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Fluid meanings: A semiotic analysis of water in Persian gardens

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Abstract. This study investigates the semiotic significance of water in Persian garden landscapes, revealing its cultural, spiritual, and religious roots. Drawing on Louis Hjelmslev's theories and employing a semiotic model for landscape study, the paper conducts a holistic analysis of water's physical and semantic dimensions in these gardens. The research adopts a triadic approach, starting with an examination of the form-to-substance ratio at the expression level to interpret the gardens' physical and visual features. The article explores the connection between these features and the gardens' cultural context and, finally, links structural concepts to broader societal ideologies. Qualitative content analysis of case studies, including Fin Garden and Dolatabad Garden, exposes the multifaceted meanings of water elements, from their geometric organization to their socio-cultural and ideological resonance. The findings disclose a triadic meaning system where water acts as a unifying symbol, reflecting Iranian societal values and enhancing the gardens' lasting appeal. This study not only contributes to the semiotic discourse by applying Hjelmslev's theories to the specific context of Iranian gardens but also enriches the understanding of cultural heritage and landscape design.

Keywords: Persian garden; landscape semiotics; semantic dimensions; water

1. Introduction

This paper is designed to provide an in-depth examination of semiotics in landscape architecture, with a particular focus on Persian gardens. Persian gardens are of deep cultural and historical importance (M. R. Khalilnezhad *et al*. 2024) and stand as magnificent symbols of Iran's rich cultural heritage. In 2011, UNESCO added them to the World Heritage List, emphasizing their value not only as stunning landscapes but also as vital sources of history, art, and philosophy. Their

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historical significance is clearly reflected in their global influence on garden design, reaching as far as India and Spain.[2] In Iranian culture, the garden is of a profound importance, symbolizing an ideal that permeates various art forms and is integral to the nation's cultural identity (Oskoyi, Kiani 2020). The ancient pattern of the Persian garden has had a significant impact on various Iranian arts, such as carpets (Hirbod 2022), miniature paintings (Saeide, Vahid 2014), designs on ancient pottery, and Persian poetry and literature (Gharipour 2020).

Therefore, studying and exploring the cultural-semiotic roots of the Persian garden and its elements paves the way for a better and deeper understanding of Iranian culture. Additionally, examining how the thoughts and beliefs of a society manifested through semiotic patterns in an art form such as garden design and landscape architecture can prove beneficial for contemporary designs in architecture and landscape. This is particularly relevant, as cultural and identity characteristics, when thoughtfully incorporated into design, are regarded as valuable sources of inspiration, especially when their manifestation goes beyond merely imitative or direct. Interpreting the Persian garden and its fluid meanings using semiotic means provides a model suitable for understanding other gardens and global arts. Studies in landscape semiotics are particularly valuable for practical planning and management policies, as they facilitate an understanding of how meaning is generated within everyday landscapes, and elucidate the creation of value in non-material dimensions (Lindström *et al.* 2018).

The existence and vitality of every garden is intrinsically linked to the presence of water (Jeyhani, Reza'ipur 2022). Water, a fundamental element of landscape architecture, carries profound cultural, spiritual, and religious significance. These dimensions are pivotal to our understanding of human–environment interactions, while they often remain marginalized in landscape studies and policy-making (Burmil *et al.* 1999). The challenge lies in the articulation and quantification of the cultural and symbolic water meanings, which, despite their intangibility, exert a profound influence on human life.

In the socio-cultural context of Iran, water is venerated – a sentiment reflected in the design of its historic gardens. These landscapes are not merely aesthetic creations but are imbued with the religious and cultural ethos that has shaped Iranian society. This article will concentrate specifically on water, as this element is one of the most important elements of Persian gardens. Using semiotic tools, it

[2] On the topic, see: Persian Gardens: A UNESCO World Heritage Legacy – Untold Persia 2025, available at https://www.untoldpersia.com/persian-gardens-a-unesco-world-heritage-legacy/ (accessed on 23 January 2025).

seeks to answer the question: how are the physical and visual features of water in Persian gardens connected with contextual characteristics, concepts, and beliefs?

The study employs a semiotic approach to observe the semantic layers that inform the representation of water in these gardens. Semiotics, transcending mere aesthetics, is a critical tool for communication and scholarly exploration, offering insights into the creation and transmission of meaning through art and architecture (Mingers, Willcocks 2017; Lomas 2016, 2019). The constructed environment is more than just a physical space: it is a semiotic system that conveys cultural, social, and historical meanings (Preziosi 1979). Semiotics of arts should be based on the research of spatial codes (Tchertov 2019). Umberto Eco (1997) notes that architecture often serves a primarily functional purpose rather than a communicative one. However, architecture still acts as a form of mass communication. Eco sees architecture's primary function in its practical utility and its secondary function in its symbolic significance. He concludes that architects should design buildings to accommodate varying primary functions while allowing for flexible secondary functions (Eco 1997).

Eco's semiotics emphasizes the differentiation between denotation and connotation (defined in Chandler 2022 as the explicit or direct meaning of a sign, and indirect meaning that encompasses the nuanced, socio-cultural, and personal associations a sign may invoke, respectively) – see Table 1.

Table 1. Denotation and connotation at the levels of expression and content.

	Semantic layers	Theme
Denotation	levels of representation	tends to be described as the definitional, literal, obvious, or common-sense meaning of a sign
Connotation	levels of meaning	more used to refer to the socio-cultural and "personal" associations (ideological, emotional, etc.)

Roland Barthes 2006[1957] extends Louis Hjelmslev's framework, positing connotation as a secondary level of signification that generates a sign from another sign, leading to a succession of connotations (see Fig. 1).

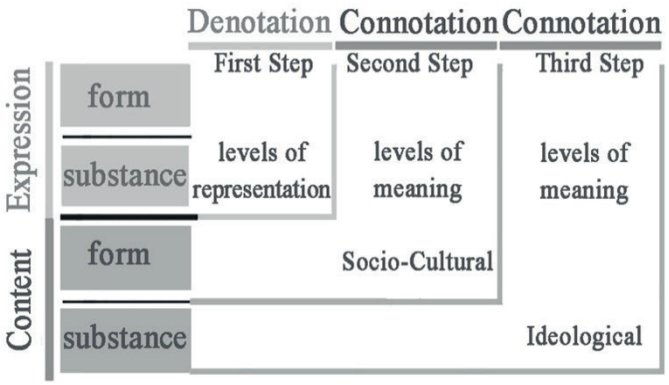

Figure 1. Position of denotation and connotation at the levels of expression and content.

Pierre Pellegrino and Emmanuelle P. Jeanneret (2009) employed the Saussurean conception of the arbitrary relationship between signifier and signified and Hjelmslev's concept of connotation to explore how space can make signs. Rachel Lawes (2019) stresses the importance of connecting signs and symbols to their societal, cultural, and ideological milieus, thus unlocking the full potential of semiotic analysis. Josep Muntañola and Dafne Muntanyola (2012) use symbolic and cognitive phenomena to analyse architecture and emphasize that architecture should be analysed as a symbolic system, considering the physical and social environment.

This study analyses the cultural dimensions of Persian gardens by utilizing Hjelmlev's expansions on Saussure's ideas, specifically focusing on Form and Substance, as well as Mingyu Wang's analysis of internal structure of signs (Wang 2020). These theoretical foundations are critical for understanding the complex layers of meaning embedded within the garden landscapes. Hjelmslev's notions of denotation and connotation are pivotal in distinguishing the direct and indirect meanings conveyed by the garden design elements. Furthermore, Wang (2020) emphasizes the significance of a text's internal structure as a relational matrix for organizing content and its semiotic meaning. These concepts are further elaborated in the subsequent sections. In this context, 'substance' is conceived as a reflection of the external world within the text, encompassing a spectrum of denotational information that spans the real and the virtual, the material and the spiritual. This denotational information undergoes a process of objectification through four stages – things, objectives, representations, and objects – each contributing to the layered meanings within the landscape (Table 2).

Table 2. Form and substance in expression and content level.

	Expression	Content
Form	How elements relate (internal structure)	Structural concepts
Substance	External material elements	Conceptual references

By conceptualizing the landscape as text, landscape elements are seen as analogous to text elements, constituting the substance of expression. The arrangement of these landscape elements creates the form of expression layer. According to Barthes (2006[1957]), at this juncture, the sign is connected to the contextual values. Wang (2020) posits that a third level pertains to the semantic structure of concepts within the textual context. Numerous contextual factors influence the semantic structure, including cultural, social, ecological, religious, economic, and other values, which serve as the foundational framework for the text's concepts. These contexts form multiple layers that either individually or collectively influence the physical structure's formation. At times, these concepts stem from another dominant source, such as an ideology prevalent within the cultural milieu, or multiple sources. Consequently, the landscape is shaped and formed by these contextual concepts and values. The manifestations of these concepts within the landscape can be analysed at the expression level (Sad Berenji *et al.* 2022). This research, aimed at delving deeper into the meanings of the landscape, also addresses the content level, continually reflecting on and analysing the landscape until reaching the referential stage of concepts or ideologies embedded within the context.

The eventual findings present a semiotic reading of water in Persian gardens, observing aspects such as geometry, hierarchy, display modalities, scale, and spatial configuration. The paper then explores the multifaceted values embedded in Persian gardens, including their cultural, social, climatic, religious, and ideological significance. The study concludes with a summary of key results, implications, and recommendations for future research.

2. Semiotics in landscape architecture

Researchers have often described landscape as a form of text, both in its entirety and in its individual elements (Spirn 2000; Jorgensen 1998; Lindström *et al.* 2018). James and Nancy Duncan use the term 'text' to refer to landscape as a context where the meaning-making process takes place in an open-ended manner. They

argue that the landscape text is replete with signs and metaphors that influence its interpretation. According to them, "the landscape is a text in which signifiers continually become signifieds in an infinite chain of metaphors" (Duncan, Duncan 1992: 34). Text analysis tools, such as semiotics, can significantly contribute to the interpretation of landscapes as texts (Duncan, Duncan 1992).

In the interdisciplinary field of landscape architecture, semiotic analysis has emerged as a pivotal tool for deciphering the encoded meanings within environmental design. A semiotic approach in landscape studies involves analysing the mechanisms for creating meaning, as well as examining the aspects and functions of symbolization and sign processes (Lindström *et al*. 2018). The semiotic framework engages with both denotation and connotation. This bifurcation is crucial for appreciating the polysemic character of signs. Landscapes can be examined using the same analytical techniques applied to language, discourse, or text. The field of semiotics offers effective methodologies for analysing the processes involved in the formation of landscapes (Lindström *et al*. 2018). Landscapes are not just physical spaces; they are also shaped by the signs and symbols present within them. The concept of semiotic landscapes extends beyond linguistic elements to include images, objects, and other forms of semiotic material (Jaworski, Thurlow 2010).

A semiotic approach to landscape studies is vital for understanding how symbols mediate our perception of nature and the cultural processes that shape it (Lindström *et al*. 2018); however, empirical case studies in this field are rare. While the intersection of semiotics and landscape architecture has not been extensively explored, significant contributions by Kevin Raaphorst and Karsten Jorgensen have highlighted the importance of visual content analysis (Raaphorst *et al*. 2017, 2020; Jorgensen 1998). Their research advocates for a critical visual research approach to interpreting the communicative "language" inherent in landscapes. In the article "Semiotics as a framework for reading and writing landscape" (Sad Berenji *et al*. 2022), the author of this article and her co-authors explore the potential of semiotics as a tool for landscape architects to analyse and design landscapes. The article employs a comparative method to draw an analogy between a landscape and a text and between semiotics and a text analysis tool, developing a framework for landscape architecture based on semiotic theories, particularly those of Peirce and Hjelmslev. The study proposes a mixed three-dimensional model that examines the physical, semantic, and audience-based dimensions of the landscape in relation to one another. This model is informed by Wang's extended model of Hjelmslev, as Hjelmslev's theory offers a more detailed discussion of expression and content, delving into deeper layers. This approach studies

the physical and meaning dimensions of landscapes, as delineated in Fig. 2 (Sad Berenji *et al.* 2022).

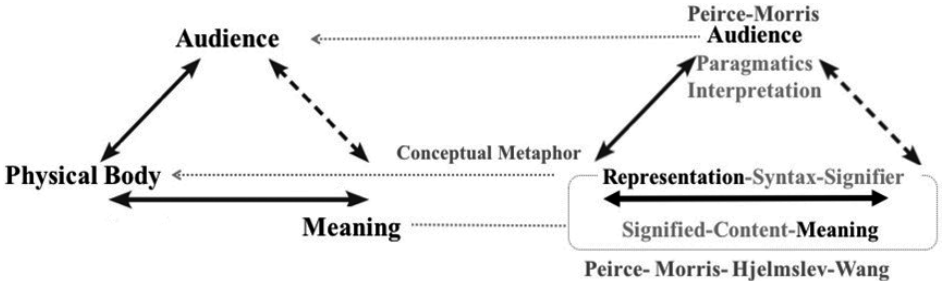

Figure 2. The integrated framework of Peirce, Morris, Hjelmslev, and Wang's semiotic theories, applied in conjunction with the dimensions of landscape architecture (Sad Berenji *et al.* 2022).

This model has not yet been applied in empirical analysis. The present paper may be the first to do so, as it employs the model to uncover the various layers of water symbolism in the landscape of Persian gardens. The focus of this study is primarily on the interplay between environmental characteristics and conceptual frameworks; consequently, it does not include an examination of place audiences. Thus, only the lower portion of the model will be utilized within the scope of this article. This selective application allows for a focused exploration of the landscape's intrinsic attributes and their conceptual correlations, aligning with the research objectives set forth in this study.

The article proposes a triadic analytical framework grounded in Hjelmslev and Wang's semiotics theories (see Fig. 3) to discuss the cultural landscape of four Persian gardens. An overview of the methodology can be found in Section 3.

Saussure		Hjelmslev	Wang
Signifier	Expression Plane	Form of Expression	Internal structure (Physical structure)
		Substance of Expression	Text Elements
Signified	Content Plane	Form of Content	Structures of Concepts
		Substance of Content	Ideology

Figure 3. Expansion of the Hjelmslev-Saussure semiotics pattern by Wang (Sad Berenji *et al.* 2022).

Adhering to Hjelmslev's paradigm of expression and content, this structured approach elucidates the intricate relationship between the tangible and visual dimensions of space and the intangible doctrinal and contextual beliefs. It posits that the physical aspects of a space are inextricably linked to its internal and contextual elements – the content of the initial stage. However, Hjelmslev acknowledges that not all spaces inherently possess subsequent levels of implicit meanings. The strength of the physical connection to conceptual underpinnings directly influences the sense of place and, consequently, the perceived attractiveness and enduring value of the place.

Meaning within a landscape can thus be stratified into three principal levels: the direct meaning derived from the spatial elements and their organization; the contextual meaning stemming from the embedded values of the design; and the ideological meaning reflective of the dominant societal beliefs. The denotation, extracted from the environment's physical and visual attributes, possesses an objective quality and constitutes the direct meaning. Connotations emerge from the environment's encoded narratives, which are unveiled through literary devices such as conceptual metaphors, metonymy, and irony, linking the physical realm to the cultural, social, historical, natural, and religious dimensions. By employing this theoretical model, the subsequent analysis in Section 3 aims to decode systematically the multi-layered symbolism of water in Persian gardens.

3. Materials and methods

This study employs a qualitative research design to explore the semiotic significance of water within the landscape architecture of Persian gardens. The research is interpretive in nature, aiming to uncover the ideology behind cultural, spiritual, and religious dimensions embedded in the human–environment interactions facilitated by these gardens. The semiotic framework described in Section 2 forms the theoretical basis for this methodological approach. The framework employed is grounded in the theories of Hjelmslev and further informed by the methodologies developed by Sad Berenji *et al.* (2021). It is adopted to analyse the symbolic representations of water in the context of Iranian gardens, with a focus on the physical and semantic dimensions of landscape architecture. The methodology unfolds in three hierarchical steps each of which treats the outcome of the previous one as its form:

(1) Morphological analysis. The first step scrutinizes the form and substance at the expression plane, as posited by Hjelmslev (1961). This involves a detailed examination of spatial elements and their interrelationships,

alongside an assessment of the governing principles and discernible characteristics of the space. This part is further elaborated in Section 4. The outcome of this analysis may range from clarity to ambiguity, from coherence to disarray, and from allure to neglect.

(2) Contextual semantic analysis. The subsequent phase considers the initial findings as a form (signifier) and delves into their interplay with the structural concepts embedded within the design's context. These concepts span historical, social, cultural, religious, and natural domains, filtering through the structural codes. This part is more thoroughly explored in Section 5.1–5.3.

(3) Deep semantic analysis. The final stage evaluates the congruence of the preceding analyses, treating them as the form of this stage. It then probes the relationship between these synthesized concepts and the prevailing ideologies of society, thus connecting the structures and concepts through processual codes. Section 5.4 focuses on this level of analysis.

The gardens selected for this study include Fin Garden, Dolatabad Garden, Shazdeh Garden, and Hasht Behesht Garden. These sites were chosen due to their historical significance, diverse design elements, and, in case of three of them, the inclusion in the UNESCO World Heritage Site "The Persian Garden". Each garden represents a unique adaptation of the principles of the Persian garden, displaying a rich variety of water symbolism. Fin Garden was constructed around the year 1000 AH (1590 AD) in the city of Kashan and has undergone restoration and expansion during various periods, including the Zand (18th century AD) and Qajar eras (19th–early 20th century AD). Hasht Behesht Garden was built during the Safavid era (17th century AD) in the city of Isfahan. With its beautiful architecture and artistic decorations, this garden served as a place for recreation and as a display of the power and splendour of Safavid kings. Shazdeh Garden, located in Mahan, 35 kilometres from Kerman, was built during the Qajar era (around 1750 AD). Due to its terraced design, use of fountains, and lush greenery amidst the desert, Shazdeh Garden is extraordinarily captivating. Dolatabad Garden in Yazd was constructed during the Zand era (around 1880 AD). All four gardens were royal and governmental gardens at the time of their construction; Dolatabad Garden functioned as both a fruit garden and a governmental garden.

Data were collected through a combination of library research and field visits. The latter allowed for direct observation, photography, and sketching of garden layouts, water features, and design elements. For the plans of the gardens, see Fig. 4.

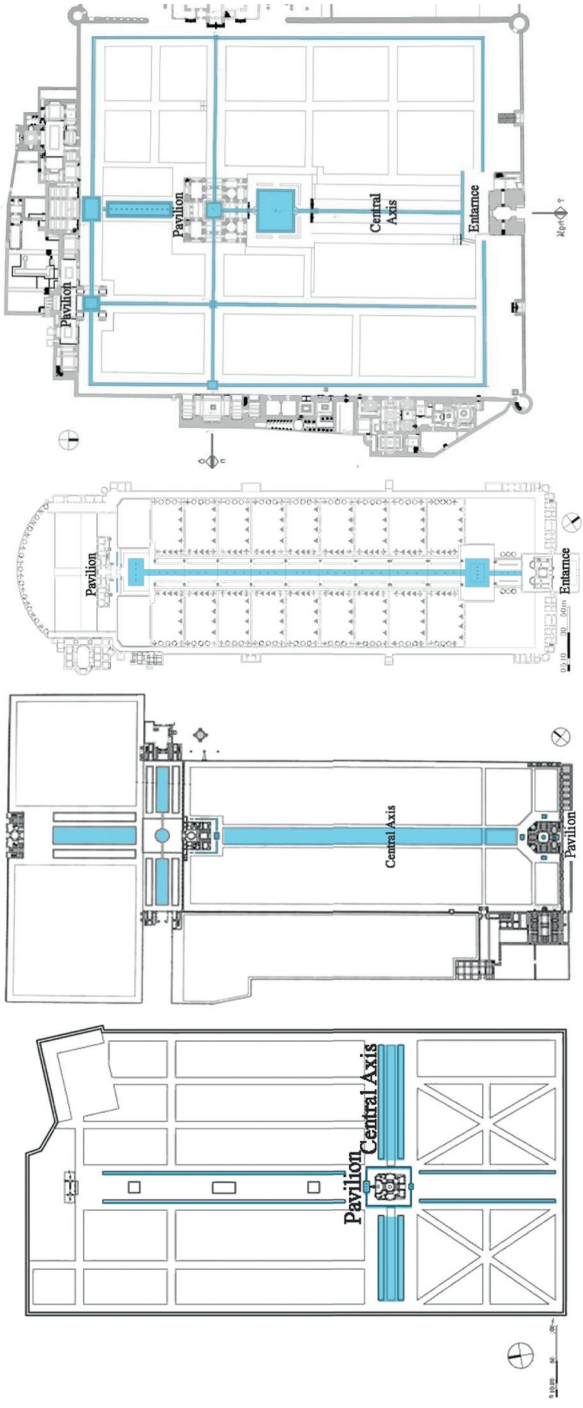

Figure 4. a. Hash Behesht Garden Plan; *b.* Dolatabad Garden plan. *c.* Shazdeh Garden Plan; *d.* Fin Garden Plan.

A qualitative content analysis was conducted on the collected data. This involved an inductive approach to coding and categorizing visual and textual information, focusing on the identification of patterns and themes related to water symbolism. The analysis was guided by the semiotic model proposed by Sad Berenji *et al.* (2022), which examines the ratio of form to substance at the expression level and the interplay between these physical attributes and the gardens' contextual values. The detailed analysis conducted in this study follows the structured three-step approach outlined above, ensuring a coherent link between the theoretical framework and the practical analysis.

The study applied the analytical model to a triadic approach. The first stage involved decoding the physical and visual characteristics of water elements in the gardens. The second stage explores the internal connection between these characteristics and the contextual values of the design platform. The final stage seeks to uncover the overarching societal worldview or ideology that links the structural concepts identified in the previous steps.

4. Findings: semiotic reading of water in the Persian garden

As was mentioned in Section 2, in the realm of landscape analysis the cognitive process starts with an examination of the physical structure, progressively engaging with the layered content and the intricate relationship among form, meaning, and context. Sad Berenji *et al.* (2022) have proposed a set of criteria for the analysis of landscapes, as depicted in Fig. 5.

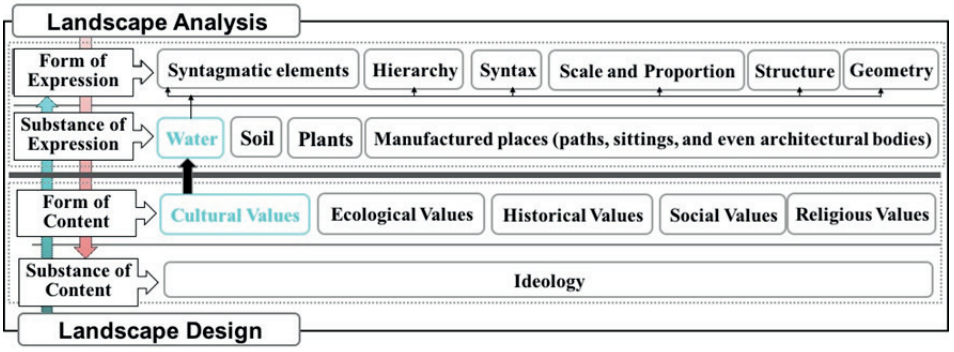

Figure 5. Development of semiotic patterns in reading and writing landscape text (Sad Berenji *et al.* 2022).

Utilizing this model, the current study conducts a semiotic analysis of water within the landscape. The morphological phase of this analysis – referred to as 'water syntax' – entails a detailed investigation into the geometric configuration and structural organization of water elements. This includes an assessment of the hierarchical arrangement and the dynamics of water movement within the garden, the various modalities of water presentation, the proportional scale of water features, and the spatial interplay between water elements and adjacent areas within the garden, as outlined in Table 3.

Table 3. Categories of physical and visual structure in the Persian garden.

Dimension	Category
Physical and visual structure	Geometry and general structure
	Hierarchy and system of movement
	Water display methods
	Scale and proportions
	Spaces adjacent to the water

4.1. Geometry and water structure

In the Persian gardens, there exists a discernible interrelationship among the geometric patterns, the systematic layout of the gardens, and the intricately designed water supply networks (Shirdast, Farahani Fard 2014; Albert, Reza 2015). This nexus underscores the harmonious integration of form, function, and aesthetics in the traditional Persian horticultural schema. The irrigation methodologies are recognized as a significant influence on the development of geometric garden structures, complementing the shaping forces of Persian beliefs and ethical principles (Naghizadeh 2013). This confluence of practical irrigation techniques and cultural values is instrumental in the creation of the distinctive spatial organization characteristic of Persian gardens.

The water structure in the Iranian garden adheres to a general order and a regular geometry (Gachkar *et al.* 2022), yet it exhibits diversity through its dotted, linear, and planar geometrical forms. Observations of water in Persian gardens reveal that water is consistently positioned at the centre of the symmetry axis of these gardens (see Fig. 4). By examining the movement of water in the gardens studied, it appears that the regular flow of water in the main parts of the garden creates cohesion and unity in the overall structure of the garden. The location of water as presented in the Iranian garden is connected to the mansion or pavilion within the garden.

4.2. Hierarchy and dynamics of water movement in Persian gardens

In the architectural design of Persian gardens, the influx of water is seldom direct (as it is in Fin Garden). The initiation point of aquatic circulation is strategically planned to align with the garden's thematic concepts and ideational underpinnings. Typically, the flow of water within these gardens is orchestrated to run counter to the visitor's path from the entrance (Nejad *et al*. 2017; Göker 2017[3]), symbolically greeting and guiding them through the space.

In certain instances, the genesis of water movement is situated within the pavilion's central structure, subsequently encircling the mansion before joining the primary watercourses (as seen in Fin Garden). Conversely, other gardens feature water that remains concealed within the pavilion, with its journey commencing from the mansion's periphery, coursing towards the main channels and entrance (for instance in Dolatabad Garden).

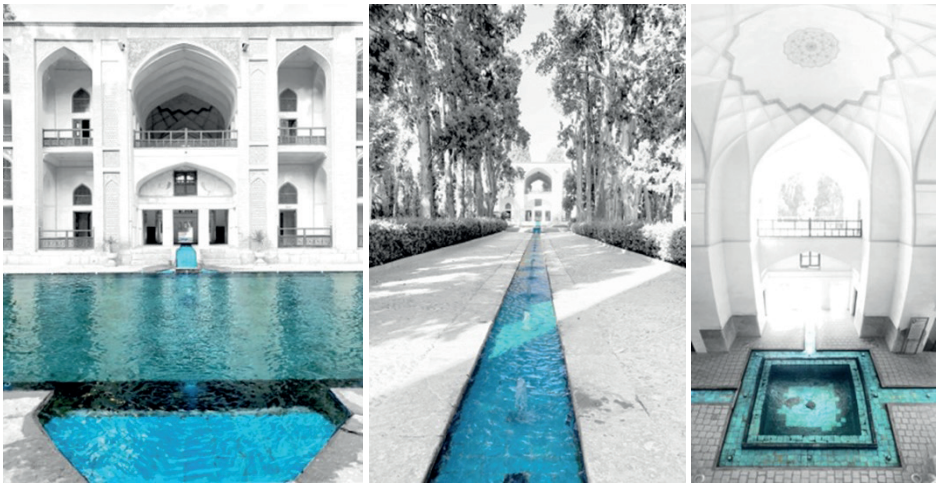

Figure 6. The initial phase: the emergence of water from beneath the mansion in Fin Garden (left). The second step: the reflective water surface at Fin Garden's central forecourt (centre). The third step: water flows along the central pathway at Fin Garden (right) .

It is noteworthy that the mode of water presentation is subject to transformations across different segments of the garden. Similar to what can be seen in Fin Garden, as visitors transition from the pavilion's confines to the open expanse, or as

[3] See: Göker, Parisa 2017. An analysis of water features in Persian gardens; Bagh-e Shahzadeh. *International Journal of Environmental Science and Development*. https://www.semanticscholar.org/paper/An-Analysis-of-Water-Features-in-Persian-gardens%3B-G%C3%B6ker/35529daff546d8294eb13f008ad97db5a07179c8.

they traverse the vicinity of the mansion to the garden's central pathway, the water often cascades into waterfalls. This dynamic shift in water display, accompanied by its harmonious sounds (Monshizadeh 2017), serves as an auditory and visual prelude, ushering individuals into the subsequent phases of the garden experience. Fig. 6 illustrates the initial stage of this process, depicting water emerging from beneath the mansion in the garden.

In the last phase of its journey, water exits the Persian garden towards urban areas, agricultural lands, or adjacent gardens, thereby integrating the garden's water management system with the broader ecological and agricultural networks of the region (Nejad *et al*. 2017).

4.3. Water display modalities

Within the context of the Persian garden design, the exhibition of water can generally be categorized into two distinct forms: dynamic water and reflective water (Mohammadi, Zandieh 2015). It is important to recognize that within the confines of the Iranian garden, water is always in motion. Even in the instances where water appears to be static and reflective, it is, in fact, in a state of subtle motion (Göker 2017; Soltanzadeh, Soltanzade 2017). This underscores the principle that water within the Persian garden is perpetually in flux. In its reflective state, water possesses the capacity to mirror its surroundings, thus allowing the garden's pavilion, edifice, and arboreal elements to be observed upon its surface, accompanied by the expanse of the firmament above.

The gradient of the terrain is instrumental in the foundational layout of the garden and its aquatic features. Gardens that present an ostensibly level appearance are, upon closer examination, designed with an incline sufficient to facilitate the movement of water. In exemplars such as Shazdeh Garden, where the land's gradient is pronounced, this topographical feature has been ingeniously employed to forge cascades along the water's trajectory. Conversely, in other gardens, the vertical disparity between the architecture and its environs, as well as the elevation variance along the water's course, are utilized to engender waterfalls, albeit of a diminutive stature. In such instances, the spatial extent of this segment is often expanded in the style of SINEH KABKI[4] (Haghshenas 2014), coupled with intricately chiselled stonework at the base of the watercourse, thereby augmenting

[4] Sineh Kabki is a traditional technique in Persian garden design, in which carefully cut stones are curved and placed along the bed of channels and waterfalls. By breaking the flow of water, this arrangement creates visible ripples that make the stream appear fuller and more dynamic, while simultaneously amplifying the sound of water throughout the space. The technique thus enhances both the visual and auditory presence of water, reinforcing its role as a central element of the garden experience.

the visual perception of water volume while simultaneously generating auditory sensations and undulations.

In the case of Hasht Behesht Garden, the water feature descends from the uppermost level to the terrestrial plane in a vertical fashion, ultimately converging into a pond (see Fig. 4a). An alternative method of water presentation is one wherein water emanates directly from the subterranean realm. This phenomenon is divided into two primary categories: the first is the emergence of water in a bubbling fashion from the pond's bottom, observable beneath the central pavilion of Fin Garden; the second category pertains to water that ascends from the earth in the form of a fountain or a jet. The phenomenon of bubbling fountains is conspicuously manifested within the precincts of Bagh-e Fin (Campbell, Boyington 2018) and along the principal waterways of Shazdeh Garden. Notably, in Shazdeh Garden, the steep incline amplifies the pressure differential, resulting in a more pronounced elevation of the water's trajectory. Additionally, fountains are positioned beneath the windcatcher of Dolatabad Garden, further illustrating this concept.

Thus, in Persian garden design, a diverse array of hydrological elements such as channels, canals, cascades, waterfalls, pools, springs, creeks, jets, and fountains are meticulously incorporated (Campbell, Boyington 2018; Albert, Reza 2015; Asgarian *et al*. 2023). These features are strategically situated throughout the gardens in accordance with the functional requisites and the underlying belief systems prevalent in Iranian culture.

4.4. Scale and proportions of water spaces in Persian gardens

In the architectural tradition of Persian gardens, the water elements within pavilions are designed to be commensurate with human dimensions, ensuring that these features are in proportion to the scale of human interaction. This principle facilitates a harmonious interplay between the observer and the observed, fostering an intimate connection with the water element (Albert, Reza 2015). Adjacent to the pavilion, one often encounters larger aquatic bodies, such as ponds or pools, which serve not only as visual spectacles but also as climatic moderators within the garden's microenvironment (Göker 2017). The primary pathways of the garden are flanked by slender watercourses, akin to creeks, which guide the visitor's journey through the landscape. These smaller channels are integral to the garden's design, contributing to the overall sensory experience through the sight and sound of flowing water. It is important to note that the specific manifestations of these water features vary across different gardens, reflecting the unique character and intent of each space (Nejad *et al*. 2017). For instance, Dolatabad Garden exempli-

fies the use of water as both a reflective surface and a dynamic element. Along the central axis of movement, the water is abundant and possesses a mirror-like quality, amplifying the visual and spatial continuity of the garden (Soltanzadeh, Soltanzade 2017). In contrast, the pools situated near the pavilion are of a smaller scale, creating a more personal and reflective space that complements the human-scaled architecture of the pavilion (Göker 2017). This nuanced approach to the scale and proportion of water features is a testament to the sophisticated design principles inherent in Persian garden architecture, where every element is carefully considered to achieve aesthetic balance and functional utility.

4.5. Spatial configuration and adjacency to aquatic features in Persian gardens

In the intricate design of Persian gardens, the pavilion stands as a prominent element in juxtaposition with water features. The initiation of water's journey from the pavilion signifies the interconnection between the architectural space and the fluid element, with the main living quarters within the pavilion serving as an additional contiguous entity to water. The omnipresence of water alongside the garden's main pathways underscores its integral role in the landscape's composition.

Arboreal species, such as the cypress, pine, and plane tree (S. Khalilnezhad *et al*. 2016), are deliberately positioned adjacent to both the primary and ancillary watercourses, creating a symbiotic relationship between the flora and the water elements. The selection of these species is attuned to the local climatic conditions, allowing for substitutions that best fit the environmental context. The cultivation of fruit trees, including pomegranates and grapes, in the periphery of the water channels, as exemplified by Dolatabad Garden, introduces an interplay of light and shadow, further enriching the multisensory experience of the garden.

Dolatabad Garden uniquely integrates the elements of wind and water. The water feature is strategically located beneath the windcatcher. This not only provides a pleasant environment but also demonstrates a fluent application of natural cooling techniques that are both sustainable and effective. This design choice amplifies the sensory engagement with the water. Similarly, in Hasht Behesht Garden, architectural ingenuity is displayed through roof openings situated above the central pond of the pavilion, allowing the wind to traverse the water's surface, thereby enhancing the dynamic interaction between these natural elements (as depicted in Fig. 7).

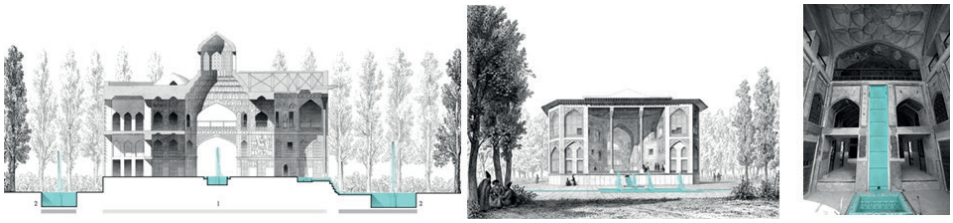

Figure 7. Water feature located beneath the central space of Hasht Behesht garden pavilion and in front of the mansion (left). View of the water surrounding Hasht Behesht Garden mansion (centre). A one-story waterfall at Hasht Behesht Garden (right).

Fig. 7 provides a visual analysis of the water's placement beneath the central space of the Hasht Behesht garden pavilion, set against the backdrop of the mansion, while Fig. 8 illustrates the syntactical relationship between the spatial syntax and the landscape elements, revealing the outcomes of this deliberate design adaptation.

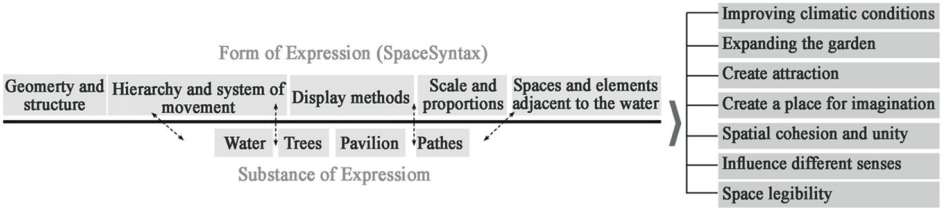

Figure 8. The results come from a study of space syntax to elements of spaces (a form of expression to the substance of expression).

To facilitate a comprehensive understanding of this segment, Table 4 encapsulates the attributes of the physical and visual architecture across four quintessential gardens. A meticulous analysis of the physical configurations within Fin Garden, Hasht Behesht Garden (Safavid era), Shazdeh Garden (Qajar era), and Dolatabad Garden (Zand era), as depicted in Fig. 4 above, reveals the implementation of four out of the five water display modalities previously delineated. Notably, in three of these gardens, the water's presentation is traceable to the pavilion. Among these, Fin Garden exhibits the greatest variety concerning the proportions, scales, and assortment of water display techniques employed.

Table 4. Comparison of water appearances in the four Persian gardens studied: Fin, Hasht Behesht, Dolatabad, and Shazdeh.

	Fin Garden	Dolatabad	Shazdeh	Hasht Behesht	Fin Garden	Dolatabad	Shazdeh	Hasht Behesht	Fin Garden	Dolatabad	Shazdeh	Hasht Behesht
Key areas of the garden layout	**Hierarchy and system of water movement**				**Water display Modalities**				**Scale and proportions of water**			
Pavilion	*	*	-	*	Spring + Pool	Fountain + Pool	-	Fountain + Pool + Waterfall	Medium	Small	-	Small
Between the pavilion and surrounding	*	*	-	*	Waterfall	Waterfall	-	Waterfall	Small	Small	-	Small
Surrounding pavilion	*	*	*	*	Fountain + Pool	Fountain + Pool	Pool+ Creek	Fountain + Pool + Creek	Large	Small	Large	Small
Between the Surrounding pavilion and Central Axis	*	*	*	-	Waterfall	Creek	Waterfall	-	Small	Small	Medium	-
Central Axis	*	*	*	*	Fountain + Creek	Pool	Fountain + Waterfall + Creek	Pool	Small	Large	Medium	Large
Between Central Axis and entrance	*	-	*	-	-	-	Pool	-	-		Medium	-
In front of the entrance	*	*	*	-	Creek	Creek	Pool+ Creek	-	Small	Small	Medium	-
Result	7/7	6/7	5/7	4/7	5/5	4/5	4/5	4/5	3/3	2/3	2/3	2/3

The evaluation system is based on whether the hierarchy and system of water movement can be observed across seven key sections of the garden.

The evaluation of each garden is based on how many of the five water display modalities it incorporates.

The evaluation of each garden is based on the number of scales it encompasses.

5. Multifaceted values of Persian gardens

The second phase of the study delves into the multifaceted cultural, social, climatic, and religious underpinnings that influence the water features within Persian gardens. Culture has an impact on everything we do (Schafer 1998) and cultural and societal identity significantly influences architectural design, imbuing structures with intricate layers of meaning (Farahani *et al*. 2016). Beheshti (2008) posits that the cultural expressions of a nation encapsulate a unique essence, which can be termed as the nation's identity or spirit. This transformative process underscores the significance of meticulous craftsmanship in the human-made environment, where the meticulous calibration of scale and proportion in garden elements such as paths, creeks, pavilions, and ponds is paramount. The layered and stratified nature of Iranian culture engenders a hierarchical approach to garden design.

5.1. Cultural and social significance

Water in Persian gardens is a central element that symbolizes the concept of Eden or Paradise on Earth. It is an artistic expression that reflects the ideals of art, philosophy, and symbolism. The Persian Garden is designed to materialize the concept of paradise, with water playing a crucial role in both irrigation and ornamentation (Ansari, Mahmoudinejad 2007).

The endowments for the aqueducts of certain gardens, notably Dolatabad Garden, underscore the socio-cultural imperative of water conservation and its unpolluted state, reflecting a deep-seated value within Iranian society. Additionally, the dedication of products of Dolatabad Garden's yield to the shrine of Imam Ali in Najaf[5] exemplifies the intertwining of religious and cultural tenets of the period, indicative of the profound reverence and judicious stewardship of the garden. The sanctity of water purity has perennially been a focal concern for garden custodians, leading to the adoption of the "Shotor Galu" system[6] – a siphon-like mechanism for water transfer that ensures the water's unsullied entry into the garden while precluding debris from contaminating the water channels. This method also facilitates the creation of ground springs, a feature that enhances the garden's aesthetic. The veneration of water and arboreal life has been a longstanding cultural conviction in Iran. Temples venerating water were established in the

[5] The shrine of Imam Ali in Najaf, resting place of the first Shia Imam and the most important Shia pilgrimage site; according to tradition, the graves of Adam and Noah are also located beside him.

[6] The system's name refers to a Persian expression describing a structure curved like a camel's neck or throat ('*Shotor*'= 'camel'; '*Galu*' = 'neck, throat').

pre-Islamic era, and although water lost its sacred status after the advent of Islam, it continued to be held in high esteem. The stone-carved representations of trees, such as cedars, in palaces and ancient edifices, bear testimony to the respect accorded to the flora in antiquity (Ansari *et al*. 2008).

Persian gardens have played a significant role in the social aspects of society, becoming a central feature in residences, palaces, and public buildings, as well as in ensembles associated with benevolent or religious institutions.[7] The presence of water features such as fountains and pools not only serves aesthetic purposes but also facilitates social gatherings, providing a tranquil and comfortable environment for interaction and reflection.

5.2. Climatic adaptation

The majority of gardens in Iran are situated in regions characterized by a hot and arid climate (Albert, Reza 2015), leading to conditions of drought and water scarcity. In such environments, water becomes an invaluable and essential resource. Consequently, a variety of methods have been developed to ensure a reliable water supply for these gardens, including the use of aqueducts, springs, and streams. Historically, the continuity of garden life has been heavily reliant on sustainable water sources, a consideration that has been at the forefront of gardeners' practices through various eras. The presence of water is crucial for establishing a microclimate that moderates both temperature and moisture levels. The strategic placement of water features alongside trees provides shade, which helps to conserve water by minimizing evaporation. This arrangement also contributes to the creation of a favourable microclimate within the arid landscape, offering a respite from the desert heat and thus fulfilling one of the key objectives of Iranian garden design.

5.3. Religious context

Water in Persian gardens is deeply rooted in religious beliefs. Respect for water has been a well-known cultural value in Iranian society before and after the advent of Islam. The important role of water in various aspects of human life is emphasized in holy books, particularly in the Avesta and the Holy Quran, where water is introduced as the essence of life (Ansari *et al*. 2008). In the pre-Zoroastrian Aryan traditions, water was considered as a sacred element, its sanctity being predominantly reflected in the beliefs and rituals associated with Anahita, the goddess of water. During this era, temples dedicated to the veneration of water were built across Iran. Among these temples, the Anahita Temple in Bishapur and the

[7] See: Persian Gardens: A UNESCO World Heritage Legacy – Untold Persia 2025.

Anahita Temple in Kangavar are particularly noteworthy. The faith and devotion to Anahita were so profound in Zoroastrianism that a significant chapter of the sacred book Avesta is dedicated to this deity. The Aban Nyayesh is a hymn in praise of Nahid, who, according to Avestan texts, is the divine source of all waters in the world. Furthermore, the Avesta states that all creation initially existed in the form of a single drop of water. Similarly, the Zoroastrian creation myth states that water was the second creation of Ohrmazd, following the sky (Abbasi *et al*. 2018). With the advent of Islam, water in Iranian beliefs transitioned from being a sacred entity to a revered and respected element. The tradition of constructing temples to honour water ceased. Nonetheless, the Quran mentions that the creation of all living beings stems from water. Islamic traditions and texts also underscore the importance of maintaining water's purity. Similar perspectives can be found in Zoroastrian teachings and other pre-Islamic faiths.

These aspects highlight the integral role of water in Persian gardens, not just as a physical element, but as a symbol of life, prosperity, and spiritual reflection that permeates Iranian life and its artistic expressions. The reverence for water in Persian gardens is a reflection of a broader cultural and environmental wisdom that emphasizes harmony, sustainability, and the sanctity of natural resources.

5.4. The ideology behind contextual values

The third segment of the analysis scrutinizes the ideological foundations and contextual significances that have historically influenced the Iranian ethos. Religion has perennially been a cornerstone of ideology and worldview within Iran's historical tapestry. The nation's socio-cultural fabric is deeply interwoven with religious tenets. Throughout different periods, both the populace and the state have embraced religion, with Zoroastrianism shaping societal norms pre-Islam, and, thereafter, Islam delineating ethical boundaries and lifestyle paradigms, thereby impacting individual and collective actions. This section explores the Quranic roots of water symbolism, which underpin the concepts and values previously discussed. In this study, a comprehensive analysis was conducted on all verses within the Holy Quran that encompass the term 'water' and its synonymous expressions, including '*Ain*' and '*Ayun*', as well as '*Nahr*' and '*Anhar*'. Furthermore, employing a semiotic perspective, an extraction of all notions associated with the term 'water' as mentioned in the verses was performed. An overview of the findings derived from the examination of the Holy Quran in relation to this subject matter is concisely presented in the lower part of Fig. 9.

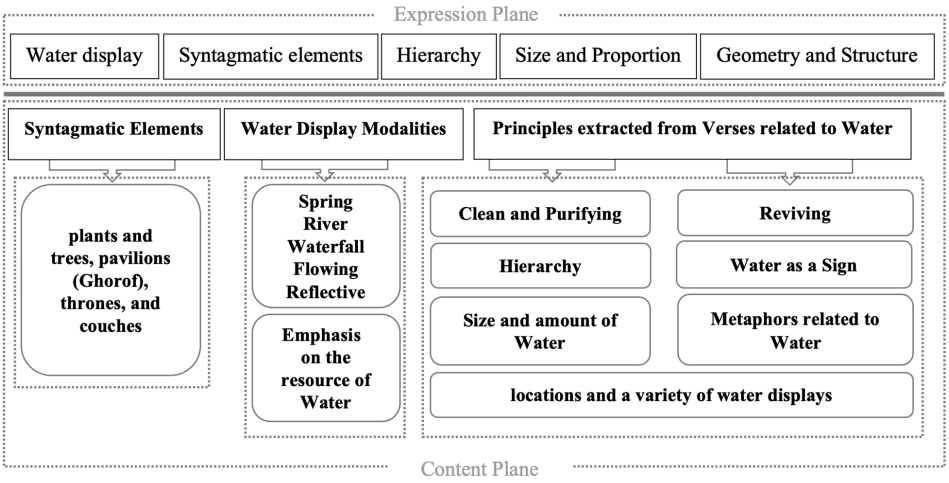

Figure 9. Summary of results obtained from the study of water in the Quran in the research semiotics model (Sad Berenji 2021).

The Quran describes water with attributes such as 'blessed' (*Ma' Mobaraka*) in Surah Qaaf (50:9), 'purifier' (*Ma' Tahoor*) in Surah Al-Furqan (25:48), 'flowing' (*Ma' Maein*) in Surah Al-Mulk (67:30), 'abundant' (*Ma' Sajjaja*) in Surah An-Naba' (78:14), 'sweet' ('refreshing') (*Ma' Forata*) in Surah Al-Mursalaat (77:27), and 'pouring' (*Ma' Monhar*) in Surah Al-Qamar (54:11). These attributes reflect the Quran's portrayal of water as a life-giving, purifying, and sustaining force, a concept mirrored in the dynamic and nurturing presence of water in Iranian gardens. The concept of 'blessing' is often understood as the sustained presence or continuation of favour. Thus, the enduring presence of such favour is synonymous with blessings. This concept is exemplified by the water in Persian gardens, which draws visitors with its perpetual motion and vitality. The dynamic nature of water, characterized by its constant flow, is a hallmark of these gardens. They feature water that flows and cascades, presenting both abundance and blessings. As previously noted, water in Persian gardens is always in motion, serving not only as a reflective surface but also as an active, living element. The Quran speaks of water in its many forms – rain, oceans, rivers, springs – across numerous passages. A syntactical examination of these verses reveals a recurring theme of water's synergy with wind, as highlighted in Surah Al-Baqarah (2:164), Surah Al-A'raf (7:57), Surah Al-Hijr (15:22), and Surah Al-Furqan (25:48) (Ali 2023). This harmonious relationship between water and wind is architecturally integrated into the pavilions of Dolatabad and Hasht Behesht Gardens (see Figs. 7 and 10).

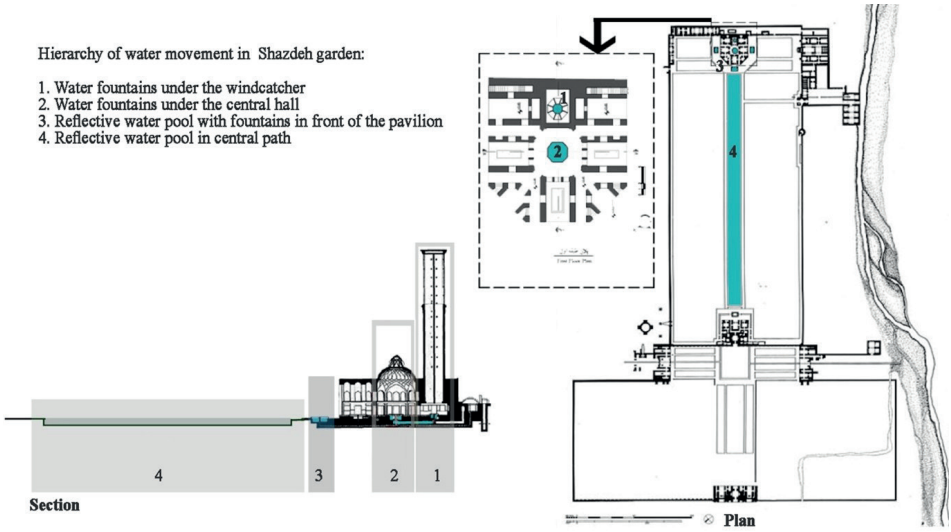

Figure 10. Hierarchy of water movement in Dolatabad Garden.

Throughout the Quran, water is frequently paired with flora, including trees and other plants. The emergence of vegetation post-rainfall is consistently portrayed as a manifestation of divine grace. A syntactic analysis reveals that specific trees, such as pomegranates and grapes, are often mentioned alongside gardens in the Quranic text, suggesting a symbolic representation. Nonetheless, when these trees are utilized in the Persian gardens, practical considerations such as sustainability – ensuring the viability of tree cultivation in given climates – also significantly influence these decisions. The Quran describes various states of water, notably springs, which are mirrored in the design of Persian gardens such as Fin Garden beneath its central pavilion, the Qajar pavilion, Dolatabad Garden, and others (Figs. 6 and 10). The depiction of water in motion, including waterfalls and springs, finds its echo in the Quran. Additionally, the Quran speaks of the shade provided by trees, referred to as "continuous shade" in Surah Al-Waqia (56:30). A summary of the physical presence of water in gardens and corresponding Quranic verses that serve as conceptual references for these displays is provided in Table 5.

Table 5. Water features and Quranic verses as conceptual references in Iranian gardens.

Physical and visual structure	Subcategories of physical and visual structure		Verses that can be a conceptual reference for water manifestations in the garden landscape
Types of water displays	Flowing	Reflective	Verses that refer to the attribute of flowing water, for example, 'flowing water' (Surah Al-Mulk, Verse 30) or 'two flowing springs' (Surah Ar-Rahman, Verse 50)
		Spring (Fig. 6 left)	
		Fountain	In Verse 66 of Surah Al-Rahman, the fountain character of water is mentioned (Feyz Kashani 1994)
		Waterfall (simple and between two floors; Fig. 7 right)	Verses refer to the pouring nature of rain (Surah Al-Naba, Verse 14)
			Waterfall between two floors can be a metaphor of Tasnim Spring, the fountain in heaven, a spring from which those near [to Allah] drink. In Surah Al-Mutaffifin, Verse 27, the Tasnim spring fountain is mentioned. The meaning of Tasnim in the Tafsir is a kind of sublimity and supereminence. It is a special spring in Paradise and its description says that it is a river in the air (above) (Tabatabai 1996).
Hierarchy and system of water movement	Inside the pavilion – around the pavilion – Garden Surroundings (Figs. 6 to 7 in Fin Garden or Hasht Behesht Garden)		Verses contain the phrase degrees (rank) in the Quran (Surah Al-Baqarah, Verse 253; Surah Al-Imran, Verse 163; Surah Nisa, Verse 96; Surah An'am, Verses 83, 132 and 165; Surah Anfal, Verse 4; Surah Al-Mutaffifin, Verse 27–28, Surah Yusuf, Verse 86; Surah Isra, Verse 21; Surah Taha, Verse 75; Surah Ghafar, Verse 1; Surah Zakhraf, Verse 32; Surah Al-Ahqaf, Verse 19; Surah Al-Majdaleh, Verse 11)
	Around the pavilion - inside the garden (in Shazdeh Garden)		
Scale and proportions of water	Symmetrical geometry, regular and right angles		Reference to the AL-HIJR creation of everything (in balanced or justly weighed) in Verse 19 of Surah Al-Hijr
Spaces and elements adjacent to the water	Plants – The path of human movement – Wind – Mansion (sitting place) - Shadow (Fig. 10)		In verses such as Surah Al-Waqia, Verses 30 and 31, and Surah Al-Mursalat, Verse 41, there is the companionship of shades and fountains (springs) and flowing water in the description of Paradise. The coincidence of running water and the pavilion in heaven is mention in verses, such as Surah Al-Ankabut, Verse 58, and Surah Zumar, Verse 20.

Thus, the design of water features in Persian gardens is deeply influenced by the principles outlined in the Holy Qur'an, with a clear hierarchy that places water at the forefront of the garden's visual axis, symbolizing its central importance in the act of creation. This design ethos emphasizes the purity of water, ensuring it is always flowing and vibrant, akin to the living waters described in sacred texts. The strategic positioning of water within the garden is complemented by the careful selection of adjacent elements, including plants that are reminiscent of those mentioned in the Qur'an, reinforcing the metaphorical representation of water as a divine blessing. Additionally, the gardens are constructed with a focus on securing a reliable water source, reflecting the reverence for water as a sustaining source of life and a reflection of paradise as depicted in the Qur'an.

6. Conclusion

This article employs a semiotic framework to elucidate the multifarious significance of water in Persian gardens. It posits that each spatial construct possesses a distinct semantic spectrum, which is inherently shaped by the prevailing worldview, ideological constructs, and cosmological perceptions. Contemporary semiotics as an academic discipline holds substantial potential in deciphering and deconstructing the semiosis of architectural spaces, thereby informing the semantic infusion into future spatial designs.

The meaning derived from Persian gardens can be both explicit and implicit, shaped by the interplay of form and content, and the form and substance of the content within a given locale. This stratified interrelation may extend *ad infinitum*, yet it can be distilled into three overarching strata. The primary stratum yields a direct meaning, one that emanates from the tangible and visual attributes of space, scrutinizing the logical interconnections among the contextual elements therein. The intermediary stratum germinates from aligning the physical attributes of space with the embedded values and notions of its milieu, culminating in a tapestry of latent meanings. The tertiary stratum delves into the origins and referents of the notions delineated in the antecedent stage, probing the semantic nexus between societal attitudes, ideologies, and the conceptual-physical dimensions of space (as depicted in Fig. 11).

Figure 11. Factors affecting the meaning of landscape.

This paper encapsulates the tripartite stages in interpreting the aquatic elements of Persian gardens, unravelling a compendium of their significations. The initial phase, grounded in water's geometric, physical, and visual properties, explores meanings such as spatial coherence, water integration, diversity, and the elimination of monotony within the garden. The subsequent phase brings forth notions such as reverence for natural elements – particularly water – in cultural, social, and religious doctrines, alongside the role of Iran's natural and historical infrastructures. Herein, diverse semiotic codes are unveiled. The final phase acknowledges religion as a pivotal determinant across various epochs of Iranian history, serving as the foundational bedrock for legitimizing the spatiality of Iranian gardens.

Historically, Iranian designers have embraced a holistic and multifaceted perspective. Consequently, design decisions are often underpinned by multiple rationales. For instance, the presence of flowing water, while climatically motivated, also embodies symbolic dimensions rooted in valued notions and psychological impacts such as vitality and the eschewal of stagnation, while also addressing concerns such as water decay in static conditions. Hence, the aquatic characteristics elucidated here may be attributed to a plethora of rationales. The manifestation and essence of elements can be ascribed to varying reasons across the triadic levels of meaning. The delineation between the described stages is not absolute; however, a tripartite categorization facilitates a more nuanced comprehension and analysis. The interpretation of meaning necessitates contextual consideration, often oscillating fluidly between denotation and connotation.

This study emphasizes how water in Persian gardens serves not only as an aesthetic element but also as a cultural symbol that reflects historical, social, and

environmental values. Understanding these semiotic dimensions can guide architects and landscape designers to create spaces that resonate with cultural significance and ecological sustainability. This analysis of Persian gardens contributes to the broader semiotic theory of landscape and architecture and demonstrates how architecture serves as a form of mass communication, balancing practical utility with symbolic significance. The research underscores the importance of connecting signs to their societal, cultural, and ideological contexts, thereby unlocking the full potential of semiotic analysis. By investigating the Persian Garden's layered meanings, this study offers new insights into the semiotics of space and architecture, enriching our understanding of how cultural and historical contexts shape the interpretation of architectural forms.

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معانی سیال: تحلیل نشانه‌شناختی آب در باغ‌های ایرانی

چکیده

این پژوهش به بررسی اهمیت نشانه‌شناختی آب در منظر باغ‌های ایرانی پرداخته و ریشه‌های فرهنگی، معنوی و مذهبی آن را آشکار می‌کند. با استفاده از نظریه‌های یلمزلف و به‌کارگیری مدل نشانه‌شناسی در مطالعات منظر، مقاله به تحلیل جامع ابعاد کالبدی و معنایی آب در این باغ‌ها می‌پردازد.

این تحقیق رویکردی سه مرحله‌ای دارد؛ ابتدا با بررسی نسبت صورت به جوهر در سطح بیان، ویژگی‌های کالبدی و بصری آب را تحلیل می‌کند. سپس ارتباط این ویژگی‌ها با زمینه فرهنگی باغ‌های ایرانی را مورد مطالعه قرار داده و در نهایت، مفاهیم ساختاری را به ایدئولوژی‌های اجتماعی گسترده‌تر پیوند می‌دهد.

تحلیل محتوای کیفی نمونه‌های موردی، از جمله باغ فین و باغ دولت‌آباد، معانی چندلایه‌ای عناصر آب را از جنبه‌های هندسی تا بازتاب‌های اجتماعی-فرهنگی و ایدئولوژیک آشکار می‌سازد. یافته‌ها یک سیستم معنایی سه‌گانه را نشان می‌دهد که در آن آب به عنوان نمادی وحدت‌بخش عمل کرده، ارزش‌های اجتماعی ایران را بازتاب داده و به جذابیت ماندگار باغ‌ها می‌افزاید.

این مطالعه نه‌تنها به گفتمان نشانه‌شناسی با کاربرد نظریه‌های یلمزلف در زمینه خاص باغ‌های ایرانی کمک می‌کند، بلکه موجب غنای درک میراث فرهنگی و طراحی منظر نیز می‌شود.

واژگان کلیدی: تحلیل نشانه‌شناختی، باغ ایرانی، ابعاد معنایی، آب

Voolavad tähendused. Pärsia aedade vee semiootiline analüüs

Uurimuses vaadeldakse vee semiootilist tähendusrikkust Pärsia aiamaastikes, tuues nähtavale selle kultuurilised, spirituaalsed ja religioossed juured. Lähtudes Hjelmslevi teooriatest ning rakendades maastiku uurimise semiootilist mudelit, viiakse artiklis läbi neis aedades esineva vee füüsilise ja semantilise mõõtme holistiline analüüs. Uurimuses kasutatakse kolmiklähenemist, alates vormi–sisu suhte vaatlemisest väljendustasandil, tõlgendamaks aedade füüsilisi ja visuaalseid jooni. Seejärel uuritakse artiklis nende joonte ning aedade kultuurilise konteksti vahelist seost ning viiakse lõpuks struktuursed mõisted kokku laiemate ühiskondlike ideoloogiatega. Näiteks Fini ja Dolatabadi aedu hõlmavate juhtumiuuringute kvalitatiivne sisuanalüüs toob nähtavale vee-elementide mitmetahulised tähendused nende geomeetrilisest korrastatusest kuni ühiskondlik-kultuuriliste ja ideoloogiliste vastukajadeni. Tulemustest ilmneb kolmetine tähendussüsteem, milles vesi toimib ühendava sümbolina, peegeldades Iraani ühiskondlikke väärtusi ning tugevdades aedade püsivat võlu. Uurimus panustab semiootikadiskursusse, rakendades Hjelmslevi teooriad Iraani aedade konkreetsele kontekstile, ent rikastab ühtlasi ka kultuuripärandi ja maastikukujunduse mõistmist.