Enhancing Quality of Traditional Built Environment: Towards a Convenient Model of Decision Making in Traditional Milieu

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A R T I C L E I N F O	A B S T R A C T
	Traditional built settlements, which usually present original and local qualities in contrast to settlements dominated by professional planning, normally are found lacking in post-development conditions. The incompatibility of the planning practice with traditional qualities is partly rooted in its analysis and design (planning) methods; and it seems important to devise an alternative method which can reflect processes which shape those qualities. This study, after making a review on prevailing methods of information analysis within planning processes, argues why those methods are blind to traditional quality, or are unable to wade through an appropriate intervention there. Subsequently, by introducing fundamentals of case-based reasoning models, this study suggests that a study on and evaluation of previous experiences, within that model, is capable of simulating traditional art evolution processes; and justify its adoptability in modern planning. In conclusion, this study proposes how and where these models may be applied within the planning bureaus for retrofitting these models for adoption within traditional environments.
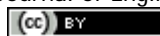
1. Introduction

Development programs in underdeveloped regions (especially within rural contexts) which have been imposed by globalization usually seem to ignore the visual quality of built

environment. Centralized generation of these programs tend to increase quantitative, economical indices at the national level, and therefore pay less attention to "spatial" or "social" concerns (Willis, 2005, p.8). On the other hand, grassroots development programs, which rest on the participation of local people (by devolving the decision making power), also usually neglect this quality of environment whether by focusing on provision of fundamental livelihood under the dominance of multilateral and philanthropic organizations (for example, review the effect of UNDP`s Millennium Development Goals on the Sustainable Livelihoods approach, in Clark & Carney, 2008) or by following the expectations of residents who are in post-developed conditions where the local way of thinking has been changed to global (look at Willis, 2005, pp. 28 & 113) and the low cost standard housing replaces the need for houses of (local) quality. However, within traditional rural milieu which has been so far safe from the global or national economic space, the built environment usually represents some kind of local and original spatial quality; even in remote, economically weak rural areas which have no access to experts. The question then arises; why part of the traditional qualities of the mentioned contexts are missed after being affected by modern global or national influence, while previously, those qualities have being reproduced for generations even after complete destruction of cities and villages?[1]. Not only is this metamorphosis of quality seen in rural areas in post-developed conditions, but the built heritage of developed countries is also usually protected by controlling legislation rather than natural reproduction of the local quality by the designers (for example look at ODPM, 2004; policies No. 12 & 13).

Therefore it can be inferred that some of the changes occurred after modernity prevents the reproduction of local quality. This study, by focusing on modern planning and its professional tools and abilities for analyzing information, investigates this failure from this perspective. In this instance this study deals with traditional rural contexts which are (were) far from traditional aristocratic centers, and tries to explain what the process of built environment evolution in those contexts looked like, as well as why after leaving planning and design activities to technocrats the traditional qualities were diminished, and why even after devolving the power to local authorities (after decentralization processes), these qualities were not revived. This study thereafter tries to introduce a method for reapplication of traditional built environment evolution processes within planning processes adopted in underdeveloped towns and villages which are influenced by global (or centralized state-initiated) development.

For the mentioned aim, in the second section, attending to the vague nature of the concept

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of tradition, this study clarifies its reference notion of that concept, by articulating its assumptions about the traditional art (and built environment) and its evolution process. Then, those aspects of the mentioned process which are comparable to modern planning principles of data analysis will be declared. Subsequently, (in section 3), orienting toward data analysis (especially decision making) process within planning, a review on related methods in major models of modern planning and urban design literature is done, concluding why those kinds of enquiries and related concepts fail to represent the traditional built environment evolution process and therefore, are unable to reproduce traditional products. In section 4, as an alternative data analysis method, this study reviews the principles of case-based reasoning and shows its competence for representation of traditional societies` approach to data analysis as described in the first section, while examining the plausibility of its adoption in modern planning frameworks will be done within the next section. There, resting on a previously devised model of case-based decision, it will be confirmed that this model can be adapted to be used within planning-related decisions. This sample, in this way, justifies the capacity of this method for retrofitting planning ability in traditional contexts. In conclusion, the probable placement of this method within various rural development planning processes, for achieving the mentioned aim, will be discussed; and suggestions will be made for more investigations in this regard.

2. The Traditional Alternative to the Planning and Design Process

Before discussing the appropriate method of data analysis and decision making in a traditional built environment, it is necessary to identify what this process looks (looked) like in the traditional milieus, before being affected by modern development. However, what is the actual meaning of tradition or traditional art (architecture or built environment) [2]? Tradition is sometimes reduced to concepts such as local customs or beliefs; and although these concepts may be included within it, a general explanation needs to include more abstract ideas; for example Sedgwick (2009, p.21) who describes tradition "as belief and practice transmitted from time immemorial"; where he implies a major principle of tradition to be stability throughout history, independent of man. The nature of these principles is elaborated in this description by Seyyed Hossein Nasr (1981), but by resting on more spiritual ideas:

"Tradition ... means truths or principles of a divine origin revealed or unveiled to

mankind and, in fact, a whole cosmic sector through various figures envisaged as messengers, prophets, avatārs, the Logos or other transmitting agencies, along with all ramifications and applications of these principles in different realms including law and social structure, art, symbolism, the sciences, and embracing of course Supreme Knowledge along with the means for its attainment" (p.67).

The metaphysical and non-experimental elements in the definition, which are probably challenged by many scientists, are factors that can explain the notion that "tradition is like a living presence which leaves its imprint but is not reducible to that imprint" (ibid. p.67). Taking the traditional built environment as one category of these imprints, it can therefore be inferred that this study aims to understand what kind of relation exists between that traditional product and the mentioned divine principles which may be "unveiled" to the traditional man. In other words, this study, by remaining at the level of the mentioned *imprints,* on which there is more agreement, merely tries to understand the behavior of the traditional designer within the process of art evolution from data acquisition to production of the final object, in face of such a cosmic order without engagement with that said order.

It seems that one main strategy of the traditional artisan or architect (in a rural environment) confronting the superior cosmic principles (to which he probably believes) is conformity of his product: "conformity to cosmic laws of forms, to the laws of symbolism, to the formal genius of the particular spiritual universe in which it had been created, its hieratic style, its conformity to the nature of material used, and, finally, its conformity to the truth within the particular domain of reality with which it is concerned" (ibid. p.254). From this perspective, this art "remains comfortable to the nature of the object with which is concerned rather than imposing a subjective and illusory veil upon it" (ibid.). In modern terminology this conformity can be regarded, generally, as quality of being harmonized passively with the environment.

The quality of getting to this conformity will explain the second principle of the traditional art evolution: how does/did the traditional artist understand the correct way of harmonization? For answering this inquiry it can be said that, although the state of conformity is a result of granting an overwhelming *divine* power or "harmony which pervades the cosmos and the hierarchy of existence" (ibid. p.254); but "it is neither possible nor necessary" that every

traditional craftsman be aware of "Divine law inherent in forms; he will only know certain aspects of it, or certain applications that arise within the limits of the rules of his craft" (Burckhardt in Stoddart, 2003, p. 88). This implies that the traditional man could find the correct action in conformity with a whole which he did not know thoroughly[3]. Unlike a modern (urban) designer who initiates the action or planning process after acquisition of and analyzing information, or simply after an understanding of the environment (whether his knowledge be limited, self recognized, pluralistic etc.), the traditional craftsman (designer) "participates in the creative process of nature" (Ardalan and Bakhtiar, 1973) and therefore follows or evolves "in a quasi-organic manner" a lasting traditional style (Burckhardt in Stoddart, 2003, p.88). In this way, quality and *beauty* will be inherent in the product as an essential dimension of life and not as a technical product. This unconscious (or semi-conscious) quality of aesthetic creativity then can be assumed as the second principle of the traditional art evolution; especially in rural regions where the traditional scientists are not available.

Accepting *unconscious action* and *passive harmony* with *(conformity to)* nature as two main principles of the traditional process of art (built environment) creation, the next section, discusses why the modern, professional planning and design is unable to prescribe the *unconscious action* to reach *passive harmony* with nature, and investigates how this failure can be overcome.

3. Modern Planning Theory against Traditional Quality

3.1 Incompetence of Theoretical Base of Planning for dealing with Traditional Contexts

Although professional urban planning and design has taken on different procedural approaches during its evolution, but it seems that all these approaches are common in their consideration of planning "as an activity centrally concerned with *the linkage between knowledge and organized action*" (Friedmann &Hudson, 1974; emphasis from the authors). The applicable tools for making the mentioned linkage are theories which "present a systematic view of phenomena by specifying relations among variables" (Kerlinger, 1986 in Gray 2004); and it is the most accepted that any process of urban design has to be based on some kind of theoretical construct. Moughtin et al. (1999, p.7) believed that "it is only through theory that

design concepts and data can be organized into coherent patterns". But, theories have different constraints for making efficient analysis of information. Here these constraints can be studied from three perspectives: first, the intrinsic failure of human mind and his tools in process of making theories; second, the insufficiency of available theories in developing states, and finally the limitations of theories for dealing with traditional environment, interwoven with nature.

The first concern arises from the limited abilities of human mind for processing information and finding regularities in face of the complex world. Here there is glorious literature dealing with this failure of human systems of thinking in various fields[4]. One of the general attempts in this regard is formulated mathematically by Aragones et al. (2005), who by using mathematics and computer sciences, prove that finding the best regularity within a usual database is an insoluble problem (it should be reminded that they prove this statement regarding the processing abilities of computers) (p.1362). This fact implies that, in usual occasions people cannot "discover all the regularities in their knowledge base, and may overlook the most useful regularities" (ibid. p 1356), which are the basis for theories. Therefore application of theories (which are shaped in this way) may exclude a portion of determining information (ibid.). It is clear that this problem will be deteriorated in a social context which has different ties with various sections, especially in a traditional milieu that includes many "unveiled" factors (look at sec.1); as will be argued later in this section.

While, the previous concern implied the limitations in the available theories, but there is another problem where there are no theoretical constructs, available to be adopted. This problem (especially in the context of this study) roots in insufficient investment of underdeveloped states in institutions which make theories compatible with their own societies. While the nature of developmental issues, which incorporate many different aspects of life, necessitates multi-disciplinary and therefore expensive researches, the need and desire of people or government who "have shorter time horizons than the scientists" (Harris, 1966, p. 259) for rapid action in those states may underestimate the value of theoretical study, labelling it as unjustifiable spending. But, anyway most of the main traditional urban and rural contexts are located within underdeveloped states; which are said that are suffered from the planning and design theories which have not sound relationship to the context. Even where the context is studied deeply, it will be hard to convert the fragmented facts to planned actions, systematically (for example look at Piran, 1990). Although this lack of theoretical studies has been a factor for

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infiltration of the global approaches in planning practices in developing states, but it is now turned out that even modernized, large cities of these countries yet persist on their traditional social relations (Piran, 1992, p. 69), a quality that, too, confirms the inconsistency of global theories for those societies.

From the third perspective, the problem is making theory for an environment which is not shaped by human mind *rational* domination, but through a passive process of harmonization with the predominant natural (or metaphysical) forces which may be unknown to human (look at section 1). In other words, here, the subject of study is not an artificial one (say a modern city) which may be "divided" from the external (natural) world, a quality which according to Simon (1981) will make it easier for the researcher to abstract and use the necessary information from the external world, by resting on the rational internal structure of this artificial system. In a traditional milieu the distinction of the artificial built environment from the nature would not be so easy; and therefore finding the related rules and information, also, would be difficult, theoretically. Then it can be inferred that making theories for such environments would have more difficulties, which also worsen the previously stated problems.

3.2 Seeking a Substitute

Attending the problems of technocratic dominance in planning profession there have been reforms in planning processes. The most important change is substituting the direct or representative democracy instead of rational paradigms of decision sciences, as the foundation of planning processes; or using participatory techniques for retrofitting rational processes. Especially, the new generations of development program, unlike previous centralized ones, encourage grassroots development which is mostly based on devolution of the power of decision making to local people or authorities (Willis, 2005). In spite of these practices there have yet been obstacles to reproduction of the traditional quality.

The first obstacle is methodological limitations which arise from this fact that many of the participatory research and planning methods and related techniques are in some way dominated or led by technocrats and their tools of analysis, which itself induce participators to follow theoretical pre-assumptions[5]. The second and more important challenge is the social change in communities in post-development conditions, the societies which have been affected by national or global-initiated development, which is believed that destroy "indigenous cultures"

(ibid. p. 28) and placing those communities in a global economic system which is shaped by global values. It is more probable that the mentioned societies depart from local values and products. This departure, naturally, prevents from reproduction of traditional quality of those communities, even when people themselves decide what to do.

Then, although there have been approaches which have great interest in investment in local traditions (for example like what is called new-localism in Parnwell (2005), but it is not surprising that one asks "to what extent is this possible in situations where the process of 'crowding out' is already quite advanced, and has eroded local institutional foundations" (Parnwell, 2005, p.147)? Actually, it seems that in such communities doing any **conscious action** on the basis of theories, or through participation of local people who are absorbed to global or national leading development, will not likely end in traditional quality which, as it mentioned in section 1, passively harmonize with the nature.

Generally, the aim is to produce a product whose routine process has been collapsed, and whose related knowledge is not usually (perhaps never has been) in hand; therefore it seems that the appropriate process which now can represent traditional art evolution is better not to be rested on sophisticated theoretical constructs or knowledge, but rather the basic steps of science. The mentioned basic steps within the social sciences is case by case observation which is the beginning of the induction; but unlike usual scientific methods (Gray, 2004, p.7) this observation is neither rest on any theoretical foundation for deduction, nor wants to generalize through induction. According to Simon`s wording (Simon, 1981), it is more convenient, here, to elaborate the "(extensive) knowledge" rather than compress it "into more parsimonious form by theories", which anyway diminishes the local complexity.

Case by case study (observation) for an urban designer (or architect), seems equivalent to the way traditional craftsman learned piece by piece from previous experiences (even during generations) to follow the successful trends for retrofitting works of their predecessors. Although this process seems to be navigated unconsciously in traditional era[6], but for prescribing it to modern planning bureaus it should be declared in a clear framework. A convenient framework for representing that unconscious process seems to be devisable by adopting case-based reasoning literature[7]. In the next section the specific characters which make this kind of reasoning appropriate for this role will be introduced.

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4. Case-Based Reasoning as a Method of Representing Traditional Built Environment Evolution

Case-Based Reasoning[8] is actually a method of finding solution for problems (cases); which through study of previous cases (problems and their solutions), provide the necessary means for solving new problems "by constructing solutions from parts of previous solutions" (Reich & Kapeliuk, 2004). This means that when a problem is being solved via this method, analysis and synthesis of basic data, and therefore resting on a theoretical construct (as its tool), will not be needed; and "the solution process itself can remain a ''black box'' (ibid.). The fields in which this system has been applied for solving problems are various: architectural and engineering structural design, meteorology, cost and sales prediction (Owrang, 1998), medicine (heart failures), law (Kolodner 1993; in Reich & Kapeliuk, 2004) and so.

Although there are comprehensive technical descriptions of CBR systems, consisting of multiple steps, but the main process is recognition of **similar** problems that have been solved in the past and make use of their solution, for solving the problem in hand (Coupey et al. 1998). For it can be applied, it is needed that previous solved problems be represented and indexed in a case-base (versus data-base according to Owrang, 1998) using two kinds of codes (attributes): "attributes used for the problem part of the case and attributes used for the solution (or action) part of the case" (Owrang, 1998). These attributes (codes) are used when the system is finding cases with characteristics similar to one in hand, and are obviously defined attending the nature of the application field. Of course an evaluation of the results of the previous solutions is regarded when retrieving the cases.

This system of reasoning has characteristics (sometimes different from usual, analytical problem solving methods) which make it convenient for representing traditional man`s process of art and built environment creation (as it is described in first section):

1- Its process is similar to operations of human mind during reasoning and problem solving activities (Owrang, 1998); and therefore can better represent the traditional man`s mental process of reasoning when creates his products.

2- In this method all the information needed is previous complete cases, and there is "no need for a knowledge base filled with domain principles extracted from experts"

(ibid.). Therefore it can be said that the problems here can be solved without need to have deep understanding of the context (cosmos). This phenomenon is like what stated about traditional man`s unconscious and passive harmonization with unknown, complicated world.

3- As a result of the above mentioned structure and also its "simplicity" (ibid.), the need for experts to take part in problem-solving process would be eliminated. This quality is, too, make this method similar to the action of a general, traditional man in an era and area in which no systematic knowledge (and expert) is available.

4- Because of being free from formal knowledge, this method is considered to be appropriate for solving problems without "decontextualize" them (Reich & Kapeliuk, 2004). This quality lets the problem be investigated from the very local perspective and therefore, if applied within a traditional context, may use of local traditions more effectively.

The traditional built environment evolution can be described by using the case-based reasoning structure in this way: the traditional (rural) man -who is not a traditional philosopher or even architect- face with a request (problem) for building a structure. He is familiar with local samples (cases: buildings) of his area and their different types and elements (for example large, medium or small houses, the structural elements –domes, arcs …- and so). Although these cases may get richer by adding other ones which he became aware within his journeys or via passengers or other medium but the traditional builder`s values and/or limitations (customs, access to material, availability of artisans, information, …) bind him mostly to local solutions. Anyway, after analyzing the problem in hand (economic and social conditions of who requests, the specific use of the intended structure -bazaar, bath, citadel …- the shape and size of the lot) he would search in his and his collogues` minds to recognize the similar cases for each element of his intended final design (the pattern of plan, the materials and details, …). He, then, evaluates and modifies those experiences to adapt them to new problem and by using them the final design will be built.   This process may be done piece by piece during the erection of the building, which will finally be a new case in his memory (case-base), too.

This process is actually more applicable to ordinary traditional people in rural and small towns in which, work division is not occurred, and therefore traditional engineers, architects

and philosophers or scientists are not available. Although the exact details of this mental process may not be described in this framework (the criteria of similarity of cases, the criteria for evaluation and choice of cases ...), but it can be introduced to modern planning literature, for reviving traditional art evolution process, in contemporary rural and traditional contexts. The next section tries to justify the plausibility of this claim, using an available model of case-based reasoning.

5. Discussion: The Adaptability of Case-based Reasoning to Planning and Design Literature

Although the case-based reasoning system can explain traditional built environment evolution to some extent, but for its adoption in contemporary era, as a basis of or tool within a design process in traditional urban or rural contexts, it would be necessary to represent it precisely until it can be applied in modern bureaus. Such a representation, generally, should clarify the shape of problem and its attributes, setting guidelines for the case-base, and explaining the retrieving process, and so on, in fields of urban planning and design. The general formulation of this process is not the subject of this article; for this instance the study focuses just on urban or rural space problems in traditional contexts, and using an elaborated model of case-based reasoning in field of decision sciences, shows that the design problem of those contexts can be formulated according to the factors of this model. This adaptability verifies the plausibility of using case-based reasoning system in the intended contexts.

The model that is used here as the reference, is a model of case-based decision, introduced by Gilboa and Schmeidler (2001). This model is devised as a support system which helps the user to decide on an action within a process of decision making or during planning, or even for making prediction of the results of that action. Within this model, on the basis of this idea that "people choose acts based on their performance in similar problems in the past" (ibid. pp. 32, 33), problems actually prepare a basis for measuring the similarity between the situation in hand and others in the past; while the performance is the criteria for evaluation of the result *(r)* of a specific solution (action) in past. Thereby this model defines two functions: first, the function of **similarity** *(S)* and second, the function of **utility** *(U)* that indicates the performance. Multiplication of these two functions *(U*S)* introduces a variable which shows the suitability of a specific solution (action) for adopting in the new problem. By adding up this variable for

different cases (previous problems) the decision maker would identify *U(a)* which ascribes the utility (performance) to an action *(a)*. Then the decision maker will choose the act with higher *U(a)*. The primary formula for measuring *U(a)* is:

$$U(a) = \sum_{(q,a,r)} S(p,q)U(r) \qquad (1)$$

where

p: new problem

q: past problem(s)

a: action (or solution for problem(s)

r: result of the action (solution)

U(r): utility of the result of an action for a past problem (q)

If this model is to be adopted in traditional urban or rural context, it seems that the counterparts of this formula`s elements in that context may be as below:

1- New problem (p), is the spatial or social contexts in which a specific design solution has to be suggested. The problem may include various social, economic, cultural, natural or physical attributes (for example the structure of family relations in a village, or the natural elements of the environment, etc.).

2- Past problems (q), are the spatial or social contexts in which urban or rural design solutions are shaped traditionally (unconsciously). As these are counterparts of a new problem, their attributes would be comparable to those of new problem (for example a past problem which led to a terraced layout of a village, as a traditional solution, may include attributes like topography of site, available materials, common skills, family networks, and etc).

3- Actions (a): are design solutions or specific attributes of a design solution, that has mostly physical nature (designs patterns, buildings and details of public spaces) that the designer prescribes for a context (or has shaped unconsciously in the past); for example stone retaining walls and pavement of a street which are made from stones

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obtained from adjoining river.

4- Similarity (S): is the degree by which different attributes of the context resembles the attributes of the contexts in which past design solutions have been produced.

5- Utility (U): is the degree of harmony of the design solutions with the tradition of the context.

First three elements of this model are objectively defined phenomena in professions related to built environment, whether in dealing with a traditional or modern context. Then, it is needed that functions of *similarity* and *utility* be redefined practically (for this aim the characteristics which introduced in first section about the traditional qualities should be reminded again: unconsciousness of actions, and passive harmony with context).

First, the similarity of contexts (problem) is a determiner which proves the validity of the past design solutions (acts) for being adopted in new situation, and its identification has deep relation to the attributes used for definition of problems. Defining the attributes necessitates a deep understanding (knowledge) of the related field (architecture or urban design ...). For the traditional man, say architect, the attributes are, most probably, unknown; but being limited to local resources (whether it be information about the cities and building types he had observed; or construction materials and the craftsmen who can work with him, and so) made him restricted to local cases which are from the same tradition, too. Therefore the diversity of attributes would decrease to clear specifications like size of the family or the available budget. Then it is suggested that for planning and design purposes in traditional rural and urban contexts in the modern era, the domain of obtained cases be limited just to local ones in the same village or similar ones[9] which has a common social, economic and geographical background. This strategy, too, will simplify the effective attributes and therefore eliminates the need for deep knowledge of the product.

Secondly, utility, according to the philosophical basis of this study, is the degree of being traditional, a main characteristic of which is state of passivity in face of socio-economic and geographic environment. The mentioned quality is in harmony with general principles of the

concept of sustainability, about which there are comprehensive studies available. Therefore it can be hoped that the necessary operational criteria for measuring the mentioned quality in built environment can be derived from that literature. In addition other criteria may be obtained from the existing, local old structures, which most of times are remarked as traditional. It is, too, agreed on, that these old (traditional) buildings are usually adapted to principles of sustainability.

Definitions, adapted above, show the adaptability of the mentioned model of case-based decision to design projects in field of traditional built environment. Then it can be argued that, when a modern case-based designer designs for an urban space, by adopting this model, he should at first identify the problem attending its attributes within the context (e.g. the neighbor buildings, the shape and topography of site …), then search in the case-base (the existing (traditional) urban spaces) to find cases which are erected in contexts that share one or more attributes with one in hand. Attending the ascribed degree of being traditional (have passive harmony with context) for each design or each attribute of design, he would select those designed elements (past actions) with highest harmony with the context (corresponding to shared attributes of the new context) and synthesize them to devise the final solution out of them. Of course this description is just an introduction for elaborating on a comprehensive, applicable model.

6. Conclusion

This study fundamentally justified the applicability of the case-based reasoning models within planning and design processes. It was discussed here that, the independence of these models from theoretical constructs make them competent to cover the data which are otherwise invisible to modern planners who are usually rest on theories. This quality seems to be vital for reinvention of local qualities free of the dominance of global norms which even sometimes affect the democratic, participatory made decisions.

The article prescribes, generally, this model for planning within traditional contexts, because it make possible for planners to simulate the traditional artisan`s being in passive harmony with nature while not being conscious of its forces. Anyway, the exact, technical formulation of an accessible alternative to prevailing planning and design processes are yet to be studied. Regarding different aspect of this study, it seems to underpin further practical

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formulation of this alternative within the domain described below.

As to the appropriate context of application, it can be discussed that although this method is devised to be used within post developed traditional environment, but its application can be expanded to any context that is not theoretically investigated, so that there is not appropriate available theories in hand. This condition may be found in many developed communities, too. Using this process may be efficient in preserving local and unique qualities of such communities against global dominance.

Regarding the scale, it seems that the scale of intervention may be varied from planning to architecture; if the appropriate cases are identified regarding that scale. Cases in the development program may be the existing patterns of social collaboration, but in architectural scale would be architectural components and design patterns.

About its position in the process, concerning this point that this system has a theoretical foundation far different from, say, utilitarian rationality or democracy, this system is better to be a basis for a new method (process) of planning and design. At the same time, it may be used just as a technique for study of context, within public or general educational programs, action research (or other method of research in development works); and even enriching the analytical ability of rational (synoptic) or participatory methods[10].

7. Notes

1- The Iran`s city of Isfahan can be served as a very good sample of this quality reproduction. While this city, during the history, has suffered from many wars and has been demolished in some invasions, but insisted to remain a sample of Iranian traditional city until contemporary era.

2- The definitions introduced here are cited from the theorists who sometimes are identified under the title of "traditionalist", a movement its initiation is ascribed to Guenon at the start of 20th century (Sedgwick, 2009). Attending various branches within this school, this article just obtains fundamental concepts from some of key authors in this field without engagement in probable debates between those branches.

3- For instance the author remembers that during a visit of a traditional old building, its old architect was interviewed with an academician, but in response to the academician's

philosophical enquiry he emphasised on techniques of measuring and ...; or in another occasion, in a report by a group of researchers who investigated in the complex geometry of Persian gratings (Orazio, 1976), it has been noted that when they encountered an artisan who was professionally working on a grill work, they tried to get some information of him but as they reports he could not give them efficient advices about what he was doing, routinely.

4- One important category of studies in this regard is done within physical sciences, a branch that sometimes claimed to have "hegemony" over the other branches of science (Papineau, 2000). There has been claimed restrictions in the abilities of physical theories in describing the world, and the domain those can cover (Cartwright, 2000). Cartwright noted that "the regularities that follow from a good many of our most highly prize theories in physics .... hold only so long as all the causes that operate are causes described within the theory" (ibid, 220). In other world these theories may be applied confidently in context where just the controlled variables play role.

5- For example in the advocacy-oriented planning, technocrats represent different groups (look at Moughtin et al. 1999); also the structure of many participatory design techniques like workshops, surveys etc. are shaped on theoretical constructs, or adopt scientific tools (look at Sanoff, 2000). For example in participatory design workshops, participants sometimes use simple professional mediums (like models) to transmit their ideas (for example look at Faga, 2006).

6- Of course aristocratic centers, as the hub of many traditional scientists, may be excluded, but it seems to be acceptable in rural environment, which are nearer to the subject of this study.

7- The case by case learning is also the method which is adopted probably unplanned, in setting out urban and rural design guide documents, for example look at "Cotswold Region Design Guide" (Cotswold District Council, 2000) which in different sections introduces successful experiences which can act as patterns for new designs.

8- For a comprehensive reading about this subject refer to Kolodner, 1993.

9- A good criterion for identification of similar villages or towns is simply the similarity between their traditional built environments.

10- It is interesting to note that the model of case-based decisions used in the past sections, is basically devised in a rational context. As another instance, the author used case-based reasoning as a workshop framework in the studio of "Rural Architecture Survey and Design" in Iran.

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