

Planning and Thinking Housing as an Open System

The methodological power of -Open- Systems Thinking.

I INTRODUCTION

In the book *Building and Dwelling*, Richard Sennett uses the concepts of the *Ville* and the *Cite* to contextualize the contemporary problems in our cities. Furthermore, he argues that the divorce between the two and the ways in which professionals related to the building practices deal with them is at the root of the problem. The *Cite*, a French word closely related to the notion of citizenship talks about the social relations, conditions and characteristics found in how people live within the built environment. The *Ville* on other hand, refers to the built environment itself and the relations between the built forms around us.¹ This dichotomy speaks so strongly to architects because of the nature of our profession. Our designs and our buildings are one thing, and how people dwell on them is another. This dichotomy is further carried through the entire book by always contrasting opposing and contradictory discourses in the architecture profession and the way in which they tackle this *Cite/Ville* relationship. Examples include theories about designing our cities from both Lewis Mumford and Jane Jacobs, the former much more interested in how to create master plans that would shape the environment; the latter talking about how master planning generally means destroying the existing ways of living and the slow-pace created social relations.

The most interesting example however is how he looks at the contributions of both The Chicago School and the urban planning enterprises of Le Corbusier. It becomes clear from Sennett's recount that the legacy of both schools of thought was deeply rooted in the ways in which they carried out their research methods. The Chicago School based its practice from a heuristic-ethnographic research method, diving inside communities and studying the social practices and narratives that characterized them. The flaw of their approach, Sennett argues, came from disregarding the physical implications of such practices and the relation to the built form around them. The modernist movement on the other hand, responded to the advances in science and technology by setting a more typological, objective-orientated research; looking for the new possibilities granted by the new construction materials and building techniques. The aim was to find a set of global principles that could rule every creative process to ensure a desired standard of living. The results were buildings and cities that worked like machines disregarding the existing social patterns and relations.²

Faced now with the task of carrying out research in India towards the development of a design thesis that addresses the need for affordable housing in this unknown environment, I think is necessary to pose the following question: Was the lack of a more comprehensive understanding of the possibilities and shortcomings of the research methods employed by these two schools that led to the 'incomplete' legacies of what they produced? Or was the problem the lack of a methodological structure to reconcile the two? In this paper I will argue for the methodological potential of System Thinking to create such a structure to reconcile these perceived competing approaches towards architectural research and designing.

The System Thinking approach will be assessed against the potential to answer the central research question of my thesis: How does a housing-based masterplan can cater for specific existing social relations found in Mumbai while still achieving the coherence of a connected and responsive plan that has a positive footprint in its environment? Or in Sennett's terms, how do you plan for an existing *Cite* by transforming the *Ville* into a coherent open system?

II RESEARCH-METHODOLOGICAL DISCUSSION

Being conscious of the duality of that task, I decided to tackle the research in itself with the same principle of an open system to organize and divide its phases and its possible outcomes. By dealing with the Ville and Cite from a designing perspective, these somewhat abstract concepts become palpable whenever you start dealing with the different scales tackled by the design. It is in the urban dimension of the planning where the Ville becomes clearer and malleable, while it is in the specific intimate relations inherent to the notion of a home where the Cite starts.

Thinking in terms of systems can help to deal with this multi-scaled task because it deals with networks connecting different nodes, which in themselves are also networks functioning in a smaller level. Thus, the notions of scale are replaced in this process by a leveled hierarchy of networks within networks. This multileveled structure can also frame the different stages of the research, and consequentially, of the design. This are the basis of the Actor Network Theory as a tool for research, where each element can be studied in basis of how it relates to other elements and to the different levels of the network; and also, as a smaller network in itself. By understanding the context as a large-scale entity with a series of independent elements on constant interaction it becomes possible to map the different connections of the network to produce a theoretical map that can abstract the unfamiliar context to get an objective understanding of it.

However, this poses a challenge the further the research immerses in the 'smaller scales' of the context, the ones related to the Cite. In these intimate realities it becomes impossible to map every single subtle interaction, every single process and every single node. Even if this research method acknowledges from the beginning that networks are always going to be incomplete and that knowledge in that sense is going to be always only an approximation³, in the smaller scales it becomes impractical to further pursue a systematic mapping. The amount of information processing needed to make sense of the network will derive in a lack of useful results for the design.

However, it has been proved that living organisms perceive things not in terms of isolated elements but rather, as integrated perceptual patterns.⁴ This is the base of ethnographic, phenomenological methodologies. These patterns of inhabitation were the method used by the Global Housing studio as the heuristic/ethnographic approach meant to translate the experiences of the students in the studio trip to India. Given the short amount of available time to carry out a traditional ethnographic research, these patterns were meant to serve as a common language that could translate the multiple different experiences of each student to create a common book of patterns. The patterns then become the 'final level' of the mapped network. In this level the objective results of the Actor Network Theory will function as the organizing structure that supports a series of patterns of inhabitation realized during the site visits.

III RESEARCH-METHODOLOGICAL REFLECTION

Actor Network Theory (ANT) was developed primarily through the work of Michel Callon and Bruno Latour as a way of scientifically approach sociotechnical processes by neutralizing both human and non-human entities as actors interconnected in a network.⁵ This means that ANT analyzes the relational materiality of these entities as presupposes that they achieve significance only in relation to others. The value of the methodological approach set forward by the ANT is that it advocates to abandon any premade assumptions about the nature of networks. By free associating the different actors of the network it also eliminates the distinction between natural and social phenomenon, meaning that these distinctions are effects of the network activity rather than causal. The portability of this concepts made the Actor Network Theory -and other system analysis methods- a valuable tool to approach unfamiliar complex contexts by limiting the researcher's own biases and premade

conceptions. However, it has also been criticized, especially for its managerialist and anti-humanist character, as well as its proclivity to over represent the powerful and dismiss “the other”⁶.

And this is where the second part of the research process enters as a way to insert a humanist - designer- perspective in the larger network provided by the ANT. Pattern analysis has been largely studied as a tool for architectural research. In this sense, the canonical book by Christopher Alexander *A Pattern Language* (1977) was the first one that started merging the System Thinking concept to a practical methodological tool for architects and designers. The idea that urban and architectural patterns can be arranged in a multileveled, multiscale network proposed a ‘fundamental view of the world where you can never build in isolation;’⁷ because every pattern is connected to a larger network. where the ‘larger’ patterns are composed by the smaller ones, and in turn, working on the smaller ones must be related to how you understand the larger ones.

What is interesting about the systematic understanding of *A Pattern Language* is that it puts forward the methodological qualities of a more ‘architectural’ research, where the tools used by architects like drawings, photographs and texts are heuristic methods that unravel and enrich the construction of the language -system. Adherents to this research methods have developed further the potential of drawing as a way to study, represent and discuss the patterns of a perceived context. Using the platform of the 2018 Venice Biennale, Momoyo Kaijima collaborated in the exhibition of the Japanese Pavilion and the accompany book titled *Architecture Ethnography* (2018) where she reflects on the power of drawing as a technique to grasp the “viewpoint of the people who use it [built space].”⁸ On top of that, she argues that architectural drawing, both objective -coplanar, scaled- and subjective - perspectives, patterns, annotations, are part of the architecture’s condition of working across scales, communicating the empirical and the abstract, and moving between the parts and the wholes to put forward the construction of both physical environments and knowledge bases.⁹

To further explore pattern researches already carried out in the context of India. The books *How the Other Half Builds* (1990) by Witold Rybczynski, and *Elements of Spacemaking* (2016) by Yatin Pandya were consulted as basis for the book of patterns realized during the on-site survey to Mumbai. Both categorize the drawn patterns according to construction logics; the former from a self-built/informal perspective that looks at the individual patterns that form the collective space, the latter from a more designed and formal perspective attending to the basic elements of every building and how they can be used in different ways to achieve a variety of experiences. What struck me about them was how wide these two studies are, to the point where they become more a catalog of patterns than a research method that can provide conclusions of the surveyed environment. In other words, there was a need for a larger methodological framework.

Both the scientific -Actor Network Theory- and the heuristic -pattern language and drawing- have developed through time as means to analyze and make sense unfamiliar environments. What I found interesting about combining the two is that ANT with its systematic approach could serve as the first approach that caters for the Ville, thus developing an organizing system that functions as the platform for the further ‘dives’ in the smaller more intimate scales of the Cite. Those ‘dives’ are based in my own experience and perception of the environment expressed by the drawn patterns that continue to be created. The organizing system represents the coherent whole where I can expand, concentrate, test and create feedbacks without getting lost in the complexities of urban studies. The idea is that by taking both approaches each one can cater for the other’s shortcomings.

IV POSITIONING

In essence, the research is putting forward a structure to combine phenomenological and scientific oriented methodologies; by using both heuristic and praxeological methods to be able to read both the Ville and the Cite with its inherent characteristics. The phenomenological/heuristic patterns of

inhabitation put the viewer in a perceptive frame of mind towards the physical elements, actions, and details that can speak of the ways in which people perceive the space in their relation to others and to the immediate built forms. The 'other spatiality' visible only when walking the city¹⁰. By drawing, comparing and categorizing the patterns a "continuous spiraling movement of knowledge between tacit and explicit states"¹¹ is created, making them accessible as design tools for the next phases of the project.

Meanwhile, the systematic structure provided by the praxeological/analytical Actor Network Theory, investigates how these patterns connect and relate in different levels to form a wider environment that is not readable from on-site experiences. The connections of human and not-human actors determine the processes that take place in the Ville while they shape and expand it at the same time.

By dealing with both the Ville and the Cite, with two different but interconnected approaches, I am in reality dealing with two paramount problems in the field of architecture. The approach towards the Ville, speaks about the problem of the environment in its broader sense. Of the need to understand that there is no isolated element, building, community or resource that does not relate to a wider more complex network of relationships.

The second one talks about a personal concern, that is to talk about how as an architect one deals with intervening in an unfamiliar, foreign context. Some of the considerations in regard to this subject include elements of post-colonial theory and the implications of this self-imposed task to work in a context in which I might be always be seen as a foreigner. A Cite that is not my own. However, for the purpose and extent of this paper, what is important to annotate is that the search of a methodological approach was very much motivated by an effort to acknowledge my own biases and preconceptions in addressing the first approach to the research of the context. Having said that, I also think it is important to consider the position of the Global Housing studio regarding this matter. By choosing the affordable housing theme, a broad issue that crosses cultures and contexts, the studio deals with this specific/global dichotomy. In the search for that balance between local culture and global developments, my interest in this academic studio motivates me to find those strategies and considerations that could be translated later to closer realities. Coming from a Latin-American context where the problems explored by the studio like rapid urbanization and informal unsustainable growth are also pressing issues, I find it a challenging enterprise to search for cross-cultural and global solutions.

With all these considerations in mind my position relates back to the initial issue of designing open systems. I believe Richard Sennett is onto something when he contrasts Mumford's fascination with master planning and the dangers of imposing such big ideals on top of existing social and cultural realities; with the Jane Jacobs' beliefs of an urban condition that arises from spontaneity and informality, and the proof that such conception can no longer be maintained facing the speed or urban growth and environmental deterioration.

The development of open systems in sciences is shaping how we conceive and design the new self-learning machines and information processing programs. Open systems rely on the fundamental idea of communication loops between the multileveled parts of a structured network that are in a constant process of feedback. It is the feedback that allows the structure of the network to expand, learn and grow without losing the coherence of the whole. These ideas should find a way to immerse in how we think and plan our built environment. In a broad translation: the idea that you can maintain human agency in smaller intimate scales and cater for increasing multicultural realities, conflicting perspectives and complex interactions without losing the coherence of the whole. This coherent whole is a sustainable, sociable living environment.

If an open system project is the desired outcome, designing the research as this systematic structure that can reconcile readings of both the Ville and the Cite was the first attempt to create the frame of mind necessary to carry out the design part of the project.

Notes

¹ Richard Sennett, *Building and Dwelling* (London: Penguin Random House UK, 2018). 2-6

² .64

³ Fritjof Capra, *The Web of Life* (Berkeley: Random House Publishers, 1996). 29-30

⁴ Wolfgang Kohler, *Gestalt Psychology* (New York: H Liveright, 1929)

⁵ Bruno Latour, *On actor-network theory. A few*. *Philosophia* (1990) 47-64.

⁶ Cassandra Crawford. *Actor Network theory. A Ritzer encyclopedia* (Maryland: SAGE Publications 200a). 1-4

⁷ Alexander, Christopher. *A Pattern Language* (New York: Oxford University Press, 1977) x-xii

⁸ Kaijima Momoyo. *Architectural Ethnography* (Tokyo: TOTO publishing, 2018) 08

⁹ . 010

¹⁰ Michel De Certeau, *The practice of everyday life* (Berkeley: University of California Press 1984). 92

¹¹ Peter Sattrup, *Architectural Research Paradigms* (20120). 9

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