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Review Essay

ARCHITECTURE, WATER AND WELL-BEING IN ISLAMIC CULTURE AND BEYOND

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Abstract. The article aims to reconsider the historical role, peculiarities, significance, and meaning of water in traditional Islamic culture and society. The emergence of long-lasting systems of water supply in the territories that eventually gave rise to Islamic culture resulted in elaborate aesthetics of water most commonly associated with the phenomenon of the Islamic garden. In a piece of what might be described as a generalist's interest, the author of the article examines this phenomenon and aesthetics of Islamic garden from the point of view of the history of ideas and attempts to grasp its universal features, which contributed to the dissemination of the cultural phenomenon beyond the Islamic realm and hadan impetus on the development of water culture in post-medieval Western Europe, especially during the Renaissance and Baroque eras when encounters with some of the Islamic cultural phenomena became more common and lasting. It is suggested that it was specifically the water culture of Islam that had an impact upon Western imagination and cultural practices from the dawn of the modern era. The author claims that the legacy of Islamic culture in the field of water aesthetics can be applied and used today in various regions even if symbolism of water has largely given ways to other concerns, among them about the future of the environment.

Keywords: water, Islamic garden, Persian gardens, aesthetics of water, well-being.

"...I do not depart from the conviction that a work of synthesis must rest mainly upon facts already gathered and critically digested by relevant specialists: In other words upon that, what, from the standpoint of scholarship must be classed as secondary sources. Those who are suspicious of this foundation show a distaste for the function of interpretation rather than a rationally grounded distrust of the method. All general views are, of course, open to correction, both as to fact and as to interpretation…"

Lewis Mumford, *The Culture of Cities*

Introduction

Water is a substance of utmost importance all over the globe and it has always been important since times immemorial for a variety of reasons, first and foremost because no life on earth is possible without water and, that said, one should be reminded that water makes up a significant part of the composition of the human body. It has been noted that "Water has favored birth, and its absence has caused the death of entire civilizations. When the balance between the local resources and its productive use, maintained during the centuries with difficulty, collapsed, it created the deterioration of entire territories" (Montalbano, 2008, p. 694). Thus understandably water available in nature was socially and culturally important since the early stages of human civilizations, first and foremost perhaps as a means of transportation and communication that triggered human mobility and the exchange of cultural products, ideas, and patterns of life. As renowned urban historian Lewis Mumford has observed in his monumental study on the origins and development of a historical city "The rivers themselves were the first highroads, once boats were invented: moving belts of water, six hundred miles long in Egypt and Mesopotamia, a thousand miles in Indus valley. They formed a spinal transportation system which served as model for the irrigation ditch and the canal; while their sudden floods or periodical inundations made it necessary for the village cultivators to band together to repair the storm damage, to guide the water

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around their fields to fend off drought, to create finally a whole network of embankment and canals and irrigation works. The construction of these utilities demanded a degree of social intercourse, co-operation and long-range planning with the self-contained village culture, complacently accepting its limitation, did not need or encourage" (Mumford, 1961). What Mumford observed remains critically significant. Being a natural means for both irrigation and transportation, water was also (more implicitly) means of nurturing human association and cooperation, i.e. of human qualities that were and have remained important from the dawn of civilization (whatever is meant by this category) to this very day.

The aim of this paper is both to overview the development of water supply systems and their use as well as to discuss the importance of water symbolism in Iran and Arabic cultures, having in mind its practical and symbolic value and significance. This paper belongs to the realm of the history of ideas and in this sense it is not a specialist's analysis of a particular problem. It attempts to transgress the rigid disciplinary boundaries and does not employ a linear approach peculiar to most mainstream specialized research. Thus the author of this article aims at a certain level of universalization with all limitations such an attempt might have. Thus by following this methodological approach, categories like Persian architecture or water culture will be favored instead of the Iranian one, because as Saeid Khaghani has rightly argued, "Iran as a territory and Iranians as occupants of this territory are the notions which lost ground in the definition of Iranian or Persian art. Generally speaking, the absence of central capital in the Iranian territory which would have created an interdependence of center and periphery to mark a geopolitical terrain and the ideo-political detachment of Persian cultural materials from any particular sects, allowed provincial centers to participate in the production of high cultural material without being undermined as marginal or peripheral. The Timurid architecture of central Asia, the Farsi poems of Mogul India and the miniature paintings of the Ottomans testify to the elements which enable Persianate to be defined as an attribute beyond Iranian territory as it was known in those eras" (Khagani, 2017, pp. 67–68). Moreover, despite political changes, despite Arabic conquests, as Homa Katouzian argues, "Persian society and culture has never died" (Katouzian, 2010, p. 112). The main focus while discussing the uses, role and symbolism of water will be on gardens rather than spaces of Mosques, as the latter issue in the opinion of the author requires a somewhat separate discussion.

1. Approach and methods

The article employs the attitudes of comparative cultural studies and also the approach of the history of ideas while analyzing the complex topic. This essay falls into a category of qualitative research. Critical analysis of literature was also applied in selecting the sources and references.

The author has made several field trips to Iran (Meibod, Kashan and Isfahan), Indonesia (Yogyakarta) and Spain (Alhambra) to study the surviving examples of historical Islamic gardens for the purpose of this review essay.

2. Water supply in early and Pre-modern Asia

More than that, water was and continues to be a source that facilitates life on the planet and it is no wonder that the ancient Egyptians believed that the earth floats on gigantic underground waters that provided life for earthly beings. Moreover, they firmly believed that it is water from which the sun rises every morning, and that even gods have appeared from this source. In ancient Egypt, water was closely related to birth, purification, renewal, and life after death. One of the old Persian rivers was named *Zayandeh* or *Zenderood*/*ZayandahRūd* – i.e. the life-giving one, and its name linguistically attests and embodies the importance of water sources in ancient Persian civilization. Moreover, already in the very early Iranian myths, water and fire were treated as powerful – both destructive and at the same time cleansing force.

In a practical sense, the channels of extracting and circulating water were known in the ancient territory of Persia. No doubt, the climatic peculiarities and limitations (hot climate, drought, the scarcity of water resources, etc.) forced and enabled the inhabitants of these (Persian) lands to innovate and perfect their water supply systems. In the desert oasis where natural sources of water supply were abundant, activities such as gardening flourished despite the scarcity of water in neighboring areas. Thus it is hardly surprising that in these territories marked by the scarcity of water, several kinds of gardens originated and finally became rooted: in some of them water was provided by wells, in some others – canals were used for water supply; in other cases there were several layers of water that were made use of. In ancient Persian localities, the technology that was used to extract and supply water was pretty simple: in most cases, horse or mule power was used to spin water. Besides, as it is well known, the ancient Persians mastered the engineering devices to accommodate underground tunnels/and/or wells that were commonly known as *quanat* or *qanat* (Crowe & Haywood, 1972, pp. 30–31) (Figure 1). As early as 500 hundred years B.C., water was supplied to the city of Persepolis using these particular-kind of channels. Surprisingly or not, these early technologies for water supply discovered by the ancient Persians, are still used in the modern era in this part of the globe (Crowe & Haywood, 1972). This fact attests to the insight of early engineers and the durability of their invention. As Calogero Montalbano has emphasized, the traditional method of extracting and circulating water has also influenced the location of Iranian settlements: they were often located on "light rocky slopes, well terraced, and placed on deeply cultivated valley loors, not far from the foot of the hills nourishing the qanat. The different systems of irrigation are not employed exclusively, but the structure

Figure 1. Quanat in Meibod, Iran
(photo by the author of the article)

of the villages is bound, in many cases, to the main water provisioning, with settlements developing a water source of gathered at the mouth of a qanat, or near the collection of the storage dams" (Montalbano, 2008, p. 686).

It should be added though, that such technical tools of water supply often referred to as *noria* (water wheel) and *quanat* (underground water channel) seem to have spread in a large geographical area from the former territory of Persia up to the so-called Moorish Spain. The research carried out on this subject by Keith Sutton confirms that these early irrigation technologies existed in the southern part of Europe as, for example, in Spain's Andalusia (Sutton, 2001). Underground aqueduct water supply systems *(quanats)* were installed by the Mughal rulers in some towns of Central India. At least two of them have survived in places like Burhanpur and Aurangavad, where water supplies came from the mountains (Siriraj & Tayab, 2017, p. 24).

In the vast Arabian Desert that occupies most of the Arabian peninsula and where a subtropical, hot desert climate (comparable perhaps to African Sahara desert) prevailed and where biodiversity was extremely limited, water resources were far more scarce than in any adjoining regions. Thus when Islam came into being and started to spread,people depended on oases where occasionally wells were dug, and only after encountering the Egyptian lands and those of the fertile crescent, did the inhabitants of the Arabic peninsula learn to use the irrigation techniques devised and appropriated there (Siriraj & Tayab, 217, p. 35). Mastering the use of this water supply system, they eventually triggered their use in other areas as well, as has already been noted. As some researchers have already emphasized, such devises as the Persian wheel, that used the force of water to lift water to large heights for the purposes of irrigation, were used as widely as in Iran, Syria, and places like Cordoba, Granada, and Seville in southern Spain which experienced Islamic influences, especially in the medieval period (Siriraj & Tayab, 2017, p. 38). It is, nevertheless, worth noting in this context that in the territory of Spain, Roman aqueducts that provided water from large distances were already available for use. However, Arabs still erected quanats in order to provide water to their towns and settlements, Madrid in particular (Montalbano, 2008, p. 687). Quanats are still used by the people in some Islamic countries, like for e.g. Iran.

3. Water in Islamic gardens: role and meaning

The garden (like an oasis) understandably occupies an important place in countries with a hot or warm climate, the territories of which often include desert areas, as such gardens provides shelter from the heat of the sun and prevents hot winds. No wonder that gardens in the territory of Persia and Arabic countries became an area where for practical and aesthetical reasons, these were combined to produce a specifically distinct cultural entity known throughout the world as the Islamic garden. Islamic gardens have been planned and designed according to a set of principles, and water has always been arranged formally asaresearcher into the history of the culture of gardens Ema Clark has so insightfully emphasized "The most practical and effective form of irrigation is to use straight lines; but in traditional Islamic culture, as stated many times because of its importance in the making of an Islamic garden, the practical and the spiritual go hand-in-hand" (Clark, 2014, p. 88). The history of Islamic gardens is vast and complex, and widely discussed on various levels; however, it is useful at least for the purpose of this paper to consider the most essential features that made Islamic gardens distinguishably specific and unique and finally in the modern times enabled them to offer reproducible patterns to other cultures in various parts of the globe, especially Western ones.

Islamic gardens are usually characterized by symmetry, balance, harmony and proportions (Figure 2), and besides they were constructed following the concept of unity *(at-tawhid)* (Clark, 2014, p. 40). The gardens were intended to provide an atmosphere for relaxation, and peace and

Figure 2. Geoometry of water in Fin-Garden, Kashan
(photo by the author of the article)

escape from the heat of the sun by sheltering its users from the conditions of unbearably hot climates. Especially in the (Persian) gardens known as *chaharbagh*, the qualities of water were used for the purposes of cooling. These type of gardens were laid in strictly geometric fashion. It is generally maintained that the central fountain in this type of garden symbolized the giving and sustaining of life. The four channels of water extending from the central fountain/pool are usually associated with the four rivers of the Garden of Eden. The gardens were of several types: *chaharbagh*, gulistan or rose garden as well as mausoleum gardens that could be considered a variation of *chaharbagh*; however, as Emma Clark has insisted "the principal element of all Islamic gardens, of whatever type and whatever they may be, are water and shelter..." (Clark, 2014, p. 19). As some researchers insist, the Persian term *chaharbagh* means "four gardens" or "gardens divided into "four" and has no equivalent in Arabic, besides in reality their paths and water channels were divided into more than just four parts, so this requirement is in fact a reference to a "strict geometrical scheme" (Barrucand, 2015, p. 116). Some researchers argue that *chaharbagh* wasn't invented in the Timurid period as the concept of such a "walled, quadripartite garden containing pavilions was an ancient Iranian one going back to Sasonian and even Achaemenid times" (Subtelny, 2014, p. 116). Anyway, there is evidence that the existence of Persian gardens was documented as early as 600 BC, and also that the earliest known garden of this type was designed under the influence of Zoroastrianism, which maintained a metaphysical division of the cosmos (or universe) into four parts and where the four primary elements (water, air, earth and fire) were used for the classification of the material world (Farahani et al., 2016). It should be added though that neither Zoroastrians nor Persians were unique in using number four for these purposes: for example, the four elements existed in early Greek and Babylonian cosmologies while some other civilizations, like Buddhist or Hinduist, preferred to base their view of the material world on five elements. The same applies to the image of paradise as a garden that was shared by several religious traditions.

Speaking in these terms about Islam, however, it should be taken into consideration, as in recent research Saeid Khaghani has emphasized, "At the very center of Islamic aesthetics, we find the garden, a "liquid image" if we can name it as such, which moves from the theme of "paradise as garden", to that of the simple place of pleasure, especially significant for a culture of arid climates. From the face of beloved which "resembles a garden", to the background of paintings where celestial or worldly lovers meet, it is the place of unification. <...> The garden is a dominant cultural theme rather than just an image" (Khagani, 2017, p. 81). Though I would like to dismiss Khagani's appeal to the "liquidity" of an image, simply because thesociologist Zygmunt Bauman (2000, 2003) reserves this term specifically for describing the peculiarities of modernity and the modern period, still the general remark about its lasting character deserves special mention. Indeed, the phenomenon of the Islamic garden is a very specific cultural construct that goes beyond any particular historical period; however, at the same time it is deeply rooted in its religious-aesthetic culture as well as conditions of a southern climate and natural environment that is characterized by oppositions, for e.g. the scarcity of water resources, abundance of desert land, and the existence of remarkable natural oases where water resources had a huge significance in fostering various forms of life.

The importance of water in Islamic gardensis well documented (at least in Turkish historical sources). One of these documentations is a treatise of Huseyn Al-Ayvansaray's guide to the Muslim monuments of Ottoman Istanbul, where the author of the eighteenth century treatise regularly stresses the significance of water channels and fountains, recording chronograms found on the fountains, as for example, commenting on the fountain erected by sultan Mehmed Khan, the author of the treatise notes "He built a hall and fountain. It was brought to life. He created a rose garden of Paradise-resembling ornaments in the world. It became a royal excursion spot, a joy-giving place of pleasure" (Crane, 2014, p. 548). Or elsewhere in the treatise other chronograms are documented as a comment on the fountain found in Besiktas region, "I built this fountain as a *Sebil.* Perchance it is the fountain of the Sensibil [of Paradise]. This water within an arch of the road, Opened the door to the treasure of the world" (Crane, 2014, p. 425).

Persian gardens were especially important in relation to the use and role of water. As some researchers have already noted, "Water is one of the most important elements in the formation of Persian gardens and perhaps, with no exaggeration, it is the most critical and important element. Use of water in Persian gardening is very subtle and artistic, because in the Iranian garden, water is used not only for irrigation and supplying garden plants but also conceptual, poetic and artistic use of it has decorates garden space and with its presence, has created freshness, vitality, movement and beauty in the garden" (Salimi et al., 2016, p. 64). Geometrical arrangements of Persian gardens evolved under the influence of religious beliefs, myths and symbolism and this is an acknowledged fact (Mahdi Nejad et al., 2017, p. 46).

4. The role of water symbolism

Whenever the issue of water in Islamic culture is considered, references are usually and adequately made to the Holy Quran where one can find recurrent allusions to the significance of water. The very act of creation is closely related to the primacy of water that precedes other elements: "And it is He who created the heavens and the earth in six days, and his throne was upon Water" (Surah 11: 7). Among numerous other references to water, for e.g. to fountains and springs, Quran contains images of Paradise where water is also a dominant theme: it has

been calculated that perceptive phrase "Gardens underneath which rivers flow" is mentioned no less than thirty times in the text of Quran (Latiff & Ismail, 2016). In the description of the garden of paradise one can found references to four gardens: "And for him who fears to stand before his Lord are two gardens./ In both of them there are fountains flowing./ And besides these two are two (other) gardens)./ In both of them are two springs gushing forth" (Surah 55) or "In the gardens of bliss/ Amid thornless lote-trees. And banana-trees (with fruits), one above another. And extended shade,/ And water flowing constantly (Surah 56). Elsewhere in the Quran one can find a passage insisting that "Surely those who guard (against evil) shall be in garden and fountains" (Surah 51: 15).

However, though strong associations between garden and paradise are often mentioned while discussing any formal aspect of Persian as well as Islamic gardens, the questions is to what degree is the Islamic garden *per se* bonded with Quranic visions of Paradise? Moreover, the description of gardens as well as bodies of water, wells, or fountains in the text of the Quran is rather abstract and thus to a certain degree vague.

Some authors have argued that throughout the history of Persia, constant attempts were made to design and construct gardens under the image of Paradise found in the Quran; (Lehrman, 1980), however, in some of the more recent research this argument has been subjected to criticism. For example, Marianne Barrucand insists that despite images of Paradise as a garden and vice versa, "strictly speaking the real garden of Islam have relatively little in common with the Koranic notion of Paradise. It is easier to see them as continuation of pre-Islamic traditions of garden design, which led to the park landscape of the Ottomans and the large, intricate gardens of Persia, which in Islamic India were adopted with even more expense and witht the addition of elaborate fountains" (Barrucand, 2015).

In addition to what has already been stated, it can be added that allusions and references to water and its various meanings are quite naturally found in Arabic and Muslim literature: from the accounts of some particular bodies of water to the images found in verses of different Arabic poets. The discussion of literary sources in relation to water, however, goes beyond the scope of this paper.

Water in the Islamic garden is not only a simple, passive "screen" suitable for reflection and accordingly, peace of mind and tranquility, it is also an active element, as it is streaming, flowing, i.e. constantly moving and occasionally going up high into the air, refreshing the greenery in the area. For example in the gardens of the Alhambra's Generalife, it is also a symbol of life and motion (Figures 3, 5). In other cases, for example, in the evening or at night the water surfacing in ponds and pools can be interpreted as "containing" and "soothing" (Latiff & Ismail, 2016, p. 63). Water surfaces in Islamic gardens can also serve as smaller or larger "mirrors" reflecting the beauty of architectural and the natural environment. The pools of Alhambra have been especially famous in this role, providing gorgeous and often awe-striking mirror reflections of their immediate environment (Samalavičius, 2012, p. 47) (Figure 4).

At any rate, the arrangement of water in the architecture of Islamic gardens (including Iranian ones) incorporated both holiness (spirituality) and performance (practicality) (Zarghami et al. 2015, p. 123). Water was also used for pleasure purposes (Figure 6). It can be added that water as a symbol of divine cognition as knowledge, also bears a close relation to Islamic culture (Samalavičius, 2011, p. 96).

Figure 3. Water pool at Alhambra's Generalife
(photo by the author of the article)

Figure 4. Water mirror images in Alhambra
(photo by the author of the article)

Figure 5. Water pool in Alhambra
(photo by the author of the article)

Figure 6. Swimming pool in Tamansari, Jogyakarta, Indonesia in the site of former royal garden of the Sultanate of Yohyakarta – part of the Umbul Pasiraman bathing complex previously intended for sultan's concubines
(photo by the author of the article)

Figure 7. Cloister garden in Pažaislis, Lithuania
(photo by the author of the article)

Figure 8. Cloister garden at Holy Spirit Monastery
(photo from Wikimedia Commons, 2010)

On the other hand, the symbolism of water associated with Islamic gardens is hardly exclusive if compared to other cultures. It contains parallels to the symbolism of other Abrahamic religious traditions. In the Old Testament, one finds corresponding ideas claiming that the earth was founded upon the waters (Genesis 1: 6–7, 9–10) or that water brings life (Exodus 15: 23–35; 17: 2–7). However, the formal arrangement of Islamic gardens as well as the aesthetics of water of Islamic culture and society, had a profound influence on European water culture, especially during the Renaissance and after, when a number of cross-cultural practices for different reasons entered the European domain (Figures 7, 8).

Conclusions: the legacy of Islamic culture of water and its implications for contemporary societies

Emma Clark observes that "similarities between Islamic garden and the medieval European gardens can be seen, for example, in cloisters or the "cloister garth" as it was originally called" (Clark, 2014, p. 44). Whether these are just similarities of the result of controversial interactions between Muslim and Christian societies during the Middle Ages, remains an issue that demands more elaborate specialized comparative research, however, some of the similarities are striking. It can be added that as during this

period there was a strong confrontation between Islamic and Christian civilizations, statement of this kind needs serious reconsideration and more numerous evidence going beyond observation of Clark which, is by the way, worth further exploration.

Nevertheless, the cultural syncretism that was revived by the intellectual spirit of Renaissance undoubtedly provided an impetus for European culture to expand its horizons, incorporating elements formerly treated as Pagan, alien, Oriental or otherwise ideologically and culturally unacceptable. The spirit of the Renaissance triggered a previously unimaginable inclusion of exoticism of various kinds, and the developing interest in Eastern cultures resulted in various influences that were eventually adopted in Italy, Portugal, France, and other European societies. These encounters and exchanges differed: some places experienced the allure of Mughal gardens, some were more affected by the Andalusian garden and water culture. As Anatole Tchikine has acknowledged while discussing implicit relations between the Italian gardens of the Renaissance and those of Middle East, though these relations still require more elaborate research, some parallels between horticultural developments in both cultures are already evident (Tchikine, 2017, p. 226). For example, the introduction of running water in the Italian gardens of the period might have witnessed the influence of Oriental sources. Keeping in mind that profound aesthetics of water during this period flourished in European areas controlled by the Muslims, as in Spain's Granada (Alhambra), such a statement should be considered something more than a passing hypothesis. Some recent researchers, like for e.g. Christopher Pastore, have moved beyond the hypothesis and have concluded that the links between the aesthetics and water effects of Italian Renaissance gardens and those of the East are traceable because some of the southern Europeans and Venetians in particular travelled a lot during the period and recorded their admiration of Islamic gardens. Having analyzed the design and aesthetics of the Villa della Torre-a-Fumante built in the Italian province of Verone around 1550, Pastore emphasized that "This mid-sixteenth century garden complex near Verona thus epitomized the important role of water in Italian and Venetian villa <...> Fascination with this kind of moving water was not entirely novel, but Navagero's description of the Alhambra piqued the interest of his friends. We can see the importance of water in the complex of the Villa della Torre and imagine the impact of fountains, pools and watercourses had on the visitors of this villa" (Pastore, 2017, p. 23). Further Pastore concludes that in in these Italian villas, "magnificient gardens of ancient Rome, Andalusia, and the modern Muslim East offered discerning patrons models of refinements worthy of recapitulation in Veneto" (Pastore, 2017, p. 23). More evidence was recently providedin current research that Portuguese gardens and their culture of water were directly influenced by Mughal gardens in the sixteenth and seventeenth centuries (Castel-Branco, 2017).

Five centuries have passed of modest attempts to integrate some of the features of the Islamic garden and water culture into the European cultural millieu, and the presence of Islamic water culture seems to have grown considerably. This is, however, an issue that requires another time and another place to be dealt thoroughly. But as soon as such aspects as meanings, metaphors, and symbolism of water rooted so deeply in any religious culture are approached in a modern context, one has to deal with another uncomfortable question: whether a culture that denies the vertical (metaphysical) dimension can adequately deal with certain notions, concepts, and experiences. Having in mind that the interest in the issues of well-being is growing all over the world further research in the role of water in Islamic societies could provide more insights for global use and application of water in architectural and urban milieu. There is no doubt that the meaning of well-being has changed through the ages, however, the recent upsurge of well-being studies indicates that contemporary societies are conscious about the quality of their living. Water is one among many the important elements that can and should be considered thinking about the qualitative changes in human environment as well as healing capacities of natural environments (Well & Ludwig, 2019). Accordingly, the geometry and aesthetics of Islamic gardens can be useful models to be applied in different cultures and locations, albeit in most cases without its original symbolic content.

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