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A Bridge Between Earth & Sky: How the Natural World Shaped the Civilizations of Ancient and Early-Modern Persia

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historian and independent scholar
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presents

A BRIDGE BETWEEN EARTH & SKY

how the natural world shaped the civilizations of ancient and early-modern Persia

an honors thesis

This work is dedicated to my mother;

for taking me to as many historic sites as possible in the limited time of my childhood,

for being strict about my school work yet uncritical of my creative work,

and for always encouraging my strange enthusiasm.

To borrow a few words from the poet Rumi,

it is as if your soul and my soul are very old friends.

TABLE of CONTENTS

Abstract

This project seeks to investigate the ways in which nature shaped the culture of ancient Persia through technology, architecture, agriculture, and art. Furthermore, this project investigates how the symbols and mentalities of ancient Persia were carried forward into the early-modern period. Achaemenid Persia and Babylon are studied as societies which influenced one another and combined to create the foundation of Persian culture as it is currently understood, which then combined in later centuries with other Middle Eastern and Central Asian cultural movements to produce the Safavid and Mughal Empires. The Safavids and Mughals imitated and revived Persian culture in order to legitimize their empires, combining Persian and Islamic worldviews in the process. All of these empires are studied with the intent of uncovering how nature was viewed and understood in these societies, as well as how nature influenced religious practices and was used to legitimize political power.

Acknowledgements

This project is an ambitious one, and it would not exist if not for a number of people who have shaped my life and scholarship in very significant ways, whether they are aware of it or not. I will forever be indebted to everyone who has helped me find my voice and otherwise develop as a scholar and person. As Isaac Newton once to eloquently said, "If I have seen further than others, it is because I stand on the shoulders of giants."

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Preface: The Unnatural Natural World of Humans

Humans tend to view nature and culture as distinct opposites; one is wild, strange, and animalistic while the other is uniquely human and civilized. Yet these imaginary dichotomies between what is artificial and what is natural, what is cultural and what is wild, only serve to obscure the fact that humans are a part of the natural world. Innovation is a part of human nature, and the artificial creations of humanity are part of a much larger natural system of animals, plants, and geological features. All of these things alter the landscape within which they exist and shape the behavior of living things, and so the natural and the artificial are inexorably linked; they are not mutually exclusive of one another.

Nature has influenced human history, art, architecture, and culture. In turn, the events of human history, and all that we have produced over the course of our existence on this earth, have left an equally noticeable mark on the natural environment. While this symbiosis between the natural environment and human culture can be studied in many different contexts, the chapters which follow will explore this phenomenon in the context of ancient Persia and the Pre-Islamic Middle East, then in the context of the Persianate Early-Modern Empires of Safavid Iran and Mughal India, showing how the practices and perspectives of ancient Persia survived in the Early-Modern Era.

CHAPTER 1:

The Creation of Empire & New Environments in Achaemenid Cities

The cityscapes of the Achaemenid Empire in ancient Persia reveal the nuanced relationship between the natural world and the artificial world constructed by humanity. Natural symbolism adorned architectural features, while technology was used to manipulate natural phenomena, utilize natural resources, and alter the local climate. Indeed, the ability of the Achaemenid rulers to create artificial environments by bending nature to their will was seen as a manifestation of divine power. Furthermore, the perceived manifestation of divine power legitimized Persian imperial power. The way the Achaemenid Persians merged natural and artificial elements within the cityscape would influence and inspire similar practices within the constructed spaces of later Perso-Islamic and Indo-Persian Empires, such as those of the Safavids and Mughals. Thus, studying the Achaemenid relationship to the natural world can deepen and enrich one's understanding of that same relationship in later Persian cultures. It may even offer valuable insights about this relationship in general, revealing how the fusion of natural and artificial elements within a cultural environment is connected to the creation of empire.[1]

The Achaemenid Empire, or First Persian Empire, founded by Cyrus the Great (559-530 BCE) and expanded to its greatest size under Darius the Great (522-486 BCE), was

[1] For a visual overview of some ancient Persian artifacts, and to see how natural elements are incorporated into this art, see Charles K. Wilkinson, "Assyrian and Persian Art," *The Metropolitan Museum of Art Bulletin*, New Series, 13 no. 7. 213-224; to read more about the relationship between natural and artificial spaces in Persia, see V. Minorsky, "Geographical Factors in Persian Art," *Bulletin of the School of Oriental Studies, University of London*, 9 no. 3. 621-652. Cambridge University Press; for more specific information on Persian architectural technology and its symbiosis with the natural world, see A. A'zami, "Badgir in Traditional Iranian Architecture," presented at the International Conference "Passive and Low Energy Cooling for the Built Environment" in 2005, as well as F. Soflaee and M. Shokouhian, "Natural cooling systems in sustainable traditional architecture of Iran," from the same conference.

geographically the largest empire in human history prior to the Roman Empire. Under Darius the Great, the Achaemenid Empire included Egypt, Anatolia, parts of Greece and the Balkans, the entire Iranian Plateau, all of Afghanistan, and parts of the Indus Valley (Figure 1.1). This area, totalling about six million kilometers according to lower estimates, contained over forty percent of the global population at its peak, making the Achaemenid Empire not only the largest geographic empire of its time, but also the most populous empire in all of human history proportionate to the total global population. Its vast size also made it incredibly diverse, with several languages, including Old Persian, Aramaic, Egyptian, Greek, and Sumerian, spoken within its borders.

Figure 1.1: "Persian Empire around 500 BC" from *The Historical Atlas* by W.R. Shepherd, 1923.

The natural environment of the Iranian Plateau played a significant role in the formation of Persian culture during the Achaemenid Empire. The hot climate of much of Persia, especially the hot and arid climate of central Iran, required Persian architects and engineers to create hospitable artificial environments within the often hostile natural one. Multipurpose architectural structures known as bâdgirs, or wind-catching towers, were used to regulate the environment within individual buildings and entire cities.[2]

These architectural features were essentially rectangular, hexagonal, or octogonal towers with slits along the sides and interiors consisting of at least two tall, thin hollow spaces leading down into the main chambers of the building. When a breeze blew against one side of the bâdgir, the wind would be funnelled down into the building and circulated throughout the space. It was then pushed back up the other side of the bâdgir due to the increased air pressure within the building and the pocket of low air pressure in the hollow of the bâdgir facing away from the approaching wind (Figure 1.2). This not only decreased the temperature within buildings, but also in the city streets, which made life in urban areas of the Achaemenid Empire significantly more bearable during dry summer days, which can easily hover at temperatures above 100 degrees fahrenheit (38 degrees celsius). These wind towers were not only used in living spaces, especially in urban centers across Iran and Afghanistan, but also used in conjunction with irrigation systems to keep water from becoming infested with bugs and bacteria in storage reservoirs, ensuring that the air and water within the reservoirs was never stagnant.[3]

[2] A'zami, "Badgir in Traditional Iranian Architecture" and Soflaee and Shokouhian. "Natural cooling systems in sustainable traditional architecture of Iran," from *International Conference "Passive and Low-Energy Cooling for the Built Environment."*

[3] Soflaee and Shokouhian, 716-718; Azami 1022-1024.

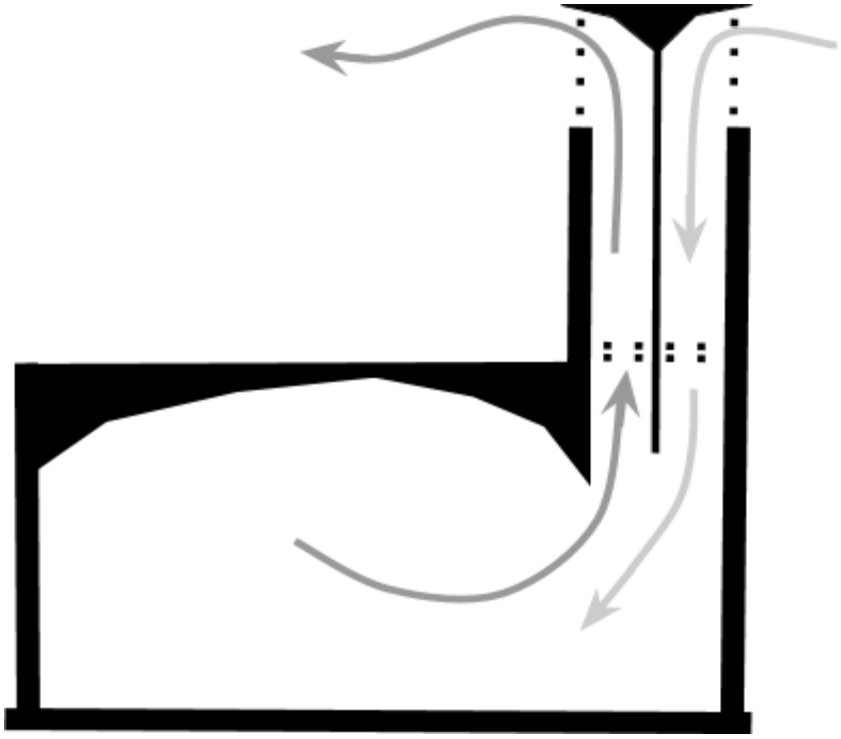

Figure 1.2: Illustration showing airflow caused by a bâdgir.

Furthermore, funneling dry air into these moist reservoirs and then circulating the now moist air back out into the city streets using bâdgirs also regulated humidity within the cities, thus making the environment more comfortable and preventing buildings from growing brittle and collapsing due to lack of moisture. Humidification also occured when the amplified wind from the bâdgirs was channelled across public fountains, spreading particles of mist. These ancient wind-catching towers simultaneously served as air conditioning for interior spaces, climate control systems for cities, and anti-contamination systems for water storage spaces.[4]

Bâdgirs are not only a testament to the sophistication of ancient Persian architecture, but are also a physical manifestation of the relationship between humankind and the environment in

[4] Fatemeh Saradj, "Using Natural Resources for Ventilation: The Application of Badgirs in Preservation," 45-46.

the Achaemenid Empire. Bâdgirs function simply by amplifying a natural feature of the environment, the wind, and are made entirely out of local natural materials, yet are still artificial structures imposed, however carefully, upon the natural landscape. It would be easy to refer to them as a "natural" form of air conditioning, but such a statement misconstrues the meaning of "natural" to mean something more like "energy neutral" or "efficient." Most people in modern, developed nations have grown so accustomed to guzzling electrical energy it can be difficult to imagine that ancient peoples created comfortable living spaces without the use of electrical energy. Architectural structures can work with nature and combat its harshest features without battling against its natural laws; the divide between the natural and the artificial may allude to different origins, but not necessarily an antagonistic conflict with one another.

To someone travelling through the arid countryside, stepping into an Achaemenid city with bâdgirs would have been like entering a new world, a sanctuary protected from the wrath of nature by divine forces. Indeed, the perceived ability of the Achaemenid Emperors to rule over nature, and even create new versions of nature, made them appear to be semi-divine figures and helped legitimize their authority. This message was reinforced by religious and natural symbolism on palaces and monuments. In the Achaemenid Empire, the creations of nature were closely entwined with the creations of man, and the ways this relationship manifested itself in the cityscape are directly related to the political and religious facets of ancient Persian society.

Achaemenid water reservoirs, irrigation systems, and urban water supplies also exemplify the ability of the ancient Persians to use nature's laws to their advantage, bending natural phenomena in a way which was advantageous to them. Water is crucial to life, and thus supporting large urban centers within a vast empire marked with mountains and deserts was

crucial to the maintenance of a stable urban population. To achieve this end, the Achaemenids used various methods of gravitational and reverse-gravitational irrigation. The Persians used pulleys similar to the ancient Egyptians to raise buckets of water and eventually devised a sort of water wheel, but one especially interesting example of water movement was the digging of qanats. These large, underground tunnels, first applied to Persian cities around 800 BCE, were carefully constructed so that the water within them would flow from higher to lower elevations through Persian cities, with reservoirs for drinking water located at a higher altitude and reservoirs for bath water, irrigation water, and other purposes at a lower altitude. The qanats were punctuated by narrow shafts which allowed the tunnels to be entered, cleaned, and otherwise maintained. This system also interacted with badgirs, which were sometimes constructed within a close enough proximity to wells, reservoirs, and tunnels in the qanat system so that the fresh air could circulate through the space. Achaemenid cities operated organically. The qanats served as the arteries and veins, just as the bâdgirs served as lungs which infused this system with fresh air and, with regards to their equally-crucial temperature-maintaining function, also as the city's hypothalamus. This homeostasis would contribute to Persia's later successes.[5]

Qanats, like bâdgirs, allowed the Persians to create order out of chaos and display their imperial power as being divinely ordained. To a Zoroastrian society rooted in the belief that all things in the universe are either aligned with goodness and order or with evil, destruction, and chaos, being on the side of order reflected spiritual righteousness and the physical power to bring this orderliness into being. The qanats were a crucial component in the creation of small paradises within cities in naturally-arid climates. In later Persian empires, the Achaemenid

[5] Yiannopoulos et al, "Evolution of Water Lifting Devices (Pumps) over the Centuries Worldwide," *Water* 7, no. 9, Section 2.4.

practice of controlling water and constructing elaborate built structures to create small paradises would live on. While Zoroastrianism would later be replaced by Islam and Hinduism as the predominant religions in early-modern Persian kingdoms, certain aspects of the Zoroastrian worldview were compatible enough with these other faiths to continually influence the practices, aesthetic sensibilities, and intentions of the ruling elite.

In addition to shaping the landscape and bending nature to their will, the Achaemenids also sought to imitate natural motifs for symbolic purposes. Elaborate nature depictions of both realistic and highly creative varieties can be found at numerous ancient Persian sites. At Istakhr, about forty miles down the winding Kor and Pulvar Rivers from Cyrus the Great's capital at Pasargadae, is the ancient site known as Persepolis. This site was founded by Darius the Great and includes his Susa palace complex. One of the most notable features of Persepolis is the Apadana, a large roofed hall upheld by enormous columns. The Apadana was started by Darius the Great (522-486 BCE) and completed by his son, Xerxes I (486-465 BCE). Also known as the Hall of One-Hundred Columns, the Apadana was the largest structure at Persepolis, with an area of over 1,000 meters, and served as a space for kingly public appearances (Figure 1.3). It was a stage and audience hall for displays of imperial power, such as the giving and receiving of gifts. Since the Apadana was a performative space, the visual elements of this structure reflect specific intentions and ideals of imperial power which the Achaemenid Emperor hoped to communicate to his subjects or visitors.

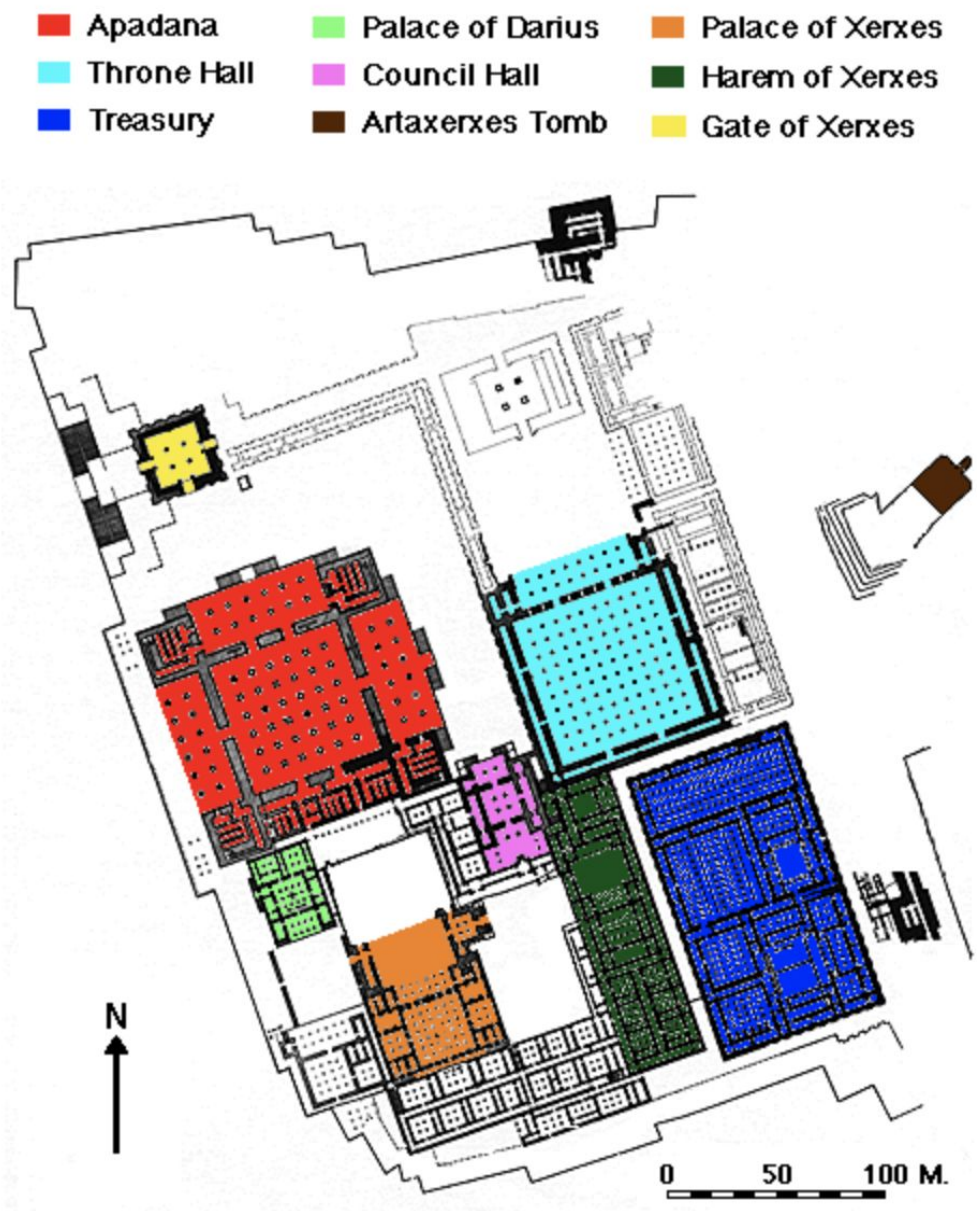

Figure 1.3: Map of Persepolis palace complex, with the Apadana in red.

The Apadana contains numerous detailed artistic elements related to the natural world. The 72 large columns of the Apadana, which were each estimated to have been about sixty-five feet high at the time of construction, were topped with giant cattle heads for capitals, some of

which are currently held at Le Musee du Louvre (Figure 1.4) and the Metropolitan Museum of Art. Anyone entering the Apadana would have been dwarfed by the height and width of the columns as well as the openness of the space. Furthermore, the organized structure and large magnitude of the space was representative of orderliness, constructed by and for the empire, triumphing over chaos.

The large square platform was once shielded from the sun by a flat roof, upheld by the columns, which would have plunged ancient visitors to the palace complex in a cool darkness and shielded them from the intense heat. This change in atmosphere, like the change in climate caused by wind towers in Persian cities, exhibited mastery over the natural world on a large and impressive scale, capable of inspiring wonder within visitors. While modern viewers of the site observe white and off-white stone structures and carvings, the Apadana would have been brightly colored at the time of its completion, with striking aquamarine blues derived from an opulent glaze of powdered lapis lazuli punctuating the vivid reds and yellows of the great hall and surrounding palace complex. Such hues would have reflected opulence and wealth when used to adorn buildings with color, as lapis lazuli was highly valued in various ancient Middle Eastern societies.[6]

[6] The Metropolitan Museum of Art, "Bull's head from column capital," accessed from https://www.metmuseum.org/art/collection/search/324025.

Figure 1.4: Bull carvings from Persepolis, displayed in Le Musée du Louvre; photographed by Sophia Laila Cabana.

Persepolis is adorned with many monumental carvings of animals, such as cows, falcons, and lions. There are also anthropomorphic figures, such as the god Shedu, a male Lamassu or protective deity, depicted with a human face but a bull's body and the wings of a falcon. Animal carvings and anthropomorphic figures are not unique to Persia, and indeed many Middle Eastern, Mediterranean, and Mesopotamian societies depict similar animals and anthropomorphic gods. However, in the specific context of Persian society and religion, the meanings of various images, motifs, and symbols differs from that of other Middle Eastern societies.

Zoroastrianism is rife with animal symbolism. Cattle, for example, as depicted in the form of giant cow heads atop the columns in the Apadana, are symbols of wealth and prosperity in many Middle Eastern and global cultures, along with other types of livestock. However, in Zoroastrianism, cattle in particular holds additional symbolism associated with creation, gender, and the early days of the universe. Much of this symbolism is derived from the Gavaevodata of Zoroastrian cosmology, a divine, uniquely created bovine creature of a hermaphroditic or sexually ambiguous nature, which was slain in the Persian creation myth. The blood, flesh, bone marrow, and physical *cithra*[7] of the animal was used to populate the world with animal life, while the soul of the Gavaevodata became the soul of all livestock and beneficent animals. The name of this creature alludes to it's hermaphroditic nature, meaning literally "created as one" or "solely created," thus indicating that the Gavaevodata was meant to embody feminine and masculine attributes, possessing the essence of all male and female animals and both masculine

[7] Meaning something like seed, essence, or bloodline, meaning its genetic material and likeness.

and feminine instincts.

This animal represents the idea of many within one, both in the sense that its physical body embodies masculine and feminine traits and in the sense that its single soul is embodied within every individual domesticated herbivore. This unity between different elements of nature, such as the male and female sexes and even unity between all individual creatures, shows a Zoroastrian understanding of the nature of the universe which differs from that exhibited in the Egyptian creation myth. The Egyptian concept of Nut, the feminine sky goddess, and Geb, the masculine earth god, exhibits an understanding of the world in which male and female are naturally separate but come together in the act of creation, but the Persian concept of a single being, both feminine and masculine, being fragmented into various feminine and masculine individuals, exhibits and understanding of the world in which male and female are naturally united, in which creation is an innate and effortless action of the universe which is hindered by earthly divisions.

The notion of all creatures being of one essence, rather than distinct essences, is something people generally associate with eastern religions, but Zoroastrianism is more similar to the Abrahamic religions than anything else, and certainly shouldn't be studied as distinct from western culture simply because this concept of oneness is different from the intellectual upbringing of modern Anglo-Americans. Even the ancient Greek philosopher Plato believed in a sort of oneness between men and women; in his famous dialogue, *The Symposium*, Plato describes, by way of a story told by Aristophanes, how humankind originally had two faces, four arms, four legs, and were double what we are now in every sense, such that the gods themselves actually feared us and divided humanity into men and women, leaving humans to always long for

the missing halves of themselves.

While such a notion is perhaps more romantic than that of a giant, primordial, hermaphroditic cosmic cow, the worldview expressed in both of these creation myths is very similar. Oneness is emphasized above the self, and gender or sex is conceived of as a purely physical, not spiritual, division between living beings, something intended to neatly divide living things during their lives so as to limit their endless creative potential.

The Gavaevodata, while an expression of an abstract understanding of the truth of the universe, was also based on nature and biology as the ancient Persians could have observed it. Hermaphroditism in a more mild form known as freemartinism is incredibly common among cows when compared to other livestock, so the Gavaevodata being a bovine creature as opposed to some other type of livestock makes sense given what the ancient Persians would have observed during their farming endeavors. The association between cattle and gender, in both the physical, biological, creation-oriented sense and in the social, role-oriented sense, was also rooted in what cattle herders and breeders in the Achaemenid Empire would have witnessed.

Male and female cattle exemplify an idealized version of traditional gender roles and desirable gender qualities from the perspective of the ancient Persians. Bulls are aggressive, strong, and verile. Cows are nurturing and motherly, with milk which the Persians associated with the waters of life. Cattle, like water, were necessary to the maintenance of the human population in ancient Persia, providing nourishment and taking on spiritual significance. Just as cattle in general embodied creation in general to the ancient Persians, depicting one sex of cattle instead of another was associated with different symbolic qualities with different sets of values, and represented different aspects of idealized feminine and masculine creative forces. These

forces, when united, continue the cycle of creation and reproduction.[8]

Additionally, cattle were associated with moral righteousness and goodness. To the Persians, they were benevolent creatures. Their soul or essence was shared among all good animals, and those who cared for cattle were seen as taking part in the betterment of human life. Cattle provided stability, nutrition both from milk and meat, and simply by reproducing could create more wealth for an individual or town. As such, the Emperor, and the state he governed, could share in the associations which cattle had with moral goodness, benevolence, stability, nourishment, and wealth by associating itself with cattle through symbolism.[9]

Given their cultural and religious importance, which reaches beyond the wealth symbolism of cattle present in many other cultures, it is not surprising that cattle are depicted in various forms at Persepolis. In addition to cow and bull head carvings, the protective deity Shedu (Figure 1.5) is depicted with the body of a bull. The bull was likely associated with protective and hypermasculine qualities, as a strong and territorial animal. It could represent the protective character of the king over his domain, idealized masculinity, physical strength, and even spiritual strength in different contexts, and these associations may have overlapped.

[8] Richard Foltz, "Zoroastrian Attitudes toward Animals," *Society & Animals* 18 no. 4, 2010, 367-380.
[9] Richard Foltz, 369.

Figure 1.5: Shedu, displayed in Le Musée du Louvre in Paris, France;
photographed by Sophia Laila Cabana.

The symbolism of the bull is reinforced by other carvings in other locations onsite, such as the presence of stylized bovine-like horns being included on carvings of winged lions on the procession way of Darius the Great's palace, where these images served as intimidating palace guardians and marked the Emperor's domain. The physical form of the animal was a vessel through which its essential truth could be manifested in the world, a way for the spirit and nature of the animal to live out its divinely ordained purpose for being. Depictions of animals were not meant to merely be depictions of animals, but depictions of the attributes and powers associated with that particular animal, which is why different body parts and features of various creatures were often combined in one image. In depictions of the bull-bodied Shedu at Persepolis, the bull body represents a masculine essence as protector, and alludes also to masculine strength and sexual energy, while the presence of wings makes the figure a divine one. The presence of wings in Persian art consistently indicates divinity, yet understanding why requires an investigation of more than just depictions of gods like Shedu.

Falcons and birds of prey were considered sacred animals. They were fierce, intelligent animals with a piercing gaze like the eyes of divine beings cast down to earth, and their ability to soar above the world in which people lived suggested a link between these birds of prey and the upper world of the divine. Their ability to destroy or subjugate smaller birds, as well as reptiles like snakes, which are generally associated with evil in Middle Eastern cultures, made them evocative of divine power over other beings and the domination of the divine over evil.[10]

Zoroastrianism is a unitarian religion in some ways, meaning it embraces the concept of a unified source or being of goodness in the universe, but it is also a dualistic faith in which good

[10] Michael Jay Chan, "Cyrus, Yhwh's Bird of Prey (Isa. 14:11): Echoes of an Ancient Near Eastern Metaphor," *Journal for the Study of the Old Testament* 35 no. 1, 118-122.

and evil are constantly struggling against one another, with good eventually overpowering evil. Just as a snake and a falcon are both powerful, but the falcon unquestionably capable of dominating the snake, good and evil were seen as two powerful but imbalanced forces in the universe. The triumph of goodness and order over evil and chaos is also something that makes Persian religion and morality unique from earlier Mesopotamian religion, in which the gods were chaotic and possessed less moral consistency. This is one reason why Zoroastrianism is sometimes seen as being the spiritual movement which laid the foundation for the Abrahamic religions and the dualistic struggle of the universe, exemplified in Islam, Christianity, and Judaism as the battle between a just and merciful deity known as Allah, God, or Yahweh and his angels against the evils of Satan and his demons. The falcon, which is emblematic of Persian culture and depicted on the flag of the Achaemenid Empire as well as on the Faravahar symbol of the prophet Zoroaster, evokes the noble, wise, powerful, and ultimately good nature of the divine in Zoroastrianism.[11]

The figure of the falcon combines physical power and spiritual power in one image, as do depictions of Shedu and other creatures or deities bearing the wings of the falcon. Furthermore, deciphering the relationship between humans and falcons in Persian society uncovers a new dimension to the implicit symbolism of these fantastic birds of prey.

Through falconry, birds and people entered into a symbiotic relationship, one in which the birds allowed themselves to be commanded because they were also taken care of by their human companions. There had to be a degree of comfort and even trust between the falconers and their birds, and this relationship may have added a new dimension to the symbolism of birds

[11] Aren Wilson-Wright, "From Persepolis to Jerusalem: A Reevaluation of Old Persian-Hebrew Contact in theAchaemenid Period," *Vetas Testamentum* 65 no. 1 (2015), 152-167.

of prey. Not only were they divine, but they were also willing to serve humanity, and humanity, through hard work, could gain the favor and assistance of divine forces to serve their purposes.[12]

The winged lions depicted at the Susa palace of Darius I (Figure 1.6) are yet another example of this nuanced relationship between man, nature, and the divine in ancient Persia. Lions were not only kingly power symbols due to their formidable hunting ability and physical fierceness, as well as their social order in which a powerful male serves as protector and leader of a pride just as a king serves his people, but also due to the ways in which the Persian elite interacted with lions. In order to show their strength and ability as noble, masculine protectors, men of royal or noble birth actually hunted lions for sport, armed with spears or bows and arrows. This practice, however, differs from modern trophy hunting in that it was seen as a spiritual and physical battle between two worthy opponents, the king and the lion, who were seen as possessing similar virtues and roles. Furthermore, the practice of controlling the lion population was actually vital to protecting human life within the Achaemenid Empire, and thus mankind grew to see lions as a respected enemy which had to be controlled so as to maintain a balance between the kingdom and the wilderness which threatened to encroach upon it.

[12] Boyce, Mary. "THE NATURE OF THE WORLD AND ITS ORIGINS". In *A History of Zoroastrianism, The Early Period*, (Leiden, The Netherlands: Brill, 1996) doi: https://doi.org/10.1163/9789004294004_006. Rose, Jenny. *Zoroastrianism: An Introduction*. (New York, I.B. Tauris, 2010), 25. Both Persepolis readings.

Figure 1.6: Fragment of wall from the processional way of the Palace of Darius, displayed in Le Musée du Louvre in Paris, France; photographed by Sophia Laila Cabana.

The spirit of the lion and the spirit of the king were seen as similar, and even today the lion is a powerful symbol of Persian heritage and featured on the Iranian flag as a way of tying their current nation-state to Persian ethnic and cultural history. This revival of Persianness in modern Iran began during the Safavid Empire, even though this empire also had strong ties to Turkic practices and peoples. The lion was also featured on numerous flags of the Mughal Empire, indicating the continuation of Persian symbolism and identity among Mughal elites who, like the Safavids, sought to claim legitimacy from their Persian past. Where they differ is in the way that the Mughals, through their founder Babur, also derived legitimacy through the Turkic and Turko-Mongolian heritage of Timur and Genghis Khan. The complexities of mixed cultural heritages in later Persian Empires is a subject of much discussion and debate which cannot be fully addressed here, but it must be emphasised that the idea of Persian heritage persisted and

evolved as it mixed with other heritages, and that Persian sensibilities, practices, and symbols did persist in early-modernity and beyond.

While the lion, specifically, is a masculine symbol, it is more importantly a noble masculine symbol, one reserved only for the greatest, wealthiest, and strongest men rather than the common man. It is a symbol of the king himself, of his character and his ability to battle nature or overcome any challenges it places before him, but also a symbol of his place as a natural ruler and as the fiercest creature in the natural world. This ability to overcome challenges, enact divine will, and protect those who cannot protect themselves was ideally reflected in everything the Emperor did, such as Cyrus' conquering of Babylon and freeing of the Hebrews, Darius' building of roads and expansion of the Persian Empire, or even in the construction and maintenance of bâdgirs and qanats. All of this was seen as divine will, as the Persians inheriting the world of nature and reshaping it as the divine intended for them to do, but also as the Persians battling nature as almost equally powerful forces, one being order and one being chaos, with order eventually triumphing. In many ways, this worldview is deeply entwined with the dualism and unity of Zoroastrianism.

The winged lions, which possessed the same spiritual attributes of the ordinary lion and were also symbols of the king, are also depicted with divine falcon wings and powerful bull horns, which adds additional symbolism to these images in particular. The winged lions were the first thing greeting visitors to Darius' palace at Susa, where they lined the tall, confining walls of the procession way to his palace. The illusion of being surrounded by powerful beings on all sides, slowly being cut off from the view of the surrounding city, would have projected the power, importance, and dominance of the Achaemenid Emperor to all those who visited him.

Not only were the roads one used to travel constructed by his command, the climate of the city regulated and by his command, and the laws of the land created by his command, but also the symbolism present throughout the city and the procession way would have reinforced the power of the king and made him seem like a semi-divine force to all who visited him.

The Persians were not the only ones who saw the Achaemenid Emperor as an enactor of divine will, and while the Persians and Hebrews used different names for the ultimate divine power of their cosmological order (the Zoroastrian Persian name being Ahura Mazda, the Wise Lord, and the Hebrew name being Yahweh) the Hebrews adopted Zoroastrian symbolism and combined it with Hebrew terms when describing Cyrus the Great in the Torah. Cyrus, who freed the Hebrews from captivity after conquering Babylon, allowing them to return to Jerusalem and rebuild the Temple of Solomon while also granting religious freedom to all of the people living within his empire, is referred to as "the Bird of Prey" by the Hebrews. Given the immense respect and gratitude the Hebrews felt for Cyrus at this point in their history, and given how they also refer to him as a "Messiah anointed by God" or a messenger of God, it is clear that the Hebrews adopted Zoroastrian symbolism to craft a title of respect for Cyrus which would pay homage to Persian culture.[13]

The similarities between the Hebrew Yahweh and the Zoroastrian Ahura Mazda, both of whom are poised as the ultimate masters of the universe and forces for good locked in battle against an opposing force of evil, made it possible for the Hebrews to adopt Cyrus as a sort of religious figure or prophet, even though he was not a Hebrew. The main deity he worshipped was similar enough to the one they worshiped, and his actions beneficial enough to the Hebrews,

[13] Lisbeth Fried "Cyrus the Messiah? The Historical Background to Isaiah 45:1," *The Harvard Theological Review* 95 no. 4 (2002), 390-393; Wilson-Wright, "From Persepolis to Jerusalem," 165-167; Chan, "Cyrus, Yhwh's Bird of Prey," 124-127.

for this to seem justifiable. It was perfectly plausible to the Hebrews that the divine force which motivated Cyrus was the same divine force which they worshipped, even if they were called by different names. Furthermore, Cyrus was already projecting an aura of semi-divinity due to his military success, wealth, and apparent control over the natural world, and this was reinforced by the symbols his own people associated with him, even before he liberated the Hebrews. The practice of invoking divinity through the utilization of natural symbolism and environmental engineering in architectural spaces gave legitimacy to the Achaemenid Emperor.

While the relationship between divinity, the natural world, and political power in ancient Persia is a nuanced one, what is clear from the available evidence is that all of these aspects of Persian culture were intimately connected, and this was displayed publicly in the art, technology, and architecture which dominated the Achaemenid cityscape.

CHAPTER 2:

Nature & Artifice in the Gardens of Babylon

While some would argue that Persian architectural and artistic traditions are the most influential in the Middle East, there are other civilizations which warrant special consideration. Particularly when investigating the relationship between humanity and the natural world as expressed in physical spaces, garden spaces become a crucial subject of study, and no kingdom in the ancient Middle East is so renowned for their gardens as the older Mesopotamian kingdom which Cyrus the Great famously conquered when he founded the Achaemenid Empire: Babylon, located in modern day Iraq. Gardens are crucial to understanding how a culture views and interacts with nature, since they are spaces in which the natural and the artificial are blended and shaped in an artistic way, and thus made to invoke and amplify symbolic messages.

Given how prominent gardens are in later Perso-Islamic empires, and given how early in Persian history the conquest of Babylon was, the garden traditions of this kingdom must be incorporated into our understanding of Persian garden traditions, since Babylon's legendary horticultural feats likely left a profound mark on Persian artistic sensibilities, and Persian influence likely altered Babylonian architecture and aesthetics as well, leading to the creation of a new culture, both Persian and Babylonian in nature.

Babylonia, one of the first civilizations to emerge in Mesopotamia alongside the kingdom of Assyria, included land along the Tigris and Euphrates rivers and the Arabian Gulf Coast. This land was more fertile than much of the land in the region despite lacking reliable rainfall, with rich soil and access to large navigable rivers which could supply abundant water to irrigation

canals. This made the region an ideal one for agricultural innovation and artistic experimentation involving agriculture. It is even likely that the Babylonians or other nearby Mesopotamians invented the notion of gardens for pleasure rather than purely for food.[14]

The existence of the Hanging Garden of Babylon, as described in the Bible and by classical writings, has not yet been substantiated by archeological proof. However, written records regarding this particular mythical garden and archeological evidence regarding Babylonian gardens in general can give us insight into the possible truths behind this myth. Furthermore, studying the artistic garden tradition of Babylon as well as the mentalities and values which informed it can reveal the origins of later Persian and Middle Eastern garden styles.

The ancient Roman scholar Diodorus Siculus described the Hanging Garden of Babylon sometime between 60 and 30 BCE, centuries after the era in which the garden existed. The story of the Hanging Garden which he wrote down, based on his own biases and the conflicting evidence available to him, was as follows:

> The Hanging Garden, as it is called, which was built, not by Semiramis [a Lydian-Babylonian queen], but by a later Syrian king to please one of his concubines; for she, they say, being a Persian by race and longing for the meadows of her mountains, asked the king to imitate, through the artifice of a planted garden, the distinctive landscape of Persia.[15]

This brief passage is extremely revelatory of attitudes and interpretations in the scholarly community at this time regarding the gardens of Babylon. Firstly, based on the way Diodorus Siculus immediately refutes the idea that Queen Semiramis was responsible for the construction of the hanging garden indicates that this was a position with at least some support in the

[14] Stephanie Dalley, *The Mystery of the Hanging Garden of Babylon*, (Oxford: Oxford University Press, 2013) 2-3.
[15] Diodorus Siculus, *Library of History* 2 no.10, translated by C.H. Oldfather, Loeb edition (1933); Dalley, *The Mystery of the Hanging Garden*, 31.

scholarly community of ancient Rome, otherwise there would be no point in debating or refuting it. Secondly, even though Diodorus Siculus believed that Semiramis was not responsible for the garden, he still believed there was a feminine influence in its construction, even if the official political power behind it was exercised by a man. Thirdly, Diodorus, and possibly other members of the scholarly community at his time, believed there to be some relationship between Persia and the legendary garden, likely indicating that there were aesthetic similarities between the gardens or landscape of Persia and the gardens of Babylon.

Given that there was a belief in a Persian-Babylonian garden connection during this time, there are then three probable inferences one can then make regarding this similarity. The first inference is that, as Diodorus believed, Persian sensibilities influenced Babylonian gardens; the second inference is that, conversely, it was actually Babylonian sensibilities which influenced later Persian gardens; and the third possible inference is that the garden traditions of Babylon and Persia did not directly influence each other, but rather evolved independently out of a shared Middle Eastern cultural lineage. There is no way to know with absolute certainty which possibility is most true of the three inferences, especially because the lack of Babylonian sources mentioning the specific Hanging Garden referenced in Biblical and Grecco-Roman records leaves the contemporary historian without a clear chronology. It cannot be discerned which garden tradition came first, the Persian one or the Babylonian one, but the idea that Persian and Babylonian gardens are somewhat culturally related, even if only distantly, can be asserted with confidence.

It is also clear that the Babylonians, like the Persians, created new environments which mimicked the natural one, but with substantial improvements in comfort and aesthetics.

However, this sort of activity in the context of garden spaces differs from this activity in the context of purely architectural cityscapes in one major respect; cityscapes are not meant to give off the illusion of being part of the natural world, while garden spaces are intended to mimic nature to varying degrees, so that some gardened spaces may even be mistaken for nature. The presence of organic material as the main component of a garden space gives it a sort of artificial naturalness; it is a place where people can go to interact with a controlled form of nature. Furthermore, gardens were more than just planted spaces, and were also part of intricate architectural and technological systems.

The Hanging Garden of Babylon was described as a many-leveled terraced structure, similar to a ziggurat in shape, with complex irrigation systems operating to transport water to the highest levels of the structure. Recent scholarship and excavations around the city of Nineveh have uncovered complex irrigation systems like the ones described by the ancient Greek historian Heroditus in his writings about Babylon, and the irrigation systems at Nineveh bear a striking resemblance to the Archimedes Screw (today also known as the hydraulic screw) invented centuries later in Greece. Hewn of brass, the system consisted of a cylinder with a spiral inside of it, which could raise water although no one outside could see it being done. While not all irrigation projects or garden projects in Babylon utilized the hydraulic screw, the recent archeological evidence indicating their existence at Nineveh adds another dimension to the nature of Babylonian gardening. While water was inseparable from paradise, the artificial processes involved in securing it might have detracted from this powerful association at times,

leading the Babylonians to seek seemingly-impossible ways of making water move upward and magically appear where it was most needed.[16]

Even if the mythical, Biblical Hanging Garden did not exist, or at least not on as grand a scale or in the same location as one would expect from the legends, there is evidence that the Babylonians did indeed create intricate hanging gardens, and in a city like Nineveh with rugged topography, using the natural landscape to help mount hydraulic screw irrigation systems made the construction of hanging gardens much easier and more efficient. The archeological evidence at Nineveh which indicates that Babylonians possessed hydraulic screws long before Archimedes' time also reveals that the ancient Middle East may have had a more profound influence on the classical world than previously believed. While it is possible that the traditional interpretation that Archimedes invented this device is not completely false, indeed, he could have invented it independently, the fact that the ancient Greeks knew about Babylon's gardens and even had documentation of the type of irrigation system used in these gardens makes it highly unlikely that the hydraulic screw was invented independently in Greece.

Philo of Alexandria wrote that the Babylonians "force [water] up, running backwards, by means of a screw… round and round the spiral of the machines… altogether they irrigate the whole garden." While Philo lived a couple centuries after Archemedes, he did not seem to credit Archimedes with this invention, referencing an older kingdom already in possession of this technology.[17]

The Persians utilized water-lifting irrigation and used gravity to their advantage as well, but the ancient Persian method of reverse-gravitational irrigation, the waterwheel, was not

[16] Dalley, 40-41, 78-79.
[17] Dalley, 41.

described in ancient Babylon. No records of the Babylonian gardens describe the twirling wooden wheels, carrying water from a low point and depositing it at a higher point often by the use of animal power, but such structures have been described in Persia and Egypt, indicating that the Babylonians possessed different irrigation technology.[18]

The Babylonian technology was more visually subtle, indicating that it was meant to be a hidden component of the terraced garden spaces which existed in Babylon, not a highly noticeable part of the landscape like large water wheels. The subtlety of this irrigation system may indicate that these structures were indeed intended to give off the illusion of being naturally or divinely created, not simply constructed by humans. Perhaps, as Diodorus believed, these structures were meant to imitate Persian mountains and were influenced by the Persian landscape, but the practice of Babylonian garden design was still something unique to Babylon. While Persian's invoked natural symbolism in clearly artificial structures, the Babylonians sought to recreate something natural through artificial means. This practice, executed to this level of excellence, would later be evident in Perso-Islamic Empires during early modernity, yet was not evident initially in ancient Persia. This indicates that the conquest of Babylon and the absorption of Babylonian culture into the Persian Empire did have a long-lasting effect on the material culture of the Middle East. Babylonian sensibilities and practices were not destroyed or necessarily made more Persian, but rather the Babylonians were incorporated into the idea of what constitutes Persian identity. This Perso-Babylonian creolization introduced the unique garden practices of Babylon to the striking architectural tradition of Persia, and this blending of traditions would serve as the foundation for many future architectural and garden practices,

[18] Yiannopoulos et al, "Evolution of Water Lifting Devices (Pumps) over the Centuries Worldwide," *Water* 7, no. 9 (2015), 5034-5039; Dalley 73-81.

which sought to invoke natural symbolism and use powerful geometry like the Persians while also seeking to create garden spaces that created an idealized form of nature like the Babylonians.

The use of technology to create new environments was a commonality between Persian and Babylonian culture. While the Persians bent wind to their will to project an image of imperial power and create small paradises within their cityscapes in the arid Iranian Plateau, the Babylonians bent water to their will and blended organic materials like plants with artificial landscaping and architectural features. Both projects intended to project power, so in some respects, these traditions reveal a similarity between Persian and Babylonian worldviews regarding the place of man within nature.

In both instances, humanity was viewed as having a constructive and symbiotic relationship with nature, but not necessarily an equal one, as humanity was viewed as capable of dominating nature and also caring for nature by use of intellect. In Babylon and in Persia, certain aspects of nature were replicated with artificial means to create a particular visual and aesthetic effect, control over nature was believed to be a sign of the divinely ordained right of monarchs to rule, and complex, energy-efficient technology that still works today was incorporated into large-scale architectural projects. Yet in Babylon, man's control over nature, in the manual, physical sense, was intentionally hidden.

Persians conceived of man's control over nature as being tied to creative faculties and the ability to exert physical force on the natural world through construction. The Babylonians, on the other hand, wished to will new controlled wildernesses into existence, constructing these gardens in such a way as to make it appear as though some deity simply placed these artificial

mountains and forests in the midst of Babylon, with the process of artificial irrigation kept out of sight. The actions of both the Babylonians and Persians could turn the ruler of these kingdoms into minor gods in the minds of subjects, but it is clear that they wished to become two different types of gods.

The artistic traditions begun with Achaemenid architecture and Babylonian gardens would retain some of their original elements and underlying mentalities in the Early-Modern Era, where they would make themselves plainly visible in the garden traditions of the Safavid and Mughal empires. The tension between asserting dominance over nature through construction and exercising power and stewardship over nature through imitation would be combined with the tension between Persian, Islamic, and Hindu cultural traditions and artistic sensibilities in these empires, leading to a wondrous diversity of design. The deities of ancient Persia and Babylon would be displaced by Allah, but the pre-existing Perso-Babylonian culture, which would come to gradually be seen as simply Persian culture as formerly-Babylonian elements became indistinguishable from the culture which had absorbed them, would would remain alive and intact even as Islam was superimposed onto it.

CHAPTER 3:

Power & Paradise in the Gardens of Safavid Iran and Mughal India

Safavid Iran (Figure 3.1) and Mughal India (Figure 3.2) both represented a merging of various cultural traditions and individual identities. This chapter explores and compares the sociopolitical, aesthetic, environmental, and architectural facets of Safavid and Mughal culture by investigating the physical space where all of these facets intersected: gardens. The garden space in Mughal India and Safavid Iran was a multipurpose, highly complicated, highly symbolic space in which the natural and the artificial interacted in unique ways compared to other public, private, political, or spiritual spaces. The garden, which was capable not only of shifting between being a public, private, political, or spiritual space in different contexts, but was also capable of embodying all of these social functions in a single situation, reflected the nuanced relationship between humanity and nature in these empires. Furthermore, the expression of relationships within the garden space (including the relationships between Allah and humanity, humanity and nature, nature and the Shah or Sultan, and the Shah or Sultan and his subjects) were all crucial to legitimizing the consolidation of state power and the creation of these empires in the Middle East during early-modernity.[19]

[19] For a general overview of Islamic and Perso-Islamic architectural styles, see J.B. Harrison, "Architecture," *Encyclopedia of Islam*, New Edition I (Leiden, Netherlands: Brill, 1967) 609-625; for more basic information on Middle Eastern gardens, see A.S. Bazmee Ansari, "Būstan," *Encyclopedia of Islam*, New Edition I (Leiden, Netherlands: Brill, 1967) 1345-1348; for more information on the social, political, environmental, and architectural factors of Safavid gardens and palace gardens, see Mahvash Alemi, "Princely Safavid Gardens: Stage for Rituals of Imperial Display and Political Legitimacy," In *Middle East Garden Traditions: Unity and Diversity*, edited by Michael Conan (Washington, D.C.: Harvard University Press, 2007) 113-137; for more information about the political, symbolic, and environmental significance of gardens in the Mughal Empire, see Ebba Koch, "My Garden is Hindustan: The Mughal Padshah's Realization of a Political Metaphor," In *Middle East Garden Traditions: Unity and Diversity*, edited by Michael Conan (Washington, D.C.: Harvard University Press, 2007) 159-175; to learn more about ancient traditions of gardens being utilized as political spaces in the Middle East, see David Stronach, "The Garden as a Political Statement: Some Case Studies from the Near East in the First Millenium B.C.," *Bulletin of the*

Figure 3.1: Map of the Safavid Empire from "Safavid Persia"
In *A Global History of War: From Assyria to the Twenty-First Century* (page 171).

Asia Institute, New Series 4 (Bulletin of the Asia Institute, 1990) 171-180; finally, for an excellent primary source regarding interactions between man and nature as well as the political power of garden spaces, in addition to evidence of garden traditions and natural observation being significant at the foundation of the Mughal Empire, see *The Illustrated Baburnama*, translated and edited by Som Prakash Verma (New York: Routledge, 2016).

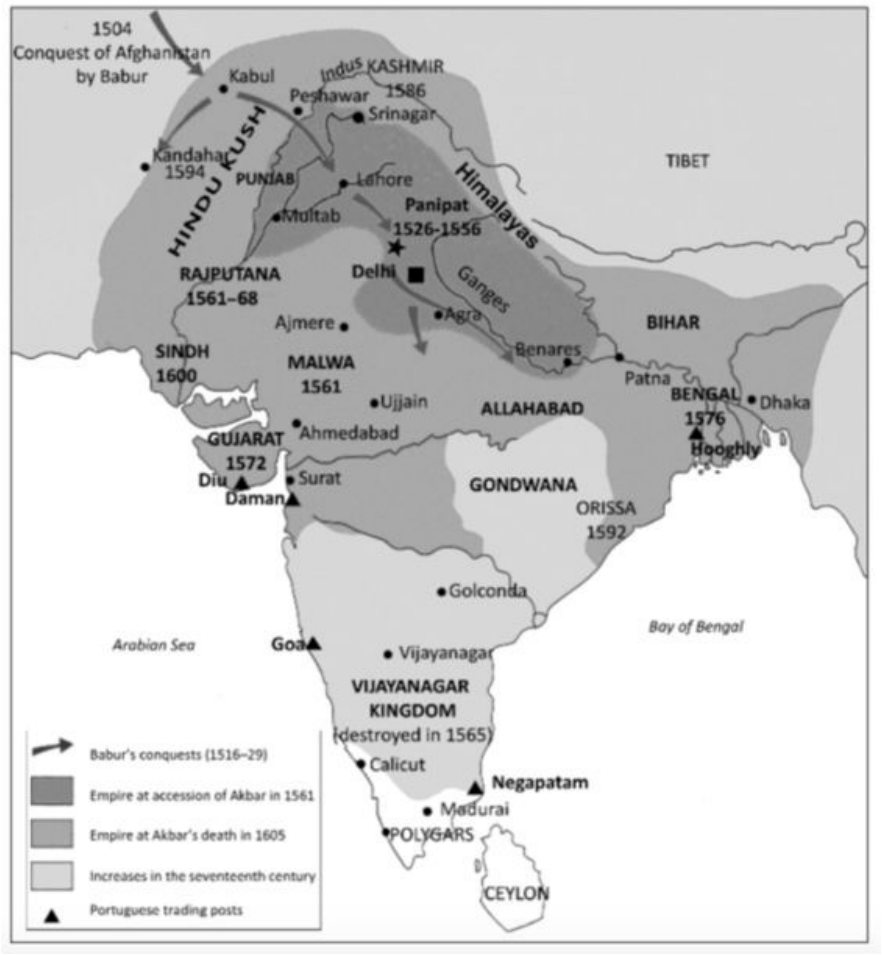

Figure 3.2: Map of the Mughal Empire from "The Mughals and Islam in India" In *A Global History of War: From Assyria to the Twenty-First Century* (page 190).

The garden traditions of Safavid Iran and Mughal India may also be seen as continuations of the traditions begun in the ancient Middle East. Persian architectural, artistic, and social traditions combined with ancient Middle Eastern garden traditions such as those in Babylon and elsewhere in Mesopotamia. These elements then further combined with Islamic symbolism and belief in the all-encompassing divinity, Allah, thus creating a unique, vibrant, highly geometric and deeply spiritual aesthetic garden practice.

A distinctly Persian worldview and culture survived during the rise of Islam in the former Persian Empire, and so the Safavids and Mughals are the inheriters not only of Islamic traditions and motifs, but also of the tradtions, symbols, and motifs of the ancient Persians. These empires perpetuated Persian artistic sensibilities, which were gradually blended with and superimposed onto a Muslim worldview, first submerged beneath the religious fiber of Islam and then revived, such that Persian heritage and Islamic faith played equal roles in the identities of these empires.

The Safavid Empire, having begun the transition from Sunni to Shia Islam under Shah Ismail during the 16th century, and being inconveniently located between two Sunni empires with larger populations, used the continuation and revival of ancient Persian cultural traditions in an attempt to legitimize the authority of the state and further differentiate itself as the sole heir to the Persian Empire. The aesthetic and architectural styles of Safavid gardens, the rituals which took place within them, and their physical locations within the empire reveal the myriad of ways in which gardens became social and political spaces unlike any other, and how they represented the political and religious authorities which created them. Especially at times when external threats forced the Safavids into retreat or submission, such as when the expulsion and killing of Shia Muslims in the Ottoman empire was immediately followed by an attack by Sultan Suleiman the Magnificent (1520-1566) during the early days of Shah Tahmasb's reign (1524-1576), the building of magnificent gardens could rekindle nationalist sentiments in the empire or transform a military defeat into a social and cultural victory.

Being forced to pull the capital of one's empire further from the border is ordinarily seen as a national failure, but by choosing a majority-Sunni location, Qazvin, and by constructing an elaborate garden city, Shah Tahmasb transformed a military defeat into an opportunity to reassert

his religious and political authority. The construction of elaborate gardens represented something profoundly powerful: the ability to control nature and impose order upon chaos.

In the face of military defeat, enjoying victory over nature by creating a paradise on earth was a similarly effective means of legitimizing the state by reaffirming the divine status of the Shah. Mastery over the divinely-created world could be used as proof of Allah's good favor, and thus proof of the Shah's religious as well as political legitimacy as ruler. Yet the supposed divinity inherent in the act of defeating chaos with order was not introduced to Iran by Islam, but rather existed prior to the Arab invasion of Persia in Zoroastrian dualism, and the association of order with goodness and divine power had already been a legitimizing political force displayed in Middle Eastern gardens and architectural projects for millenia (as addressed in Chapter 1).

The concept of Persian gardens, including their mix of functions and geometric designs, can be traced back to the kingly hunting parks and pleasure gardens of the Achaemenid Empire at the very inception of Persian culture, and may also have roots in even older gardens throughout Mesopotamia, such as those of the Babylonians, whose conquest by the Persians marked the beginning of the first Persian Empire. Interestingly, these pre-Islamic garden traditions, as well as pre-Islamic symbolic and functional associations with gardens, added another layer of legitimacy to the state and religious institutions. By institutionalizing Shia Islam, a sect unique from what was practiced by elites in the Ottoman and Mughal Empires, and then by combining the ritual practice of Shia Islam and a visual environment of heavy Islamic symbolism with ancient Persian traditions and rituals, the Safavids began to craft a uniquely Iranian[20] cultural identity that unified their sense of Persianness with their religious practice.

[20] Iran is not synonymous with Persia, since the geographic bounds of ancient Persia extend far beyond the bounds of modern Iran, and also because Iranian identity has been infused with Islamic and turkik traditions which were superimposed onto the pre-existing Persian culture, in some instances displacing it. It should simply be noted that

Even though Shiism was newer and less popular than Sunnism, Shiism was legitimized and given more power by this newly created Safavid identity, which, however artificially, linked Shiism with Persian tradition, thus allowing the new identity created by the merging of these two aspects of Safavid identity to be seen as the continuation of an older and therefore seemingly more legitimate tradition than that of the Sunni Muslims. The garden was the central space within which this merging of traditions and forging of identities occurred.[21]

It is important, however, not to allow the purely ideological political significance of gardens in Safavid Iran to overshadow or become disjointed from the social importance of these spaces, or to allow the idea of what ought to occur in gardens to overshadow what truly occurred. Gardens were places for both the sacred and the profane, for Islamic ritual and for scandalous social or romantic interactions, for kingly actions of a legitimizing nature and for many foolish excesses of the elite class which made leaders appear hedonistic and careless to their subjects when such behavior was revealed. Gardens were places for religious celebrations and wild parties, the encampment of troops, the cultivation of edible plants, and also sites for political or religious meetings. They were a central space in urban areas, and the surrounding cityscape was often profoundly affected by gardens in a way that reinforces their cultural and social importance. Furthermore, the making of gardens was a strenuous feat. Gardens were not just planted areas, but complex architectural projects integrated into palaces in cities like Qazvin and

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Iran is not being confused with Persia, but it is being acknowledged that, perhaps more than any other modern nation, Iran traces its lineage back to Persia and has adopted ancient aspects of Persian culture to its modern cultural context, often reviving Zoroastrian traditons and fitting them within the bounds of Islam or an Islamic worldview.

[21] Mahvash Alemi, "Princely Safavid Gardens," 113-114; David Stronach, "The Garden as a Political Statement: Some Case Studies from the Near East in the First Millenium B.C.," *Bulletin of the Asia Institute, New Series* 4 (1990) 171-180; Mohammad Gharipour, "Transferring and Transforming the Boundaries of Pleasure: Multifunctionality of Gardens in Medieval Persia," *Garden History* 39, no. 2 (The Garden Trust, Winter 2011) 249-252.

Isfahan. Royal palaces and even the entirety of Safavid cities could be architecturally linked to grand garden palaces, smaller courtyard gardens, or even the surrounding countryside, which would be built upon just slightly to create a sort of wild garden, similar to public parks or forests today. The cross-axial floor plans of palace complexes and other important city structures matched well with the quadrilateral *chahar bagh* (contracted as *charbaugh*) garden designs, a Persian style based upon divisions of four and geometric balance. This garden design was not only popular in Safavid Iran, but also in Mughal India.

Babur, the founder of the Mughal dynasty, took great interest in the natural world, particularly the flora and fauna of his new conquest in Hindustan. Kabul was his strategic epicenter and home base, from which he could defend himself or go on the offensive against enemies from any direction. At Kabul, Babur was not only a military leader, but also

> a horticulturalist… naturalising some valuable fruits and plants in provinces to which they had formerly been strangers, where they still flourish; and [Babur] was as proud of his success, as of a victory in the field of battle.[22]

Babur's interests in nature's creations were not limited to mere observation, and he pursued gardening and cultivation with as much enthusiasm as he did military conquests, even taking time to study and cultivate plant life "in the midst of turmoil and war" as if his conquests over nature were as important to him as his conquests over new lands, and as if cultivating both a flourishing garden and a flourishing empire was his ambition.[23]

The exchange of species brought about by Babur's conquest and cultivation also had a significant cultural and environmental impact on South and Central Asia. In his Kabul garden,

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[22] Ebba Koch, "My Garden is Hindustan: The Mughal Padshah's Realization of a Political Metaphor," *Middle East Garden Traditions: Unity and Diversity*, edited by Michael Conan, 159-175.
[23] Ibid.

the *Bagh-i Wafa* or Garden of Fidelity, he cultivated plantains, native to India and formerly nonexistent in Afghanistan, alongside indigenous Afghan fruits like Pomegranates. This garden also embodied a geometric *charbagh* design (see figure 3.1), which, combined with the unique assortment of flowering and fruitful plants never before seen together in the region, would have seemed to be the creation of a new world, a sort of miniature Eden held together only by the power of Babur, and symbolic of man's benevolent dominion over nature as well as evocative of the eternal paradise Muslims hoped to enter in the afterlife. The ability to cultivate such gardens would become a statement of imperial power as Babur expanded his domain, as the fruits of the garden were brought together from different regions under Babur's control. This sort of cultivation would also become a statement of divinity, as creating a paradise is a godly thing to do and inspires the aesthetic response one hopes to experience in Jannah. Furthermore, such practices would come to reflect beliefs about humanity's place in the natural natural world as masters over nature, but masters in cultivating life and allowing nature to flourish due to human intervention rather than violent or oppressive masters, making humanity more like benevolent stewards of nature rather than merciless conquerors of it.[24]

The *charbagh* garden space was one in which humanity could superimpose an artificial order on top of the natural order of things, one in which nature could flourish, but without the chaos which was so inherent to the untouched wild. The *charbagh*, in its true form, represents the most organized garden type, the one in which human involvement is most obvious and orderliness dominates. Yet Babur also cultivated a more wild garden and a water reservoir at Istalif, an area near Kabul with fertile, rugged land and cold, clean streams of mountain spring

[24] Wolfram Kleiss, "Safavid Palaces," *Ars Orientalis* 23 (Washington, D.C.: Freer Gallery of Art, The Smithsonian Institution, and the Department of the History of Art at the University of Michigan, 1993) 269-271; Babur, *The Illustrated Baburnama*, Som Prakash Verma, Ed. (New York: Routledge, 2016) 134-135.

water. While Babur also refers to this project as a *charbagh*, it has none of the perfect symmetry and geometry of his Kabul garden, except for the straight lines and square angles of the reservoir. This wild garden appears to have no walls, and is not divided into quadrants. There is no clear, organized floor plan, and the site at Istalif (see figures 3.2 and 3.3) is depicted in a drastically different way from the *Bagh-i Wafa*.[25]

The *Bagh-i Wafa* is depicted in the *Baburnama* from an aerial view, so that the perfect geometry of its ground plan is clearly visible, and even emphasised as a defining feature of this space in contrast to the rolling hills, jagged rocks, and roaring waters depicted in the background of the image. Istalif is depicted from a ground-level or slightly elevated perspective, so that the viewer is brought into the scene as someone standing within the garden or on a nearby hill rather than as a bird soaring high above it. Here, the fluidness of the shapes are emphasised, and it is difficult to tell where the boundaries of the garden are, or even if there are any. This is not a contained space like the *Bagh-i Wafa*, but an open space that merges with nature. Additionally, there are numerous figures in the image of Istalif, and they appear to generally be in a state of relaxation or play rather than a state of labor, which contrasts with the solitary, hoe-wielding figure in the depiction of the charbagh. Yet, one crucial area of similarity between all these images is the way geometric pools of clean water constitute the centerpiece of the image, around which the activities of the garden revolve.

[25] *The Illustrated Baburnama*, 134-141; Howard C. Crane, "Babur: 1483-1530: Mogul Ruler and Garden Designer," *Encyclopedia of Gardens: History and Design,* Candice A. Shoemaker, Ed., (Chicago: Fitzroy Dearborn Publishers, 2001).

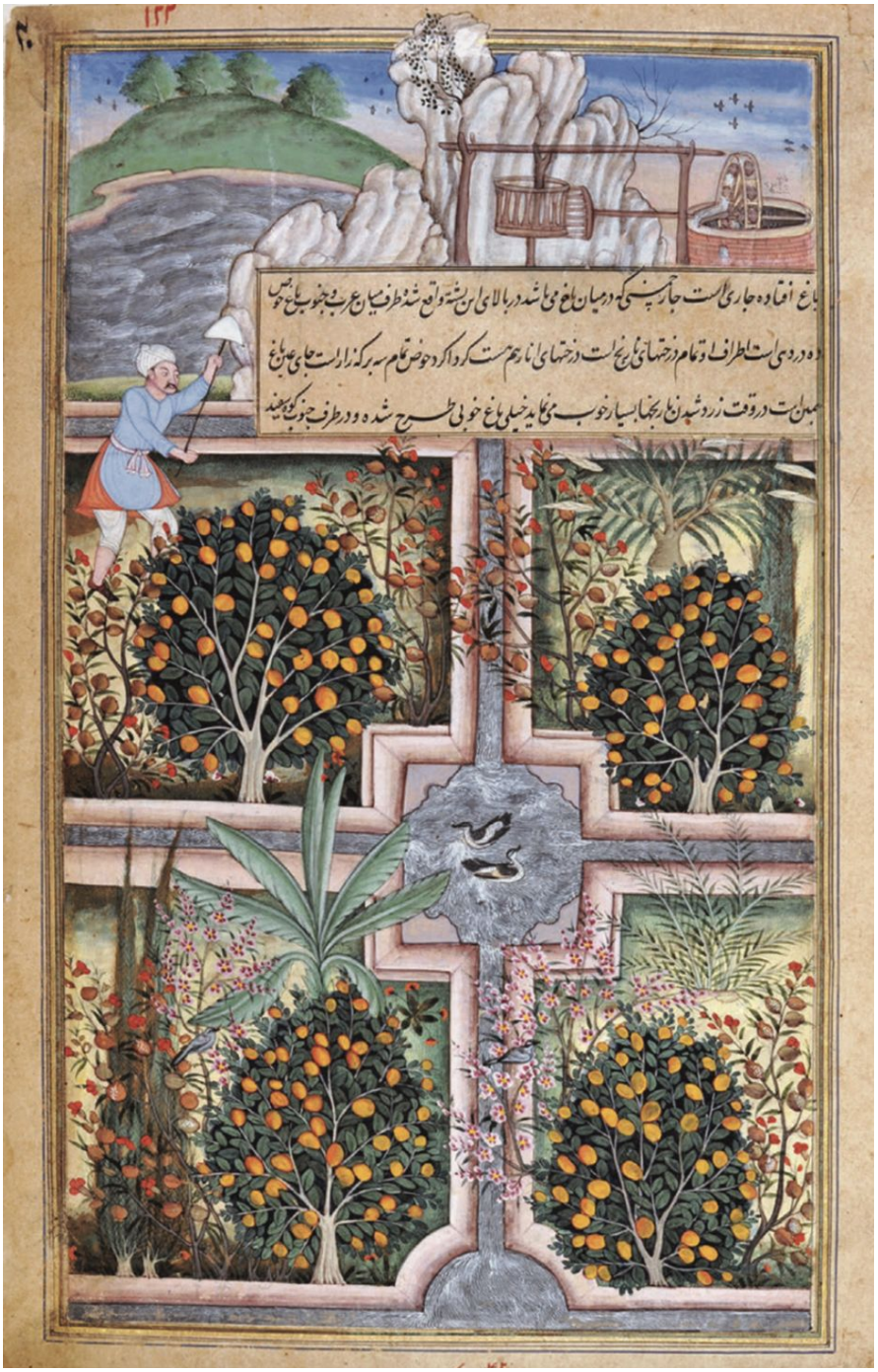

Figure 3.3: Babur's *Bagh-i Wafa* in Kabul (*The Illustrated Baburnama*, 134).

Figures 3.4 & 3.5: Babur and others in Istalif, *The Illustrated Baburnama*, pages 138 and 140.

The form and structure (or lack of structure) in the Istalif garden adds another dimension to the way the relationship between political authority figures, the divine, and nature was understood in the Mughal Empire. The perfection of nature as it was naturally designed by Allah is appreciated in wilderness gardens like Istalif. The way Babur refers to this garden as a *charbagh* could indicate that the word, originally used to refer to carefully designed, geometric gardens, had lost much of its literal and technical meaning by the time of his conquests, instead

being used as a metaphorical term to connote the natural perfection of the environment. The use of the term *charbagh*, with its implication of careful design, could also indicate respect for the creative work of Allah. Babur may have not meant to detract from the meaning of the term, but rather meant to elevate the wilderness to a more organized and revered state, showing respect for what he recognized as the careful work of a divine artist. In the midst of an ecological wonderland like that at Istalif, Babur perhaps felt that to alter the landscape too much would be to detract from the labors of a much more skilled and learned creator.

The natural beauty of this particular region in Afghanistan made it seem to already be an intentionally designed space, a garden designed by Allah rather than humanity. At Istalif, the steep mountains served almost as the walls of a man-made *charbagh*, and a diverse assortment of vines, flowers, and fruits flourished in the fertile soil. Having such a space within one's domain as a ruler would have been a fortunate coincidence, making it seem as if the divine intentionally placed a small piece of paradise -- a hint of what is to come in Jannah, the remnants of Eden, perhaps-- within the center of Babur's imperial domain.[26] Thus, Babur used wild gardens and man-made gardens to make two different statements, both of which helped legitimize his rule and make him a divinely-ordained figure. The organized, true *charbagh* garden showed that Babur had dominion over nature and the ability to cultivate life, and since nature and life itself were both miracles of the divine mystery, this meant that Babur acted by Allah's grace and permission. The wild garden showed that Allah had prepared his own small paradise on Earth within Babur's kingdom, and by allowing Babur to enjoy this paradise, Allah was granting His good favor and a piece of his own kingdom to the kingdom of Babur. The existence of both

[26] The word "Jannah" translates to the word "garden" and has been used to describe both Eden and the afterlife in Islamic writings.

types of gardens reveals a nuanced and balanced relationship between humans and the world they inhabit, one in which the act of shaping or not shaping the pre-existing landscape could both be ways of being close to the divinity of the universe.

However, just as Islamic influence combined with traditional, pre-Islamic Persian influence in Safavid Iran, this Perso-Islamic culture interacted with a significant cultural force in India which had been on the subcontinent for thousands of years: Hinduism. The *charbagh* design is of Persian origin, as are the wild, non-geometric gardens of Mughal India, and similar gardens of *charbagh* or wilderness types can also be found in Safavid Iran. However, a garden design unique to India, which survived and was immensely popular during the Mughal dynasty, was the mandala design. These circular patterns are intended to invoke a sense of wonder at both the grandness and the miniscule detail of the universe, and in the context of gardens they also become a shape which urges one to reflect on the miracle of existence and the diversity of life. While such a design and what it represents can certainly be incorporated into an Islamic worldview, its origin is uniquely Hindu, not Islamic and not Persian. Hindu sacred geometry influenced Mughal architecture as much as Persian design, yet the influence of earlier Indian design on Mughal work is often downplayed in favor of propagating a homogenized concept of Perso-Islamic culture. Even many *charbaghs* in Mughal India contained axial, mandala like structures as well as square ones. Structures like the Dig Garden Palace and Shah Jahan's nature-inspired palace in the Red Fort of Delhi (shown in figures 3.4 & 3.5) represent a uniquely Indian style of architecture in Mughal India.[27]

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[27]Ebba Koch, "Mughal Palace Gardens from Babur to Shah Jahan," *Muqarnas* 14, (Cambridge, MA: Brill, 1997) 143-165; Monsoori, Maryam Monsoori and Mostafa Zade, "When Myths Collide: The Mandala Archetype and the Charbagh Tradition on Indian Gardens During the Mughal Empire," *Traditional Dwellings and Settlements Review* 24, no. 1, (International Association for the Study of Traditional Environments, October 2012) 56; Ebba Koch, "Cypress columns, pool, and water chute all of marble, forming part of the garden building of the Shah Burj of Shah

Figure 3.6: Dig Garden Palace, "This Fairy Creation," 203.

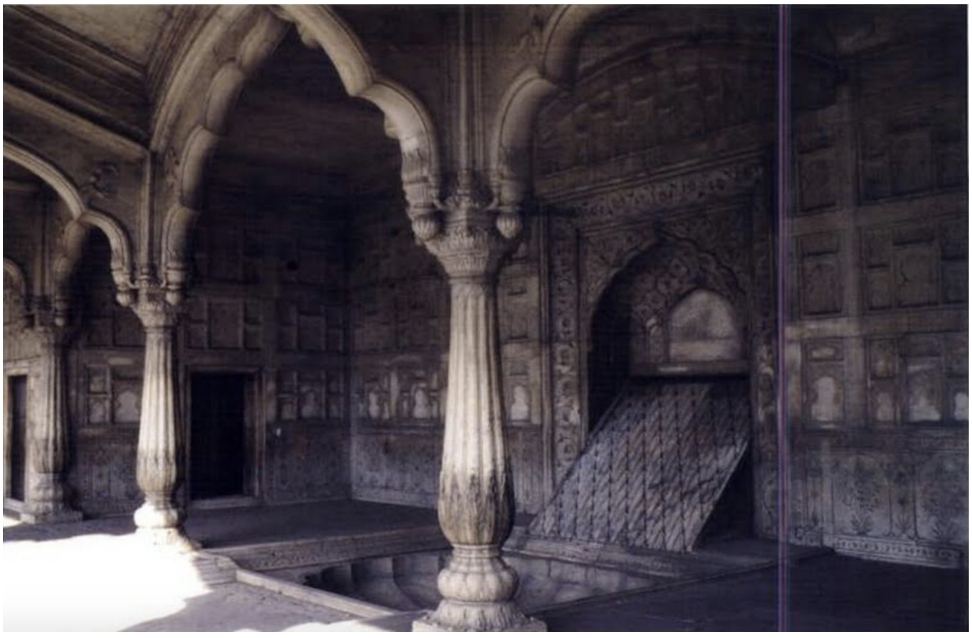

Figure 3.7: Cypress columns of Shah Jahan's palace, "My Garden is Hindustan," 170.

Jahan's palace in the Red Fort of Delhi, 1639-48," taken 1993, *Middle East Garden Traditions: Unity and Diversity*; Patrick Bowe, "The Indian Gardening Tradition and the Sajja Niwas Bagh, Udaipur," *Garden History* 27, no. 2, (The Garden Trust, Winter 1999) 189-205.

Both Safavid and Mughal garden designs arose out of unique cultural histories, one involving Persian heritage and Shia Islam, the other involving Persian and Indian heritage as well as Sunni Islam and Hinduism. The Hindu tradition of sacred geometry not only made itself visible in Mughal mandala gardens, but also may have been one of the reasons why Persian geometry is often more pronounced in Mughal gardens than Safavid ones. While Mughal kings did enjoy wilderness gardens and allow nobles to hunt alongside them in such spaces or enjoy the relaxed atmosphere, the use of wilderness gardens was more common in Safavid Iran.

For the Mughals, wild gardens may have generally been a less desirable option than traditional *charbaghs* because of the Hindu history of geometric gardens in the region. Allowing it to appear as though the Hindus were more capable of controlling nature than the Muslim Mughals would be allowing it to appear as though the divine favored Hinduism, or otherwise imply that the Hindus were more capable of complex geometric designs and mathematical calculations. The Mughals had to compete with the pre-existing geometric garden tradition of a different ethnic and cultural group which made up an overwhelming majority of the empire, occasionally assimilating these older Hindu traditions into the Mughal tradition and creating even more grandiose garden structures, especially around tombs like the Taj Mahal and the tomb of Shah Akbar (figure 3.6), to represent the Islamic paradise of the afterlife and the divine connection between the Mughal elites and Allah.[28]

The Safavids, identifying, for the most part, as wholly Persian and living in a land where most past structural and garden traditions were heavily influenced by a Persian cultural identity,

[28] Unknown artist, Rajasthani style, "Plan and elevation of Akbar's mausoleum at Sikandra," circa 1780-1800, gouache on paper, in *Jannat: Paradise in Islamic Art* 63, no. 4, by Mumtaz Currim, Ed., (Mumbai, India: The Marg Foundation, 2012) 47.

did not have a significant cultural tradition within their borders which could threaten the idea of Persian dominance and Perso-Islamic culture. Even Turkic culture, as prominent as it was, could be easily assimilated into the modern idea of Persianness or Persio-Islamic identity. The Safavids could allow themselves to relax in their more secure Islamic and Persian identities, embracing the more organic architectural styles of the Persian artistic tradition and implementing this style in new ways and contexts. They created leisurely pleasure gardens with gazebos and trickling, deceptively natural streams or waterfalls rather than avoid wilderness gardens in favor of organized, geometric garden palaces. The Safavids, as a more unified culture and as an ethnic majority, could be more artistically experimental and less structured than the Mughals.

While the Mughals created complex irrigation systems and elaborate fountains as a political statement and way of emphasizing the divine link between the Mughal Sultan and Allah, the Safavids created artificial streams within wild or artificially wild spaces. This distinction reveals how the Mughal concept of sacred space became more entangled with sacred geometry and the use of mathematical principles to create perfect shapes and structures, while the Safavid concept of sacred space became more closely related to nature as Allah created it, and the ability to create things similar to the natural forms that Allah had perfectly designed. It may even be that, despite their similar cultural roots, the Safavids and Mughals developed different ideas of aesthetic perfection, different frameworks for conceptualizing the nature of a divine connection between the state and Allah, and different ideas regarding the relationship between humanity and nature.

Figure 3.8: Plan of Akbar's Mausoleum at Sikandra, from *Jannat*, page 47.

At their core, both geometric and wild gardens were meant to reflect something natural. Geometric gardens represented what was believed to be mathematical perfection, an innate and hidden natural element of the universe. Geometric gardens, whether *charbagh* or mandala styles, did not merely seek to impose order upon a chaotic and disorderly universe, but rather to uncover the hidden order and mathematical perfection beneath the complicated, messy parts of nature. The smoothness and regularity of shapes and the repetition of patterns was a way of stripping Allah's natural universe down to its barest elements.

If one believes that the natural world as it currently is came to be so because of the human fall from grace, then attempting to dig beneath the imperfections of nature and create a space of geometric and artistic perfection is not correcting Allah's work, but undoing the damage which humanity caused to the earth with the original sin, thus recreating the world Allah created before the original sin and consequent human fall from grace: a perfect garden. Yet if one believes the work of the divine to be perfect, and views the original paradise of Eden not as a mathematically organized or perfectly orderly place, but rather as a place where the disorderly, organic attributes of nature were allowed to flourish and thrive in a pleasurable, chaotic, yet intrinsically orderly way, then the sort of garden one would design to replicate this space would be as natural as possible, such that even the artificial components of it do not appear artificial, but rather carefully mimic an idealized form of raw nature.

Both of these perspectives on paradise, and the aesthetic traditions which would naturally emerge out of them, fit within Islamic belief systems and a Persio-Islamic worldview. However, due to the differing political and social contexts of the Safavid and Mughal Empires, different

visions of paradise could be more commonly embraced in one empire over the other. Regardless of how paradise was imagined, the creation of paradise in these empires was rife with religious symbolism, had political and social significance, impacted the cityscape and the landscape in both empires, and reflected the general trend towards trade and globalization during Early-Modernity with regards to what flora could be found in gardens. Political leaders, by cultivating nature and cultivating their empires, became natural stewards of Allah's creation.[29]

The wild garden is often studied as a more modern invention within Persian culture, but both the *charbagh* style garden and the wild garden are Persian artistic traditions which may date back as far as the Achaemenid and Sasanian Empires, as exhibited by Cyrus the Great's wild garden at Pasargadae and the highly symbolic hunting trips of ancient Persian elites. With the revival of ancient architectural styles came the revival of ancient ritual traditions in the Safavid Empire. Nowruz celebrations, feasts, and customs that hadn't been practiced for centuries or even millennia in the Persian region on a large scale were revived as a way of drawing the line of the Safavids back to the ancient Persians, even though such holidays and celebrations were Zoroastrian rather than Islamic.[30] Such an ancient lineage was then used to legitimize the ruling elite and strengthen the Safavid Persian identity during the formative years of the empire. The Shah used his imperial gardens and palace paradises as stages upon which he could stand as the link between ancient Persia and the Persia of the future, performing ceremonies and rituals of an

[29] Ebba Koch, "Mughal Palace Gardens from Babur to Shah Jahan," *Muqarnas* 14, (Cambridge, MA: Brill, 1997) 143-165; Mahvash Alemi, "Princely Safavid Gardens: Stage for Rituals of Imperial Display and Political Legitimacy," In *Middle East Garden Traditions: Unity and Diversity*, edited by Michael Conan (Washington, D.C.: Harvard University Press, 2007) 113-137; James L. Wescoat Jr., "Questions about the Political Significance of Mughal Garden Waterworks," In *Middle East Garden Traditions: Unity and Diversity*, edited by Michael Conan (Washington, D.C.: Harvard University Press, 2007) 177-195.

[30] If empire is taken to mean a geographically large, ethnically or culturally diverse, militarily powerful, and culturally influential expansionist kingdom or state with centralized power, then the Achaemenid Empire of ancient Persia could be considered the first empire in history.

Islamic and non-Islamic nature and artificially unifying the two until they became so intertwined with Iranian identity that it would be difficult to separate early-modern Iran from either aspect.[31]

Safavid and Mughal gardens reveal to us the ways in which early modern societies built upon the traditions of the ancient world, reinvented identities, and participated in more globalized trade. Furthermore, they reveal how the specific contexts of early modernity in the Perso-Islamic world and the consolidation of state power and legitimacy was not only tied to military power, but also to artistic and architectural pursuits, environmental factors and the cultivation or manipulation of the natural world. Mughal and Safavid elites legitimized the ruling class by visualizing divinity through nature's beauty and invoking divine power through the control and maintenance of "natural" garden spaces. The ancient rulers of the first Persian empire used architectural technology, natural symbolism, and the apparent domination and cultivation of nature within their domain to project their images of imperial political power onto the very landscapes and cityscapes they ruled. The Safavids and Mughals would then project similar ideas regarding power and paradise onto the surrounding landscape in the same way, though in the name of a different God, over a thousand years later. Perhaps more than any other form of material culture, architectural garden spaces represent a thread of continuity between the ancient and early-modern Middle East, revealing how certain cultural ideas regarding themes of power, divinity, and the human relationship to nature transcend time and religious change.

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[31] David Stronach, "The Garden as a Political Statement: Some Case Studies from the Near East in the First Millenium B.C." *Bulletin of the Asia Institute, New Series* 4 (Bulletin of the Asia Institute, 1990) 171-180; David Stronach, "The Royal Garden at Pasargadae: Evolution and Legacy," *Archaeologia Iranica et Orientalis Miscellanea in Honorem Louis Vander Berghe* (Belgium: Peeters Press, 1989) 475-503; Mahvash Alemi, "Princely Safavid Gardens: Stage for Rituals of Imperial Display and Political Legitimacy," In *Middle East Garden Traditions: Unity and Diversity*, edited by Michael Conan (Washington, D.C.: Harvard University Press, 2007) 128-137; Gharipour, Mohammad. "Transferring and Transforming the Boundaries of Pleasure: Multifunctionality of Gardens in Medieval Persia." *Garden History* 39, no. 2.

Conclusion & Afterword

The construction of empires in the Persian world is tied to the ability of imperial leaders to utilize the idea of a duality between order and chaos in a constructive way. The elites legitimized their own political power by shaping the natural world into more orderly forms, constructing stunning architectural projects which appeared to be new worlds within the pre-existing one, utilizing powerful natural symbolism and passing that symbolism onto non-Zoroastrian groups, and adapting the Persian worldview to a diverse array of situations. The legitimacy of Persian power was so successfully enforced that later empires would call upon their Persian roots as proof of their divine right to rule other people, even Cyrus the Great venerated a different divinity from the Persians of early-modernity. The Safavids and Mughals created their own new worlds, worlds which were both Muslim and Persian, natural and artificial, ancient and modern. These empires served as a bridge between Persian tradition and the modern world, just as the bâdgirs of Achaemenid cityscapes once served as a bridge between the earth and sky.

List of Figures

Chapter 1: The Creation of Empire & New Environments in Achaemenid Cities

Chapter 3: Power & Paradise in the Gardens of Safavid Iran and Mughal India

Figure 3.3: Babur's *Bagh-i Wafa* in Kabul from *The Illustrated Baburnama*. Translated and edited by Som Prakash Verma. New York: Routledge, 2016. Page 134.

Figure 3.4: Babur and others in Istalif. *The Illustrated Baburnama*. Page 138.

Figure 3.5: Babur and others in Istalif. *The Illustrated Baburnama*. Page 140.

Figure 3.6: Dig Garden Palace. "This Fairy Creation" by Eugenia Herbert. Page 203.

Figure 3.7: Cypress columns of Shah Jahan's palace. "My Garden is Hindustan" by Ebba Koch. Page 170.

Figure 3.8: Plan of Akbar's Mausoleum at Sikandra. *Jannat: Paradise in Islamic Art* 63, no. 4 by Mumtaz Currim, Ed. Mumbai, India: The Marg Foundation. 2012.

Bibliography

Primary Sources

Babur. *The Illustrated Baburnama*. Translated and edited by Som Prakash Verma. New York: Routledge, 2016.

Coste, Pascal Xavier. *Itinéraire de l'ambassade Française en Perse sous M. le Conte de Sercey, et des excursions scientifiques des deux artistes attachés à cette mission, par M. Coste, architecte*. Manuscript 1132. Bibliothèque Municipale de Marseille, 1840.

Kaempfer, Engelbert. Manuscripts Sloane 5232. London, British Library, 1684.

Koch, Ebba. "Cypress columns, pool, and water chute all of marble, forming part of the garden building of the Shah Burj of Shah Jahan's palace in the Red Fort of Delhi, 1639-48." Taken 1993. Photograph in *Middle East Garden Traditions: Unity and Diversity*.

Mal, Nidha. "Muhammad Shah in a Garden." Circa 1735. Ink and gold on paper. Currently held in the Museum of Fine Arts, Boston. In *Jannat: Paradise in Islamic Art* 63, no. 4. Edited by Mumtaz Currim. Mumbai, India: The Marg Foundation, 2012, 57.

Unknown artist, Rajasthani style. "Plan and elevation of Akbar's mausoleum at Sikandra." Circa 1780-1800. Gouache on paper. Copyright of The British Library Board. In *Jannat: Paradise in Islamic Art* 63, no. 4. Edited by Mumtaz Currim. Mumbai, India: The Marg Foundation, 2012: 47.

Secondary Sources

Alemi, Mahvash. "Princely Safavid Gardens: Stage for Rituals of Imperial Display and Political Legitimacy." In *Middle East Garden Traditions: Unity and Diversity*, edited by Michael Conan. Washington, D.C.: Harvard University Press, 2007: 113-137.

A'zami, A. "Badgir in Traditional Iranian Architecture," from *International Conference "Passive and Low-Energy Cooling for the Built Environment."* Sartorini, Greece: Islamic Azad University of Tabriz, 2005: 1021-1026.

Bazmee Ansari, A.S. "Būstan." *Encyclopedia of Islam*, New Edition I. Leiden, Netherlands: Brill, 1967: 1345-1348.

Bowe, Patrick. "The Indian Gardening Tradition and the Sajja Niwas Bagh, Udaipur." *Garden History* 27, no. 2. The Garden Trust, Winter 1999: 189-205. Accessed from https://www.jstor.org/stable/1587216?seq=1#metadata_info_tab_contents.

Chalind, Gérard, Michèle Mangin-woods, David Woods, and R. Bin Wong. "Safavid Persia." In *A Global History of War: From Assyria to the Twenty-First Century*, 170-75. University of California Press, 2014. www.jstor.org/stable/10.1525/j.ctt7zw1cg.16.

Chalind, Gérard, Michèle Mangin-woods, David Woods, and R. Bin Wong. "The Mughals and Islam in India." In *A Global History of War: From Assyria to the Twenty-First Century*, 187-92. University of California Press, 2014. www.jstor.org/stable/10.1525/j.ctt7zw1cg.19.

Chan, Michael J. "Cyrus, Yhwh's Bird of Prey (Isa. 14:11): Echoes of an Ancient Near Eastern Metaphor." *Journal for the Study of the Old Testament* 35 no. 1, 113-127.

Crane, Howard C. "Babur: 1483-1530: Mogul Ruler and Garden Designer." *Encyclopedia of Gardens: History and Design.* Edited by Candice A. Shoemaker. Chicago: Fitzroy Dearborn Publishers, 2001.

Currim, Mumtaz, Ed. *Jannat: Paradise in Islamic Art* 63, no. 4. Mumbai, India: The Marg Foundation. 2012.

Dalley, Stephanie. *The Mystery of the Hanging Garden of Babylon.* Oxford: Oxford University Press, 2013.

Gharipour, Mohammad. "Transferring and Transforming the Boundaries of Pleasure: Multifunctionality of Gardens in Medieval Persia." *Garden History* 39, no. 2. The Garden Trust, Winter 2011: 249-262. Accessed from https://www.jstor.org/stable/41411812?seq=1#metadata_info_tab_contents.

Foltz, Richard. "Zoroastrian Attitudes toward Animals." *Society & Animals* 18 no. 4. 2010. 367–78. doi:10.1163/156853010X524325.

Fried, Lisbeth S. "Cyrus the Messiah? The Historical Background to Isaiah 45:1." *The Harvard Theological Review* 95, no. 4, 2002: 373-393. www.jstor.org/stable/4150727.

Harrison, J.B. "Architecture." *Encyclopedia of Islam*, New Edition I. Leiden, Netherlands: Brill, 1967: 609-625.

Hegewald, Julia. *Water Architecture in South Asia: A Study of Types, Developments, and Meanings*. Leiden: Brill, 2002.

Herbert, Eugenia. "'This Fairy Creation': The Garden Palace of Dig in Rajasthan, India." *Garden History* 42, no. 2. The Garden Trust, Winter 2014: 201-214. Accessed from https://www.jstor.org/stable/24636211?seq=1#metadata_info_tab_contents.

Kleiss, Wolfram. "Safavid Palaces." *Ars Orientalis* 23. Pre-Modern Islamic Palaces. Washington, D.C.: Freer Gallery of Art, The Smithsonian Institution, and the Department of the History of Art at the University of Michigan, 1993: 269-280. Accessed from https://www.jstor.org/stable/4629453?seq=1#metadata_info_tab_contents.

Koch, Ebba. "My Garden is Hindustan: The Mughal Padshah's Realization of a Political Metaphor." In *Middle East Garden Traditions: Unity and Diversity*, edited by Michael Conan. Washington, D.C.: Harvard University Press, 2007: 159-175.

Koch, Ebba. "Mughal Palace Gardens from Babur to Shah Jahan." *Muqarnas* 14. Cambridge, MA: Brill, 1997: 143-165. Accessed from https://www.jstor.org/stable/1523242.

Minorsky, V. "Geographical Factors in Persian Art." *Bulletin of Oriental Studies, University of London* 9, no. 3. London: Cambridge University Press, 1938: 621-652.

Monsoori, Maryam and Mostafa Zade. "When Myths Collide: The Mandala Archetype and the Charbagh Tradition on Indian Gardens During the Mughal Empire." *Traditional Dwellings and Settlements Review* 24, no. 1. International Association for the Study of Traditional Environments, October 2012: 56.

Nasr, Hossein. "Religion in Safavid Persia." *Iranian Studies* 7, no. 1. Studies on Isfahan: Proceedings of the Isfahan Colloquium, Part I. Taylor & Francis, 1974: 271-286. Accessed from https://www.jstor.org/stable/4310164.

Saradj, Fatemeh M. “Using Natural Resources for Ventilation: The Application of Badgirs in Preservation.” *APT Bulletin: The Journal of Preservation Technology* 39 no. 4. Association for Preservation Technology, 2008: 39-46.

Soflaee, F. and M. Shokouhian. “Natural cooling systems in sustainable traditional architecture of Iran,” from *International Conference “Passive and Low-Energy Cooling for the Built Environment.”* Sartorini, Greece: Islamshahr Azad University, 2005: 715-719.

Stronach, David. “The Garden as a Political Statement: Some Case Studies from the Near East in the First Millenium B.C.” *Bulletin of the Asia Institute, New Series* 4. In honor of Richard Nelson Frye: Aspects of Iranian Culture. Bulletin of the Asia Institute, 1990: 171-180. Accessed from https://www.jstor.org/stable/24048359?seq=1#metadata_info_tab_contents.

Stronach, David. “The Royal Garden at Pasargadae: Evolution and Legacy.” *Archaeologia Iranica et Orientalis Miscellanea in Honorem Louis Vander Berghe.* Belgium: Peeters Press, 1989: 475-503.

Wescoat, James L. Jr. “Questions about the Political Significance of Mughal Garden Waterworks.” In *Middle East Garden Traditions: Unity and Diversity*, edited by Michael Conan. Washington, D.C.: Harvard University Press, 2007: 177-195.

Wilson-Wright, Aren. “From Persepolis to Jerusalem: A Reevaluation of Old Persian-Hebrew Contact in theAchaemenid Period.” *Vetas Testamentum* 65 no. 1: 2015, 152-167.

Wittfogel, Karl A. *Oriental Despotism: A Comparative Study of Total Power*. New York: Vintage [1958], 1981.

Yiannopoulos, Stavros, Gerasimos Lyberatos, Nicolaos Theodossiou, Wang Li, Mohammad Valipour, Aldo Tamburrino and Andreas N. Angelakis. “Evolution of Water Lifting Devices (Pumps) over the Centuries Worldwide.” *Water* 7, no. 9. MDPI, 2015. Accessed from https://doi.org/10.3390/w7095031.