
Architecture, Land, and Man

Rereading, reviewing and criticism of Pirnia's suggested principles for Iranian architecture

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Abstract

Mohammad-Karim Pirnia, one of the most prominent scholars of the history of Iranian architecture, has recorded two major achievements: the principles of Iranian architecture and the stylistics of Iranian architecture. In this article we will discuss his suggested principles for Iranian architecture. For this purpose, we will first show how his five principles have evolved and completed through time. Then we will refer to his words about each of the principles we have gathered from the original source but widely spread and will present them in an integrated and coherent form.

In another section of the article, we will deliberate upon the entirety of these principles and evaluate their worthiness in characterizing Iranian architecture. We will strive to study and review Pirnia's motivations for proposing them, their underlying assumptions, and their tacit implications. In the end we will show that the current order and content of these principles have both internal and external dimensions whose appearance was necessitated by his time. One may argue that such principles are no longer suitable or credible for contemporary Iranian architecture. However reviewing the internal dimension of these principles is a valuable element for identifying and understanding the Iranian architecture in the context of the Iranian culture. In this case, we will be able to reread Pirnia's principles and use them to serve as vehicle for improvement of research on the history of Iranian architecture and its development.

Keywords: Iranian/ Persian Architecture, Islamic Architecture, Architectural History, Architectural Principles, Architectural Criticism, Persian Art, Mohammad-Karim Pirnia

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Introduction

The late Mohammad-Karim Pirnia (1920-1998) was one of the most prominent scholars of the history of Iranian architecture. He was one of the first scholars who strived to use modern language and knowledge to study and present opinions about old architecture in Iran. Pirnia has many traits which positively differentiate him from his colleagues. He was a student of traditional architecture. He was among the earliest students of the first modern school of architecture in Iran— Faculty of Fine Arts of University of Tehran – where he learned academic language as well.¹ His most significant characteristic – unlike most of his colleagues- was not only his vast knowledge about Iranian architectural history or his acquaintance with modern academic architectural language; but his awareness about the importance of theories on the architectural history of Iran and the necessity of studying Iranian architecture in relation to the Iranian culture. He knew that his goals could not be achieved without developing certain theories around Iranian architecture, abstracting general principles from this architecture, identifying general characteristics and categorizing them according to their styles. His goals included inviting his audience to ponder upon Iranian architecture and its value and expanding research on it in order to use its achievements in today's architecture. He also believed that

understanding Iranian architecture is only possible through comprehension of its bond with the Iranian culture.

Pirnia enjoys an exceptional position in the historical studies of Iranian architecture. In a sense, he was the pioneer of studying the history of Iranian architecture in the academic system; and indeed he was the first to study the history of Iranian architecture systematically. His words and works are still the most referenced sources for studying the history of Iranian architecture in Iran; they are frequently being cited and used. Continuing Pirnia's path and project requires an accurate recognition and understanding of him. Still, except for a few cases, no study has been carried out in this regard and most of what has been published about him are appraising or stating him.²

Pirnia published his thoughts and achievements in the form of articles, class lessons, and a book³ co-authored with other scholars⁴. Pirnia's most important accomplishments in this field were “The Principles of Iranian Architecture” and “The Stylistics of Iranian Architecture”. In this article we strive to review and deliberate on one of his achievements – The Principles of Iranian Architecture – by relying on original sources and what is closer to his own language.⁵

I. Development of the Principles

Identification of the Principles of Iranian Architecture is one of the two prominent achievements of Pirnia. He was the first scholar in Iran who proposed some general principles for Iranian architecture. The Principles, in their final version, are as Human Scale; Inward-Looking; Self Sufficiency; Avoiding non-essentials; Structural Rigidity; and Proportion.

By studying the words and works of Pirnia it becomes clear that these principles have not been shaped instantly, but rather being gradually formed in his mind. This is also one of Pirnia's noticeable characteristics. From such gradual development and its manifestations, it became evident that he did not suffer from the perfectionist complex – which had been epidemic among many Iranian scholars – and proceeded to publish any achievement even if he thought they were not complete or comprehensive. This way, he enabled both scholars and his students to have a quicker access to his accomplishments. By doing so he increased their efficiency by exposing them to others for review and criticism and improved the principles by benefiting from their comments. He consequently availed himself the opportunity to improve and develop the principles step by step without any disposition or bias towards their initial order.

If we consider three stages for Pirnia's intellectual and professional life namely

the era before his university (1922 - 1940), after university (1945 - 1979), and then after the Islamic Revolution (1979 - 1997) – he first introduced the principles of Iranian architecture in his years after his university studies. In the beginning there was no word of the “Five Principles”. In most of his articles and interviews at the time, these principles included four principles of “Inward-Looking”, “Human Scale”, “Homogeneous Proportions”, “Structural Rigidity” and “Symmetry and Asymmetry”. For example in the book *Art for Secondary Education* “which he wrote in 1974 while working at the National Organization for the Protection of Iranian Historical Monuments, he mentioned the two principles of “Inward-Looking” and “Symmetry and Asymmetry”.⁶ In a 1976 article “Human Scale in Iranian Architecture”, these principles include “Human Scale”, “Inward-Looking”, “Structural Rigidity” and “Symmetry and Asymmetry”.⁷ In 1978 these principles were repeated in the class pamphlet of “Architectural Styles and Techniques in Iranian Architecture”.⁸ In addition, in one or two other cases he briefly talked about a principle or subject referred to as “Economics in Iranian Architecture”.⁹

For the first time, Pirnia confirmed this recent number of principles – Five Principles – in the 1980's.¹⁰ But the principles themselves were still changing. In his first words in this decade, he named Structural Rigidity and Proportions

as two independent principles and spoke of Inward-Looking separately.¹¹ Later on he expanded the subject of “Economy in Iranian Architecture” and categorized them into the two principles of “Self Sufficiency” and “Avoiding non-essentials”. He eliminated Symmetry and Asymmetry from the principles and merged Structural Rigidity with Proportion.¹²

The final naming and combinations of these principles in the 1990’s are as follows: 1) Human Scale; 2) Inward-Looking; 3) Self Sufficiency; 4) Avoiding non-essentials; 5) Structural Rigidity and Proportion.¹³ Till the time of Pirnia’s death in 1998, he kept the order of the principles and constantly struggled to prove their accuracy and enrich them with explanations and examples.

II. Reviewing the Principles

In this section, we will review Pirnia’s proposed principles for Iranian architecture using the original sources. What you will find here are not the words of the authors of this article, but a report of the words and thoughts of Pirnia himself. In the next section, we will study and review these principles.

II.1. Human Scale (*mardum-vârî*)

Human Scale (*mardum-vârî*) is one of the first principles Pirnia proposed, maintained and further developed. He

claimed he learned this principle from skilled Iranian traditional architects: “When we discuss the ancient methods of this human and expressive art with skilled Iranian [traditional] architects, they state that the work must be *mardum-vâr*.”¹⁴ *Mardum* in the Persian language means humans and people¹⁵, and so *mardum-vâr* means like humans.

A building is Human Scaled when human measures have been appropriately used.¹⁶ Appropriateness of human measures means the organs of the building should be proportionate to and in harmony with the organs of the human body and human needs.¹⁷ If a living room is built, its measures and the proportions must be commensurate to the needs of human bodies and organs.¹⁸ An architect had to be completely knowledgeable of all the acts of family living and resting in the house. Three-door rooms (*se-dari*), for example, were built in places which are not viewable to outsiders.¹⁹ The architect chose measures in such a way that it did not seem too spacey for a small group of people. If the statics and other technical aspects of a three-door room required a high roof, inside the room, the architect would shorten it with a wooden tray and inner vaulting (*kârbandî*) and make it suitable and attractive. The architect would construct edges on the wall and closets at the back so they could place their living and resting appliances there. He even chose the proportions wisely regarding the lightning of the room, the dimensions

of the windows and the material used in the construction of the room.²⁰ An Iranian architect would construct a house which would maintain the privacy of the family and still allow neighbors to keep in touch with each other. If an architect builds a house which does not allow neighbors to communicate, that house is not Human Scaled.²¹ So a Human Scaled building is tailor-made fitting its users' life.

An Iranian architect also considered Human Scale in royal palaces. The room in which the King rested was built specifically for resting: Xerxes's bedroom in Persepolis has the dimensions of a normal bedroom. But in the hall of the palace which is a place for ceremonies and celebrations and a crowd of people gather there in which the king demonstrates his power, the architect has built high ceilings.²²

Also, in building madrasas, the Iranian architect was completely aware of the life that goes on at madrasa. An example is the Khan madrasa in Shiraz. The student requires a room to live and study in: a room exactly the size of a person's needs; on one side there was a place for changing clothes, on the other side was a fireplace, and at the back there was a chamber. In the Khan madrasa, the architect used the height difference between the room and the chamber to make the latter a two story building: the first floor is for storing and cooking and the second floor in a quiet place with a view of a garden for studying and deliberations. The rooms are built

around a garden-type yard. Students must pass this beautiful garden and gain new energy if they intend to see any friends or do anything else besides studying and resting. In front of each room there is a small iwan which is both an entrance to the rooms and a place for students to gather in. In this madrasa, everything has its own proper place and size as it should have and is appropriate for the life that goes on in it. The Khan madrasa is an excellent example of Human Scale.²³

II.2. Inward-Looking (Darûn-gerāyī)

The structures of the world consist of two types regarding the order of their open and closed spaces: Inward-looking and outward-looking. Sometimes, a structure is built like a reticular cage, located in an open area in which people sit and view the outside scene; sometimes they bring an open area inside the structure and situate the closed area around it so that people no longer need to look outside for such a view. In accordance with the natural specifications of their lands, many of the structures of the west, India and the Far East are outward-looking. In Iran it is the opposite; meaning that most of the structures are inward-looking and they embody the open area.²⁴ This central yard, or *miyan-sara*, is a manmade area, not natural; a scene consisted of a pool and a garden. The architect constructs the sections of the building around this built scene. Therefore, the structure looks into,

tends towards itself and looks inward.²⁵

The Inward-Looking principle has emerged from the Iranian climate and culture. It has been affected by the climate as most of the lands in Iran are arid, with dry weather coupled with irritating wind, quick sand, and burning sunlight with no natural and vast green scenes. Such climatic conditions have strengthened internal considerations and introspection.²⁶ The Iranian environmental conditions lead the architect to enclose a natural scene and to demonstrate a green natural landscape like a paradise among the warm and dry desert. An example is the shrine complex of Shah Ni‘matullah Vali which has three small paradises in three areas.²⁷ However, in lands with different climates than the arid ones such as in Gîlân, Mâzandarân, Kurdistân and Luristân provinces, extrovert houses are also built.²⁸

Inward-Looking has also emerged from the Iranian culture. From this point of view, in addition to climatic needs, we can refer to three evident specifications of the Iranian culture which have shown themselves in inward-looking architecture: Sufi introspection, hijab, and privacy. The first is the theosophical tendency towards inner deliberation which Iranians and Iranian architects have. An Iranian architect, similar to an Iranian Sufi, looked inward and had learned that he must reflect more upon inside rather than outside.²⁹ The second feature of the Iranian culture is hijab in its general sense. Before and

after the emergence of Islam, the Iranians preferred to hide their private lives from the public. This tendency has caused a rejection of the outside and an inclination towards the inside.³⁰ This is why we even find hijab and confidentiality in Elamite architecture; with a yard in the middle and rooms and other sections of the structure around it along with a simple outside view with no opening. This is also the case with all the structures of Persepolis, including Xerxes’s harem; keeping the inside away from the view of the public was followed even more strictly than the Islamic period.³¹ There are also rooms inside the treasury of Persepolis, the exact copies of which can be seen in some old houses of Tehran which were built some 2500 years later – with a yard in the middle and rooms around the yard and a passage behind them. In Qajar structures, instead of those mentioned, there is a passage and two three-door rooms at each side.³²

The third feature of the Iranian culture emerging from the Inward-Looking concept is keeping one’s privacy. The Iranians strive for complete liberty and independence in their private lives and independence in life starts from homes. An introvert house is away from the city and its traffic, in which one can rest and live peacefully and independently, far from the view of others.³³

Inward-Looking can also be seen in Iranian gardens. In Iran, especially in the center of the land, they built gardens with a palace or kiosk in the middle. Iranian

gardens are inward-looking in relation to their outside environment. The kiosk in the middle of the garden is extrovert with regards to the garden but inward-looking in relation to itself; because, again, it has a central space inside it, around which they have located its space.³⁴

II.3. Self Sufficiency (*khud-basandagī*)

Iranian architects struggled to procure the structure materials from the closest places in order to avoid the need to refer to farther locations; they strived to be “Self Sufficient”.³⁵ They believed the material must be “domestic-brought” or *īdarī* (coming from here) and in building the structure domestic facilities must be used as much as possible. By doing so they would increase the speed of the project; the structure would be in more harmony with its surrounding environment; and when the need to repair arrives, the material will always be available and at hand.³⁶

Examples of self-sufficiency include the use of soil from excavation. For instance in some cities, water was underground and they were forced to dig a small yard (*gawdāl-bāghcha*) inside the main yard to get closer to water. Self sufficiency necessitated the use of the soil gotten from the excavation in molding bricks to building the structure itself; they did not bother carrying soil from one place to another.³⁷ In many cases self sufficiency has reached better technical conclusions;

for example in Fahraj Friday Mosque, the most ancient Iranian mosque, they prepared all material from the location itself. Since they did not have access to straws, they used *Khâr-shutur* – an indigenous plant – and it turned out to be much better since insects such as termite won’t eat it.³⁸

II.4. Avoiding Non-essentials (*parhīz az bīhudagī*)

Iranian artisans and architects, especially after the advent of Islam, struggled to perform what they were to perform in the best possible way. They never allowed themselves to perform useless actions or to use any worthless material, even in prominent structures. In other lands, arts related to architecture – such as stonecutting and painting – were recognized as decorative arts; but in the Iranian architecture, neither of them was purely decoration, and the existence and quality of each and every one was a must. For example, if a dome was tiled from its top to bottom, it wasn’t for the sole purpose of ornamentation; in fact, they were waterproof and heatproof tiles. They used colorful patterned tiles in order to hide the defects that appear after repair; this is because tiles do not stay perfect for long and if they are monochromatic, mending them back to their initial state is a hard task. They used mosaic (*mu’arraḡ*) tiles in order to replace and repair their pieces.³⁹ Inner dome, as the second covering layer

under the main and outer dome, creates an insulating double-layer against cold and heat. In addition, it is also used in erecting the structure; because the architect inevitably follows the proportions and cannot reset or change them according to his desire for the interior space. He takes the outer dome for the outer view and the inner dome for the interior space. In all these and other cases, the architect has carried out his duty both artistically and properly.⁴⁰

II.5. Structural Rigidity (niyārish) and Homogeneous Proportion (paymūn)

“Structural Rigidity” (*niyārish*) refers to what holds the building⁴¹ and the science of Structural Rigidity means the science of holding a structure together.⁴² It refers to all that is done for the resistance and stability of a building. It includes and in fact is the result of three sciences: Statics (structural analysis and force calculations and structure stability); Material Studies (material substances, producing and using plasters and mortars, etc); structure techniques (execution and constructional elements and details).⁴³ Structural Rigidity was of high importance for Iranian architects. In contrast with European architects, they concentrated on technical issues, vaulting and constructional aspects of the design. This awareness towards the rationality of the structure brought about its stability and beauty. In

Iranian architecture, beauty was based on rationality and appropriate proportions, and that everything was well in place.⁴⁴ In Iranian art and architecture, beauty does not mean prettiness, but be fitting; meaning everything is symmetrical, they match one another, and that everything is in its right place.⁴⁵

In Iranian architecture, the design, execution, architecture and material were not separate. The architect could not freely and separately design and then let someone else prepare and calculate it for execution and establishment in another stage. They must all be done at the same time.⁴⁶ This combination was possible through using the right “Homogeneous Proportions” (*paymun*). Homogeneous Proportions were the set of norms followed in order to make the parts of the structure proportionate with one another. Homogeneous Proportion was a product of tested ratios which led to finding correct measures in designing the architecture and material of the structure.⁴⁷ Iranian architects believed using numbers and sizes in architecture can bring about mistakes; this is why they preferred to use proportions. They chose proportions which have shown to be suitable, through experience, and constructed the structure according to them. These small scales or modules which consisted of different ratios are called *paymūn*. *Paymun* shows the relationship between the lengths of

the corridors, span of each opening, rise of each arch, length of the openings, rise of each entrance, etc.⁴⁸ It is clear that Structural Rigidity is also hidden in this proportion. It is the total rationale for architecture – from the facilities of the building material to Structural Rigidity and people’s needs for living – which brings about the suitable ratios, and their essence shows itself in *paymun*. An architect’s knowledge of the set proportions was his talent and skill in architecture. This way he would carry out and organize architectural designing, calculating and executing at the same time and he was confident that by following this procedure, his design would be efficient, stable, practical and beautiful.⁴⁹ With this method, a not-so-skilled bricklayer in a faraway village could build a small scaled dome the same as a master architect from a capital city would; without being concerned about its stability or lack of beauty.⁵⁰

Using Homogeneous Proportions was always accompanied by “wax and wane” or increase and decrease (*kast-afzūd*) of the measures, decreasing from one place and adding to another. In some cases proportions do not end up as one may have had in mind; especially inner vaulting (*karbandi*) and ribbed vaulting (*rasmibandi*). Still, the architect attempts to slightly change the proportions with *kast-afzud* in order to achieve the desired result.⁵¹

III. Deliberation upon the Principles

In the previous section, we tried to organize and represent Pirnia’s Principles for Iranian architecture from his own point of view. His work on determining and clarifying the principles of Iranian architecture has some assumptions and motivations. Recognizing, understanding, evaluating and criticizing the principles without considering and deliberating upon these motivations and assumptions, if possible, would be imperfect. Moreover, his words about these Principles, apart from what was evidently mentioned, imply implicit denotations as well. In this section we will attempt to elicit and clarify these motivations, assumptions and implicit denotations from his words, and demonstrate the position of Pirnia’s views in the studies of Iranian architectural history.

III.1. Motivations

From all that is left from Pirnia – writings, class lectures, and class pamphlets – it is apparent that he only had one main wish and motivation: inviting everyone to take more notice of Iranian architecture and reflect upon it with the aim of reviving the disciplines of this architecture. He could clearly see that Iranian architecture with its thousands of years of history is disintegrating vis-a-vis foreign architecture. Architecture is no longer assigned to masters who

have become well learned through the traditional architectural system, but to students of modern schools of architecture in Europe and Iran. He evidently saw that the disciplines which had emerged from Iranian taste, climate and land, and which had led to an efficient, beautiful and stable architecture, were gradually shattering to pieces and fading away. He knew well that even if structures were assigned to professionals or if Iranian architectural forms and patterns were to be used, the issue would still remain unsolved. He saw the problem rising from the Iranian architectural system. Therefore, his invitation to solve this issue was to consider the general disciplines of Iranian architecture and not its components and divisions.

Pirnia had realistically accepted that the components of Iranian architecture – from workers and architects to material, techniques, forms and shapes – would not be revived or lasting in our time while they are set apart and have become separated from the system which united them and gave them meaning. For this reason, he desired to understand that system and struggle to show the position of Iranian architecture components in that system and reveal their meanings. Therefore, what Pirnia brings forth of Iranian architecture is mostly its system and not its components. If he speaks of any components, it is for the philosophy behind them; or in other

words, what gives them meaning in the Iranian architectural system. It is the Iranian architectural system which can withstand and fight back against different world architectural “isms”.

In his time, those who had strong faith in their religious and regional beliefs but at the same time did not reject the advantages of modernity, tried to reach a harmony between their beliefs and western culture. Examples include hardworking intellectuals such as Mahdi Bazargan, Yadollah Sahabi, and Ali Shariati. They struggled to prove what Islamic sources are in conformity with new sciences – especially in their fields of specialty: thermodynamics, biology, sociology and history. This way they wanted to prove the rightfulness and eternity of Islam.⁵² Pirnia’s words on Iranian architecture were similar to these attempts. He endeavored to show what such individuals were looking for in the architecture of the West could be easily found in Iranian architecture in an even better and more profound way. This would have been in a more harmony with our Iranian culture. We should not therefore search for something we have it here at home. Iranian architecture is scientific, objective, practical, functional and far from pure adornment.

Pirnia made an effort to show that the Iranian architecture is no way inferior compared to global architectural schools which become famous each day. Like

modern schools which have manifestos, he struggled to identify and introduce principles for Iranian architecture. Like the architecture of the West which has styles and schools, he also strived to comprehend the styles of Iranian architecture and demonstrate their relation with the Iranian culture. If the modern movements (which were dominant at his time) believe good architecture is one which is functional and scientific, he endeavored to show that the Iranian architecture has been functional and scientific throughout its long history of existence. If modernists criticize the decorations which are added to structures, he introduced Iranian decorations as something useful with materialistic advantages and not something luxurious and extra. Indeed, all of Pirnia's works are aimed at introducing the Iranian architecture as an efficient system in all the fields of thought, design and execution; a system which can stand in line with modern architectural schools.

Still if we degrade his works to a modern manifesto of Iranian architecture, we have truly done injustice to them and ourselves. Contrary to his peers, Pirnia knew well that research on the history of architecture will never last or will not get strengthened without a theory backing it. Therefore he developed theories. He understood that a theoretical system which could be a basis for further research on Iranian architecture, had to include both details

and generalities of this architecture at the same time; a system in which one can speak of Iranian taste and culture and of its specific skills, delicacy, and materials in use. The theory which he proposed – “Pirnia's Project” for Iranian architecture – is a strictly humanistic project, in which all humans, both individually and collectively, their bodies and souls, and their materialistic and cultural needs are heeded to. In Pirnia's project all the specifications of Iran, from the earth to the sky, are embodied. Pirnia's Project allows us to understand the history of Iranian architecture with a modern approach and also to plan for its future. His Project neither closes the door for further research by others, nor claims to say the final word. His words have both developed through time and have paved the way for future research.

III.2. Assumptions

From the phrase “Principles of Iranian Architecture” and the sum of Pirnia's words on this subject, it becomes clear that he grants an independent nature for “Iranian Architecture” – an independent and recognizable phenomenon named “Iranian Architecture” which has evolved through time and by Iranians. In his opinion, this creation can be understood and its general specifications or principles can be identified. He has then presented different architectural examples for these principles and passed

judgments on whether they belong to Iranian architecture. Therefore, Pirnia's most significant and general assumption was the existence of the independent and identifiable phenomenon of Iranian architecture. At times he referred to this phenomenon as "the Architecture of Iran" and sometimes "Iranian Architecture".⁵³

Pirnia knew this phenomenon – Iranian Architecture – to have emerged from Iranian culture. In his view, Iranian Architecture is the fruit of Iranian taste and culture imbedded in the geography of Iran. Other Iranian arts are the same. Therefore, Iranian architecture and other Iranian arts share similar principles; "there are basic and fundamental principles related to Iranian lifestyles and tastes"⁵⁴ and the principles of Iranian architecture, except for "Structural Rigidity and Homogeneous Proportions", are the principles for all Iranian arts.⁵⁵ So, Pirnia's second assumption is that Iranian Architecture is similar to other Iranian arts since it has emerged from Iranian culture and taste like them. Architecture and other Iranian arts are the fruits of one tree: Iranian Culture. Iranian Culture is itself a product of the Iranians' characteristics, and the climate and its geographical situations.

Pirnia believed since Iranian Architecture has emerged from Iranian culture and geography, it is a pleasant and logical architecture. In other words, in his view, "pleasant" and "logical" architecture

are synonyms;⁵⁶ and logical architecture is architecture which has not been created out of passion, but it has emerged from the needs and requirements of people and their culture and land characteristics, being in total harmony with the nature and existing characteristics of the land.

Other assumptions can also be found behind Pirnia's proposed principles for Iranian Architecture in addition to what have been mentioned already. . His other assumptions, which in comparison rank lower, will be pointed out in future discussions.

III.3. The Generalities of the Principles

From Pirnia's views, one can deduce that he has gathered the principles of Iranian architecture from the set of Iranian architectural works, ever since building and living took place in Iran until the Qajar period through friendships with traditional architects and builders. In this endeavor, he also included his own judgments. It seems that from his view, Iranian architecture has one general, definite and unchangeable principle which is rationality. He also compared other general, old features (inferred from studying Iranian architecture) with this original principle according to his own understanding, and then included them as one of his own principles. This is why what he has included in his principles have not been mentioned in many Iranian

architectural works and there may also be many similar general features among Iranian architectural works which have not found their way into Pirnia's principles.

Examples of these include noteworthy characteristics such as poeticality, abstraction and beveling (*barsāv*), a strong understanding in order to acknowledge absorption of the components of the architecture of other cultures; and diversity which Pirnia has mentioned in his views⁵⁷ but never included them in his principles. Maybe Pirnia considered some of them as insignificant to try to prove their accuracy. As stated earlier he thought of the principles of the Iranian Architecture as a "manifesto of architecture"; a global manifesto for living and building better. Maybe these features, in spite of their importance, did not have the firmness and rigidity to be included in his manifesto.

The best interpretation of Pirnia's Principles of Iranian Architecture might be that he knows these principles, except for Structural Rigidity and Homogeneous Proportions, to be also known as good and logical architecture in the whole world. This is why he did not need to prove their truth in Iranian architectural works. It would be adequate for him to show that Iranian architecture is mostly based on these principles and is among the best examples of architecture in the world. We will return to this subject later on.

a) Source and Path to Eliciting the Principles

Pirnia has rarely mentioned how and wherefrom he elicited these principles. At times he spoke of deliberating upon Iranian architectural works or of friendships with Iranian traditional architects and master builders. For example, about the principle of Human Scale he says: "When we speak of this ancient, elegant and open art with skilled Iranian architects, they say architecture must be in harmony with mankind."⁵⁸ By visiting different parts of Iran and studying all aspects of the existing works and becoming acquainted with Iranian culture, and by relying on his strong memory and understanding of architecture, he gained an overall image of the similarities of Iranian architectural works. Pirnia did not feel obliged to academically confirm the accuracy and credibility of these principles. Neither did he feel the obligation to prove the credibility of his research methodology. He lived in a time in which the last footprints of Iranian architecture were fading away. His work was academic and research-based but not a scientific study of the history of Iranian architecture carried out for amusement. He saw crisis in Modern architecture⁵⁹ and searched for a solution from the past. His work was not a quiet academic attempt, but it was a cry and speech in an academic framework. He owned an opinion and had examples and evidence for it. To show the path from

which he achieved his opinions were not what he expected of himself; or he may not have had the time to do so.

It seems that his general view of the phenomenon – Iranian Architecture – was more reliant on the architecture of the desert. The experienced architects he spoke to probably more or less came from Yazd, Nāyīn and Tehran. The technical language of architecture which he spoke and the technical words he inserted in our language were all either derived from Yazdī accent or words revived from the middle Persian (Pahlavi) language. It seems that in his view, the architecture of the center of Iran – the margins of the desert – is the central architecture of Iran, and the architecture of other areas positions itself on the margin of this architecture. This is why when specifying climate conditions as one of the reasons for Inward-Looking, he says this principle has emerged from the warm and dry weather in *this* land. He argues that in areas of the country with very different climate than those in the Central part of the country such as in North of the country, in Kurdistān and Luristān provinces, extrovert houses are also constructed.⁶⁰

He constantly searched, looked at , spoke with, listened to, accompanied architects, explored, and contemplated on works and structures. He also continuously increased his understanding of architecture

as a whole and his sense of architecture. By doing so, he identified the principles of this architecture. He however, did not see his own principles as those subject to no change and rigidly fixed. With the further development and expansion of his knowledge and view of this architecture, he modified , improved and completed the principles. For this reason Pirnia spoke of the Principles of Iranian Architecture for years but never claimed that the principles are limited to the ones he came up with.

b) Principles for Criticism

From Pirnia's ways of eliciting the principles we can also conclude why he used these principles for criticizing Iranian architectural works. He had not derived his principles directly from structures therefore not being in accordance to some structures would not destroy the foundations of the principles. He counted his principles as rational principles with which he has the right to criticize Iranian architectural works with. He even had the courage to say most of the structures built out of a certain architectural principle are not in harmony with the same principle. He could even say that if these principles are considered in a structure built today, that structure would be among the works of Iranian or Islamic architecture.⁶¹ These Principles are criteria for identification of a structure. The closer they are to these principles, the more Iranian they get..

c) Indicative or Compositional Principles

As these Principles are rational, Pirnia does not feel obliged to differentiate among their indicative or compositional natures. He says these are the Principles of Iranian architecture; upon which the Iranian architecture has been built and roots from which Iranian architecture has grown. Up to now it seems that these principles are indicative meaning that they inform us of something that is about architecture. But from deliberating upon Pirnia's words we conclude that these principles are indicative at times (which concerns with what architecture was) and compositional at other (which concerns with what architecture should be). The fact that he has achieved the principles not from most of the works but from a number of them, and that he has evaluated them with his own mindset and imposed them on other works or criticized other works with them means that he has at least considered them compositional at times. These principles are the desired and ideal principles and the Iranian architect and Iranian architecture deserve gratitude because they have been in accordance with these principles in their structures throughout history. In other words, these are not principles which inform us about Iranian architecture; they are principles which say what Iranian architecture should be. This mixture of information and composition is an indication of his

addressing tone and social responsibility in the specific period in which he lived.

d) The Iranian Origin of the Principles

When Pirnia names Human Scale, Inward-Looking, Self-Sufficiency, Avoiding -non- essentials, Structural Rigidity, and Homogeneous Proportions as the principles of "Iranian architecture", this means they are principles which differentiate between Iranian and non-Iranian architecture. To decide whether a work is Iranian or not, we must see if these principles have been implemented in its structure. At first it seems that Pirnia believed these principles are the distance between the Iranian architecture and other architectures. A work can be evaluated to see if it has embodied these principles or not and then we may judge about it being Iranian or not. It is on this basis that we can ask to what extent a work, period or method must exemplify these principles for it to be reckoned as Iranian architecture. Now that according to Pirnia, most architectural works have violated the Self Sufficiency principle, why do we still include them as Iranian architectures? This is also the case for the Inward-Looking principle in the architecture of mountainous lands or the Human Scale principle in the Parthian style.⁶²

If these principles distinguish between Iranian and non-Iranian architecture,

they must own an Iranian essence. From what Pirnia has mentioned regarding the principles, a comprehensive conclusion cannot be attained. The principle of Human Scale may have been applied in the architecture of the Incas or Alp; but only in harmony with their people and environment. In the Inward-Looking Principle, we speak of Iranians' tendency towards privacy and hijab. Therefore by thoroughly studying Pirnia's works, we are able to find an inner Iranian essence in this principle. But is this characteristic exclusively for the Iranian Architecture? If the response is in the positive then has Pirnia done anything to prove this exclusiveness? The Self-Sufficiency principle in itself has no essence dependent on Iranian culture; but we can associate it with the contentment of the Iranians who live around the desert. We can also say that if the Self Sufficiency principle is implemented somewhere in Iran, it will become Iranian since by using it, it will meet the needs of the country.. If this principle is used in the mountainous lands of Russia, the Self Sufficiency principle will become Russian. The Avoiding non essentials principle also hasn't emerged from any specific Iranian taste or characteristic; even if it is, Pirnia hasn't mentioned anything about it. Structural Rigidity and Homogeneous Proportions can also be found in any non-modern culture and in compliance with its characteristics.⁶³

We can see that these principles, in themselves, do not hold an Iranian essence. So what makes these principles Iranian is their application by Iranians and their tastes in Iranian cultural and geographical platform. But these principles may be the distinguishing element between the Iranian and non-Iranian architectures from another view as well: their mutual companionship. We might think that if all principles are used in an architectural work, that work will be recognized as Iranian. But Pirnia himself has rejected this notion because in his view, as mentioned earlier, some of the principles have been violated in some of most important Iranian architectural styles.

Hence, with a bit more reflection upon all of Pirnia's works and views, we discover a new picture of the principles. In the previous sections we strived to clarify this image. In none of his works has Pirnia claimed that these principles are exclusively a feature of Iranian architecture nor that they are the differentiating element between Iranian and non-Iranian architecture. He hasn't even implicitly mentioned anything for us to be able to elicit the fact that if a structure has these specifications it must be Iranian and does not belong to any other architecture. He never claimed to separate the tradition of Iranian architecture from the tradition of other cultures – neither did his principles support this. Even in

one of his interviews, in the beginning of his explanation of the principles, he said: “Some of the specifications of art are similar everywhere and some differ from one climate to another.”⁶⁴

By becoming accustomed to Iranian architecture which he referred to as one of the best achievements of man’s architecture, he attained eternal principles for architecture; principles which are mostly beyond time and place. Pirnia’s principles of architecture are good and logical. In his opinion Iranians must be proud that their architecture has been based on these principles throughout history. His image of the timeless aspects of the principles caused him to eliminate features such as symmetry and asymmetry, or gave him the authority to use the principles as criteria for criticizing Iranian architecture. For the same reason, he did not feel responsible to prove the rightfulness of the principles through induction.

e) Principles for all Iranian Arts

Pirnia has said many times that these principles, except for the fifth principle (Structural Rigidity and Homogeneous Proportions), are present in all Iranian arts. He was familiar with Iranian culture and arts; probably more than any other scholar of the history of Iranian architecture.⁶⁵ Still, he brought no evidence or reason to prove his claim. If we consider Pirnia’s words further than just an appraisal of the exclusiveness of Iranian arts, we will face

difficulty when it comes to its credibility and adaptability with reality. We can understand Inward-Looking in the arts of book such as calligraphy and miniature, or an art such as Iranian music; but how about Human Scale and Self Sufficiency?

However, what is significant in this regard is his struggle to show the strong connection between the Iranian architecture and the Iranian culture. He sought to draw the attention of his addressees to the fact that the Iranian architecture is a manifestation of Iranian culture; as it is true for the Iranian painting and music. A researcher of the Iranian architecture will only be guided on the right path if he views the Iranian architecture as a member of this family.

In Pirnia’s view, the Iranian architecture has emerged from the Iranian culture. The Principles of the Iranian Architecture are the principles of Iranian culture and even the principles of the Iranian personality. An Iranian is himself in harmony with mankind (Human Scale), inward-looking, and self sufficient; he avoids non-essentials and tries to stabilize and correct every task he carries out. The Iranian characteristics, either of the Iranian architect or of the people of Iran, immerse in the architectural work. So it is no surprise that these characteristics appear in other Iranian arts as well. It is a pity that Pirnia did not explain his intention for the appearance of these principles in other arts.

f) The Language and Tone of the Principles

Pirnia tended to use original pure Persian words; but his inclination wasn't extravagant. He did his best to find Persian equivalents for foreign terms common in today's architectural language – such as *barburī* and *pardāz* (stylization); *barsāv* (beveling); *parhīb* (schema); *āmūd* (revetment). The words he has chosen for his principles are also all Persian words. But there is a sort of disorder seen in the vocabulary of these principles, similar to what we said about the mixture of being indicative and compositional. We can say the Iranian architecture is “in accordance with Human Scale” or “Inward-Looking” or “Self Sufficient”. We can even say it ‘avoids non-essentials’; but we cannot say it is “Structural Rigidity and Homogeneous Proportions”.

Moreover, as we will see, what Pirnia mentions about the principle of Homogeneous Proportions are useful for the Structural Rigidity of a work; but it is much more than just Structural Rigidity and stability. Homogeneous Proportions (*paymun*) embodies the essence of all principles. We may say that all the other principles appear through Homogeneous Proportions. Still, he brings Homogeneous Proportions alongside Structural Rigidity and has not included it as an independent principle.

IV. Another Deliberation upon the Principles

What was mentioned in the previous section was the outcome of deliberating upon the generalities of the principles. We will now state a few other points separately for each principle.

IV.1. Human Scale (*mardum-vārī*)

What the mind accustomed to modern architectural concepts understands from this principle is “human scale” in modern literature of architecture; meaning the body of the structure should be proportionate to measures of the human body. But what Pirnia means by the Human Scale is much more profound. At times Pirnia speaks of this principle in such a way that we conclude only – materialistically – the congruity between the human body and the structure. However by studying all of his works we understand that he refers to this congruity as something more than just physical congruity. He says a work must be in harmony with the lives and conditions of human beings.⁶⁶ He says: “When you show an experienced architect an inappropriate room [...], he says it is not *mardum-vār* (in harmony with humans); meaning it has no Human Scale.” This means it is not in accordance with the behavior and life of the person who will be living there; that this room is not appropriate to live in; or, for example, such structure is not suited to be a school; or, it is not appropriate for students and residents to live in, etc.⁶⁷ In

defining Human Scale, he even speaks of the quantity and quality of light or material. Accordingly, a structure is in accordance with the Human Scale which is proportionate to the life that goes on in it. This is why Pirnia believes the grand magnificent palace of the Achaemenid is in accordance with Human Scale. Although it was not proportionate to the human body, it was in proportion with the grandeur and the dignity of the King living in it. It is still unclear why he has reproached the grand structures of the Parthian Era as not being in harmony with human being although their glory may have been befitting for the life going on in it.

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With this principle, Pirnia states his belief that an ideal architecture is one which is in proportion with the life-style of those living in it. What deserves the most deliberation in this principle is the attention dedicated to humans and their lives. In Pirnia's view, architecture should be understood with the life in it. Architecture and life are intertwined elements. Just as architects must build works proportionate to humans and their lives inside the structure, researchers must also approach architecture with this mindset and consider the fact that studying architecture divorced from life-style will lead to an imperfect understanding.

IV.2. Inward-Looking

Pirnia's words regarding Inward-

Looking and its causes are a bit distressed. For example, he once rejects the relationship between Inward-Looking and religion. At one occasion he mentions Inward-Looking as a factor which has exclusively emerged from climate conditions while in another place he says it is the result of many factors, *including* climate conditions.⁶⁸ Still, by reflecting upon Pirnia's works and considering the gradual evolution of his thoughts on the principles, we can conclude that he knows three factors to have caused Inward-Looking to emerge in the Iranian Architecture: 1) Iranians introspection trend; 2) The importance of hijab for Iranians from old times up until now, the significance of maintaining privacy and preserving the independence of private borders for them; 3) Climate factors.

If we set aside the inclusions of this principle in Iranian architecture, Inward-Looking has important indications; such as:

- Humans and architecture are of the same kind. We can attribute a humanistic – inward-looking – characteristic to architecture. The characteristics and personality of the maker of a structure appears in architecture.

- The Iranian architect was himself affected by Iranian culture and not through a Sufi; as the culture and land of Iran had taught both to look inward. In other words, the Iranian architecture and Sufism are

at the same level regarding their Iranian culture and locality.

- Taking much notice of hijab and privacy is not limited to Muslims; it is an ancient characteristic of the Iranians and Islam has confirmed it. Inward-Looking is a factor which has emerged from the Iranian “life style”.

- The most important of all is that a characteristic in Iranian architecture can only be correctly understood and reviewed if it includes Iranians, their culture, beliefs, personalities, life styles, land and geography simultaneously and together.

IV.3. Self Sufficiency

In explaining Self Sufficiency, we can see another dimension of Pirnia’s thoughts and efforts; a dimension which is different compared to the other two principles. He believes Self Sufficiency means an architect should be content with what he has. The first issue is that the previous two principles refer to the characteristics of the building; characteristics which were also a manifestation of the characteristics of the architect. But here, self sufficiency is a characteristic of the architect alone. We cannot say a structure is Self Sufficient; but we can say its architect is, and that he was content with what he had. In addition, this principle is less included in Iranian architecture compared to the two previous principles. Pirnia himself brings examples of Iranian architecture styles which do not demonstrate Self Sufficiency. The most

important of them is the Persian style: The style of the first empire of the world (Achaemenid Empire) which was based on an international foundation and not on domestic material.

Still, this principle has a valuable outcome. The principle of Self Sufficiency allows Pirnia and other researchers to pay attention to the hidden dimensions of the Iranian architecture. In other words, through this principle, Pirnia studied the different local and regional aspects hidden inside the architecture of Iran. He also brought about a focus on material; a concept which is usually less talked about in the stylistics of architecture. Moreover, Self Sufficiency delivers a domestic version of something that has emerged in our time called “Sustainable Architecture”. Without knowing or having in mind this idea, Pirnia mentioned some of its valuable aspects.

IV.4. Avoiding Non-Essentials

Unfortunately, Pirnia did not have the time to explain the principles more thoroughly and equip them with examples or to expose them to criticism and judgment of others to find worthy answers. This principle shows us another image of Pirnia. Instead of explaining the architecture of Iran in its cultural context, he comes to defend architecture from the values of Modern architecture. It is as if he is trying to prove that Iranian architecture is more tied to the principles of Modern

architecture than Modern architecture itself. Consequently, similar to the pioneers of the modern movement, he deems pure ornament as useless and reproaches it while he purifies Iranian architecture from the disgrace of being decorative. He who had earlier explained all the generalities and details of architecture in relation to human beings, cultures and life styles, now rejects the notion of decoration in Iranian architecture. He lessens the decorative aspects to the level of a physical mediator, just to grant the structure its materialistic needs, such as *panam* (insulation).⁶⁹ Still, this principle is a sign of Pirnia's focus on the details of Iranian architecture and its scientific aspects. This principle can be adjusted and used to study the disregarded aspects of Iranian architecture.

IV.5. Structural Rigidity & Homogeneous Proportions

Pirnia has already given full consideration to Iranian taste, culture and life-style in understanding the specifications of architecture in all the other principles. He now moves to the Principle of Structural Rigidity and focuses on the technical aspects of architecture. In explaining the stability aspects of architecture, which he refers to as Structural Rigidity, he exactly knows that stability in architecture cannot be separated from its other aspects. An architect would not carry out a design and later on beautify or stabilize it. An experienced architect could carry out a plan

which is at the same time efficient and functional, beautiful, stable, and practical. Pirnia knew that no architecture can be well understood without considering its technical principles. His acquaintance with skilled and experienced architects had helped him gain full command of these principles. He had also become knowledgeable regarding the technical aspects of Iranian architecture and had included them in the principles of Iranian architecture. For this reason, his interpretations of the technical aspects of Iranian architecture differed from others. Contrary to other scholars of the history of Iranian architecture, he analyzed three technical aspects of architecture –statics, material studies, and structural elements and details – and gave them one name: Structural Rigidity.

It was Pirnia's focus on this, in describing Structural Rigidity and its mixture with other aspects of architecture, which led him to a concept we may refer to as his masterpiece: "Homogeneous Proportions" (*paymun*). To be frank, Pirnia's account of Homogeneous Proportions has not been clearly understood up to now. Maybe the reason for this ignorance is Pirnia himself since he mentioned this significant fact of his theory alongside Structural Rigidity and has therefore not given enough attention to it as it deserves. Pirnia's initial words on *paymun* and nearly equating it with a "module" has assisted those whose

minds digressed by modernity e.g. to recognize it as “module”.

In Pirnia’s view, all the features of Iranian architecture along with Structural Rigidity will only become practical when they merge in a clear and transferable form. If this is not the case, it will only be the cultural centers and the capital in which architecture flourishes and finds way into the principles of Iranian architecture. But he believes the architecture of distant parts of the country, even far away villages, is an architecture befitting the people, their life styles and culture. The way the units and components of Iranian architecture are in proportion with the lives, thoughts and conditions of all people, and are static and stable at the same time, appear in sets of combinations called *paymun*. *Paymun* was the product of analyzed ratios which led to correct measures for architectural designing and the structure of a building. Correct measures are measures which bring about efficiency along with beauty and stability. *Paymun* seemed to be something similar to what Christopher Alexander referred to as “pattern”.⁷⁰ We can claim Pirnia’s *paymun* is more comprehensive compared to Alexander’s pattern⁷¹ and also more suitable for the Iranian Culture.

V. Conclusion

When the Iranian Architecture was breaking apart by the influx of Modern

architecture and its implicit and explicit remainders were close to fading away, Pirnia struggled to introduce this architecture which had emerged from the heart of culture. He could not demonstrate that the Iranian Architecture was adequate for fulfilling everyday needs; but he could show that this architecture has grown from the roots of the Iranian Culture and throughout thousands of years. He showed how it was in proportion with the Iranian spirit, taste and life style; fulfilling both their materialistic and spiritual needs at the same time. So, if we too understand the principles, it will not be surprising to become able to meet the needs of Iranians of our time as well. This was his driving force to search for the firm principles of Iranian architecture; principles beyond time and space that cannot be disregarded or ignored for being encapsulated in the conditions of their time.

Pirnia had great knowledge of Iranian architecture and culture as well as modern civilization. He strived to preserve the achievements of the Iranian Architecture from the reckless attack of modern culture and architecture. At times he grasped the eternal values of Iranian architecture and at other times, even though out of responsibility, matched them with modern architectural values. On the one hand, he showed how the Iranian Architecture has true values which have emerged from the Iranian Culture and on the other, with an

ideological tendency which was present at their time, he tried to show the young that if modern architecture is what they appreciate, the Iranian Architecture had been a modern one from the very beginning.

He presented a few principles for Iranian architecture based on these thoughts and motivations, principles which can make up the doctrine of architecture to challenge the new and various schools. It was the relationship between these principles and the ideological doctrine which changed his principles from an indicative type to a compositional and ideal type in history. Pirnia spoke of ideals towards which our architecture must move. He then claimed that the Iranian Architecture has achieved these ideals and aspirations most of the time.

Pirnia considers a proper and desired architecture as one which is suitable for humans in each habitat; an architecture aligned with the existence of mankind. So no wonder if we learn that instead of extracting the principles from Iranian architectural works, he elicited them from Iranian culture and the characteristics of Iranians, and then equipped them with examples from architectural works. What Pirnia did was to invite people to accept these timeless principles. He did not see himself obliged to logically stabilize these principles and separate them from the architectural principles

of other civilizations at the time. Pirnia was aware of the architecture of other lands and civilizations, especially Islamic civilizations, and had spoken of them as well.⁷² He however did not enter the field of differentiating and separating Iranian architecture from architectures of other lands. This disregard for academic paths, and devoting complete attention to the needs and conditions of the time are among the features of all ideological works.

In addition, Pirnia related the characteristics of an Iranian architecture to the taste and needs of Iranians, and most of the time, to the will and understanding of the Iranian architect. His emphasis on the architect, his personality, and characteristics is also a result of his focus on modern time and its requirements, which was necessary for developing an ideological manifesto about Iranian architecture for young architects.

However, Pirnia's work is much more than theorizing or laying out an ideological work in the field of architecture. Pirnia's work even goes further than being a pioneer in the new studies of the history of Iranian architecture. Pirnia focused on Iranian culture, and the relationship between culture and life, more than Iranian and Western history scholars of the Iranian architecture did. If we view his work from the approach of theoretical schools, Pirnia was much more advanced than his time in historical architectural thoughts.

Pirnia did not suffice himself to

theorizing but rather he intended to impact his society. The prerequisite for moving from theory to practice is developing a kind of architectural ideology. Today, we greatly need Pirnia's thoughts and achievements to be able to carry out profound research on the Iranian history of architecture. For this purpose, we need to remove the tints of urgent practical needs in his time from his thoughts and achievements. We must set aside the claim that his five principles are the sole principles of Iranian architecture in all times, and consider them as tools for understanding Iranian historic architecture. In this case, Human Scale will lead us towards paying more attention to humans and the life of an Iranian in architecture; Self Sufficiency, Avoiding Non-Essentials and Structural Rigidity will be tools for deliberating upon the material, habitat, elegancies and scientific techniques of Iranian architecture. Above all, Homogeneous Proportions will open up a new window for us to structurally understand Iranian architecture and its forgotten language. As Pirnia wanted himself, all these will offer us criteria for identifying the fields and styles of Iranian architecture.

In our time, neither Pirnia needs our admiration, nor does praising him solve any of our architectural issues. We are in need of reviving Pirnia which includes considering all the cultural and technical

aspects of the Iranian Architecture, an attempt to develop theories in the history of architecture, and understanding all its dimensions.

Endnotes

1. On the life of Pirnia, see: Akbar Ghalamsiah. 2002, *Yad-nama-yi ustad karim pirniya* (in memory of Karim Pirnia) ; Mohammad-Karim Pirnia. 1999, *Tahqiq dar me'mari-yi guzashta-yi iran* (a research on the historic architecture of Iran); idem, June 1985, "Ustad muhandis karim pirniya va usul-i me'mari-yi sonnati-yi iran" (Karim Pirnia and the principles of traditional architecture of Iran), 3-13; idem, November 1994, *pīr-i me'mārī-yi sonnātī-yi īrān*" (Karim Pirnia: the sage of Traditional architecture of Iran), 29-40; idem, February 1995, "Īn rishti-yi gosasta rā girihi bāyad zad" (this disentangled thread must be tied, 12-18; idem, Summer 1983, *Me'mārī-yi īrānī: dar mahzar-i ustād* (Iranian architecture: at the presence of the master).

2. The authors have not found any works which analyze Pirnia's historical mindset, except for this article: Mehrdad Qayyoomi Bidhendi, "Bar-rasī-yi intiqādī-yi chahār tārikh-nāma-yi me'mārī-yi īrān" (a critical study of four historical books on Iranian architecture), in *Khiyal* 15 (Fall 2005): 4-36; and also for two or three ordinary educational researches, not published, including: Mahdi Rayissi Nafchi, "Bāz-andīshī-yi sabk-shināsī-yi me'mārī-yi īrān" (rethinking the stylistics of Iranian architecture), (educational article in PhD course

in architecture, Shahid-Beheshti University, 2009).

3. Mohammad-Karim Pirnia and Keramatollah Afsar, 1971; he also co-worked with Baqher Ayatollahzadeh Shirazi and Mahmoud Maheronnaqsh in writing the book *masjid-i jāmi‘-i isfahān* (Isfahan Friday Mosque): Mohammad-Karim Pirnia and Baqer Ayatollahzadeh Shirazi and Mahmud Maheronnaqsh, 1979, *masjid-i jāmi‘-i isfahān* (Isfahan Friday Mosque). The book *Handasa dar me‘mārī* (geometry in architecture) by Zohre Bozorgmehr is also result of studying as Pirnia’s student: Mohammad-Karim Pirnia, 1992, *Handasa dar me‘mārī* (geometry in architecture). In the article “Rib=Arch- Arc” talks of a book about to be published named *Razigari* (architecture) in Iran. This book has never been published and there is no evidence of its draft.

4. About Pirnia’s works which he has written himself or others have collected, see: the bibliography of this article and also: Mohammad-Mahdi Abdollahzadeh, 2010, “*Farār az madrasa: bar-rasī-yi ahvāl-u asār-i mohammad-karīm pīrniyā az manzar-i tārikh-pazhuhī-yi me‘mārī-yi īrān*” (run away from school: Mohammad-Karim Pirnia’s life and works as a pioneer in Iranian architectural historiography).

5. To rationalize our study, we emphasize more on sources which are closer to Pirnia’s words; his writings, sound and video cassettes and files. The words of his students and friends and published notes from his classes (such as *Sabk-shināsī-yi me‘mārī-yi īrānī* and *Tahqīq dar me‘mārī-yi guzash̄ta-yi īrān*) have only been used when they have no conflict with these primary sources.

6. Mohammad-Karim Pirnia, 1974, 5.

7. Idem, Winter 1976, 62-64; idem, (?), “*Zavābit-i me‘mārī-yi īrān*” (The Norms of Iranian architecture), (televised Interview): 1-4.

8. Idem, 1979, 28-40.

9. Idem, (?), “*Zavābit-i me‘mārī-yi īrān*, 3.

10. Idem, June 1985, 4.

11. Ibid., 6.

12. Idem, (?), “*Panj pāya-yi hunar-i me‘mārī-yi īrān*” (five principles of the art of Iranian architecture), 78-79; idem, Summer 1991, 5-7; idem, 2003, 26-38.

13. Idem, (?), “*Panj pāya-yi hunar-i me‘mārī-yi īrān*,” 78 and 79; idem, Summer 1991,” 5-7; idem, 2003, 26-38. However, in the letter which Pirnia wrote to specify the course of “Islamic Architecture 1 & 2”, he named six principles of Iranian architecture and arts. Four of them are similar in all Iranian arts and the last two are specifically for Iranian architecture. See: Mohammad-Karim Pirnia, 1999, 41.

14. Idem, Winter 1976, 62. From this narration we can conclude that the origin of this principle stems from Pirnia’s companionship with traditional architects.

15. Dekhoda Dictionary, under the entry “*مردم*”.

16. Mohammad-Karim Pirnia, Summer 1991, 5.

17. Idem, 2003, 26. “All living things, every flying bird, every living creature builds their dwelling place the size suitable and desirable for themselves. Why do we people build houses unbecoming for ourselves?” (Mohammad-Karim Pirnia, Winter 1976, 62). “Never has an Iranian architect build a cinema and named it a bedroom [...]; place a bed in a corner and cry for his loneliness.” (Idem, 1979,

35); see also: Mohammad-Karim Pirnia, April 1990, "Sokhanī darbāra-yi me'mārī-yi īrānī" (words on Iranian architecture).

18. See: Mohammad-Karim Pirnia, Summer 1991, 5. "Sees a ... three-door, which is something 3.20* 3.60 meters; just like a husband and wife lying down together; the shelves and on the shelves, ewer and pot, praying cloth and ... mirror and comb and ... have been placed next to them; they have determined where the children play; even the entrance door, the closet, all these have determined positions. Finally, the architect has drawn a line around them; this means it is not one bit different." (Mohammad-Karim Pirnia, April 1990.); See also: idem, June 1985, 4.

19. Ibid.

20. Mohammad-Karim Pirnia, Winter 1976, 62; idem, 1979, 36.

21. Idem, June 1985, 5.

22. Idem, 1979, 36.

23. Idem, June 1985, 4 and 5.

24. Idem, Summer 1991, 7.

25. Idem, 1979, 29.

26. Idem, 2003, 36; idem, Summer 1991, 7.

27. Idem, 1979, 33.

28. Idem, 2003, 36.

29. Idem, Summer 1991, 7; idem, April 1990.

30. Idem, Summer 1991, 7.

31. Idem, 1979, 31. "Strictness regarding hijab and privacy in Iranian culture was much more severe in pre-Islamic era; this was so strict that women were named Pardagī in Persian; meaning sitting behind a curtain." (ibid., 32).

32. Idem, 1977, Class Sessions from the Faculty of Pardis, the subject of "Persian

Style"

33. Idem, Summer 1991, 7. "The subject is not just hijab; An Iranian does not want anyone to look into his privacy. Now in the north of Tehran, in Niavaran and above Shemiran, palaces have been built and bought with landlords who mostly live in America or Europe and they even have foreign spouses. Still, sometimes when they are tasteless, they place a tin so it won't have a lid; or if they have good taste, they will build arches which will not be seen from the Pahlavi house [...]. It may have not been seen anywhere that one persons sits in his house with pyjamas and has a few people beside him as well. Europeans must even wear pants in front of their spouses; but Iranians sometimes even came to the streets with those trousers and it was not important or there was nothing wrong with it, because it was a tradition. But still he was covered and covered his underwear with a cloak." (Mohammad-Karim Pirnia, 1979, 34). See also: Idem, 1971.

34. Idem, 1991, part "2-a-2."

35. Idem, 2003, 31.

36. Ibid.

37. Idem, (?), "Panj pāya-yi hunar-i me'mārī-yi īrān," 79.

38. This plant is named Zhāzh, and it will not be chewed however much one chews it. (Mohammad-Karim Pirnia, June 1985, 5); See also: Mohammad-Karim Pirnia, Spring & Summer 1970, 2-13.

39. Mohammad-Karim Pirnia, 2003, 28. "... they say why have they drawn patterns? And for the reason of being able to darn them; to repair a tile which will only last for 8 years. For example when a piece of a tile from the dome of Sheikh Lutfullah falls down, an ar-

chitect seeks it, goes up and places it back in its place. This will always stay stable with the first design which an architect/ geometrician has drawn.” (Mohammad-Karim Pirnia, June 1985, 6).

40. Idem, 2003, 28; idem, June 1985, 4.

41. Idem, June 1985, 4.

42. Idem, Summer 1991, 6.

43. Idem, 1991, part “1-a”. “Niyārish covered the both field of construction: structural works such as arches, domes, piers and ..., and also revetment works such as nodes, tiles, muqarnas.” (Zohre Bozorgmehri, March 2010.) See also: Mohammad-Karim Pirnia, 1992.

44. Idem, Summer 1991,” 16. “Iranian architecture has never been pure art and has always been a mixture with technique even though some claim the opposite. Who they referred to as an artist was who we name craftsperson; and those who dealt with science, for example statics, were not included as an artist but a craftsperson. For example, one who drew well was a craftsperson... They were named craftsmen. An artist was one who knew crafts and this was of high importance for them.” (ibid., 6).

45. Idem, April 1990.

46. Ibid.

47. Idem, Summer 1991, 7.

48. “Homogeneous Proportions is of three types: big, small, minor.” (Mohammad-Karim Pirnia, 1991, part “3-a”).

49. Mohammad-Karim Pirnia, Summer 1991, 7.

50. Idem, 1979, 38; idem, June 1985, 6.

51. Idem, 1979, 40; idem, 1981, 12.

52. For example see: Yadollah Sahabi, 1967, *Khilqat-i insān* (the creation of man-

kind); Mahdi Bazargan, 1967, *Bād-u bārān dar qur’ān* (the wind and rain in Quran); Ali Shariati, 1996, *Islām-shināsī: dars-hā-yi irshād* (Islamic Studies: Teachings of Irshad Center); Ali Rahnama, 2002, *An Islamic Utopian: A Political Biography of Ali Shariati*.

53. The phrase “architecture of Iran” is a genitive phrase; meaning architecture belongs to Iran. This explanation obviously also includes today’s architecture, which was not what Pirnia intended. “Iranian architecture” is a descriptive phrase; meaning Iran is an adjective for architecture. Because Pirnia knew Iranian ancient architecture to have emerged from Iranian culture, the phrase “Iranian architecture” is closer to his mindset.

54. Mohammad-Karim Pirnia, (?), “Sabk-i pārtī” (Parthian Style), 3.

55. Idem, Summer 1991, 5; idem, June 1985, 4.

56. Wherever Pirnia spoke of art and architecture – including Iranian architecture – and its proper or improperness, he has mentioned it being logical or illogical. In this regard, see: Mohammad-Karim Pirnia, June 1985, 4; idem, April 1990. He knows the essence of Iranian architecture to be the logic that is hidden inside it. In this regard see: idem, April and June 1973, 55. Therefore, logic, in contrast with fancy, must be counted as one of keywords of Pirnia’s theoretical system.

57. For example see: Mohammad-Karim Pirnia, July and December 1971, 17; idem, 2003, 57 and 58; idem, (?), “Zavābit-i me‘mārī-yi irān,” 4.

58. Mohammad-Karim Pirnia, Winter 1976, 62.

59. For example see: Mohammad-Karim Pirnia, July 1968, 39-43.

60. Idem, 2003, 36.

61. For example see: Mohammad-Karim Pirnia, June 1985, 4 and 6; idem, November 1994, 38 and 39.

62. For example in explaining the Parthian style, on the one hand he speaks of “frightening heights”, “prideful grandeur” and “magnificence seeking” of the structures and on the other hand he still knows Human Scale to be permanently in it. (Mohammad-Karim Pirnia, Winter 1969, 48 and 49). See also a referral to the Parthian style in the introduction of Khorasani method in: Mohammad-Karim Pirnia, 2003, 134.

63. Pirnia himself says: “Some specifications of art are the same everywhere and some other are climate based.” (Mohammad-Karim Pirnia, (?), “Panj pāya-yi hunar-i me‘mārī-yi īrān,” 78).

64. Ibid.

65. For example, see: Mohammad-Karim Pirnia, July and December 1971; idem, April 1990. Pirnia’s works deserve to be compared to the most prominent works of the West in order to discover its strengths because of Pirnia’s familiarity with Iranian culture and his deliberation upon it, and also his weaknesses in his scientific order, works such as: Arthur U. Pope, 1986, *Iranian Architecture*; the *Victory of Shape and Color*; Lisa Golombek and Donald Wilber, 1995, *The Timurid Architecture in Iran and Turan*; Donald Wilber, 1986, *The architecture of Islamic Iran: the IlKhanid period*.

66. See: Khan madrasa of Shiraz example in section 1-2 of this article.

67. This is why Pirnia insists architecture, more than other arts, and Iranian architecture, more than other architectures are related to the

lives of people.

68. Mohammad-Karim Pirnia, Spring 1980, 3.

69. For example: “...Some say Inward-Looking is because of religion; Because hijab was more strict in Alchaemenid and Parthian period compared to after Islam, they say it is because of hijab. But these are not as told; the climate here made our architecture to look inward; this means architects looked inward, similar to our Sufis, they focused on the inside more.” (Mohammad-Karim Pirnia, April 1990).

70. For example Pirnia emphasized that “Āmūd (revetment) is not pure decoration; but it is a kind of necessity which combines with beauty”. He mentions tiles to be important insulators in the structure and to justify his words he refers to tiles used in spacecrafts as a high resistant material against heat. See: Mohammad-Karim Pirnia, May 1992, *Me‘mārī-yi īrānī: mīz-i gird* (Iranian architecture: roundtable); idem, April 1990. He also knew the mosaic (mo’arraḡ) tiles to be used for the convenience of repairing. See: idem, June 1985, 6.

71. Christopher Alexander, 1979.

72. “Pirnia, in some of his classes, also taught universal architecture in the introduction to Iranian architecture and had vast knowledge about the schools of the world’s Islamic architecture.” (Hossein Rayati Moqaddam, June 2010).