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AN OVERTURE TO THE ROLE OF ARCHITECT WORLDVIEW IN CONFORMITY AND DIRECTION OF THE ARCHITECTURAL DESIGN

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ABSTRACT

The “product” of architecture, as something that is created by the architect in a “design process”, along with other effective materialistic and environmental factors, depends on the worldview of the architect as the pioneer and director of the process. In fact, the architect’s definition of human being and his aspects of existence on one hand and his needs and objectives on the other, determine “how” and “in what direction” the design process will proceed. It also reveals how the data intended for designing will be gathered, and “for achieving what goals” and “meeting what needs” they are processed. The present enquiry is an attempt to investigate how the character and characteristics of the architect’s worldview will affect the steps and characteristics of the design process. Therefore, first, an architectural design process will be established step by step, and then, the effects of the worldview on them will be studied; and consequently the components influenced by the worldview will be analyzed. Based on the nature of this paper, the descriptive-analytical methodology and inductive reasoning were used. Also, the required data were gathered by desk study.

Key words: *Architectural design process, architectural design, architecture, worldview*

INTRODUCTION

Worldview as a factor of integration of human beliefs and thoughts with its behavior and interactions [1], consists of a group of questions and answers which arise due to human interactions with the universe. Therefore, it is not an unreasonable claim to suppose that all life and existence aspects of human being are influenced by this enormous entity. If we take “instinct”, “nature” and “worldview” as the three important ways of formation of human behavior and thought [2], this is the worldview that affects the other aspects and paves the way for their influence on life. The architectural design process has been brought into attention by researchers and architects as an important issue in architectural design. For example, in his well-known book, entitled “How Designers Think”, Bryan Lawson provides simple examples to illuminate the way of moving from mentality to objectivity in architectural design as a process. The titles discussed under the design process vary and are highly applicable [3]. However, the issue has not been researched individually from the viewpoint of the architect’s worldview as the driving factor of the design process. The process, which finally leads to a mental idea of the architectural product, includes three significant steps: “data gathering”, “data

processing” and “architectural product”. This is the reason why the articles provided deal with all or part of the process [4,5]. Architecture is a humanly phenomenon created “by” humans “for” humans; and it is both the reflection of human’s “individual” conscious and unconscious assets and his “collective” beliefs and findings. “Architecture” is what is bound to shape this shapeless entity in order to make it somewhat more tangible.

So, the architect’s worldview, as a framework for his “objectives”, “values” and “measures” against the universe in a “macroscopic” scale and against the architecture in a “microscopic” scale, helps him define the theoretical and practical instruments of his interactions, like architectural design. Although architecture, as an external issue with respect to the worldview, evinces its pronounced presence in human life, and also, because its materialistic existence is independent of the worldview, but the direction of its fundamental principles, in addition to its unstructured and non-bodily objectives are severely influenced by the architect’s worldview. So, if the architectural product includes both a “materialistic” and a “semantic” part, and the materialistic part embodies in scientific attempts and surveys, its semantic part would be realized based on the architect’s or client’s worldview. Since an architectural product results from serious architectural process, it is the architect and his viewpoint that determine the “direction”, “stages”, and the “formation” and “procedure” of the architectural process.

Therefore, the present paper aims to investigate the effects of the worldview on design. It should be noted that this effectiveness is different based on the project and its characteristics; but, in this paper, a general account of the issue is provided. The present paper aims at questioning that if the architect is taken as the “precedent” of the product and process of designing, and considering that the worldview is believed to be the basis of all mental and physical values and measures of the architect, then how does all that affect the design process of the architecture? In other words, considering that any process would definitely contain levels and stages of “identification”, “data gathering”, “data processing” and, finally, “architectural product”, how is the process affected by the architect’s worldview? And how does it lead the architect? In order to find answers to these questions, and considering the nature of the present paper, we used a descriptive-analytical methodology. Also, by an inductive reasoning, efforts were made to deal with the theoretical basics to provide the theory and final classification.

THE PLACE OF WORLDVIEW IN ARCHITECTURAL DESIGN

The worldview is defined as the attitude of humans toward the universe and its conformity with the world. It affects the behavior and thoughts of human being; and how we behave affects our surrounding in turn. Since the worldviews are not independent of humans, they could all be referred to as answers to our fundamental questions. Although the worldview is the outcome of our questions, it will, consequently, be a resource of answers to other questions and will strengthen the other theoretical and practical structures. For example, regimes like culture, ethics, aesthetics, and art are severely affected by the worldview and thinking framework. Therefore, human’s fundamental questions and the answers that emerge, all strengthen the structure and frame of worldview. Table 1 is related to the fundamental questions arisen in every worldview and the answer-related philosophical schools.

The worldview is an extensive, twisted compound of questions and answers and provides a more or less clear regime of measures, dos and don’ts, procedures, and guidelines to act as human leader. Architecture is both a science and an art; each system strengthens a part of the architecture’s nature on the one hand, and affects the other’s territory, on the other. These two aspects of architecture have different “proportions” with the “architect”. Science has an external proportionality with the architect and its principles and tenets develop outside of its mentality and beliefs. The artistic aspect, however, has an internal proportionality with the architect, and relies on his interpretation and attitude.

Popper once said a big difference between art and science is that in art, the critique depends on the artist and his creativity; however, in science, it is reliant on collective views [6]. The aim of science is clear, but art doesn’t seek a predetermined objective. The architectural product is the collocation of “qualitative and quantitative”, “syntax and semantics”, and “form and content”. So, always, what is created is neither totally in the realm of art, nor it is totally in the realm of science. In this light, if we take art as an intuitive entity dependent on inspirations, cognitions and mental-spiritual experiences, then no intuition exists in science.

Table1. Questions arisen in every worldview and the philosophical schools resulted from them

Philosophical school	Question
Ontology (Reality as totality)	What is it?
Explanation (past)	Where is it originated from?
Prediction (future)	Where are we going?
Axiology (theory of value)	What is good and what is bad?
Praxeology (theory of behavior)	What should we do?
Epistemology (theory of knowledge)	What is right and what is wrong?

Science is the reasonable and procedural process reliant on testing, errors and experimental observations. In fact, due to the two-sidedness of architecture, even its measurability, manufacturing and application of the aggregates may be under transformations according to the artistic characteristics or even expectations. So, this unpredictability makes inevitable the process-bound nature of the architectural design; because, reviews or reassessments that transform the resultant product are always needed.

ARCHITECTURAL DESIGN PROCESS

Architectural design is an interactive process. Many inter- and intra-system components intervene in the process, which are evaluated by recurrent, frequent revisions. Since it is expected that, at the end of every design process, a spatial idea is realized as “objective” and “implantable”, obviously, acknowledgement of the nature of every process and attempt to master the stages more predominantly, and also the mode of transition from every stage to the other, and the components and elements required at every step and the resources for these elements and data, are effective in achieving the results. Increase of complexity, size of architectural projects, and engineering issues have made traditional, preexisting processes unable to respond to the modern design challenges [7]. In fact, variations of the attitude toward the universe and the place of human being, not only changed the components of design process, but also made some fundamental revisions to the processes; because, every process is a window through which the universe and whatever is to be made in it is observed.

The semantic aspect, and as a result, the mental dimension of human life, bring difficulties to the conformity or classification of the components of the design process. That is why its definition has always been challenging. Chan believes that architecture is a sort of problem solution process which is based on activities in the same regard [8]. Simon has the idea that the basics of design process creates and then solves architectural problems [9]. Bryan Lawson classifies the reasons behind un-definability of the design process and its problems as follows: 1) Design problems will never be expressed in an appropriately comprehensive way; 2) Architectural design problems need subjective interpretations and evaluations; 3) These problems tend to be hierarchically classified [3]. The design process, due to its context, content, audiences, and also the multidimensional interaction of its components, always bring about complexity. Scientific processes always tend to make all data “quantitative” to make them measurable. However, this will be very much harder in architecture due to the coexistence of tangible and intangible components [10]. In addition, architectural design is a systematic process containing collection and evaluation of architectural data which may be objective or subjective [11], and measurable or immeasurable. So, the process can be divided into the following stages: “gathering”, “planning”, “designing”, “final evaluation”, and “operation and occupation” by the client [12,13]. So, by controlling these stages, architecture tries to make a proper relation between the stages and provide a desirable product proportional to the client’s expectations and its own measures. So, architectural design process can be divided into “decomposition”, “analysis” and “final evaluation”.

In its simplest form, the architectural design process is a movement beginning from the architect's mind and terminating in the final product. The architect precedes the architecture and as an artist, he has a special, scrutinized, and professional attitude toward the universe and its phenomena. He interprets, selects, omits, redefines, and reorganizes the universe and then, analyzes it. The architect always has measures to define the problem and to find a solution. Various steps have been provided by architects and theorists for the design process. In the present paper an attempt is made to assess the effects of the worldview on every stage of the design process.

CONSOLIDATION OF WORLDVIEW AND VALUE SYSTEM OF THE ARCHITECT

This is the outset of the architectural production. It is formed by architect's interaction with the universe. No architect can create an architectural work without a value system, because, as a human being on the first, and as an artist/architect on the second level, the architect always interprets the universe and gains wisdom about it. The worldview obtained by this methodology determines a framework in which "existences" are interpreted and "shoulds" are wished. A significant result of a worldview is its ideals. Every attitude, based on its definition of human position and interactions with the universe, guides the human being towards some values, from which macroscopic measures are extracted. Every creation is a selection which is derived from other selections and by placing them inside a determined relational system. So, in a design process, from cognition to expression, the architect has no choice but to make selections. He selects his desired components, which are aligned with his ideals from among materialistic and spiritual areas like climate, technology, culture, religion, policy etc. Based on these measures, the architect defines their relations with each other and with the environment in a system. This relation may lead to an effective and meaningful production.

The architect can not process his data outside of his value system. Although scientific data of architecture- like types of structure and their capabilities, aggregates' behavior, inefficiencies of structural elements, etc. can be processed without a relation to the worldview and in an unrelated context, however, since it is to express the contents assumed by the architect and affect the cognition of the client – at least formally – and also, since it is to be taken into attention as an effective existence which is related to the environment and outer context, it may not be out of the realm of processing and selection. So, the architect has to take into consideration his ideals, define the "client human being" clearly, and regard the client's rights before he begins the design process. Thereby, the architect may achieve measures that not only assist him in interpretation and evaluation of his interactions at every stage, but also, make available the right way every time need arises.

PROBLEM DEFINITION OR SELECTION OF THE SUBJECT MATTER OF THE ARTWORK

Perhaps no creation is in need of the "capital" and the "employer" as much as architecture. The nature of the architecture and the necessity of presence and cooperation of human and non-human forces make the architect unable to define a new project or to make it operational individually. This does not mean that the architect postpones his thinking about architectural subject until a new project arrives. Architecture is building a place inside a place or creation of a "special" context in a "public" one. So, the creation of such a framework is not possible without a background and without drawing ideals in the mind or precedential pathologies. So, the architect takes into account the pathology of a sample of spaces and the characteristics of the existing living places with a retrospective outlook, and also, brings to mind the improved and optimized conditions with a prospective outlook. Obviously, merging of the two is not possible in the design process without referring to the worldview. For example, analyzing the previous samples to classify their right/wrong features, and to enhance the right ones and correct the wrong ones requires a comprehensive viewpoint of the human being and his environment.

Architecture is clear and obvious when it deals with numbers and dimensions. However, when semantics and qualitative aspects come into play, what is done when "defining the problem" will be, inevitably, the "description" of the ideal conditions rather than "defining" it. The way of sciences is, indeed, more illuminated, but in architecture and art, only boundaries are obvious. So, the area in which an architect may navigate to achieve his objective is more extended than the determined course in which a scientist steers; because, basing the architect's "cognition", "definition" and "problem

solving” on his beliefs and thoughts will extend this area and lead the courses to infinity. So, besides the fact that every architect may be different from the other in creating a responsive artwork, he may also still achieve more solutions by making even small changes in his viewpoint of the design problem. In other words, science is based on discovery, and art is based on development. Anyhow, this stage is “individualistic” based on the architect’s interpretation and processing of the problem. At this stage, the architect not only identifies a defect, but also he may pose a question and seeks for its answer. In other words, he involves in problem making and problem solving; and the result is, based on external stimuli (society and architecture) and internal stimuli (worldview).

IDENTIFICATION OF THE PROBLEM

Since the architecture always stands in an interval between science and art, inevitably, all of its processes will undergo this duality. At the identification stage, the architect is obliged to pay attention to both the physical, materialistic areas and the semantic, artistic realms of his artwork. This has definitely made problems for proceeding to the design process as a science. In fact, it has resulted in more individualistic design processes and has made them more reliant on the architect’s mind.

This has made it difficult for criticism, quantitative and qualitative progress, and coexistence with other knowledge areas. We can put the identification process under a group of activities called “problem exposition”, and in terms of the artistic and qualitative aspect of architecture [14]. Problem, so exposition needs to pay more attention to the external world necessities than to the internal mental requirements. Research may clarify some obscurities of the external world. Design leads to solving a real problem, while art is mostly spontaneous and based on the expression of internal reflections.

The subject of the project is sometimes well-known for the architect. It may have been examined before recurrently by him. In this case, questioning the essence of the problem would allow knowing the problem better and reviewing its substantive qualities to make possible a varied look [15]. In other cases, the problem may not have been examined before by the architect and it may be his first encounter. In this case, the architect may understand and solve the problem by relying on his attitude toward the universe and human being, and also his knowledge and experience.

In fact, any architect frequently refers to, and seeks assistance from, other’s findings and other knowledge areas like philosophy, wisdom, religion, psychology, history, anthropology, engineering, building etc. So, one of the most important activities the architect performs at this stage is to determine the theoretical and practical aspects which may be related to various dimensions of the subject. After determination of these areas, the architect is able to gather his required data and process them.

In addition to dealing with the essence of a subject and its range of impressibility to other sciences, the identification stage always takes a glimpse at the “manner” of the process, because, when the previously mentioned aspect has been determined, the theoretical and practical tools and methods of every area will be obtained. In looking at the present, the architecture gains a comprehensive knowledge by assessing the current conditions of the context, client and syntactic/semantic situations of the current age.

In fact, depending on what the architect thinks of his client’s needs (materialistic and spiritual) in the current changing context and in his constant thinking framework as a human being, the architect may provide him with a different picture. However, in looking at the future, the architect acknowledges the factors that influence the design, i.e., identification of limitations and capabilities of the design and the ability to predict the requirements and factors that the project may encounter in the future. This way, he makes an appropriate interaction with the environment and human beings.

So, the stages encountered by the architect while designing may be classified into the following three groups:

- a. Identification of the theoretical and practical areas of architecture, especially the subject matter of architecture or anything that may help in illuminating its various aspects by analytical methods and instruments.

- b. Analysis of the intended problem at three different, but related, tenses of “past”, “present” and “future” to investigate the experiences and evolutions of ideas and to sketch a general, extensible framework from the provided solutions or defects that are encountered.
- c. Identification of the effective components on “client”, “context” and “impression framework”.

Anyhow, in each of these cases, the architect’s worldview is predominant, because, considering the architect’s definition of the client and his needs, and the results that are obtained by construction, his worldview will determine whether the assistance made by the knowledge by acquisition is enough, or the knowledge by presence should be consulted.

DATA GATHERING AND PROCESSING

Data gathering and processing is an important step in the design process, which, in its own turn affects the consequences of the process and the nature of the final product. Our ignorance of the universe is complex and mysterious, and every part of our knowledge informs us of our infinite ignorance [16]. So, data processing is of high importance; because, conscious data processing may, hopefully, lead to a desirable result which will lessen our ignorance. If the identification stage aims at determination of the general framework and the information domains, at this stage the architect may do three things to obtain comprehensive information of the subject matter: first, gathering the information of every domain; second, determination, formulation and processing of the data of every domain; and third, determination and formulation of the relation between the data domain contents.

As stated, dealing with the essence of the problem occurs mostly at the identification stage. However, the architect often takes a glance at the “manner” of dealing with the issue. In fact, the architect has on his mind not only the product’s detailed essence, but also the pathway to the “answer” and the final space. He picks up, and processes, his data based, precisely, on the qualitative and quantitative characteristics of this very idea. So, the architect never aims at piling of sparse data in vain, but his purpose is to achieve an organized, and later, organizing scheme [16].

That is, although architect may achieve some architectural knowledge when encountered randomly with spatial-biological events and their interpretation, but he never acts in a random manner when he places the data in specific domains to process them. For example, the universe is multidimensional for a materialistic human being. However, for a non-materialistic human, the universe is not only multidimensional, but also multi-ventricular. So, based on his objective for his architectural space, the architect takes the materialistic and non-materialistic universe as a huge resource of data. In the end, that the architect sees the universe in multi-dimensional or multi-ventricular manner depends on his enquiry and data gathering and processing methodology. This is where increasing creativity is required for reading, and then expressing the universe.

One of the major components of this stage is selection- a major component which helps the architect increase his knowledge. Shanon says processing is to transform the stagnant to productive information [17]. During the processing stage, data are evaluated and this cannot be performed without a thinking model. It is stated in the information encyclopedia that the best place for information is somewhere between ‘raw data’ and ‘knowledge’. Information is a combination of data that is changed to be understandable and to be used in communications. Data is a “fact” to which “meaning” has been attached [18]. George Miller believes that information is something needed when “selecting” [19]. So, in the design process, in order to prepare a suitable context for selection of solutions, tools and their equivalents, the architect turns to “processing”- a process which is basically a kind of selection.

In order for the raw data to turn into “productive information”, architecture system energy is needed on the one hand, and the value system energy on the other. This is because, their interpretation and then placement into a new model based on the pathway predetermined by the architecture and value systems, occur simultaneously. Another important point is that sometimes, the common data available for a number of architects will lead to different processing and framework. One of the major reasons behind this fact is the data value and reading under the influence of the worldview in general or the idea of architecture and human in particular.

DEVELOPING SUITABLE THEORIES AND THEIR EVALUATION

Man is a very complex creature, the interactions of whom with the universe may be beyond materialistic ones. That is why the architectural design is a complex and multidimensional issue, too; and cannot remain inside logical reasoning boundaries. The architecture may include a three-stage procedure: “decomposition”, “analysis” and “final product” [20]. What happens in the architecture is, indeed, a re-processing; i.e., “processing of processing.” That is, the processed data are combined to provide recommendations and desirable designs to achieve the intended result. It is important for us to know for what purpose the architect gathered all that data. So, the result obtained by the architect from the information and its applications in creating sketches is a significant part of his identification attempts [14] made in all design processes.

At the design stage, the architect refers to his new findings at the data gathering and processing stage to combine them, and tries to find a purposive order in a more general framework to conform his visualized architectural space. The architect has to formulate “organizing”, “functional”, and “symbolic-semantic” scenarios at this stage. The sketches made at this stage attempt to accumulate the triple scenarios. These scenarios, which are intended to respond to the abovementioned problems, are also defined to meet the welfare needs of human beings. How the architect defines, classifies and formulates these needs depends, mainly, on his worldview. The pathway that the architect determines for himself is not so accurate. So, there are many choices that may affect the designing process. This is because, the components involved in the designing process are not only numerous, but also various. It has always been accepted by the designers and critiques that the decisions made at the pioneering stages of the design process play the biggest role in the quality and nature of the final product. Anyway the present paper is not to understand what accurate stages the architect goes through in the design process. It is, however, to know what context these criteria are extracted from, and how they may affect the nature of the architectural process, and the client’s body, psyche, and spirit.

A result of various effective components on the design process is having more than one priority foe proceeding with the design. Sometimes, having many priorities may lead to many designs, which, in itself, makes the evaluation process more difficult [21]. The dilemma will get more complicated when, due to the artistic aspect of the architecture and the effects of the attitude of the architect – including his knowledge or capabilities – the intuitive findings of different architects differ from each other and this leads to different design procedures [22]. In fact, contradiction arises hereby; because, the decisions of designing depend on the architect’s subconscious and have an internal relation to him. On the other hand, sometimes architects have their exclusive design methodologies. Anyway, working with any procedures, the architect has to finally select one or more designs to base his final space on it. This, in any case, needs measures to control the consistency of what has been formulated with what has been desirable. In addition to the manner of selecting measures in the architecture, another classification is possible. On the whole, the criteria are intra- or inter-systemic. In turn, these may be either quantitative (technological) or qualitative (value-based). Although the intra-systemic qualitative measures have been consolidated by the years of experience and studies of human psychological structures, or have been discovered and called on by the architect himself, but they inevitably exist and affect the design process and its final product. The qualitative measures obtained by anthropology, praxeology etc. and have turned into rules, are always added to the internal measures of architecture. So, architects use these measures and those obtained by their own worldview to create their architectural space.

Anyway, for these criteria to be useable at the evaluation stage, they should be written or debated in the specialist circles. This is because, sometimes, the criteria are obvious for the architect himself, and he may internally control his creation by continuously evaluating the design process. However, it should always be remembered that these evaluations are all dependent on the schemes yet to be produced. In other words, the real evaluation will be possible for the constructed plan only. The problems that sometimes arise after designing the spaces reveal the inability of the architect to visualize the client’s behaviors and responses to his spaces. For example, the post-operational experiences and studies show that the architect’s designs and the house may incur abnormalities, among which we may reer to the problems that are created by children and adolescents in the elevator

or staircase. So, researchers like Volker believe that tools and methods developed for evaluation of the architectural quality are mostly useful in post-occupational-evaluation (POE) periods [23]. The POE estimates the behavior of a structure and also observes if the behavioral and cognitive predictions of the architect have turned to be correct [24]. At this design stage, the architect selects or formulates a procedure that helps him find the response and make his objectives realized. A very important point at this stage is the general tendency of the architect to challenge himself. In fact, criticizing himself recurrently, he paves the way for higher creativity and improved responses. In other words, not only is he not scared of making mistakes, but also thinks that mistakes are helpful. Popper makes an interesting comparison between Amoeba and Einstein to conclude that the difference between them is that although both use trial and error, but Amoeba does not like errors, while Einstein is always excited by errors [6] to seek the solutions with higher precision, with the hope that their development and omission would teach him something.

CHOOSING A SUITABLE EXPRESSION METHOD AND ADMINISTRATION

Generally, architecture is taken as a fusion of building and art [25]. An architectural product, when observed as a materialistic, visual framework, is a self-referent entity, which may be cognized by functional elements like line, volume, plane, surface, material, structure etc. These elements are significant in their own turn; but, the story begins when they are combined to form a materialistic and visual structure and realize the context and visualized space by mutual influence and making relationships [26]. Although the architectural creations begin by mental enquiry, but, finally, a materialistic, objective product should be realized. Thereby, something is expressed and is made tangible to be recognized by others. So, Rapaport says that architecture both occupies and shapes the social [materialistic and semantic] contexts, and affects the perception, and consequently the behavior of human being [27]. As we know, architecture is tasked with organization of spaces to make the human activities flow inside them. In other words, architecture is the container of human life.

In fact, “expression” means making a phenomenon identified, the objective of which is to convey it to others. In this regard, attempt is made to make the content of the intended phenomenon understandable and tangible by using well-known, common symbols or components of “expounder” and “percipient”. The expression is meaningful when an “existence” dependent on a covert landscape, but belonging to an “individual”, intends to be appeared for “another” or the same individual, for him or the other to be able to communicate with it. Architectural creation happens when seeking to satisfy all needs-this reveals various dimensions of architecture. These dimensions cover from materialistic and psychological aspects to spiritual issues of human beings. So, in the investigation of architecture, by recognition of the theoretical principles that form the life of the artwork rendered by the architectural structure on the one hand, and by acknowledging the role the factor effective on the predominant thought or the belief effective on the artwork play, which may also be an expressive instrument, the basic principles of using that factor in architecture could be figured out.

Architecture not only tries to be something accessible and obvious on the client’s side, sometimes it also expresses itself covertly. In other words, the architect not only pays attention to the suitability and convenience of the place, but also tries to involve the client – from materialistic and psychological, to spiritual involvement-by expressing concepts that arise, sometimes, from his subconscious and sometimes result from his informed enquiry. So, by defining the architecture as a life narrator, on which the establishment of the artwork is based, it could be claimed that the ideas and beliefs of the creator, and his attitude toward the various aspects of life will be reflected in it, and they could be recognizable despite being placed underneath the layers of architectural domains, which are resultant from the expressive instruments. So, depending on what the human life consists of, the architecture is involved in problem making and problem solving. It expresses the solutions based on a language that helps it communicate the meaning.

CONCLUSION

Architecture is created “by” humans “for” humans. It is the reflection of conscious and subconscious assets of human and also, the reflection of his individual and collective beliefs. An architectural

product may never be implemented and operated without a design process. So, from the instant the idea of a place forms in the head of the orderer, the creation of architectural product progresses into a serious stage which, to be established, needs interaction of various materialistic and non-materialistic components. "Architecture" is bound to shape this shapeless entity to make it somewhat more tangible. The architectural process has always been complex due to its context, contents, and audience, and also the multidimensional interaction of its components. In its simplest form, the architectural design process is a movement beginning from the architect's mind and terminating in the final product. The architect precedents the architecture and as an artist, he has a special, scrutinized, and professional attitude towards the universe and its phenomena. The architect has measures and indices used to define and solve the problem. So, the nature of every architectural product is placed inside an interval, the two extremes of which are "being building" or "being architecture". Now, according to Table 2, the design process can be divided into the following stages:

Table 2. Interactions of architectural design, worldview

Stage	Activities and features
Consolidation of worldview and value system	No architect may create an architectural work without a value system, because, as a human being on the first, and as an artist/architect on the second level, the architect always interprets the universe and gains wisdom about it. The worldview obtained by this methodology determines a framework in which "existences" are interpreted and "shoulds" are wished.
Problem definition or selection of the subject matter	The architect takes into account the pathology of a sample of spaces and the characteristics of the existing living places with a retrospective outlook, and also, brings to mind the improved and optimized conditions with a prospective outlook. Recognizing which solution is more suitable to achieve a better solution required constant measures to help the architect in evaluation stages. These measures are definitely derived from his worldview.
Identification of the problem	After identification of the problem, which may include a defect in determination of a space suitable for a special application or even inattention to a behavior without a space, we generally try to understand it comprehensively. At the identification stage, the architecture is obliged to pay attention to both the physical, materialistic areas and the semantic, artistic realms of his artwork. The subject of the project is sometimes well-known or may have been examined before recurrently by architect. The architect may understand and solve the problem by relying on his attitude toward the universe and human being, and also his knowledge and experience.
Data gathering and processing	Data gathering and processing as an important step in the design process, affects the consequences of the process and the nature of the final product. The architect often takes a glance at the "manner" of dealing with the issue. He picks up and processes his data based, precisely, on the qualitative and quantitative characteristics of this very idea. So, the architect never aims at piling of sparse data in vain, but his purpose is to achieve an organized scheme. One of the major components of this stage is selection. At the processing stage, the data are evaluated. This cannot be done without a thinking model for both the architect and the client.
Developing suitable theories and their evaluation	The evaluation and selection stage may not be simply separated from other stages. At this stage the architect formulates a methodology that assists him in finding the answer and achieving his objective. A very important point at this stage is the general tendency of the architect to challenge himself. In fact, criticizing himself recurrently, he paves the way for higher creativity and improved responses. Therefore, having measures is a must. On the whole, the criteria are intra- or inter-systemic. In turn, these may be either quantitative (technological) or qualitative (value-based).
Choosing a suitable expression method and Administration	"Expression" means making a phenomenon identified, the objective of which is to convey it to others. In this regard, attempt is made to make the content of the intended phenomenon understandable and tangible by using well-known, common symbols or components of "expounder" and "percipient". The expression is meaningful when an "existence" dependent on a covert landscape, but belonging to an "individual", intends to be appeared for "another" or the same individual, for him or the other to be able to communicate with it. A very important component that affects this is the architect's perception of the human existence aspects. Depending on what the human life consists of, the architect may be involved in making problems and then finding solutions. He would express the solutions based on a language that helps him communicate the meaning.

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REFERENCES

- [1] Aerts, Diederik et al. (2007). World views: from fragmentation to integration. Internet Edition 2007@authors. Originally published in 1994 by VUB Press: Brussels Internet edition by Clément Vidal and Alexander Riegler.
- [2] Abiri. M. (2009). Worldview, an integral part of patterns design program. vice president of strategic planning and monitoring. 340: pp 17-20.
- [3] Lawson. B. (2005). How designers think. Translated by Hamid Nadimi. Tehran: Beheshti University.
- [4] Lupton, Ellen & Phillips, Jenifer (2011). Becoming a graphic designer: A guide to design, 1st edition. New York: Princeton Architectural Press.
- [5] Adibi. A. A. (2008). Piece writing, a process in architectural design: detection of hidden images. Tehran: Publishing and Printing institute. Tehran University.
- [6] Popper, K. R. (1994). Creative Self-Criticism in Science and in Art, In Search of a Better World. London: Routledge.
- [7] Van Aken, J. E. (2003). On the design of design processes in architecture and engineering: Technological rules and the principle of minimal specification. Netherlands: Eindhoven Centre for Innovation Studies. Working Paper. pp 1-3.
- [8] Chan, C.S. (1990). Cognitive processes in architectural design problem solving. Design Studies 11(2): pp 60-80.
- [9] Simon, H.A. (1969). The Sciences of the artificial. Cambridge: M.I.T. Press.
- [10] Gann, D. M., Salter A. J. & Whyte J. K. (2003). Design quality indicator as a tool for thinking. Building research and information. 31(5): pp 318-333.
- [11] Arçan, E. F. & Evçi, F. (1992). Yapi bilgisi çalismalari mimari tasarima yaklasim. Mimarlik Kitaplari Dizisi-1. Istanbul: Iki K yayinevi.
- [12] Mitchel, W. J. (1999). A Tale of Two Cities: Architecture and Digital Revolution. Science, (285): pp 839-841.
- [13] Markus, T. A. et al. (1972), Building Performance, Halsted Press, John Wiley and Sons, New York.
- [14] Lang. J. (2007). Creation of architectural theories. Translated by Alireza Eynifar. Tehran: Tehran university.
- [15] Taheri. J. (2013). The relationship between design and study: An Inquiry into the theoretical foundations of how to link research to architectural design. Journal of Soffe, 56: pp 7-22.
- [16] Popper. K. (2005). Logic of Scientific Discovery. translated by Hossein Kamali. Edited by Abd-al-Karim Soroush. Tehran: Cultural and scientific publications.
- [17] McGonigle, D., & Mastroian, K. (2011). Nursing Informatics and the foundation of knowledge. 2nd ed. Burlington: Jones & Bartlett learning.
- [18] Feather, John & Sturges, Paul (2013). International encyclopedia of information and library science. 2nd edition. Oxford: Routledge.
- [19] Eini. A. (2010). What is information? The concept of information and views of some experts in the professional references and some librarian scholars. Quarterly of national studies on librarianship and information organization. (61): pp 29-34.
- [20] Archer, J. B. (1963). Systematic method for designers: developments in design methodology. Ed. Nigel Cross. Chichester: John Wiley and Sons.
- [21] Özcan, T., Çelebi, N., Esnaf, Ş. (2011). Comparative analysis of multi-criteria decision making methodologies and implementation of a warehouse location selection problem. Expert Systems with Applications. 38(8): pp 9773-9.
- [22] Grout. L. and Wang. D. (2013). Architectural research methods. Translated by Alireza Eyneefar. Tehran: Institute of Tehran university press.
- [23] Volker, L. (2010). Deciding About Design Quality. Ph.D. Thesis. Delft: Delft University of Technology.
- [24] Dahl, P. (2008). Managing end-user feedback in sustainable project delivery. Ph.D. Thesis. The Pennsylvania State University. The Graduate School. Department of Architectural Engineering.
- [25] Conway, H. & Roenish, R. (1994). Understanding architecture: an introduction to architecture and architectural history. London: Routledge.
- [26] Leucking, S. (2002). Principles of Three Dimensional Design: Objects, Space and Meaning. New Jersey: Pearson Education.
- [27] Rapoport, Amos (1990). The Meaning of the Built Environment: A Nonverbal Communication Approach. Tucson: University of Arizona press.