CHAPTER 5

The Building within the City:
Contingency and Autonomy in
Architectural Design and Research

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Introduction: Two Historic Questions in Architectural Research

Architecture is often defined by the humanistic idea of authorship and the individual creativity of the designer. In contrast, the large body of buildings and cities where social life takes place is seen as the collective outcome of socio-economic processes over time. This difference separates the social purpose of individual architectural works from the collective architectural and urban production, fragmenting architecture into different fields of knowledge. Used to signify buildings and cities as the collective outcome of society, the notion of the “built environment” characterises scientific, behavioural, or computational approaches to knowledge, which are increasingly gaining strength in architectural research due to advancements in behavioural data, algorithmic design, and machine learning. The field of architectural design, on the other hand, is primarily defined as artistic and aesthetic practice.

This paper argues that the dichotomy between artistic and scientific approaches separates individual intent from the collective constructions through which we recognise buildings and cities. It furthermore proposes ways by which to overcome these dichotomies, opening new possibilities for research based on multiple overlapping definitions of authorship and invention.

The division between architecture as the product of creative intention and buildings and cities as the unconscious products of society is deeply rooted in Western thinking about our relationship to the world and human production. This gap is often embedded in the trajectories of educational programmes and pedagogical cultures. The background to this paper reaches back to my postgraduate years in the Unit of Advanced Architectural Studies (AAS)\(^1\) at the Bartlett School of Architecture at University College London in the late ’80s and early ’90s. The AAS unit was one of the research groups established by John Musgrove in 1967 as a direct result of Richard Llewelyn-Davies’ promotion of
research as director of the Bartlett in 1960. Taking up the Chair of Architecture in 1960 at the Bartlett, Llewelyn-Davies set out to develop a research-based foundation for architectural education in close connection with the social sciences, material sciences, and environmental sciences. My personal experience of the changes that took place in the department at the turn of the ‘90s further illuminates this study. From 1961 to 1991, the research heritage of the Bartlett was firmly set on a rational epistemological system. When the pioneering architect Peter Cook took up the position of the Chair of Architecture in 1990, he radically changed the direction of the school from a scientific rational approach to an experimental educational culture, and from the horizontal system of year cohorts to the vertical microcosms of the atelier or units.

Cook’s radical changes were not isolated phenomena. The distinction between the humanistic idea of architectural creativity and the idea of buildings and cities as socio-economic processes leads to different educational and research frameworks through the arts and humanities, on the one hand, and the social and environmental sciences, on the other. At the Bartlett School, a number of research programmes in the areas of building science, city science, and spatial morphology adopt the empirical method and epistemology. Inaugurated around 2000, the Design PhD programme at the School of Architecture defines design through architectural and interdisciplinary research and design practice. In essence though, it is also characterised by the artistic–humanistic paradigm rather than the empirical model of science. Such divisions fragment architectural education in many schools around the world, where each side in the debate often thinks it has the right approach, or at least a better approach than the other.

Binary opposites construct oscillation between two irreconcilable notions, critically opening questions such as the following: How is the architectural work conceived? Are architectural knowledge and authorship found outside conscious architecture, or are they actively invented from within? These questions translate to: What is the source of the architects’ knowledge? How can we define authorship in architectural work? I will explore these questions by looking first at the logical paradoxes inherent in them. Next, I will use the examples of Venice and projects by Le Corbusier and Carlo Scarpa that are informed both by Venice and the individual imagination. These projects are Le Corbusier’s Venice Hospital, Scarpa’s Olivetti Showroom in Piazza San Marco, and his extension to Museo Canova in Possagno.

If we support the view that architecture is autonomous, we accept that ideas originate within the architect’s thinking internal to design practice. If, on the other hand, we believe that architecture is solely contingent on external factors, such as socio-economic conditions, material and historical influences, or sociotechnical innovation, then it remains impervious to the discipline of the designer. None of these positions alone seems sufficient to provide a convincing account of the source of architectural ideas. As Mark Gelernter asserts,
“if a theory can explain the role of the creative author in the generation of form, then it cannot explain how individuals seem to fall under the coercive influence of a prevailing style or a dominant ideology.” Equally, if a theory accounts for how architects attend the idiosyncrasies of context, it cannot explain why they often generate versions of familiar forms throughout history for many different functions and contexts.

For Gelernter, such problems originate in our philosophical heritage and arise from a conceptual paradox deeply embedded in the Western system of knowledge. Known to philosophers as the “subject-object” problem or the “body-mind” problem, this dualism is responsible for similar confusions in many other fields, including psychology and the philosophy of science. It is beyond the scope of this text to explore the philosophical dimensions of this problem, but it is useful to explain that it suffers from a dualistic conception of the individual as a creative subject and as an object in the physical world governed by universal laws. Designers identify themselves with the creative side of this equation, epistemologists with the opposite. The underlying ambiguity of this subject has often allowed for the fusion of these sides. There are theories of creation resembling theories of knowledge and vice versa.

The Humanistic Idea of Modern Authorship

The divisions underlying the autonomous-contingent problem were accentuated by the humanist idea of authorship. Marking the beginning of modernity in the Renaissance, the theories of Alberti, Serlio, and other Renaissance architects established two things: first, the superior status of the design original to the collective, non-designed, and tacit systems through which cities and buildings are produced without conscious design intention. Second, the superiority of the design original to variations, to which the original might otherwise be subjected through use over time. For Alberti, design might have a fluid state, but when revisions stop, they should stop forever. Yet the Albertian model has deeper and wider repercussions than this. It confers the superior status of architectural design to buildings and cities as found, because they are mosaics of accidents, adaptations, adjustments, additions, subtractions, revisions, and other errors, most significantly by lacking an identifiable author. A clear demonstration is Palladio’s *Four Books*, in which the adjustments he made to some of his built projects so as to meet site contingencies are corrected to match an idealised version of design.

We recognise the problem of designed and collective architectures in Rem Koolhaas’s 2014 International Architecture Exhibition Biennale in Venice. Presenting doors, windows, and other architectural components, this exhibition implied that architecture is an assemblage of standardised elements over and above architectural intention. The same idea underlines Koolhaas’s *Delirious*...
New York, reading Manhattan as a self-organised framework of investors’ capitalism that optimises the economic and programmatic potential of skyscrapers. Discussing the skyscraper island as an empirical cityscape without a manifesto and privileging aggregate building production over individual architects and their designs, Koolhaas put forward a view of architecture as a system that is blind to the final outcome of design. In contrast, the model of architecture developed by Alberti is clear in its design intention but blind to evolutionary process. Equally passionate about Manhattan’s evolved diversity was Jane Jacobs, describing New York as an empirical framework of organised complexity. A similar idea was introduced by Alison Smithson’s idea of “Mat-Building,” defined as the aggregate configurations of the anonymous collective.

The idea of architecture as authored, autonomous object concerns the imaginative processes of inventing. In contrast, the approach to buildings and cities as empirical processes is at the core of scientific inquiry, such as the rationalisation of life and work patterns, scientific management, behavioural studies, or morphological and typo-morphological analysis. Using quantitative research of observable phenomena, these approaches seek models that can support decisions in design. Architects generate designs using intuition, imagination, and personal experience. They often call upon their subjective interpretations of factual evidence, spaces, and events, assigning attributes to places that real-world phenomena might not intrinsically possess. Empirical analysis, on the other hand, enables research to identify patterns from ground up that can be generalised to explain larger worlds of phenomena. Yet, clearly set apart from design conceptions, scientific approaches disregard possible alternative configurations that form the core principle of design. These differences define architecture either as the mysterious possession of the creative individual or as an analysable system subject to the scientific process.

Venice, Le Corbusier’s Venice Hospital, and the Works of Carlo Scarpa

In Delirious New York, Koolhaas adopts the literary metaphor of the “ghostwriter” of Manhattan that writes its retroactive manifesto in order to grasp it theoretically. I will use the metaphor of the archaeologist excavating Venice, a city that, in appearance and form, is unlike Manhattan, but like the twentieth-century metropolis, has for centuries provided a mythical laboratory for invention. Having remained intact since the fourteenth and fifteenth centuries, Venice offers archaeological evidence about the processes that shaped the city. Venice is chosen for two additional reasons: first, it is the outcome of evolutionary urban growth and conscious design intention expressed in the medieval urban fabric, the monuments, and major public spaces of the city. Second, it was the centre of Vitruvian studies, decisively opening to the Renaissance and architectural authorship in the fifteenth century. So it can illuminate the interaction of
architecture as autonomous field with socio-economic factors that are external to the conceptual operations of design. Le Corbusier, in his hospital, and Scarpa, in most of his buildings, were influenced by Venice, and so they help to explain the origin of creative ideas, that is, whether they originate in the mind or are discovered in buildings and cities as found.

If we look at the dense network of spaces in Venice, we see that the squares, or campi, are densely interconnected through alternative pathways and intersecting circular paths (fig. 5.1). The majority of the squares are directly accessible from a canal and the alley network, which seems to suggest that they work as nodes in the intersection between the two movement systems. This property captures the memory of Venice as evolutionary process from an archipelago to a compact city. The squares with their churches were the social nuclei of parish islands, semi-autonomous community centres that had a market servicing communication between islands by being directly accessible by the lagoon’s waters. The campi were also centres of water collection through wells located at the centre of each square. The continuous network of routes shows that

Fig. 5.1 Interconnected squares in Venice. Figure: Gustavo Maldonado.
the bridges that connect islands were built to link the squares with each other, forming a network of multiple interconnected centralities. As the city developed new land, local functional needs, such as dual access from land and water, and social needs, such as the redistribution of land ownership and privileges of physical access, led to the system of interconnected squares with large-scale consequences for the organisation of the city as a whole. Another fundamental characteristic of the squares is that they consist of a combinatorial system of urban elements: square-church-well-canal-bridge-loading steps. From the most modest squares at the fringes of the city to the magnificent Piazza San Marco, the campi of Venice comprise these recurring composite structures. The repetition of these elements in the squares of Venice, the repetition of the squares themselves in the fabric of the city, and their interconnections through the alley-canal networks lead to a recognisable order without conscious intention.

The combinatorial structure of these elements and the evolutionary logic of the city’s networks influenced Le Corbusier’s hospital as well as Scarpa’s designs. A closer look at the Venice Hospital reveals an analogical relationship between the building and the networks of Venice through a system of pathways (which Le Corbusier calls Calle, in a direct analogy with the alleys of Venice) intersecting at the centre of Unité de Battise (which Le Corbusier calls Campiello in an analogy with the squares of Venice) (fig. 5.2). So the architects of the hospital interpreted the processes that formed the city in a new designed reality.

Fig. 5.2  Le Corbusier, Venice Hospital, third floor. Figure: Sophia Psarra.
If Corbusier’s hospital is an analogical expression of the networks of Venice, Scarpa’s work presents a different case altogether. His projects are not shaped like a network, but adopt a lot, first, from the ways in which Venice’s streets and canals relate to one another, shaping bodily movement and, second, from the evolutionary growth of Venice, reconciling various stages and styles of built form through a logic of accretion. In the Olivetti Showroom for example, we encounter a series of techniques that split a narrow site into three long and narrow strips (fig. 5.3). To see the entire layout, the visitor has to turn direction ten times, defining a complex pattern of circulation for such a small space. Circumnavigational movement is linearly accentuated and contrasted by the long axial vistas travelling from front to back. Yet, by extending circumnavigation through these twists and turns, Scarpa contrasts the synchronic views with the sequential progress of the viewer through the interior. By punctuating the floor, the ceilings and the horizontal and vertical surfaces with different types of materials and details, he creates distinct thresholds, such as the terrazzo floor made of pieces of red glass on entering, the stone slabs of the staircase, and the timber lattice shutters of the windows. The linear progression through space is thus staged as a sequence through clearly demarcated episodes or chapters.

A circumnavigational course is a characteristic of other works by Scarpa, as in the Castelvecchio, meandering back and forth along the linear extension of the building but also around the exhibits, as it is never possible to confront them frontally or survey all the works all at once. This can be also seen in Scarpa’s Gipsoteca in Possagno: the long axis in the original gallery, where statues of similar height are symmetrically positioned on either side of the axis, contrasts the organisation of space and display in the extension to the museum (fig. 5.4). In the extension, there are objects of different types and scales placed on differently shaped pedestals. Some works portray reclining figures, others seated ones; some are busts while others represent full bodies. Instead of being tacked against the wall as in the old building, they are set at different points throughout the room, some floating close to the wall, others situated near the corners. Furthermore, each of the statues looks towards a different direction. The two reclining female figures address opposite-facing walls; the seated male figure faces away from the visitor, looking towards the bust on the wall. The varied positions of the statues requires the visitors to walk around them, crossing their own paths multiple times. The scale of the work in the linear gallery is also varied, with two major large pieces, a reclining statue at the beginning, and the other – the three Graces – at the end of the view framed by the garden. There are also small figurines inside vitrines, designed by Scarpa, to hold the smaller pieces. The changes between galleries and floor levels are marked by the changes in the ceiling and by different configurations of windows. There are vertical glazed surfaces on the right and at the far end of the gallery, clerestory windows and irregularly spaced square windows, defining a varied set of experiences.
Fig. 5.3 a, b: Carlo Scarpa, Olivetti Showroom, Venice. Figure by Gustavo Maldonado; photograph by Sophia Psarra
Fig. 5.4 a,b: Carlo Scarpa, Canova Museum in Possagno Extension. Figures by Gustavo Maldonado; photograph: Sophia Psarra.
In all three Scarpa’s works, the source of inspiration is Venice. The linear splicing of space in the Olivetti Showroom, the narrow mezzanines, the sculptural staircase, and the water located in the central zone are mediated references to that great catalogue of forms that is Venice – with its narrow passages, fondamentas, sottoporticos, bridges stretching over the water, water flooding the edges of space, all featuring as chains of reference to the aquatic city where Scarpa spent his life (fig. 5.5). The organisation of seeing and moving in these projects is analogous to the ways in which seeing and moving take place in Venice, where views extending over the linear stretches of the canals link places that are reached only indirectly, by the meandering and intersecting canals and alleys.

Critics interpret Scarpa’s work as being about metonymic articulation of found fragments. This can be best understood by Nelson Goodman’s third category in terms of how buildings mean, that is, “exemplification” by metaphoric or metonymic expression, defining properties not possessed by a work, but expressed by the work. Scarpa’s tectonic poetry was brought into being by the growth of a tradition within modernity. This tradition was based in the Venetian constructive practice to merge discrete building elements of disparate origin and building spoils that came from their trade routes. A clear example is the facade

Fig. 5.5 Streets and canals of Venice. Photograph: Sophia Psarra.
of San Sebastiano in Venice facing a narrow triangular campo (fig. 5.6). The upper columns are shorter than those on the ground floor, and they are raised on pedestals so that the two floors have matching heights. This is because the columns on the upper level were found objects that came from another structure.

Scarpa left behind no iconic abstract plans but a series of layered drawings that worked as mechanisms for his thoughts rather than a set of instructions to builders for a finished object. Richard Murphy explains that, for Scarpa, there was no sequence of thought or organisation ordering a project from general design concept to detailed construction. While representing a unity of craft and design, this approach has been criticised as attacking the building details at the expense of an overall unifying concept. The preference for iconic abstract drawings is a preference the historiography and theory of architecture have developed since the time of the Renaissance treatise, alongside the concepts of authorship and authorial control over the wholeness of form as a relationship between parts and whole. For Scarpa, Venice and architecture were a storehouse of forms, a laboratory of combinatorial tectonic possibility, untouched by the academic tradition for the part-whole relationship and compositional impulse.
Conclusion: The Need for a Different Conceptual Model for Architectural Research

Coming to the first question raised at the beginning of the chapter regarding the source of architectural knowledge, the examination of Venice and these works help illuminate the origin of architectural ideas. The sources of form in the projects discussed are neither in the internal operations of the architects’ mind, nor on external influences, but in the interrelationship between the individual imagination of the architect and the world of collective imagination. Architects retrieve the logic of designed and non-designed artefacts and innovatively interpret them in new designs.

The second question raised in this chapter is how we can define authorship in architecture. The analysis of the three artefacts shows that they all have a formal logic based on a pattern of combinations that is either recursive, as in Venice’s squares and the hospital; or based on metonymic tectonic translations; or on spatial translations of bodily movement, as in the case of Scarpa’s projects. They can explain morphogenetic processes that work from the ground up and from the part to the whole and vice versa. The morphological affinities between these works point to two basic ideas: first, the idea of authorship as creative translation across formal systems. The second idea refers to multiple, heterogeneous, intersecting forms of authorship influencing each other. The concepts of creative translation across systems and alternative intersecting forms of authorship can explain how society and culture enter designed and non-designed artefacts, built and environments, empirically understood and mentally accessed structures. The examples of Le Corbusier’s Venice Hospital and Scarpa’s work help us see how cities like Venice inspire architects and what they can draw out of architecture and buildings.

Returning to the discussion introduced at the beginning of this text, the split between the imaginative processes of the designer and the evolutionary processes that give rise to cities and buildings leads to irreconcilable world views about the origin of our architectural knowledge. As this analysis shows, architectural knowledge travels from material contexts that are collectively produced to the designer’s mind and vice versa, through the combined effects of evolutionary logic and creative invention. When architectural research and education are exclusively rooted in the model developed by Alberti or the empirical model of science, it is not possible to bridge individual and collective imagination. Perpetuating the elitist definition of architecture as high art or the mechanistic functional order of empirical evidence, without recognising the hypothetical dimensions of human minds, removes the capacity of architecture to actively contribute to the creative, social, and political processes of everyday life. We need new educational and theoretical models for architectural research, the seeds of which are contained within the educational heritage of many schools but are trapped in separate institutional and epistemological traditions.
Notes

1. The Advanced Architectural Studies Unit (AAS) was directed by John Musgrove followed by Bill Hillier, who, alongside Julienne Hanson and colleagues, pioneered an approach to the morphological description of space in close connection with social activity and cultural meaning. Bill Hillier and Julienne Hanson, *The Social Logic of Space* (Cambridge: Cambridge University Press, 1984).


4. Directed by Professor Jonathan Hill.


15. These interconnections are computed by calculating the shortest paths between all pairs of streets and spaces. This analysis shows that the network of shortest paths in Venice crosses the squares indicating their strategic position in the pedestrian and aquatic system of movement. Sophia Psarra, *The Venice Variations: Tracing the Architectural Imagination* (London: UCL Press, 2018).


Bibliography


