PRACTICAL APPLICATION
OF INTEGRATIVE RULES AND PRINCIPLES OF URBAN DESIGN

LESSONS LEARNED FROM THE PAST

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Review

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Practical application of integrative rules and principles of urban design, Lessons learned from the past is one of the few publications which has notably explain the nature of urban design and how it may be applied to make the cities more livable. The main goal of Hossein Bahrainy and Ameneh Bakhtiar in this book is to develop an integrative urban design theory through a synthesis of theory and practice. They have recently formulated the theory, its philosophical-theoretical base and main structure in their last publication (Bahrainy and Bakhtiar, 2016) which may be considered as a general theory of urban design. Now they have illustrated the implications of their proposed theory in a practical situation in this book. As they have inserted in chapter one "almost all contemporary planning and design theories strongly support the idea of the end of dichotomies and the emergence of integration and dualism vs. duality". They advanced the discussion through epistemic core of planning discipline, focusing on the close connection between knowledge and action, and the recent philosophical trends emphasizing in cognitive aspects of human experience. In this regard "the rich world of feeling" and the limitations of science to correlate theoretical constructs with data as nebulous as feelings are highlighted. By addressing these concepts through urban design the authors demonstrated that urban design as an intellectual activity, can take a number of mutually beneficial forms of theory/practice relationship, especially when it is dialectical. Accordingly Integrative rules and principles could be fined by means of which human experience can be fully and consistently

encompassed. To integrate different diverse worlds (e.g., scientific and artistic) consistently they resort to a meta-level theory for integration.

In chapter 2 they express "language" as the appropriate framework which the urban design theory as an integrative knowledge base could be formed based on it. The purpose of a language of urban design is preparing "a method of communication and a symbolic and representation tool that should represent all the individual components of the knowledge base of urban design; its attributes and points of focus as well as the overall complexity, unity and interrelationship of the various aspects of the knowledge". The authors have already outlined the general guidelines of their integrative theory in their last publication (2016). Accordingly the main structure of the integrated urban design language has been formed by interrelationship of the four areas of the knowledgebase of urban design: "substantive elements are equivalent to the vocabulary or signs and procedural elements are equivalent to the grammar or rules of the language. Vocabulary, therefore, will represent the elements of urban form and space (first area), and the element of urban activities (second area). Rules, on the other hand, will represent the integrative, intuitive (third area) and scientific principles (forth area) applied in urban design". For qualification of this language as an integrative theory of urban design, the rules should be derived from or based on the contents and characteristics of the substantive elements of urban design, i.e., on urban form and urban activity systems. So they proceeded to develop the language by exploring the equivalent of the two language elements: a vocabulary, or a set of signs, and a grammar, or a set of rules in urban design field in the next chapters.

The integrated knowledge base of urban design language simply consists of urban design rules and principles as the procedural elements, and urban form, space and activities as the substantial parameters. Considering both art and science as part of it, opens urban design arms to dealing with the intuition as a procedure aligns with the scientific analysis. Chapter3 introduces principles of this urban design language. The principles of urban design language are derived from three different sources of knowledge. First the available relevant meta-theories (or philosophy), such as critical theory, sustainability, normative ethical theories, linguistics, second the field or the practice of urban design, and the third the combination of two former sources. The rules and principles creates a useful complex of urban design rules in global and local categories, which are extensively interpreted from many aspects as philosophical, cultural, aesthetical, and natural. The concepts of each principle are also illustrated through the corresponding pictures in the general, global and local division, which have brought a better understanding of the theory. The local illustrations are exemplified from some of the actual applications of the principle in the cities in the hot and dry region on the central plateau of Iran, including the cities of Isfahan, Yazd, Kasha, etc. This feature not only improves the language transferability to the other local cultures but also show that how they could really be applied. So any general rule which might be applicable in variety of cities could be also "accomplished by a basic design element or alphabet, or vocabulary, in each context and culture, which most people communicate with based on their identity and history". This could be induced for example in the

case of "Patternization" as a general rule through the central automatic structure, which is shown in global application as the basis of order in architecture, and in local scale as the entrance of Jame mosque in Isfahan, Iran. There are almost 25 major urban design principles and rules introduced in this chapter which are explained delicately through many sub rules. For example symmetry, rhythm, movement and etc. are some of the sub rules of "Patternization", or principle of "Territories" deals with boundary, borders, domain, realm, sphere, privacy, and sense of belonging, sense of place, possession, ownership, and defensible space as some of the smaller rules. Authors have explained the general meaning of each principle and their applicability to form urban design vocabulary as urban space, forms and activities. For example "Boundaries" defines spaces in the physical environment, which will in turn lead to identity, safety, security and freedom. In urban design vocabulary, these may be appeared in the form of edges, surfaces, lines, etc. which differentiate two or more different but adjacent urban forms. The principles are interrelated and interdependent members of the family of the language of urban design. For example "Boundaries" is related to both "Quantization" and "Patternization" or "Territories" is also part of the principle of "Boundaries". It should be also denoted to the some innovative principles like Quantization based on Quantum theory as well.

Chapter 4 is dealing with how to connect the theory of urban design to the practice, while even planning theory as a broader field, has been of little use of practitioners. Considering that little contemporary research has been done on the relationship between design theory and professional practice, the authors introduce some outstanding planning views, as the practice movement (Liggett, 1996), communicative planning positions which are largely inspired by the writings of Habermas, and **epistemic practice** (Knorr, 2001). Regarding a reasonable discussion about the potentials and constraints of each approach for introducing the appropriate method for theory/practice relationship, the authors appreciate the way that Lynch's good city form (1984) embodies an integrative approach grounded in the reality of the practice. Also they believe that the theory/practice relationship in urban design can take a number of mutually beneficial forms, especially dialectical ones. They characterize the challenge for design theory as "not to be, on the one hand, so abstract as to be far too difficult to translate into practice (as some practitioners have found with the work of urban theorist Ed Soja), while on the other, to not be overly narrow and prescriptive (as critics claim to be the case with New Urbanism)". Based on these discussions finally they introduce "learning from practice" as the main applicable approach for theory/practice relationship, in which the past experiences constructs an understanding appropriate to the new situation. They support for the idea that "the ability to perform (a professional task) depends on the practitioner's ability to bring past accumulated experience fruitfully to bear on the problem in hand". This is an important idea, encouraged by scientists and policy makers all over the world, calling to incorporate the wisdom of traditional knowledge into scientific knowledge (e.g. (Kimmerer, 2012); (Herman, 2016)). Based on these statements **it becomes possible to theorize planning by** academics or planning theorists through **documenting and analyzing experiences and learning how practice is actually shaping. Then that knowledge (theory) may be used in similar situations .**As the final conclusion of chapter, it denotes to the significance of

learning from the practice. In this context their case study as the Isfahan city (next chapter) for connecting their urban design language with the practice denotes to a very brilliant choice. Isfahan has implied the high performance of intuitional practice, which would be a significant task to learn from them, join that traditional knowledge (intuitional practice) to the scientific knowledge (the language), to empower the urban design language, and make the language applicable by the practitioners.

Chapter 5 explores the integrative design principles in the various orders and layers of Naghshe Jahan Square, Isfahan, Iran, as a case study of experiencing the theory in real world. In a creative communicative method, visitors as the actual actors of urban scene were asked to take one single photo from the most beautiful element of the square, and then explain the reason of their choice. The perceptual and objective analysis of the square revealed many implications of the suggestive integrated urban design language/theory. First, as the main goal of the chapter it clearly and illustratively determined that the principle and rules of the theory are visible and perceivable by viewers in the square and their selected elements. For example this statement "a variety of repeating forms, shapes and lines are organized in the design in a coordinated and similar, but diversified manner, and create comprehensible and long lasting forms" show the validity of "Repetition" principle in the square. There are plenty of interpretations for other principles as well. Another example for the principle of "Centrality" revealed that Naghshe Jahan square which is located in the middle of a built up area of the city attracts people's attention and thus become the location of various urban activities. There are solid and built forms on all sides of square, and the void is in the center, with a large pond as a symbolic element that accentuates the center. The pond is situated in a way to reflect the main elements around the square. At the architecture scale central court form has been used in the design of mosques, which is one of the main characteristics of architecture in the hot and arid climate due to both climatic considerations and its ability to capture the benefit of sunlight. The patterns under the domes direct the eyes toward a unique point in the middle which also shows the importance of centrality. The opening of this space through the area and height reinforce the idea of centrality as well.

There are also revealed some kind of principles in a much bigger time and place scale that may be called as universal rules. For example beyond the perception of "Repetition" principle in the square it is cleared that "the valuable elements and factors, which have remained unchanged throughout time and regarded as design alphabets in each culture, are repeating. The viewer will associate this alphabet to reach better conformity and comprehension of a variety of spaces. That could be a universal principle of urban design to improve the "sense of place". Another universal rule based on "Equilibrium" principle might be "governing rules shaping visual factors of the square are the same as fundamental rules of growth in nature". This might encourage once more to design by learning from the nature. The other implication of the principles in practice is the interconnections between them, for example centrality which is said in the Iranian culture is so comprehensive that it includes other principles. Finally the analysis and interpretations of chapter 5 shows that "the tempo-spatial order created and developed in Naghshe Jahan square is in coordination with their design principles in a balanced manner". Also although each of these

principles may be recognized separately, the primary quality of the space is the interaction and balance of these different principles of design which lead to the creation of an overall order and balance".

In the end, although Naghshe jahan square is a world known heritage but its urban design principles and rules and their applicability for urban design practice was not formulated before. Now this language integrates a conceptual level of an urban design theory with the actual practical scene of Naghshe jahan square. Furthermore it interconnects the western scientific knowledge of urban design and planning with the practical wisdom of Iranian intuitive urban design and architecture. By doing this, Bahrainy and Bakhtiar's integrative urban design language presents a Global/local urban design theory which would be a more effectuating theory because it is learning from the past.For formulation of their integrated theory, the authors review and analysis a core line of urban planning/ design theory resources from the past to present. Despite learning from the theory this let the readers to access an integrated literature review of urban design and planning as well.

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