered, activating reward centers such as the septal nucleus and nucleus accumbens. The initial pattern—be it a raw archetype or sacred geometry—recognized at the earliest stage of visual processing, receives reward for its rapid primary identification (ibid., p. 422).

Since the raw pattern (archetype, sacred geometry, or primary design) activates neurons via reciprocal connections between the medial ventral prefrontal cortex and temporal lobe visual memory areas, initial recognition of frequent or learned patterns is both rapid and rewarding—supporting the concept of archetypes and sacred geometry.

Because the brain's visual memory regions are activated by archetypes, and the reading of these fundamental geometries happens quickly and leads to recognition and reward, the recognition of archetypes is inherently pleasurable for the brain.

2.13) Authentic Iranian Architecture

In Iran, several researchers have explored the topic of sacred architecture and urban planning. Among them, Noghrekar has approached the subject from various perspectives, including Islamic identity in architecture (Noghrekar & Raeisi, 2012) and semantics. He has also sought to reinterpret architecture based on Islamic texts, viewing sacred architecture not as a mere return to tradition but emphasizing the timeless and placeless nature of its principles (Noghrekar et al., 2018; Noghrekar, 2015). Other scholars have concentrated on jurisprudential principles, particularly regarding architecture and housing (Bemanian et al., 2013), while

some have critically examined the modernization of sacred architecture (Sadvandi & Mahvash, 2015).

2.14) Conclusion on Ramachandran's Neuroaesthetic Laws

Following Ramachandran's neuroaesthetic laws and the rules extracted from them, application in architectural design is explored through the examination of symbols, elements, and principles of authentic Iranian-Islamic architecture. These are presented in tables to facilitate matching and reinterpretation.

Table (2.2) Ramachandran's Neuroaesthetic Laws: *Source: Author*

Grouping	Peak Shift Supernormal Stimulus	Contrast
Segregation (Separation) Primary Layer of Visual Processing Brain's Attention Bottleneck Fundamental Minimalism	Visual Echo (Reflection)	Aversion to Suspicious Conformity
Order	Symmetry	Visual Metaphor
Primary Layer of Brain Processing	Canonical Neurons	Perceptual Problem Solving

Table (2.3) Table of Rules and Indicators Extracted from Chandaran's Laws: Source Author

Chatterjee's Aesthetic Rules and Neuro-Based Capacities	Extracted Rules for Application in Cognitive Architectural and Environmental Design (Neuroaesthetic Foundations in Visual Perception)
First Visual Pathway	**Rule 1)** Ancient Visual Pathway = First Pathway = Gene-Based Pathway That Acts Instinctively
Second Visual Pathway	**Rule 2)** Perceptual Problem Solving = Second Pathway = Syntactic Reasoning Pathway = Formed Through Education and Culture **Rule 18)** Archetypes Become Embedded in Our Brain in Two Ways: 1. Through the First Pathway: That is, Primary Geometric Forms as Our Perceptual Grammar (Innate Geometric Patterns in the Brain) 2. Through the Second Pathway: Transcendental (Ritual) Geometric

	Forms, Gradually Internalized Through Education and Exposure
Grouping	**Rule 3:** The fundamental form of the problem-solving process in the brain is the reward mechanism triggered by the recognition and completion of an object through grouping. **Rule 4:** Visual lines aligned in the same direction are perceived as a group by human vision, while separate visual forms cause visual confusion and dispersion. **Rule 5:** The law of grouping works with a spectrum of a specific color. **Rule 6:** Fundamental reasons for the use and formation of grouping: 1. To overcome camouflage 2. To recognize objects in cluttered scenes 3. Differentiating the background from the main figure 4. Distinguishing between objects and the environment 5. Recognizing an object that is partially obscured 6. Identifying distant areas

Peak Shift	Rule 7: The process of creating a supernormal stimulus through the rule of peak shift occurs in two ways: 1. Learning: Through the enhancement of the *essence* (i.e., the nature and core of the phenomenon): o a) Desirable enhancement leads to perfection. o b) Excessive enhancement leads to caricature. 2. Neural Stimulation: Visual stimuli excite neurons, leading to analogy formation. Rule 8: To achieve perfection or exaggeration in the design process, it is enough to amplify the formal essence of a phenomenon, which stimulates the neurons. (For example, in a rectangle: elongation.) Rule 9: By creating an artificial visual supernormal stimulus (which strongly excites neurons), neurons are tricked, and artificial analogy formation occurs. Rule 10: The brain's response to a supernormal stimulus produces two types of visual pleasure: • Perfection = provides high desirability • Caricature = exaggerates the components of perfection Rule 11: Archetypes become embedded in our brain in two ways: 1. Through the first pathway: that is, basic geometric shapes forming our perceptual grammar = innate geometric patterns in the brain (square, triangle, circle) 2. Through the second pathway: archetypes and sacred geometry, formed gradually through education, repetition, and cultural formation Rule 12: The effect of the peak shift rule relies on the brain's visual average template, which is formed by measuring the distances between facial features. • Average Template – New Face = unique individual features Definition of Average Template: A template formed from the stored facial information of individuals across ethnicities and races. Rule 13: Exaggeration of unique individual features = Caricature

Contrast	**Rule 14:** High visual contrast results from brightness or contrasting colors placed side by side to attract attention, often using both color contrast and high brightness simultaneously. **Rule 15:** The law of contrast uses colors with high contrast, which is opposite to the law of grouping that uses a spectrum of a specific color. **Rule 16:** The combined function of contrast and grouping is to delineate and guide attention toward the boundaries of objects. **Rule 17:** The boundary definition of objects and scenes corresponds to contrast in brightness and color. **Rule 18:** Strong contrast is a key factor in distinguishing an object from its background. **Rule 19:** High contrast increases the level of excitation in visual cells.
Segmentation (Separation)	**Rule 20:** Three colors in biological priority (red, yellow, blue) represent the function of three groups of color-sensitive cells in the visual cortex. **Rule 21:** Due to the brain's attention bottleneck, simpler and more basic designs are more effective in stimulating and activating visual brain areas than fully colored images (achieved by removing internal details, color, or lines). **Rule 22:** Cells in the primary visual cortex (the site of the first stage of visual processing = circuitry of the primary visual area) respond only to edges and boundaries. Therefore, the removal of internal details and minimal presentation in artworks align with this visual cortex function. Consequently, at first glance, initial sketches are more attractive than highly detailed, fully rendered drawings, which may also involve the removal of color. If the goal is color emphasis, removing surrounding lines helps the brain focus on the edges created by color contrast and brightness.
Visual Resonance (Reflection)	**Rule 23:** By blurring the boundary between a concept and its perception, due to the reduced recognition time of the observer, a visual echo occurs.
Aversion to Suspicious Conformity	**Rule 24:** A specific angle that the brain cannot tolerate having successive (widespread and common) viewpoints from is considered illogical and suspicious, because the brain cannot find a way to interpret this conformity and thus becomes frustrated in problem-solving and scene recognition.
Order	**Rule 25:** Economy in visual processing is important; therefore, predictability—which is achievable through repetition—creates visual pleasure.

Symmetry	**Rule 26:** The visual system is sensitive to symmetrical patterns in individual objects (object-centered algorithms). The area responsible for symmetry detection in the human brain is the occipital lobe. **Rule 27:** Objects with asymmetrical structures are unattractive, but arrangements of objects in symmetrical forms are attractive. **Rule 28:** The ancient reward pathway (first pathway) corresponds to the attractiveness of symmetry. **Rule 29:** The syntactic reasoning pathway (second pathway) is likely related to the attractiveness of asymmetry in object structure because this pathway involves both the language cortex and the prefrontal cortex, the latter engaged in higher cognitive processes such as social cognition. As a result, this area is influenced by culture, education, and specialized knowledge, leading to higher-level aesthetic evaluation.
Visual metaphor	**Rule 30:** The metaphorical or conceptual aspects of art require the engagement of both the right and left angular gyri. **Rule 31:** According to Chatterjee, different metaphors reinforce each other; therefore, multiple layers of meaning and metaphor—nested within one another—are pleasurable for the brain. The right hemisphere is the dreaming hemisphere that enjoys visual metaphor.
Primary layer of visual processing	Given that the raw pattern (i.e., archetype, sacred geometry, initial design) is activated through reciprocal connections between the inner part of the frontal lobe (ventromedial cortex) and the temporal lobe region related to visual memories, **Rule 32:** Initial designs based on frequently repeated or learned patterns receive reward in the shortest reading time—confirming the role of archetypes and sacred geometry. **Rule 33:** Considering that gradual ornamentation during the viewing of paintings or sculptures (highly decorated art) reaches a critical volume of self-reinforcing reflections and echoes between visual processing layers, leading to complete recognition in the final reflection, the brain receives reward after each stage of recognition through the postal nucleus and nucleus accumbens.
Canonical neuron	**Rule 34:** Canonical neurons are only activated by seeing a stimulus related to performing an action. 1. Producing a stimulus as part of a process 2. Creating symbolic visual signs and altering the location and sequence of these symbolic visual signs 3. Creating new combinations of visual symbols = myth-making, symbolizing, storytelling, and the production and design of imaginative stimuli

Object Recognition — The Neurological Foundations of Visual Perception	**Rule 35:** Seeing is done by the brain, not the eye; therefore, proper visual input is important. **Rule 36:** The brain and eye (retina) do not reconstruct the original image but instead represent features and different aspects of the image using entirely new terms and create symbolic descriptions of the scenes and objects in the images. **Rule 37:** Visual input occurs in the brain in two ways: 1. The image on the retina is stable, but our perception differs. 2. Perception is stable, but the image on the retina changes. 3. Time is the determinant of how perception varies. **Rule 38:** The brain's emotional nucleus (amygdala) is activated via the first and second visual pathways and sends signals to the hypothalamus. Hormone secretion by the hypothalamus occurs in all types of emotions, ultimately leading to expressed feeling and visual pleasure. **Rule 39:** The perception of art depends on how it is represented in the brain's neural circuitry.

Solving the perceptual problem	**Rule 40:** Lower visual areas (active in children) are more imaginative, resulting in artistic genius in painting. Higher visual areas tend toward more conceptual, refined, and abstract descriptions (active in adults). **Rule 41:** For perceptual problem solving through hyperactivation of visual and emotional areas, the mysterious and enigmatic nature of the problem drives the search for a specific solution. Human perception of beauty is processed by the brain, which contrasts with the primary visual processing layer (first glance). It requires successive and prolonged views to discover subtle proportions of equally ranked elements, leading to a true understanding of the scene or object and its final crystallization. **Rule 42:** Our brain's visual processing is hierarchical but not strictly top-down or bottom-up; the boundary between perception, imagination, and fantasy is not very distinct. **Rule 43:** The goal of art in perceptual problem solving is to increase pleasure by discovering more subtle proportions through greater stimulation of the brain's visual areas. In neuroaesthetics, art is defined as a kind of visual play of love culminating in the recognition of objects. Perception is defined in neuroaesthetics as the selection of an illusion that best fits the input data. **Rule 44:** The search for visual solutions is inherently pleasurable. **Rule 45:** Our brain enjoys recognizing hidden things. **Rule 46:** The basis of Capgras syndrome is a disconnection between vision and the limbic system, which acts as the brain's emotional interpreter and trigger. People with Capgras syndrome cannot enjoy visual arts.

Table (2.4) Examples of Applying Neuro-Aesthetic Rules in Art Empirically and Intuitively from Chandaran's Perspective: Source: Author

Rules	Application in Art
Peak shift • Based on learning • Perfection • Excess (Overdoing) • Based on neural stimulation	**Through strengthening the formal essence of the phenomenon** Enhancement of female sexual organs in Indian art to represent the perfection of femininity Caricature: through emphasizing individual-specific features of people Abstract art — Picasso, Henry Moore, Mondrian in black and white works, Kandinsky — through trial and error of desire or genius

Separation or Isolation Through: • Removing details • Removing lines • Removing colors	**The Impressionism style in painting — Van Gogh and Monet** Picasso's pigeons — Rodin's nude sketches — Nadia, the autistic little girl
Solving the Perceptual Problem Mystery, Being Enigmatic Rule = The search for visual solutions is inherently pleasurable.	Naked figure behind thin clothes — Smoky Water Lily, Monet
Order in the Impact of Rhythm and Repetition Rule = The importance of economy in visual processing	Floral motifs in Iranian carpets and Indian art
Symmetry	**Painting, Sculpture, and Classical Architecture** The Taj Mahal (highly symmetrical) built for the wife with a symmetrical (beautiful and healthy) face — Shah Jahan and Mumtaz Mahal = a global symbol of eternal love

3)Research Method

The type of research is applied in terms of purpose and exploratory in terms of nature, conducted based on qualitative data. The reason for its applied nature is that, by using research and experiences from other countries, it examines this subject within the country and faces its challenges. To carry out this study, various methods are used, including library and documentary research.

4)Findings

In Chandaran's Law of Differentiation and Separation, the fundamental scientific justification of minimalism is presented, which in analysis through Salingaros' approach, due to the effect of minor proportions at different scales in both the domain of decoration related to the law of perceptual problem-solving and minimalism (which is related to the effect of the primary layer of visual processing in the brain and the law of differentiation and separation), I arrived at results which are presented below.

4.1) The Effect of Minor Proportions in Materials

Eliminating details at small scales neurologically endangers individuals' visual nourishment and is incorrect. Materials with minor proportions, in addition to meeting human neuro-aesthetic and biological needs, also fulfill the goals and concepts of the architect because at large scales and bird's-eye views, the details of small scales are not visible.

4.2) The Effect of Minor Proportions in Form

According to Hedman, a simple and vast geometric surface is acceptable as an exception to the usual urban texture, but when this form is repeated, it has a negative effect on the spatial feeling and its scale. There is no useful scale for measuring distances in space. Creating rhythm in the facades of buildings that enclose space can provide the observer with a unit for measuring distances (Hedman, 1994: 85).

4.3) The Effect of Minor Proportions on Mystery and Enigma

In analyzing the assumption that mystery and enigma in discovering minor proportions in Iranian and global architecture appear symbolically, among creatures, humans are a species with a strong desire for meaning-making. Humans are, above all else, meaning-makers. They create meaning through the production and interpretation of "signs." Signs usually appear in the form of words, images, sounds, smells, tastes, movements, and objects. It must be understood that these inherently become meaningful only when meaning is assigned to them and thus turn into signs (Chandler, 2015: 41). With any definition of human and any worldview or culture imagined for him, he can be considered a symbolic and symbol-creating being. The causes of human symbolism can be discussed from different perspectives, with the most important reasons being the multidimensional nature of existence, humanity and human patterning, multiplicity of life dimensions, secrecy, and his devotion to God (Naqizadeh, 2017: 248).

In this study, the term sign refers to conventional signs which in Persian are called "symbols," and according to Peirce, a symbol "is a sign that refers to an object by virtue of a law. Usually, the consensus of public opinion causes the symbol to be interpreted as a sign referring to a specific object. Without interpretation, the symbol loses its characteristic of being a sign" (Chandler, 2015: 68-69).

Regarding the meaning and purpose of Iranian architectural works, they are primarily religious. Their origin has a magical and devotional character. Their guiding and constructive element was cosmic symbols through which humans were linked to celestial forces and associated with them. This feature, inherent in the essence of all Asian arts and still persisting until recent times, has not only provided unity and continuity to Iranian architecture but is also considered the primary source of its emotional character (Pope, 2009: 9). After the advent of Islam and Iranians' inclination towards the new religion, many beliefs, conventions, and arts from Iranian culture entered Islamic countries and influenced them. The tradition of respect for water and light is among those that can be said to have entered the traditions of Islamic countries from Iran. Lighting lamps and candles in passageways and the tombs of elders are continuations of the sanctification of water and fire. Iranian art is symbolic art, and the symbolic function is clearly observable in different artistic fields of Iran (Afrough, 2019: 77).

The formation of symbols is not a conscious process; on the contrary, it emerges through revelation or intuition from the unconscious. Often symbols result directly from dreams or are influenced by them, making such symbols full of psychic energy and possessing a compelling and irresistible influence. Symbols in artistic creations serve as tools to represent concepts and data, and all these signs help us navigate the unknown world. The unknown is an invisible world born in the creator's mind, and through these symbols, we step into that invisible world (the unknown) and advance alongside the concepts. The world of symbols is not limited or geographically bound, because symbols are formed indefinitely in the mental interaction of the artist with objects. As Paul Valéry said: "They transform the limited world of the intangible into the vast

world of the tangible." Symbols transform the intangible world into the tangible world and open a pathway in the mind to convey artistic concepts and express the artistic nature of phenomena with artistic perception. Any creation, if needed, can use symbols for self-representation.

The characteristics and properties of symbols in conveying human thought create a link between successive generations and, like a communication bridge, transfer human perception of their environment from one generation to the next. With the help of symbols and through their intellect, humans apply interpretation in natural processes; first, through recommended rituals, they prepare themselves to harmonize with these processes (Ardalan & Bakhtiar, 2011: 37).

4.5)The Place of Symbol in Architecture

If the understanding of a code system is performed by one's intellectual and intuitive faculties, the approach used for decoding is deductive, in which sense plays no role (ibid., 346). In other words, in the sensory-inductive approach, the form or appearance of the work constitutes the main element of symbolization, and this appearance is the visible form emphasizing the quantitative aspect that is ultimately easily understood (Ardalan & Bakhtiar, 2011: 5). However, in the second approach, the main element is the essence, referring to the intrinsic or qualitative aspect of the works, which to fully understand must be able to restore the appearance to its origin, a task made possible through interpretation; interpretation is a bridge between the visible and the invisible, and the path from visible to invisible through interpretation can only be traversed by intellect and intuition (ibid.).

4.6)How Symbol Manifests in Architecture

In Islamic architecture, an effort has been made to use motifs and emblems compatible with Islamic culture. For example, Muslim architects in the arabesques, which are based on emblematic symbolization, strive to abstract the symbolism more and more so that the presented motifs, while becoming abstract, are more aligned with Islamic teachings. The basis of symbolization using emblems is often founded on elements and phenomena praised in the Islamic worldview, and Muslim architects have sought to convey the importance of these elements and, naturally, their creator to their audience. Among various signs, symbols, due to their credibility and relativity, are more influenced by cultural, social, and temporal-spatial conditions than other types of signs.

Mystery and enigma in architectural design, besides being achievable through creating ambiguity, complexity, and visual metaphor, are also created by symbols, signs, and myths — especially the myth-making of wisdom — and become one of the reasons for the durability and attractiveness of urban architectural design, particularly facade design. Responding to the need for symbolization and myth-making — for example, the tailor angel attributed to Archangel Gabriel or the myths in Persian literature — in architecture and urban design stems from the fundamental need for mystery and enigma.

5)Conclusion

An architect can shape buildings using the language of patterns (including elements, components, symbols, etc.) and create infinitely many new and unique buildings with those same patterns. Iranian architecture has so many patterns that, in every building, considering the region, location, time of construction, and functional needs, it generates a new expression from its stable and valuable patterns—an expression that is neither like the past nor an imitation of imported features from other civilizations.

Table5.1) Human-made Artificial Equivalents in Response to the Fundamental Neuro-Based Need Extracted from Authentic Iranian-Islamic Architecture

Visual	Among the blurring factors of the boundary between concept and

resonance	perception by reducing recognition time in Iranian-Islamic architecture, one can mention the *Horno* and *Shamseh*, which participate in creating a source and place of light separated from the place of shadow.
Visual metaphor	Symbolization, signs, knots, visual ambiguity, and symbolic decorations in Iranian-Islamic architecture are significant because the human right hemisphere enjoys discovering hidden meanings in visual metaphors, and their added value is visibly manifested as aesthetics in art and architecture. Symbolization in the design of building components, such as the dome chamber: the dome chamber itself is a symbol of the human being, and its octagonal base symbolizes the eight angels who held the dome on the day of the Prophet's (PBUH) ascension (Mi'raj). The dome is the meeting place of the Perfect Human and the Messenger of God with Allah, who is the light of the heavens and the earth. This symbolism, oriented toward the Qibla, also testifies that the dome's design aims to stimulate the human soul's spiritual dimension toward ascension to the light and Allah during prayer and the performance of religious rituals. Symbolization through geometric shapes: the circle is a symbol of the cosmos, wholeness, and perfection. The square symbolizes the earth, the earthly human, and creatures. The triangle symbolizes the mountain and stability. Symbolization through colors: blue symbolizes trust, green symbolizes calmness, red symbolizes power, yellow symbolizes positive thinking, gray symbolizes ambiguity, perfection, and awareness, and white symbolizes purity. Symbolization through plant motifs, arabesques, and khataei patterns: the vine tree is a symbol of the tree of life and the cosmos; the ivy plant represents eternal force and sacred aspects; the khataei plant symbolizes the creation of order and unity among the details of plant motifs. Symbolization through animal motifs: the Simurgh is essentially a symbol of Gabriel, and the peacock represents eternal life. Symbolization through the elements of fire, wind, water, and earth: water symbolizes eternal coldness and moisture; the warmth and light of fire symbolize growth; earth symbolizes dryness and human grounding; wind carries qualities opposite to the coldness and heaviness of earth, such as moisture and warmth, which elevate humans toward the light of God. The mihrab maintains the Qibla axis and serves as a refuge for the seeker toward God, inviting the human, detached from the earth, to ascend toward the divine light. Symbolization through numbers: the number zero symbolizes its own shape, a circle, which represents infinity, as well as emptiness and death, signifying completion and annihilation in the divine essence; the number one symbolizes the one God; the number two symbolizes duality and

	pairing of phenomena; the number three symbolizes the three principles: good thoughts, good deeds, and good words; the number four represents wholeness, completeness, perfection, and unity, symbolizing entirety, the earth, and order; the number five symbolizes the five daily prayers; and the number seven symbolizes complexity, interconnection, and multiplicity. Symbolization through plasterwork decorative motifs: Plant motifs: During the early Islamic period, many artists used decorative motifs employed in Sassanid-era plasterworks with modifications in their form and appearance that gave them new meanings. Plant motifs distanced themselves from the naturalistic forms of the Sassanid era and acquired transcendent and divine meanings. For example, the tree of life, which was a symbol of fertility and abundance in the Sassanid period, became reminiscent of the heavenly tree *Tuba* in the Islamic era. Plant motifs used in the Sassanid era in various forms, including acanthus (palmette), palm (lotus), water lily, pomegranate, vine and ivy, grape fruit, pine and oak, leafy flowers, rosette flowers, and the tree of life in plasterworks, evoked concepts of love, prosperity, fertility, and more. Islam absorbed these ancient elements and transformed them into their most abstract common forms—that is, it bestowed upon them a new insight with spiritual subtlety. Geometric motifs: Muslim artists considered symbolic replacements for forbidden images of living beings because geometry invited viewers toward spiritual contemplation. The abstraction and symbolism of geometric motifs led to the development and expansion of geometric art and the growth of the status of geometry science in the Islamic world. These geometric motifs are a clear reference to the idea that divine unity is the foundation and basis of the infinite diversity of the world and unity in multiplicity. In the higher realm, the circle symbolizes the Creator; the straight line symbolizes divine intellect; the triangle symbolizes the soul; the quadrilateral symbolizes matter; the pentagon symbolizes nature; the hexagon symbolizes the body; the heptagon symbolizes the world; and so forth. Symbolization through inscriptions: The inscriptions and texts derived from the Quran in them are symbols that express the dominion of the great God’s power over the affairs of the world and testify to His unity and greatness.
Perceptual problem-solving	According to this principle, in order to solve the perceptual problem through hyperactivation of visual and emotional areas, it is necessary to proceed via the mysteriousness and enigmatic nature of the issue, which leads to a search for finding a specific solution to the enigmatic problem. This results in the perception of beauty in humans by the brain as an added value and a reward for discovering hidden things. This contrasts

with the initial layer of visual processing, which is stimulated at first glance. Instead, successive and prolonged views are required to discover partial proportions that are of equal rank, continuously, until a true understanding of the scene or object is achieved and the final scene or object is crystallized.

The visual processing of our brain is hierarchical and is neither strictly top-down nor bottom-up; the line and boundary between perception, illusion, and imagination are not clearly defined.

The purpose of art in solving the perceptual problem is to increase the sense of pleasure by enhancing the discovery of partial proportions through greater stimulation of the brain's visual areas, which, in neuroaesthetic terms, is equivalent to a kind of visual flirtation culminating in the supreme recognition of objects.

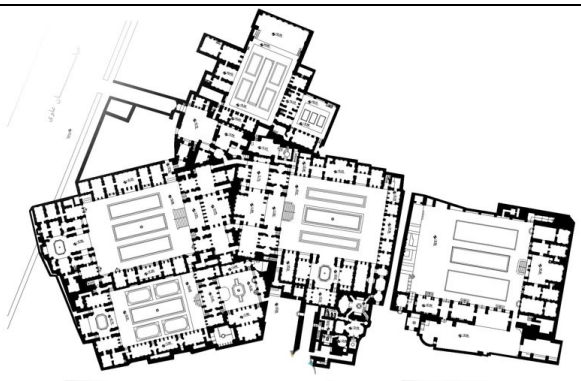
In the definition of perception according to neuroaesthetics, it is the selection of an illusion that has the best fit with the input data, which is the goal of the human brain.

The search for visual solutions is inherently pleasurable because our brain enjoys recognizing hidden things.

According to the aforementioned findings, symbolization, visual myth-making, and visual mythology in the creation of design and motifs on the building's body in Iranian-Islamic architecture—such as various plant, geometric, or animal motifs like the Simurgh, and even the spatial design of the dome chamber which contains a hidden transcendent dimension—are examples of perceptual problem-solving by the brain. This is because, in Islamic art, design and pattern, beyond their outward beauty, possess an inner meaning that the viewer's searching eye seeks beyond the beautiful appearances to find that inner secret, which relates back to the world of the unseen. For this reason, the language chosen by Islamic art to convey its concepts to its audience is the language of symbols. This is also the reason for the high overlap between the productions of Islamic art and architecture and the brain's law of perceptual problem-solving.

Motifs in Islamic art are not merely decorative but represent meanings and concepts; art has chosen itself as a language to spread its sublime teachings through symbols. Plant motifs in Islamic art undoubtedly encompass one of the most complex and diverse symbolisms of humanity. The plant world is the place where living reality and life manifest, renewing themselves periodically. The most abstract yet delicate form of life flows through plants; therefore, they are symbolically permitted presence in the most sacred places and religious buildings. The most important categories of Islamic motifs—such as

	geometric, arabesque (eslimi), and khataei—have botanical origins. The tree or any other plant symbolizes growth and the unfolding of psychic life. In Islamic art, the plant is a symbol of transcendence and growth, rooted in the earth while reaching toward the sky. Architecture employs the language of symbols to express and disseminate its inner concepts, and each individual, through thought and contemplation of various artworks and according to their intellectual growth and spiritual development, can understand the concepts and themes hidden within the diverse forms of Islamic art.
Grouping	he Tijar Gardens of the Safavid era are an example of the law of grouping. Tijar Gardens are Safavid gardens with lattice walls, where the scene behind the lattice walls of the garden is the focus of this law. According to the brain's law of grouping, it completes the fragments of the scene behind the lattice wall and receives a reward, whose added value is the visual pleasure for humans. This phenomenon is also evident in the lattice walls of other places and architectural buildings in Iran. Sometimes, the lattice effect is not created by a type of brickwork but results from the positive-negative interplay (figure-ground) in arabesque motifs.
Symmetry in object details and asymmetry in overall scene Salingaros, in his architectural theory analysis through the law of scaling, rejects symmetry at the macro scale due to the effect of minor proportions and proves the positive effect of symmetry	Groups and Sets According to Chandaran's view, if symmetry is pervasive in the design and includes all components and details, since it is recognized by the brain and the visual perception system as a recognition factor, the visual identification of more important elements is endangered, and the brain becomes incapable of identifying the more significant ones due to this excessive symmetry. The adaptability of this law in Iranian architecture is evident in the impact of the courtyard on the design of the building's plan. The courtyard, which is the factor of internal order and order resulting from geometric symmetry within the building, is initially placed in the plan, and the components of the complex (rooms) are symmetrically arranged around the courtyard, forming a basic module. The connection of courtyards with their surrounding rooms to other courtyards with rooms around them is asymmetric due to various reasons such as the shape of the land, access routes and paths around the land, adjacent buildings, the effect of the urban fabric, and so forth. Therefore, if the formed complex—whether residential or a "arsen" (a type of traditional structure)—includes two or more courtyards, symmetry is observed in the details of the plan, but asymmetry appears in the overall design of the complex. Each module is symmetric, but the final complex is not symmetric.

at smaller scales.	 Overall, the complex is presented as asymmetric with internal order and symmetry.
Differentiation and separation	An authentic example of the law of separation and segregation can be seen in the miniature paintings of Sultan Muhammad from the Safavid school of Tabriz, although laboratory limitations and quantitative research constraints have hindered a precise quantitative study of this effect. In the use of colored tiles arranged in mosaics, the rule of separation is observed solely through color differentiation, both in knot patterns and plant motifs. The law of separation and segregation can be observed in the white plaster framing on the plain ochre or bare facades, where the line is preserved and decoration is omitted.
Contrast	1. Application of contrast in two-color combinations includes: • Earthy + turquoise, common during the Seljuk period • Earthy + lapis lazuli, common during the Ilkhanid and Timurid periods • Lapis lazuli with white, common in Timurid and Safavid eras in inscription calligraphy, which is the longest-used combination historically (until Qajar) • Lapis lazuli with gold, common in Timurid and Safavid inscription calligraphy • White with turquoise in Thuluth script tile inscriptions • Frequently used two-color combinations in plaster painting include: golden-turquoise, golden-ochre, golden-green 2. Application of contrast in three-color combinations includes: • The most common is lapis lazuli and turquoise combined with one of three colors: earthy, white, or yellow, popular in Ilkhanid and Timurid periods • The green, black, and yellow combination is typical of the Qajar era 3. Application of contrast in four-color combinations includes: • Black and turquoise combined with earthy and white in the Safavid period • Turquoise, white, and yellow combined with either black or lapis

	lazuli in arabesque and khataei patterns in Shah Mosque of Isfahan • Color combinations are used in various geometric knots and the drawing of plant motifs 4. Application of contrast in five-color and six-color combinations is also evident, for example: lapis lazuli, turquoise, white, and black combined with either earthy or yellow 5. In authentic Iranian-Islamic architecture, the contrast between pattern and background forms the basis of decoration; the pattern contrasts with its background through color and glossiness—one being bright and the other matte and earthy 6. In the execution of various vaulting (karbandi) designs, if there is no pattern, the vault lines are separated from the ochre or earthy background by white plaster 7. Even in the drawing of arabesque and khataei plant motifs, the contrast between the arabesque pattern and its background is clear, whereas khataei belongs to the background color family so that it contrasts with the arabesque 8. Framing on facades serves to allocate space for creating contrast between pattern and background or the width of the frame with its background; sometimes the frame is earthy and the inside background patterned, and sometimes the frame is white plaster and the background ochre or earthy.
Order based on rhythm and repetition	**In the section on decorations, rhythm and repetition are factors of orderliness observed in the following cases:** 1. Various types of vaulting (Karbandi) have basic repetitive elements. In formal vaulting, the repetition of the base elements forms a formal circle. In muqarnas, the repetition of the "taseh" and "park" shapes creates the muqarnas structure. In Yazdi vaulting and bowl-making (kaseh-sazi), repetition is part of the formal structure that forms their framework. 2. Various geometric patterns or knots, including triangular and square knots, pentagonal knots, and hand-turned knots, in their puzzle-like structure, face repetition of parts or units. 3. Islimi and Khatayi patterns, due to repetition in elements such as shamsa (sun-shaped medallion), toranj (medallion), sarchang (scrolls), etc., exhibit rhythm and order in execution. Additionally, symmetry is a factor of rhythm through repetition and increased order in plant motifs. 4. Symmetry in the facade is a factor of rhythm resulting from the repetition of architectural components and elements on the opposite side of the building and final order. 5. Various surface treatments on the facade represent another aspect of order resulting from rhythm and repetition in the building.

Aversion to suspicious conformity	In the traditional Iranian three-part facade, the middle section is never divided by a single central column. Instead, the middle section itself is divided into three parts by two columns. The number of columns is always even in order to create an odd number of bays, and this is a rule that eliminates the middle column, which would otherwise fall on the mental symmetry axis of the facade.
Effect of minor proportions in materials and form	Small pieces of brick and adobe that make up the structure and facade, as well as small tile pieces, demonstrate the application of the effect of minor proportions in texture and consequently in form — unlike concrete, which creates a uniform, gray surface without visual details.
Creation of paranormal stimuli by the law of peak Shift	The dome chamber, based on the philosophical and spiritual foundation that created it, is designed to evoke a supra-normal (transcendent) experience. Specifically, the dome chamber has a square plan with a central point formed by the intersection of its axes. From this central point, a vertical axis rises toward the center of the dome's shamsa (sun-shaped medallion) or the dome's apex, creating a vertical pull for the human spirit toward the light. This has a mystical backing in the spiritual journey (sīr wa sulūk) of the seeker toward God (the Light). In fact, the dome chamber is designed to spiritually stimulate the human being. The dome chamber itself symbolizes the human, and its eight-sided base symbolizes the eight angels who, according to tradition, held the dome on the day of the Prophet's (PBUH) ascension (Mi'raj). The dome is the meeting place of the Perfect Human and the Messenger of God with Allah, who is the Light of the heavens and the earth. This symbolism further testifies that the design of the dome aims to stimulate the human soul's ascent toward the Light and Allah.

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