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**The pattern in *The social logic of space* (1984) and in *A Pattern Language* (1977).**

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**Abstract**

*This theoretical essay has in the pattern its anchorage. What we highlight here is the debate over pattern in the works of Hillier and Hanson and Alexander, Ishikawa and Silverstein. By pointing out the understandings and differences about the role of the pattern in both works, we seek to contribute to the debates about languages, logic and abstraction both in cognitive processes, also called epistemological, and in the processes of legitimization of certain spatial-social knowledge in different contexts. What stands out from the two works is the way they are defined and the standard treatment. Although the first deals with syntax and the second with language, both are undoubtedly spatial readings of certain levels and dimensions of what guides and structures urban space. Although in a different way, use the pattern as a theoretical tool for analytical practice and for design purposes. The differences between the approaches are mentioned in the preface to *The Social Logic of Space*. Here we explore some evidence of the relationship between the two, in view of the challenges of dealing with the complexity of the contemporary socio-spatial issue in terms of and incorporating sustainable urban, and economic social issues – in global North and South, and in decolonial terms. What is proposed here is a critical analysis of the roles of the spatial pattern of both works, given the frameworks referenced in the works studied and in other references that deal with and advance on the theme and that have been part of our field and objects of study.*

**Keyword:** *pattern, abstraction, logic, language, social-space.*

**Introduction**

*Any abstraction process is translated or accompanied by a generalization process.*  
(Piaget, 1964).

*Tout processus d'abstraction se traduit ou est accompagné par un processus de généralisation* (Piaget, 1964).

This theoretical essay is anchored in the pattern. By pointing out the understandings and differences about the role of the pattern in both works, we seek to contribute to the debates about languages, logic and abstraction, both in cognitive processes, also called epistemological ones, and in the processes of legitimation of certain spatial-social knowledge in different contexts .

In the second half of the 20th century, more specifically in the late 1960s and early 1970s, several researchers on urban space and form brought contributions regarding approaches and theories that, until now, have been shown to be relevant. The vast majority of Europeans and North Americans have been, to date, translated and studied in the countries of the planetary south, and here we emphasize Brazil.

It is important to remember that the idea of the city and the entire urbanization process were brought to the Americas by Europeans in the 16th century. This change in paradigms between existing ones and those brought from Europe have been studied for many years, but it is with debates such as the coloniality/modernity group that decoloniality has been gaining ground since the 1980s (GROSFOGUEL, 2016).

Understanding Latin American thinking and rationales favors thinking about other spatial-social logics that do not necessarily coincide with perspectives guided by methodologies exogenous to this context. Although the studied approaches bring in their references sociological and anthropological studies, the vision incorporated in these studies is always the translation of foreign scholars of the endogenous views of the inhabitants and experiencers themselves.

What is verified, at this moment, in relation to what is defined or studied as a standard, is what is formally linked to a spatial logic of urbanization from the colonial period onwards. These patterns are not necessarily and in their entirety those of the urbanized reality of Latin American countries.

Although most publications on the urban are concentrated in metropolitan studies and results, what is verified, at least in Brazil, is that, according to data from the Brazilian Institute of Geography and Statistics, only 31.47% of Brazilian cities would be suitable for legislation, because they are considered as clusters, in terms of population, metropolitan or as large and medium-sized cities.

Even though 68.53% of the municipalities concentrate the majority of the country's population, they lack studies, laws and management that are adequate to the realities and socio-spatial and cultural contexts, which do not necessarily match existing urban logics and regulations.

In our search for theories, teaching and research methodologies on the reality and contexts of small and medium-sized cities, the authors under study have been used as auxiliary sources for the foundation and construction of dialogues that indicate advances, limits, contributions, contradictions and openings to regional identities and peculiarities.

With regard to translations, texts, debates on *A pattern language*, even though the original publication took place in 1977 and the Spanish translation dates back to 1980, the Portuguese language version only arrived in Brazil in 2013, that is, 36 years later.

The book *The Social Logic of Space* was never translated into Portuguese, and remains restricted to those who access the English language. Even with the time lags in translations, both works have been a reference and used as objects of study and practices in Brazilian universities, especially since the 1990s.

Regarding the proposition of this essay, of articulating the work of both authors, we resorted to the preface to the book *Social Logic of Space*, by Bill Hillier and Julienne Hanson, which mention the difference between their work and that of Alexander and partners. In this reference, about the work of Alexander and partners, Hillier and Hanson (1984, p. xi) mention:

For example, the “pattern language” of Christopher Alexander and his colleagues at Berkeley (1977), while appearing at first to be close to our notion of fundamental syntactic generators, is in fact quite remote, in intention as well as in its intrinsic nature. For our purposes, Alexander’s notion of pattern is too bound to the contingent properties of configurations to be useful for us; while at a more abstract level, his preoccupation with hierarchical forms of spatial arrangement (surprising in view of his earlier attack on hierarchical thinking in “A city is not a tree” (1966) would hinder the formations of non-hierarchical, abstract notions of spatial relations which, in our view, are essential to given proper account of spatial organization.

In our investigations, when we consider this reference as a starting point, which contrasts one approach with another, and which in turn does not advance beyond the preface, we ask what would be an appropriate view of the formation of abstract, non-hierarchical notions of spatial relationships. In times of updating debates through other approaches, confronting disputes and rationalities, how does the statement in the above quote contribute to decolonial processes and practices?

Both Hillier and Hanson (1984) and Alexander and partners (1977) developed methodological-theories in architecture, also focused on the city and the urban. Although the first deals with syntax and the second with language, both are undoubtedly readings of certain levels and dimensions of what defines and structures urban space.

To this end, both, although in a different way, use the pattern as a theoretical tool for analytical practice and with the purpose of design. In our view, distinguishing the role of each approach and its contributions regarding standards seems essential to us, as it allows us to understand the limits and contradictions of each of them.

## **The Pattern as Syntax in Hillier and Hanson**

Hillier and Hanson's proposal, according to the preface to the book *The Social Logic of Space*, establishes a fundamental descriptive theory of the pattern of types and then a method of analysis. In their theory and methodology the authors seek to investigate syntactic generators.

They claim to be free from form, especially in its three-dimensional aspect (Hillier and Hanson, 1984, p. xii): *We are convinced that it is unnecessary to specify the form in order to model the generative processes in the real world; and that, in fact, the concept of form obscures the fundamental relational notion that sustains the human spatial order.*

Studies carried out by the theoretical and methodological procedures of spatial syntax try to model reality, considering randomness as a limited aspect. Syntax in *The Social Logic of Space* can be identified as a juxtaposition of specific patterns verified in their articulations of the whole, revealing and systematizing their modes of conjugation and structuring, and leading the investigation to the formulation of diagrams.

In *The Social Logic of Space*, the syntactic role played by the pattern is that of interpretive assessment of the levels of integration and/or segregation of the spatial fabric, in this case, applied to the form of what conditions and/or socially guides the space, whether on the urban scale or in the building.

According to Hillier and Hanson, established differences are fundamental for delimiting the field of issues to which the standard is linked. Relating the pattern to the way it is studied and theorized and, therefore, it is guided as it is/should be, methodologically.

Applied and understood, the authors mention that the theoretical-methodological approach developed only tangentially incorporates "the structures (frameworks) and methods" established on the subject and end up saying that the approach reveals aspects of the structure that are obscured by conventional analyses.

Although the authors of *The Social Logic of Space* treat the pattern from hierarchical notions and claim that Alexander's work would make it difficult to form abstract notions, we believe that both work at different levels of abstraction.

## **Default as language in Alexander, Ishikawa and Silverstein**

In *A Pattern Language*, we understand that the pattern acquires aspects and, above all, scales that, freely articulated and in a network, allow covering levels of syntactic analysis that lead to semantic variables.

In this sense, the reading provided by the theory and methodology of this work offers us a cultural and symbolic vision, dimensions dispensed by the other theory and methodology analyzed here.

The authors of *A pattern Language* state that their process is structured in the identification of languages and consider the existence of intrinsic logics that assume cultural and symbolic dimensions and support their studies in distinct appropriations of socio-spatial configurations with apparently similar patterns.

Recent developments in *Pattern Language* also contribute to the reflection on abstraction.

### **Theoretical-methodological debates on the spatial pattern.**

By referring to the notion of pattern in this work, we bring the variation of its applications in understandings that change, not only from the studied object, but from what is defined as pattern also from pre-established parameters, whether objective or subjective, real or ideal.

Michael Mehaffy and Nikos Salingaros (2011) help to understand some of the aspects of *Pattern Language* saying that Alexander and partners were trying to solve configuration problems in the human environment:

*In architecture and urbanism, patterns are good and tried-and-true solutions for building and living. Alexander recognized that there was an informal version of patterns in traditional practices and concepts that were rediscovered and reinvented over many generations and in diverse geographic locations, rooted in oral and written traditions, inherited from different cultures.*

In another previous article dealing with patterns, Salingaros (2000) states that they are those that connect to human beings either visually, emotionally, functionally, or by their interactions and activities.

Such guidance to readers contributes both to inclusions and exclusions of meanings, delimiting the spatial object for the gaze that is intended to be illuminated.

In our understanding, both come together in terms of rationalities, whether as instruments of analysis and actions on the complexities of the social space, offering debates on the proposals for analysis - syntax and semantics.

Both readings systematize reality in different rationalities and present different levels of reading. In this sense we can say that Hillier and Hanson conducted their research, theory and methodology using the structuralist approach, in contrast to Alexander and partners that used phenomenological dialectical approaches.

<p><b>A pattern language</b> C.Alexander, Sara Ishikawa and Murray Silverstein and alt.</p>	<p><b>The social logic of space</b> Bill Hillier and Julienne Hanson</p>
<p>Transcalar Lexicon/ Language Way of living and interaction Participative Interpretative Constructive Cultural Method Symbolic space <b>Dialectic/ Phenomenological</b></p>	<p>Without scale/ Syntax Society spatial integration Analytical Predictive Application/ Simulation Formalistic Process Social space <b>Structuralist</b></p>

*Figure 1. Analysis of both theories and methodologies by the authors.*

When dealing with spatial patterns, since they do not necessarily have to refer to form or the urban.

We could refer to Islamic patterns developed since the 13th century, as an intersection between art and mathematics (BIER, 2017). From this variation, some points of contact and tension are established between the notion of pattern presented both by Hillier and Hanson (1984) and that offered by Christopher Alexander in *Pattern Language* (1977).

If for this, the pattern can be considered, from design, as a form built with some intentionality and in Hillier and Hanson, constituted by sets of actions that are not always congruent or considered coherent against a single rationality or intention, but as the result of tensions and adjustments, we ask: how patterns, in both theories and methodologies, can be considered? How different levels of the same reality? From different parameters and dimensions?

## Considerations

We understand that this study is an important contribution to an emerging dialogue in urban design theory between foundational thinkers whose work is often studied in isolation from one another the theme in the concept of pattern.

The outcome is a theoretical contribution. Most of the articles using *The social logic of space* are about the application of the methodology of *Space Syntax*, not about theory. In a diverse world it is important to understand the similarities and differences about different rationalities and how they can contribute to more inclusive cities.

Both theories and methodologies are abstract and work with patterns in different levels. What kind of abstraction a pattern is?

Abstraction is a necessary process in the occidental and scientific cognition. If both methodologies and theories are apparently contradictory, it is important to understand them also as complementary parts in a dialectical possibility.

In other cultures there are other tools to make the cognitive process, specially the symbolic and ritualistic ones. Alexander at all, works with magic in cities. How to consider this in urban morphology?

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