The role of spatial networks in the historic urban landscape: Learning from Venice in the 15th and 16th centuries

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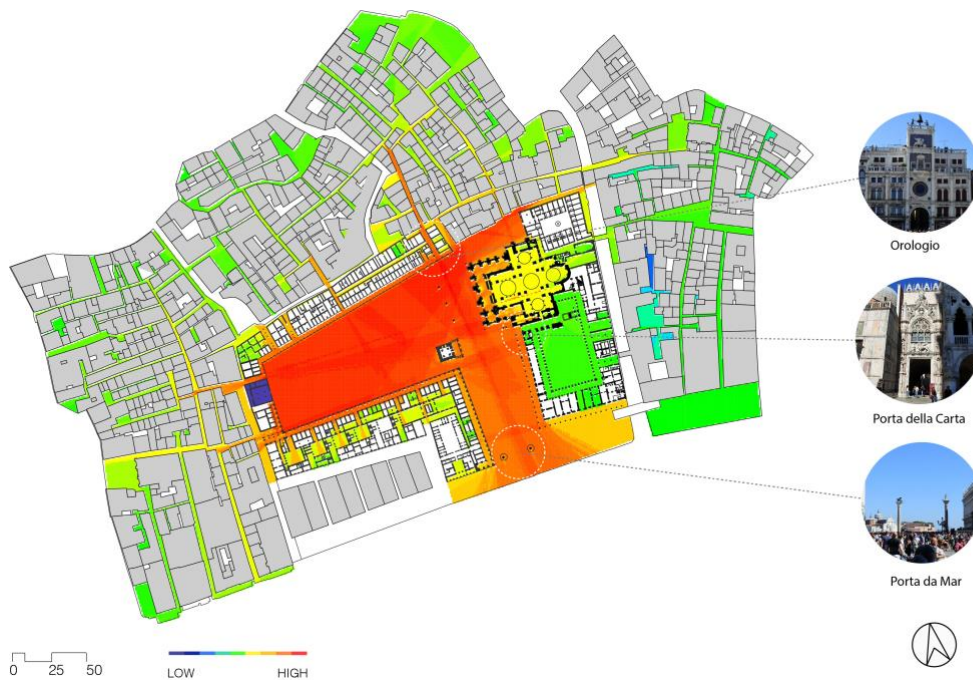https://www.journalmap.org/account/profiles (for geolocation information)

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The 2011 Historic Urban Landscape (HUL) Recommendation by UNESCO focuses on cities as dynamic environments subject to cultural processes, tangible/intangible heritage and community values. The definition of cities as evolutionary systems is widely accepted as a concept capable of addressing their material qualities and immaterial assets. However, it is important to ask some key questions: Is the heritage sector better defining the complexity of historic places, or because this complexity defies verbal description, it re-iterates simplified concepts? Are existing boundaries between disciplines such as architecture, planning, and landscape design enriching or constraining heritage? This paper presents analysis of the urban morphology of Venice and the Piazza San Marco, a key context in the history of urban management when architecture emerges as legitimised vehicle for urban regeneration in early modernity. Looking at the relationship between the Piazza and the urban networks of Venice alongside intangible spatial practices and symbols, the paper makes three contributions to urban conservation: a. it defines and visualises the HUL as the interrelationship of the anonymous city with the authored products of design; b. it revisits the foundations of early modern consciousness about architecture, urban conservation and innovation in order to better understand interdisciplinary knowledge in the heritage sector. Finally, it approaches heritage as social construction, involving the selection of structures, from buildings to entire areas, and from legal documents and political instruments to ideologies through which societies are seen from dominant positions, often disguising conflict.

Keywords: architecture; city-craft; statecraft; theatre; evolutionary urban networks; cities; Venice; Piazza San Marco

Graphical abstract

Orologio

Porta della Carta

Porta da Mar

0   25   50   LOW   HIGH

Video abstract

https://www.youtube.com/watch?v=e8WZGMhuWjU

Introduction

Although heritage is defined as something we inherit from the past, it largely concerns living environments, crucial for cultural identity, the development of resources and sustainable growth.[1] This view informs recent conservation debates which have begun to acknowledge heritage as a complex social phenomenon. The concept of the historic urban landscape (HUL) was first set out in the Vienna Memorandum on World Heritage

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[1] 'Although the name of a city may remain forever constant, its physical structure constantly evolves, being deformed or forgotten, adapted to other purposes of eradicated by different needs' (Boyer, 1994: 31).

and Contemporary Architecture – Managing the Historic Urban Landscape[2] and the 2011 Recommendation on The Historic Urban Landscape by UNESCO as a conceptual paradigm, re-interpreting the values of historic urban areas subject to socio-economic and cultural processes.[3] The UNESCO 2011 Recommendation includes:

> 'notably the site's topography, geomorphology, hydrology and natural features, its built environment, both historic and contemporary, its infrastructures above and below ground, its open spaces and gardens, its land use patterns and spatial organization, perceptions and visual relationships, as well as all other elements of the urban structure.'[4]

Equally important to these expanding territories in the definition of the HUL are the intangible dimensions of heritage related to diversity and identity and an inclusive approach based on local community values[5].

It was the Victorian art critic John Ruskin who first argued that we must perceive architecture within its social, economic and political contexts. Ruskin's[6]

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[2] The Vienna Memorandum is the result of an international conference on the subject of 'World Heritage and Contemporary Architecture – Managing the Historic Urban Landscape', which was requested by the World Heritage Committee at its 27th session (Paris, 30 June-5 July 2003, Decision 27COM 7B. 108) and held from 12 to 14 May 2005 in Vienna, Austria, under the patronage of UNESCO and attended by more than 600 experts and professionals from 55 countries. Article 5 [online] [Accessed 30th June 2018]. Available at: <http://www.icomos.org/usicomos/Scientific_Committes/Landscapes/UNESCO-ViennaMemorandum-2005.pdf>.

[3] Recommendation on the Historic Urban Landscape, including a glossary of definitions. [online] [Accessed 30th June 2018]. Available at: <http://portal.unesco.org/en/ev.php-URL_ID=48857&URL_DO=DO_TOPIC&URL_SECTION=201.html>.

[4] *ibid.*

[5] Waterton and Smith, 'The recognition and misrecognition of community heritage'

[6] Ruskin, 'The Seven Lamps of Architecture'; and Ruskin, The Stones of Venice.

protests against the destruction of old buildings and William Morris'[7] writings on art and architecture as telling stories stimulated the founding of English and foreign societies for architectural preservation and the Arts and Crafts Movement. In contrast to this nostalgic approach, the Austrian architect Camillo Sitte[8] developed an interventionist purview, addressing the city as an aesthetic model for inspiration in urban design. A different proposition was by Patrick Geddes, a Scottish urbanist and biologist, who defined the city as an organism in evolution[9], 'where physical and social components interact in a complex web of change and tradition'[10], contributing to the idea of evolutionary history. History for Geddes 'was not …a late Romantic conceit that buried the past in relics of funereal aspect; it was "a new beginning" a realisation of the life history of a community'[11]. Yet, it was the highly influential Italian architect Gustavo Giovannoni, who in the 1920s and 1930s shifted from a static to a dynamic approach to heritage, suggesting that the urban fabric should be allowed to adapt to the evolving needs of urban society without undermining the overall authenticity of the historic environments[12].

In the last 50 years, strong concerns in the heritage sector about modern interventions on historic urban areas have led to a number of conceptual reformulations. Yet, heritage conservation has until recently mainly focused on individual monuments

[7] Morris, 'The Restoration of Ancient Buildings'.

[8] Sitte, City Planning According to Artistic Principles.

[9] Geddes, Cities in evolution: Evolution.

[10] Bandarin and van Oers, The Historic Urban Landscape, 12.

[11] Vidler, The Scenes of the Street and Other Essays, 299.

[12] Araoz, 'World-heritage historic urban landscapes'; and Bandarin and van Oers, The Historic Urban Landscape, 12.

and the prevention of change[13]. The HUL paradigm expanded heritage categories, re-interpreting the values of urban conservation in ways that transcend individual buildings or ensembles on purely architectural grounds[14]. These revised conceptions have shifted discourse from 'monuments' to 'people', from 'objects' to 'functions', from 'preservation' to 'sustainable use and development'[15] and from 'material evidence to the intangible (and even unconservable) intellectual construct of ancestral communal memory'[16].

In his seminal work *The Past is a Foreign Country*, David Lowenthal was one of the first scholars to suggest that heritage is an ideological construct of the present day embedded within heritage studies[17]. For Lowenthal, every effort to balance the benefits and burdens of the past implies some awareness that we need to cherish the past and also need to get rid of it (*ibid.*). This is because if the past is increasingly manipulated by the present day's needs, it gradually becomes 'a foreign country', a cumulative body of records, relics and historical recognitions. Accruing evolving perceptions of the nature of heritage sites and the new pressures of the twentieth-first century, the HUL concept seems to illustrate the difficulty in separating the architectural, urban and territorial context from the discourse that describes it. Given the theme of this Issue of the journal and its interest in the HUL, the starting point of this paper is a pair or interrelated questions: is the heritage sector investing in better defining the complexity

[13] Araoz, 'World-heritage historic urban landscapes'.

[14] Taylor, 'The Historic Urban Landscape paradigm and cities as cultural landscapes'.

[15] Vakhitova et al., World Heritage Assessment.

[16] See above note 13.

[17] Lowenthal, The Past is a Foreign Country.

of historic places or because this complexity defies verbal description re-iterates simplified theories and concepts? Within the current production of guidance and discourse on historic environments, are the existing boundaries between different disciplines such as architecture, planning, urban design and landscape design enriching or constraining heritage management?

These questions point to the need for theoretical and analytical frameworks describing the complex relationships between architecture, sustainable urban development and landscape. In this paper, I discuss the city of Venice in Italy, a key place in the history of ideas about urban cultural values that have for centuries influenced heritage evaluations, adopting an aesthetic approach to cities and monuments as pure scenographic environments. My analysis has a threefold purpose: first, to bring the underlying structure of urban networks of cities to the urban conservation debate as integral parts of socio-economic and cultural forces. Second, to explore a key episode in the theory and practice of urban governance where architecture, the urban landscape and an entire city were conceptualised as the means for communicating dominant values of memory, identity, history, and as political instruments of control. Third, to re-evaluate the roots of architectural and urban governance at a time and context where Western architecture emerges as the legitimised vehicle for urban renovation, redefinition, and regeneration of cultural heritage in modernity since the Renaissance. I argue that Venice in the sixteenth century is particularly relevant to the debate of sustainable cultural landscapes since it was at that time that the city grafted its medieval fabric onto Republican ideology, re-inventing key urban sites as ancient theatres and fora.

The paper is organised in four parts. The first part discusses the HUL paradigm, exposing certain dilemmas about urban conservation and the associated disciplines of architecture, planning, geography and so forth. The second part follows the history of

urban networks and socio-economic operations that drove the development of Venice's urban fabric, using GIS modelling and space syntax analysis[18]. This examination points to a multi-scalar pattern of pervasive centrality[19] that captures the memory of the urban evolution of Venice from an archipelago of island communities to a compact city over time. The third part discusses the reconfiguration of the Piazza San Marco, the Piazzetta (Renovatio Urbis) and the Bacino (the Basin of San Marco) in the fifteenth and sixteenth centuries against the evolutionary urban context of the city. The fourth part examines popular beliefs, mythography and the ritual use of space in Venice, the Basin and the Piazza complex. In this part it is shown that the Renovatio annexed the urban structure of Venice, historiography and popular ritual to advocate a perfectly organised society of ancient noble origin and a centralised city of ceremonial processions. The four parts of the study are brought together at the end of the paper in response to the questions raised at the beginning. Drawing on diverse sources and disciplines, such as architecture, urbanism, the social sciences, spatial modelling and urban network analysis, this work offers a framework for addressing the role of architecture and the HUL as significant resources, contributing to conservation and heritage studies.

Between authored architecture and the authorless city

The shift from monuments-objects to processes in the definition of the HUL reflects a dualistic conception of architecture and the city, deeply embedded within the intertwined histories of urban conservation and modernism, over the last two centuries. Julian Smith for example, contrasts the orthodox approach to urban conservation based

[18] Hillier and Hanson, The Social Logic of Space.

[19] Hillier, Young and Turner, 'Normalising East Angle Choice in Depthmap - and How It Opens up New Perspectives on The Global and Local Analysis Of City Space.'

on the 'aesthetic bias' where architects and architectural historians are the key experts, with the 'ecological bias', a newly emerging twenty-first century concept in which the focus is 'not so much on the object (whether considered of archaeological, commemorative or aesthetic interest) but rather on these objects in relationship to each other and to the people who shape them and use them'[20]. She explains that the ecological bias is a 'dynamic rather than static concept, because ecological systems are not stagnant, although at their best they achieve some form of equilibrium and resilience' (*ibid*.). As Gustavo Araoz observes, expanding the values inherent in historic urban districts to include dynamic historic patterns of evolution and change, the HUL paradigm shifts 'the objective of conservation from preserving the authenticity of material form to protecting the historical processes and patterns of urbanisation' (*ibid*.: 34).

Emphasis on buildings and cities as objects had central place in the modernist tabula rasa approach best exemplified by Le Corbusier's proposal to replace the historic city with free buildings-objects in a park (*Voisin Plan*), or Robert Moses' work in 1950s New York, destroying through infrastructural projects local communities and neighbourhoods. Ever since Jane Jacobs[21] wrote her attack on modernist city plans, architects, planners and urban designers have been searching alternative models for urban vitality through the notion of some evolution or process. Confrontational oppositions to radical functionalism and the demolition of historic areas led on the one

[20] Smith, 'The Marrying of the Old with the New in Historic Urban Landscapes'.
[21] Jacobs, The Death and Life of Great American Cities – The Failure of Town Planning.

hand, to the reactions against the Athens Charter[22] by the architects of the Team 10, defining architecture and the city as evolutionary environments of the anonymous collective [23], and on the other, to contextual approaches, emphasising architectural signification and citation such as in Colin Rowe and Fred Koetter's *Collage City*[24] and Aldo Rossi's *Architecture of the City*[25], among others.

The debate between objects and process exposes the dilemma between buildings as products of artistic creativity and the city as historical fabric, 'context' or 'setting' which, according to dominant values, has either historic significance or no significance at all, being readily exposed to demolition and substitution. These split views divide the historical city into authored objects and the anonymous processes that produce the urban fabric. For Bandarin and van Oers, the complexity - and the duality - of the city containing monuments of artistic and symbolic value, as well as minor architecture explains the delay in defining the historic city as heritage[26]. I argue that this duality carries along disciplinary dilemmas exemplified by the difference between

[22] The Athens Charter was formulated during the CIAM 4 Congress that took place in 1933 aboard the cruise ship SS Patris II in the Mediterranean and Athens. The Congress established the principled of the Functional city. 'In this text, the historic city is a negative model, characterised by excessive density, lack of light, ventilation and sun exposure, where services are distant from the residential areas...A specific section of the document deals with urban heritage, seen essentially as a set of monuments, to be respected in the name of their historic and 'sentimental' value, surrounded by 'slums' that could be demolished, with the exception of some 'samples' that could be preserved for their documentary value.' Bandarin and van Oers, The Historic Urban Landscape, 21.

[23] Smithson, 'How to Recognise and Read Matt-Building'.

[24] Rowe and Koetter, Collage City.

[25] Rossi, The Architecture of the City.

[26] Bandarin and van Oers, 'The Historic Urban Landscape'.

architecture's traditional concern with intentional design and other areas of knowledge, for example planning, approaching cities as entities that emerge out of multiple actions of people over time.

This brief review reveals that after several years of 'orthodox' discourse aided by the disciplines of architecture, urbanism and history, heritage ideas have recently found expanded definitions through the HUL concept. Shifting from orthodox divisions to an integrated approach of architecture, sustainable urban development and landscape, the expanded territory of the HUL attempts to escape the problematic dualisms that have plagued many disciplines of the built environment, between objects and processes, form and function, continuity and change, buildings and context. The idea of the HUL has also discovered a host of disciplines from the natural and social sciences, necessitating a greater role for geographers, sociologists, demographers, ethnologists, economists, financial experts, and finally, the participation of community groups and concerned citizens27.

However, the key questions raised at the beginning of this paper remain open: how can we capture the integrative nature of the HUL over and above an ever growing list of terms, disciplines and people used in its definition? If heritage is expanding in other fields, what conceptual shifts can architecture perform exercising and enriching its role as the key vehicle in design, urban renewal and intervention? Such questions require modelling techniques for integrating descriptions and data from different territorial scales so that the differences and the relationship between the built and the natural, the building and the city, the site and the territory can be evaluated.

27 See above note 13.

In this paper I attempt to answer these questions by looking at the Piazza and the Basin of San Marco in relationship to the urban networks of Venice as a whole. I argue that patrons, city officials and the architects Jacopo Sansovino (1486-1570) and Andrea Palladio (1508-1580) used architecture to express the Renaissance ideals of civic unity and urban integration. The Piazza is the space where the Republic apparatus took active 'stage' in founding architecture as a discipline and as political tool. The purpose was to exalt the city-state and distinguish it from the collective and anonymous processes that had produced the organic urban fabric. The difficulty of architecture to contribute new visions for urban vitality goes back to the scenographic definition of urban space that reduced the complexity of the city into a single image. The confluence between architecture, theatre and the street defined the double role of urban space as everyday space and representational theatrical space in humanist urban culture. The theatrical model of the square and the street became an instrument of urban control and regulation, for centuries influencing architecture and urban design. Fontana's streets of Rome and Haussmann's boulevards shared this common logic[28].

In her book *Uses of Heritage*, Laurajane Smith makes a distinction between heritage approaches relying on experts, cultural agencies and institutions and those that challenge dominant narratives emphasising diversity, inclusion and community participation[29]. By focusing on Renaissance Venice, this paper locates the conceptual and institutional foundations of Smith's notion of 'authorised discourse' about architecture and cities in early Western modernity, exposing the origin of dominant ideas in urban conservation.

[28] Vidler, The Scenes of the Street and Other Essays.
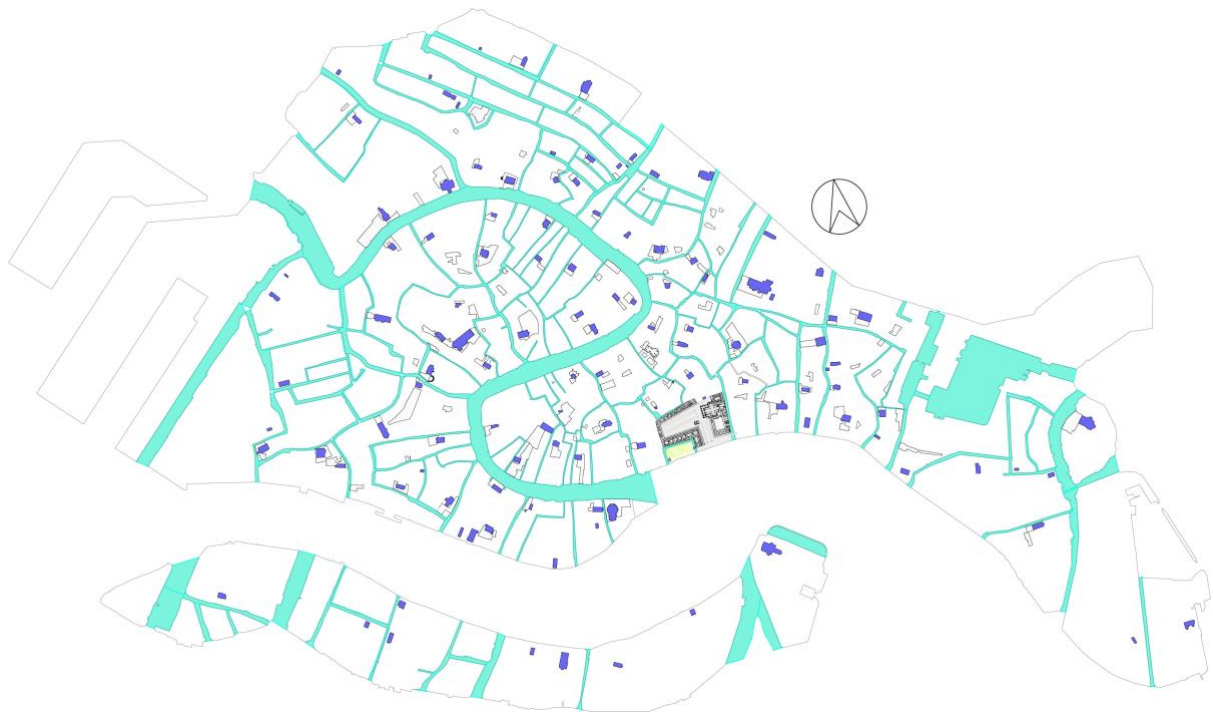
[29] Smith, Uses of Heritage

Figure 1. Venice with squares and churches (shown in blue colour) and Piazza San Marco – diagram by the author.

City-craft: urban networks and the evolution of Venice's life and urban form

The origins of Venice were in the archipelago of island communities, which after a long process of land reclamation were joined, collectively forming the compact city as a whole. The analysis of the canal and pedestrian networks (using angular segment analysis)[30] shows that the squares (*campi*) of the islands with their churches, church towers, wellheads for water collection, flights of steps connecting with the canals and bridges joining with the neighbouring islands are interconnected at all scales (radii)

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[30] Angular segment analysis is based first, on the representation of the urban network as line segments defined by the intersections of axial lines, the longest and fewest lines that cover the network drawn tangent to surfaces (Hillier & Hanson, 1984). The second step in the analysis is the calculation of a number of measures using angular distance, based on the angles of intersection of line segments (Hillier & Iida, 2005).

through the pervasive network of betweeness centrality or 'choice'[31] (Figure 1). Choice is an attribute that accounts for through- movement, or the paths that are most frequently used in order to move between every pair of origin and destination in an urban system[32]. The interconnected matrix of *campi* was a characteristic of Venice in previous historical periods although the pervasive multiple links among squares became accentuated over time[33].
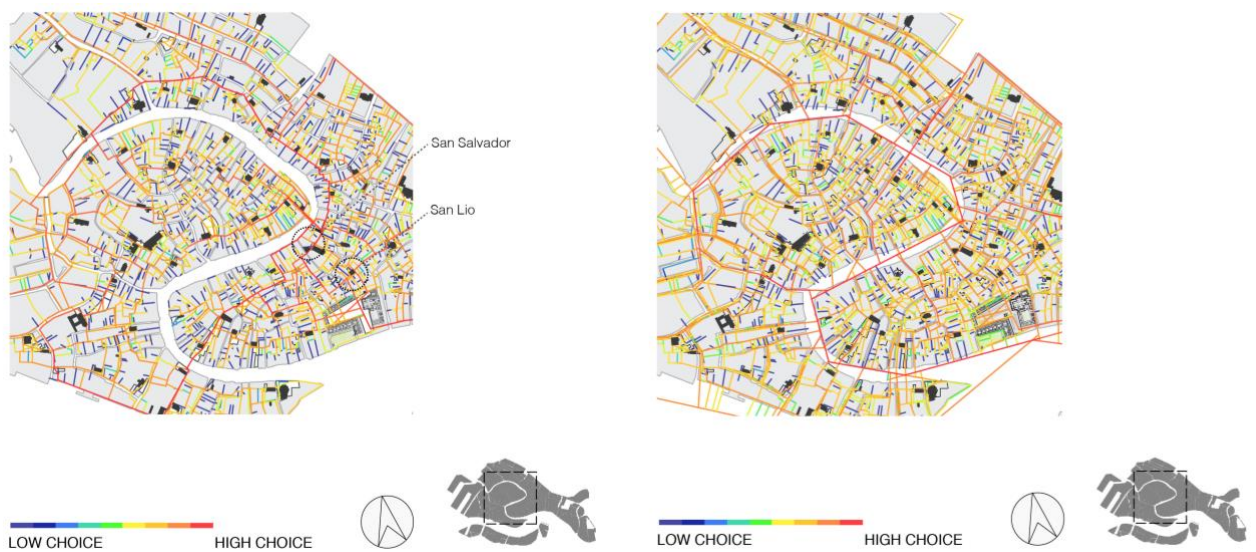

Figure 2. Betweeness Centrality (Normalised Angular Choice), pedestrian network (left); canal and pedestrian network (right) – diagram by the author

[31] Psarra, 'A Shapeless Hospital, A Floating Theatre and an Island with a Hill'; Psarra, 'Beyond Analytical Knowledge – intersections of generation and explanation'. In O. K. Young, T. P. Hoon, Kyung, S. Wook, eds. Proceedings of The International Space Syntax Symposium IX; Psarra, 'Beyond Analytical Knowledge – intersections of generation and explanation'; and
 Psarra, The Venice Variations: Tracing the Architectural Imagination.

[32] Hillier and Iida, 'Network and Psychological Effects in Urban Movement'. In M. Greene, eds. Proceedings of the International Space Syntax Symposium VIII. Santiago, Chile.

[33] Psarra, The Venice Variations: Tracing the Architectural Imagination.

This characteristic means that when the pedestrian network was formed in Venice, the bridges that joined the islands were built in close proximity to the flights of steps, connecting the canals with the *campi* and the *campi* with each other. The pervasive network of the squares is also a characteristic of the combined canal-street system, indicating that the *campi* are the nodes in the intersection of the two infrastructures. This makes sense, as initially *campi* had to be directly serviced by boat. When the islands were joined up, they became interconnected by both water and land, facilitating the unloading and distribution of merchandise and people. This property reveals not only a pattern of urban growth, but also a social and political system. The *campi* of Venice were social nuclei of semi-autonomous communities since early times, gradually coalescing to produce the Venetian commune out of multiple interconnected centralities. Parish islands contributed as much to the urban and cultural affairs of local neighbourhoods as to the city as a whole through the patrician class, featuring as leading families in the islands and as members of the Great Council[34].

If the measure of choice reveals that the logic that drove the development of the city was distributed into its many parochial centres, the measure of closeness centrality, or 'integration'[35], capturing in terms of angular terms the 'distance' of each urban element to all others[36], shows that Venice had two major nuclei: the Rialto and the

[34] Howard, The Architectural History of Venice; and Romano, Patricians and Popolani – the Social
Foundations of the Venetian Renaissance State.

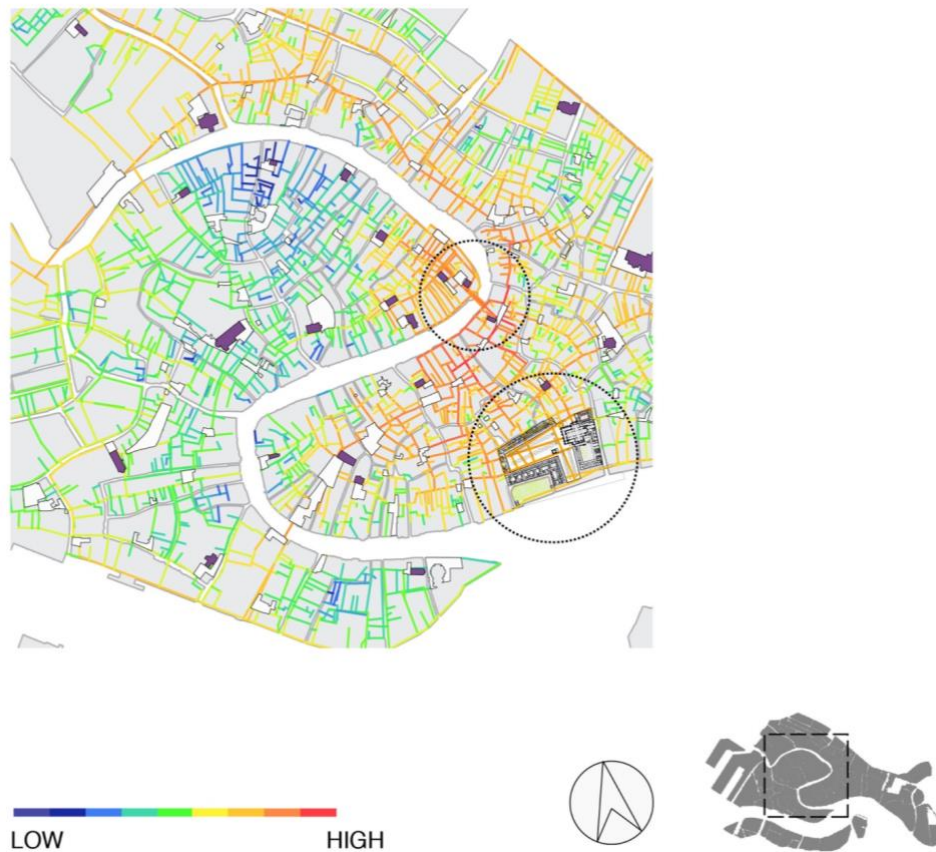[35] See above note 18.

[36] See above note 32

Piazza San Marco (Figure 3). The former was the major trading centre of Venice, while the latter the religious and ceremonious centre. We know that the Venetian patricians

had not only public office but also trading posts in the Rialto and their warehouse-palace (*fondaco*). The spatial measures of choice and integration therefore, express two powerful dualities in the social fabric: first, the twofold identity of the aristocratic class as merchants-officials of Venice, promoting republicanism within their own class and social hierarchy for the entire society; second, parochial identities of the parish communities, and civic identity through the central administration of the Republic. Venice was the outcome as much of the collective network of squares, canals and streets as of the hierarchical difference of the two urban centres from the rest of the islands.

With time, collective social organisation shifted from the island communities and the spontaneous production of space to central administration. In his analysis of social networks in fourteenth century Venice, Denis Romano explains that as the parish-islands lost their autonomy and the involvement of the leading families with various communities declined, the government intervened, creating a system of secular urban administration and a set of geographically divided areas onto the 'pre-existing ecclesiastically based parochial system'[37]. This transformation was in effect a superimposition, suppressing the local communities but in ways, which ensured the mitigation of social conflict. With time, legends and myths about the origin of the city were appropriated by Venetian historiography, forging the *Myth of Venice*, a collection of beliefs and official histories that described Venice as the most serene Republic as it was known by its political elite[38].

Statecraft: visibility structure and iconography in the Piazza and the Basin of San Marco

Moving to the analysis of the Piazza San Marco, it is essential to emphasise three key things: first, for the Venetians, this place was intertwined with Venice's Myth through the slow accretion of buildings, structures and material forms, intended to reinforce the shared beliefs, communal values and memory associated with St Mark the Evangelist and the political institutions of the city[39]. Second, the transformations of the Piazza that took place in the sixteenth century (*Renovatio*) were in essence a political project of celebrating the city's sovereignty and endurance against foreign powers. Third, these

[37] Romano, Patricians and Popolani, 18.

[38] Muir, Civic Ritual in Renaissance Venice.

[39] Ibid.

transformations mark the split of architecture and urban management from the collective production of the city that took place in the Renaissance, through the redesign of major civic spaces in Venice and other Italian cities. These transformations have their origins in the concept of scenography, a term invented by Sebastiano Serlio (1475- c. 1554) in his second book of Architecture published in Venice, whose innovations gave Renaissance architects a way to bridge Vitruvius' Roman theatre with architecture (1611). A number of theatres, buildings and squares were built at the time, still influencing the ways in which architecture and urban spaces are being designed. Arranged theatrically, urban piazzas used perspective to unify art, architecture, public space, and make them synchronically accessible to the eye. The physical configuration of the Piazza San Marco was the outcome of a long process of adaptations that had started in the late medieval period. Yet, it reached a stage close to its present form in the sixteenth and seventeenth centuries through coordinated acts of conscious design. Configured to accommodate performances and processions, the urban transformations in the Piazza were in essence a major project of aggrandisement of the city, superimposing the ideal of a Roman forum on the medieval urban fabric.

The island of San Marco has a strategic position, controlling the entrance to the Grand Canal and the route towards the littoral islands that separate the lagoon from the Adriatic (Figure 1). Its focal point is the Piazza and the Piazzetta with the Ducal Palace and Basilica of San Marco, the Doge's residence and private chapel The Piazza is enclosed on three sides by the loggia façade of the Procurators of San Marco who had the most prestigious status after the Doge, being elected for life with the task of looking after the Basilica (Figure 4). The Piazzetta forms an extension of the Piazza to the waterfront, flanked by the Palace on the right and Sansovino's Marciana Library on the left side. Until 1846, when the railway line connected Venice with the mainland, the

1. Doge's Palace
2. Porta della Carta
3. San Marco
4. Orologio
5. Old Procuracies
6. San Geminiano
7. Area initially occuppied by the 13th-Century Procuracies
8. New Procuracies
9. Loggetta
10. Libreria
11. Porta da Mar
12. Mint
13. Scala dei Giganti

0   25   50

Figure 4. Piazza San Marco – sixteenth century. Diagram by the author.

Piazzetta was the formal entrance to the city. When foreign dignitaries and ambassadors would arrive from the lagoon, the first view they would have was from the waterfront looking to the Piazza through the Piazzetta. The two columns at the water's edge (*Porta da Mar* or Columns of Justice) would greet them, bearing symbols of the two patron protectors of Venice. The columns also marked the place where executions of criminals and spectacles would be conducted. The Piazza, the Piazzetta and the entire water expense of the Basin were the heart of ceremonious occasions, from processions to festivals, regattas and mock sea battles, expressing the ritual structure of society and the social order of justice. The entire area was shaped theatrically, staging rituals and public

occasions since early times, but in the sixteenth century its definition as theatre became formalised.

An idea of how the complex looked in early days is through Fra Paolino's map (c. 1346), showing a defensive compound that encloses the palace and the Basilica of San Marco. The original castle-palace was on the water's edge, surrounded by a natural moat of canals, while the Basilica was facing a square, which was just half the length of the present area. At the west end of the square was a canal on the opposite bank of which stood the old church of San Geminiano. The first major transformation leading to the present appearance of the Piazza came in the 1170s with Doge Sebastiano Ziani (1172-1178). Ziani's vision was to create a vast space where Venetian citizens would congregate justifying his political choices[40]. He doubled the length of the Piazza, created a continuous line of buildings around it for the Procurators; created the Piazzetta, placed the two columns on the water's edge and enlarged the Ducal Palace (Fenlon, 2010). The next significant changes came in the fourteenth century, with the redevelopment of the Basilica and the Palace (1340). A triumphal arch between the Palace and the Basilica (Porta della Carta) was also constructed at that time (c. 1443), forming an official entrance to the Palace's courtyard for foreign dignitaries. Finally, the construction of the Clock Tower (Torre dell' Orologio) begun at the north side of the Piazza (1496). The Orologio was the most advanced astronomical clock in existence, celebrating the entry point to the commercial thoroughfare leading to the Rialto. The state of the Piazza at the turn of the fifteenth century can be seen in the famous woodcut of Jacopo de' Barbari (1500), showing the central wing of the Orologio which at the time was under construction.

[40] Foscari, Elements of Venice.

In the first decades of the sixteenth century, the Venetians intensified their efforts in improving the image of the city in inverse proportion to the declining political power of Venice. Membership in the Great Council (the political body that governed Venice consisting of noble men) became hereditary at the end of the fourteenth century, halting upward mobility and stabilizing the social structure of Venice into patricians, *citadini* and *popolani*41. With the defeat of the Venetians at the War of the League of the Cambrai (1508-1516), the circumnavigation of Africa (1498), the discovery of America (1492) and the fall of Costantinople (1453), Venice lost its dominance in trading networks, ceasing to innovate as an economic and political power. These changes brought a turn from naval commerce to land ownership in the Veneto, a major geopolitical project that led to innovations in land reclamation, irrigation and cartography, as well as a new building type invented by Palladio, the classical farm-house or villa42. The second major project of the Venetian Republic was the investment in public works that saw the aggrandizement of the major civic spaces in the city, such as the remodeling of the Piazza San Marco.

An ambitious urban renovation was inaugurated following the appointment of Jacopo Sansovino as state builder (1529) in charge of the entire area of the Piazza complex. Sansovino widened the Piazza and the Piazzetta, improving the position of the Basilica in relation to the other structures. He completed the Procuratie Vecchie, built the Little Loggia (Logetta) at the foot of the Campanile, the new government Mint (Zecca) facing the Basin just around from the Piazzetta, and begun the Marciana Library. He also proposed a unifying two-storey wing extending from the Library to the

41 Romano, Patricians and Popolani.

42 Ackerman, Palladio; and Cosgrove, The Palladian Landscape.

church of San Geminiano. This had the impact of turning the Campanile to freestanding monument and giving the Library a north façade on the Piazza. It was Vicenzo Scamozzi (1548-1616) and Baldassare Longhena (1596/97-1682) who completed this part of the project, realizing Sansovino's idea for a wider Piazza and continuous façade around its fabric. The connecting section joining the Procuratie Nuove with San Geminiano was eventually demolished under Napoleonic rule in 1807 and replaced by an imperial ballroom.

The Basin had also changed over the fourteenth and fifteenth centuries, including the island of the Giudecca which was extended eastwards around 1330, creating a narrow canal between it and the island of San Giorgio, on which foreign dignitaries entered the city from the south. Towards the end of the sixteenth century Palladio's churches - San Giorgio Maggiore (1565-1611) and the Redentore (1577-1592) - changed the aquatic realm, commanding views to the south. The two churches were completed in the early seventeenth and late sixteenth century, respectively. Longhena's centralised church of Santa Maria della Salute (1631) was built next, in the strategic site adjoining the Customs House (Punta della Dogana) in Dorsoduro. Dominating views at the entrance to the Grand Canal with its towering dome, it added to the constellation of religious buildings that punctuate the Basin.

Before examining how the urban transformations in the sixteenth century changed the spatial structure of the Piazza, it is necessary to explore how its spaces and monuments were viewed at the time. A vivid representation is Jacopo de' Barbari's woodcut, one of the earliest demonstrations of Venice's Myth, synthesising political ideology with the urban fabric (Figure 6). Printed to the scale of a mural, the woodcut depicts Venice framed by the lagoon as a triumphant metropolis. Constructing a moralising portrait of the city, de' Barbari's map was part of the tradition of *Mappae*

Mundi (medieval world maps) produced in the fifteenth century by Venetian cartographers. Two diagonal lines established by the wind rays emanating from the eight gods that circle the city organise the print, intersecting at the top of the Campanile in the Piazza. The composition of the diagonals and the vertical axes establishes an *axis mundi* (a world pillar) placing the Piazza, the Rialto and the urban streets that connect them (the Merceria) at the 'centre' of the city, and the city at the centre of an ideal cosmology. The Venetians and visitors that were familiar with Venice would be able from the symbolic geometry and the physical facts of the topography to perceive the pedestrian route between the two hubs as the urban spine of the city. Jacopo's image translated the empirical city to a transcendental mythical city of imperial achievement and republican ideology. Being both factual and fictional, the print raises the fundamental problem of deconstructing Venice's Myth into its constituents - spatial relationships and ideology – in order to understand its internal conflicts. How did the symbolic instruments of Venetian identity relate to the city's spatial geography, social and cultural institutions? Answers to this question can help illuminate the HUL approach, showing the layered relationship between the spatial, topographical and visual organisation of the urban fabric (the physical layer – tangible), the socio-economic patterns (the cultural layer – intangible) and the socio-cultural values (the associative - intangible layer) pertaining to Venice and societies in general. This question is explored by looking at two filters: first the spatial organisation of the Piazza and the Basin in relation to the city as a whole; second, at popular myths, local traditions and civic rituals.

The choice values of the pedestrian network of the city reveal that the Piazza and the Piazzetta are criss-crossed with lines, connecting them with the squares of the neighbouring islands. Two strong lines, one traveling through the Merceria, and the

other through the Calle dei Specchieri connect the complex, through the *campi* of San

Salvador and San Lio with the commercial district of Rialto (Figure 2). The combined

pedestrian-water structure shows a similar pattern, although emphasis in terms of choice

values shifts from the pedestrian elements to the canal infrastructure (Figure 2).

The distribution of the measure of integration in Figure 3 shows that the Rialto,

the Piazza and a group of streets connecting these two hubs define a deformed wheel

that links the heart of the city with its periphery extending in opposite directions. This is

a common characteristic in cities, easing movement from the outside to the central

streets and squares, facilitating trade and large-scale communication[43]. While the

property of integration reveals the strength of San Marco and the Rialto in the context of

the city as a whole, the measure of choice shows that the Piazza and the two squares on

either side of the Rialto have the highest values in comparison to all other *campi* in the

city. The Piazza and the Piazzetta are highly accessible spaces, channelling movement

from everywhere to everywhere else, as well as attracting movement from every place
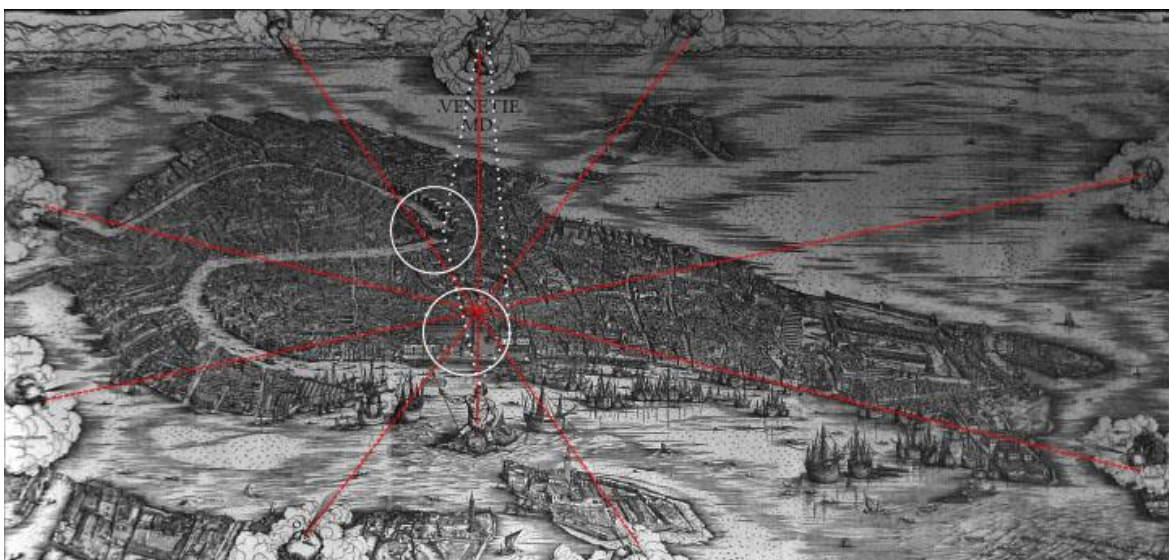
to the heart of the urban complex.

Figure 5. Jacopo de' Barbari view of Venice (c. 1500) with superimposed geometrical lines. Photo credits are:© Photo Archive -Fondazione Musei Civici di Venezia.

[43] See above note 18.

How did Sansovino respond to these properties of the city? This question can cast light to attitudes about design interventions in relation to the medieval fabric of Venice which had evolved over hundreds of years. This is explored through the visibility structure of the Piazza complex seen first, separately from the organisation of the surrounding fabric; secondly, in relation to the urban structure of the city as a whole, and thirdly in the intermediate scale of the surrounding islands. The results show that in Sansovino's scheme visual integration spread from the space in front of the Basilica to the entire layout (Figure 6). Improving the visual connections between the Piazza and the Piazzetta, Sansovino expressed the union of religious and political life. This union is also communicated through two strong diagonal links connecting the Palace and the Basilica with the western part of the Piazza, its more secular side. Sansovino's efforts to unify existing elements into the new scheme therefore, demonstrate a concern for integration between the aesthetic treatment of buildings - such as the continuous loggia around the Piazza and the placement of archways at the intersection of important axes - and the urban fabric.

Figure 6. Analysis of visibility structure of the Piazza of San Marco, 15th century (top left); visibility structure of the Piazza San Marco in the 15th century in urban context of surrounding islands (top right); visibility analysis of the Piazza San Ma

This is strikingly revealed when we look at the Piazza in the context of the neighbouring islands. A powerful axial link, clearly distinguished by strong red colour, emerges from the Merceria through the central archway of the Orologio, thrusting diagonally forward to the Columns of Justice. The line asserts the north-south pattern of integration that joins the Piazza and the Rialto (Figures 3, 6). The consonance between the properties of the Piazza and the properties of the city as a whole shows the strong role of the Piazza and this particular axial link across all scales of the analysis. The significance of this link in the life of the Venetians is evident in the fact that in the fifteenth century they felt the need to give a ceremonial entrance to the commercial thoroughfare by building the Orologio.

In Jacopo's woodcut this axis has geometric definition (Figure 5). In the Piazza it has architectural definition through significant buildings and their iconographic programme, such as the Orologio, the Loggeta, the Porta della Carta and the two Columns of Justice. Emerging from the collective unconscious efforts that built Venice over time, the Merceria axial link helped to articulate the self-conscious relationship between architecture, the city and the viewer. Sansovino seized the urban properties of Venice and used classical architecture to powerfully express the city-state and the Republic. It is this interweaving of the urban structure crafted by many hands with the architectural structure, made by fewer hands, that defines the intersection of humanist architecture with the city and urban design. For centuries, discourse in architecture, urbanism and even the area of conservation has been establishing a clear-cut boundary between intentional design, producing significant urban structures and monuments, and the anonymous processes leading to the collective formation of the commonplace urban fabric. This research challenges this view, showing that the physical transformations

that took place in the Piazza acknowledged the city as cultural and physical resource of structures accrued over time by the economic, social and religious activities of the daily city, and enhanced them through monumental architecture to express the civic values of the ceremonial city. Yet, as the next section shows, this process was one of appropriation and domination by the ruling elite, based on institutionalised forms of centralised urban governance that had a city-wide focus. Permeated by Renaissance cosmological theories, the Venetian patriciate managed the area through the aesthetic category of the stage-set, giving rise to scenographic aesthetic bias in heritage and conservation.

Stagecraft: Bringing the Ideal into the Urban Fabric of the Real

The Piazza as scenographic setting

Figure 7. Sebastiano Serlio Tragic scene (left); The Piazzetta seen through the water. The right side image has creative commons licence as follows: Image by Mariordo (Mario Roberto Durán Ortiz) -own work, CC-BY-SA 4.0 via Wikipedia Commons (https://comm

A look at the Piazzetta from the water reveals the close relationship with the Tragic scene of Serlio (Figure 7). Serlio interpreted the three typical scenes of antiquity described by Vitruvius as elaborate exercises of urban perspective: the Tragic scene which was defined by palace facades of elegant characteristics, corresponding to the administrative use of space; the Comic scene consisting of irregular buildings, related to the everyday use of space; and the Satyric scene associated with the disordered uncultivated nature.

The correspondence of the Piazza with the Tragic scene is evident in Sansovino's efforts to clear away the shacks of butchers, cheese and salami sellers who had infested the area[44]. Closely associated with this was a decree that eliminated the slaughtering of the pigs and bulls by the crowds during carnival, replacing popular elements with more noble entertainments such as comedies, ballets, and pageants[45]. The intention of the authorities was to magnify the Piazza for state ceremonies, elevating it from Comic scene - characterising the streets linking the Piazza with the Rialto - to Tragic setting. The Tragic theatrical function of the Piazza is also evidenced in the concentration of many rituals in this space. In medieval Venice ritual was the result of popular mythopeoesis, and was organized by the parish islands. In the sixteenth century, with state intervention, parochial rituals were decreased in number, and the island communities were suppressed so that attention would turn to civic rituals in the Piazza.

Civic ritual acquired official organization by the state and became hierarchical – with the Doge at the centre, the confraternities and guilds marching at the front of the Doge and the patricians following behind him, reflecting in this way the hierarchical structure of society. Theatre, architecture and political administration coalesced at the expense of the anonymous spontaneous production of the city. The emergence of architecture as liberal art coincides with theatrical civic ritual and the official historiography by the Venetian humanists who contributed to Venice's Myth as the most serene Republic. From that moment architecture and the city were no longer part of the same continuum, developing along paths that remain paradoxically distinct as well as interrelated.

[44] Howard, Jacopo Sansovino: Architecture and Patronage in Renaissance Venice.

[45] See note above 38

Figure 8. The Basin of San Marco, geometrical relationships and views in purple (from the entrance to San Marco through the Merceria and from the Piazzetta) – diagram by the author.

Palladio's churches in Venice's southern islands were built at the end of the sixteenth century, completing through geometrical alignments and frontal relationships the transformation of the Piazza and the bay into an aquatic theatre (Figure 8). In the *Four Books of Architecture* Palladio writes that temples should face important public buildings, rivers and watery expanses (1570). His church of San Giorgio Maggiore faces the Piazzetta and is struck by the extension of the Merceria line that links with the Rialto (Figure 9). If the Piazzetta was the 'eyes of the Republic' the Rialto was its 'viscera'[46]. We encounter here de' Barbari's axis extending from the interior of the city

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[46] See note above 37

to the island of San Giorgio and notionally beyond where the lagoon meets the Adriatic, uniting everyday places with cosmological relationships and sacred geography, such as the inside and outside, the city and the sea, commerce and the empire, civic identity and collective parochial identity, city-craft and statecraft, or the anonymous production of the city by many hands and the conscious appropriation of ritual by patricians that were exalting the state and the Republic.

Figure 9. View of San Giorgio Maggiore from the Merceria – photo by the author.

In the festivity of the Redentore on 3 of May 1577 as well as in all the subsequent annual rituals of Christ the Saviour in the third Sunday of July, the Venetians cross the bay through a temporary causeway of boats that stretch from the Piazzetta to the Giudecca. Seen from distance across the water, churches in the early days of the Venetian archipelago would offer sure anchorage for sailors, under the protection of the parish saint. Founded on maritime enterprise, Venice's islands had old associations with navigational practices, guided by churches that were sacralizing its

waters through *loci sancti*. Toponymy bears witness to this process, as Venice's *campi* are named after their saints, while portolan maps linking rose compasses with navigational lines must have expressed for early Venetians a water-borne network of sacred sites.

Palladio and his patrician mentors, such as Daniele Barbaro (1514-1570), were thinking according to cosmological references, seeking connections between ecclesiastical architecture, the city, mathematics and cosmological structures, a common in architectural theory at the time. Following Neoplatonic theories of cosmological harmony, they saw architecture and the city as representational diagrams of cosmological expression translated into civic integration. When Venice's islands joined, the waterborne network of squares and churches was ritually connected through processions, transforming streets and canals into *viae sacrae*47, as exemplified by the network of choice. The geometric coordination of religious buildings in the Piazza and the Basin captures the grafting of navigational and ritual spatial networks of medieval Christian origin onto republican ideology and humanistic cosmology, as exemplified by Renaissance classical monuments and churches.

These ideas found expression in close relationship with theatre. Temporary theatrical structures such as the *Teatri del Mondo* (theatres of the world) alluded to the union between celestial and terrestrial spheres with representations of planets and zodiac circles in their ceilings. A few years before the construction of Palladio's churches, in 1560, Alvise Cornaro proposed his plan for transforming the Basin to a theatre and ideal garden. His project included a floating Roman theatre, a fountain with water from the rivers of the Veneto and an island-hill with an open loggia at its summit.

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47 See note above 38

His theatre prefigures Palladio's Teatro Olimpico in Vicenza and had its roots in the tradition of the *Teatri del Mondo*. Cornaro described it as a place of spectacle and as a spectacle in itself, explaining that all the elements of the project could be synchronically seen from the greatest theatre of the Serenissima, which was the Piazzetta[48]. The second project that had an influence on the Basin was Guilio Camillo's theatre of memory, published in his '*L'idea del teatro*' in 1550. In this work Camillo described a wooden structure constructed as a Vitruvian amphitheatre. The observer would stand on the stage and look at a semi-circular structure of seven tiers marked with images and boxes. The structure was intended to represent 'the universe, expanding from First Causes through the stages of creation'[49], and enabling complete memory of all the knowledge that was available at the time.

Vitruvius' Roman theatre consisted of four isosceles triangles centering on the orchestra. Seated in the network of this spatial geometry, the audience was part of cosmological perspectival representation. The same principles were used in Teatro Olimpico by Palladio (Figure 10). Vitruvius', Serlio's, Cornaro's and Camillo's theatres came together in the scenographic treatment of the Piazza and the Basin, revealing conscious construction of the city as public theatre, and representational mythical world. For Vidler, the synchrony of theatre and street represented 'the dual role of urban space and theatrical space in humanist culture'[50], the mnemonic function of the former reinforcing the life actions of the latter.

[48] See above note 46.

[49] Cosgrove, The Palladian Landscape, 242.

[50] Vidler, The Scenes of the Street and Other Essays, 8.

These projects have autonomous theoretical and aesthetic interest, but in this paper the emphasis is in explaining how they have influenced the view of architecture and the city as scenographic and aesthetic phenomena, rather than as complex entities of evolutionary adaptation. The changes of the Piazza and the basin from a water-borne navigational-symbolic network of sacred sites to a scenographic network of monuments reveal the roots of visual appreciation of cities and buildings, framing and sacralizing favoured objects through privileged landscapes of power. In their study of representation and narrative in heritage, Steve Watson and Emma Aterton cite Bella Dicks to explain that cultures of display 'transform sites to sights', capitalizing on new forms of cultural consumption[51]. Here in the transformations of the Piazza and the Basin, at the very inception of humanist discourse, are illustrated the origins of scenographic visuality as dominant tool in architecture, cities and urban management.

The Venetian patricians and architects were operating in a different intellectual, socio-economic and political context. Yet, the theoretical heritage they left us remains unexamined in terms of the relationship of architecture and the city. The transformation of the Piazza and the Basin annexed the urban network as a field of popular mythology, ritual geography and everyday practice, separating the aristocratic definition of the city as city-state from the collective formation of the city as everyday life. If architecture as liberal art was defined by conscious knowledge, it was equally defined by the elite mechanisms of the society it served. Both architecture and ritual became tools through which the city's complexity was simplified, ordered and classified projecting the image of a perfect society top-down. The urban transformations in the Piazza and the Basin signal not only the origin of ideas in architecture, but also the roots of inherited

[51] Waterton, E., and L. Smith. "The Recognition and Misrecognition of Community Heritage."

attitudes, privileging elites, legitimized discourses and expert driven institutions. The International Council on Monuments and Sites (ICOMOS) is one such example of an expert-driven institution that delineates urban heritage conservation.[52] Interestingly, the fundamental document that initiated urban conservation as an international policy movement is the Venice Charter[53].
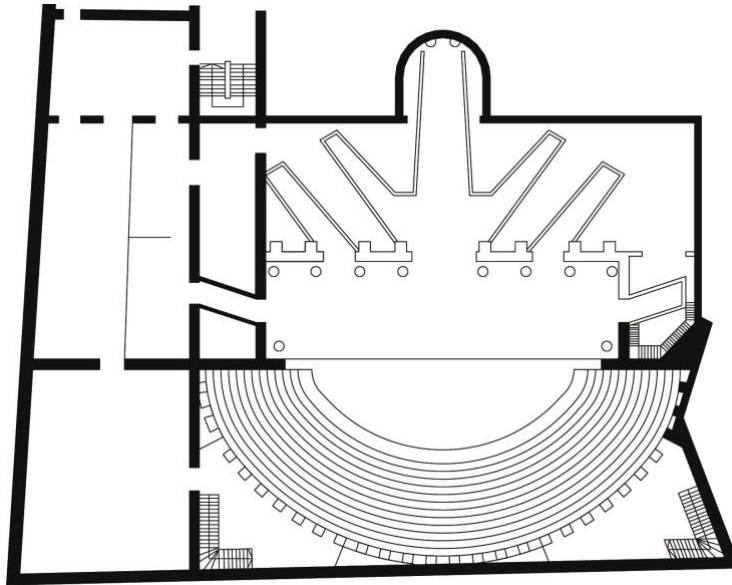

Figure 10. Palladio's Teatro Olimpico – drawing by Nick Helm architects.

Conclusion

In the squares, the canals and the alleys of Venice, the Venetians were celebrating their city as the foundational place of their society. The city of Venice was the outcome of

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[52] ICOMOS (International Council on Monuments and Sites) is an international non-governmental organisation created in 1965 at the initiative of UNESCO at the Second Congress of Architects and Specialists of Historic Buildings, held in Venice, Italy. ICOMOS is an association of professionals that currently brings together approximately 9,500 members in 110 countries. Its international secretariat is located in Paris. Its work is based on the principles enshrined in the 1964 International Charter on the Conservation and Restoration of Monuments and Sites (the Venice Charter). Bandarin & van Oers, 'The Historic Urban Landscape', 38).

[53] Bandarin & van Oers, 'The Historic Urban Landscape'.

evolutionary urban development, mythopoesis, symbolism and ritual. Along with its

gradual construction the city was also developing its history and mythological

foundations based on ritual processions. Ritual was dramatizing the creation of Venice,

uniting streets, architecture, myth and informal theatre in a coherent structure of space

and place. In their writings about the political and mythological interpretation of the

city, the Venetian humanists translated an inchoate collection of beliefs into official

historiography. Yet, as research by Zimmerman[54] suggests, they did not describe the

ritual processes, obviously knowing that people, immersed in the city customs since

they were born did not need detailed descriptions. Having internalized the spatial and

ritual structure of society, the Venetians had no need for verbal records. The space of

the city was a matter of everyday practice and memory, rather than writing and

speaking, which characterized the development of architecture as discipline separate

from the artisanal traditions. Urban space was related to movement, theatrical

performance and their sequence. Its significance was defined based on spatial practice

and not specific instructions, such as go to this place, follow this route, pass through this

place, or perform such and such activities and ritual actions (*ibid.*).

In the sixteenth century the city as spatial, ritual and mythological construction

that follows from collective spontaneous processes was appropriated by official

historiography architecture and civic ritual. It has remained since then in the blind spot

of conscious design rooted in the schenographic aesthetic understanding of space that

leaves the signature of an author (or a limited set of authors). For Vidler, the Tragic

scene would preoccupy architects and planners – we may add conservation

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54 Zimmerman, 'The City as Practice: Urban Topography, Pictorial Construction and Liminality
in Venetian Painting'.

professionals - for three hundred years for the order and the power it serves. Instead, the Comic scene, the scene of everyday life, 'would take the role of an environment of people, homely no doubt, but disorderly, and often insalubrious, and therefore to be contained of transformed through planning'[55].

What can the case of Venice tell us about the future of the Historic Urban Landscape Recommendation? We encounter in Venice the early origins of Laurajane Smith's idea of 'hegemonic discourse, which acts to constitute the way we think, talk and write [and act – my addition] about heritage'[56]. For Smith, heritage discourse 'naturalizes the practice of rounding up the usual suspects to conserve and 'pass on' to future generations, and in so doing promotes a certain set of Western elite cultural values as being universally applicable' (*ibid.*: 11). As opposed to the monumental expressions of statecraft and stagecraft that have played a key role in formulating the urban conservation and intervention ideals in the twentieth century, the daily practices of city-craft do not have means for being represented, recorded and transcribed. What cannot be recorded cannot be transmitted, gradually excluding this category from discourse or attempting to order and tame it through dominant ideologies, gradually leading to the rift between architecture and the city, representation and spatial practice. Losing the capacity to unite these three realms, we are constantly missing the possibility to influence and enrich them through an inclusive conservation approach and architecture leading to urban renewal.

Returning to the questions raised at the beginning of this paper, the definitions of the HUL and the recent interdisciplinary expansion in heritage will benefit from

[55] Vidler, The Scenes of the Street and Other Essays, 299.

[56] See above note 29, 11.

understanding the historic origin and evolution of architecture and integrate into its framework the spatial disciplines and arts that use computer based descriptions to analyse the complexity of buildings and cities as social phenomena. The discipline of space syntax employed in this study notates the large quantities of spatial elements in a city and calculates their interrelationships, a process that is not possible to be handled by the designer's mind (because of the quantity and complexity of information). It also helps explain how these quantities are organized into tangible and intangible structures in space and time (city-craft), which due to their complexity remain undocumented.

Concluding, this study provides a framework for clarifying the difference between the urban landscape as the anonymous collective outcome of society and as authored product of design, studying each one separately as well as their interrelation. Secondly, it illustrates the need for theories and methods, arguing that practical heritage tools based on simplistic concepts cannot capture the complexity of urban phenomena. Thirdly, it demonstrates the importance of revisiting the foundation of architecture and the urban disciplines as a way to better understand interdisciplinary knowledge in the heritage sector. Finally, it approaches the practice of heritage as one of social construction and interpretation, involving the selection of urban structures, from buildings to borders of entire areas, and from legal documents and political instruments to ideologies through which societies are seen from dominant positions, often disguising conflict. In order to integrate local communities and their shared values in the HUL agenda it is important to consider that many cultural landscapes, by different communities of interest exist, both tangible and intangible layered on top of one another[57].

[57] See above note 29.

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Figure captions.

Figure 1. Venice with squares and churches (shown in blue colour) and Piazza San Marco – diagram by the author.

Figure 2. Betweeness Centrality (Normalised Angular Choice), pedestrian network (left); canal and pedestrian network (right) – diagram by the author.

Figure 3. Venice. Closeness Centrality (Normalised Angular Integration), pedestrian network – diagram by the author.

Figure 4. Piazza San Marco – sixteenth century. Diagram by the author.

Figure 5. Jacopo de' Barbari view of Venice (c. 1500) with superimposed geometrical lines. Photo credits are:© Photo Archive -Fondazione Musei Civici di Venezia.

Figure 6. Analysis of visibility structure of the Piazza of San Marco, 15th century (top left); visibility structure of the Piazza San Marco in the 15th century in urban context of surrounding islands (top right); visibility analysis of the Piazza San Marco in the 16th century in urban context of surrounding islands (bottom) – diagrams by the author.

Figure 7. Sebastiano Serlio Tragic scene (left); The Piazzetta seen through the water. The right side image has creative commons licence as follows: Image by Mariordo (Mario Roberto Durán Ortiz) -own work, CC-BY-SA 4.0 via Wikipedia Commons (https://commons.wikipedia.org/w/index.php?curid=61002136).

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Figure 9. View of San Giorgio Maggiore from the Merceria – photo by the author.

Figure 10. Palladio's Teatro Olimpico – drawing by Nick Helm architects.