"The Void not Filled with Words": The Role of Venice in *Invisible Cities*

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Summary

From cosmic particles to gold-leaf tarot cards, Calvino's fictions are variations on-a-theme, confronting literature, direct observation of the world and knowledge as kaleidoscopic games of narrative possibility. In *Invisible Cities* the theme of variations takes the form of microtexts grouped into an overarching text, a prose poem for cities that recounts how Marco Polo, the Venetian traveller, describes to Kublai Khan, the emperor of Mongolia, the cities of the great Khan's empire. Kublai soon realises that every time Polo describes a city he says something about Venice and that all cities are merely variations, achieved by an interchange of elements from Polo's native city. Calvino described *Invisible Cities* as a 'space' into which the reader must enter, roam around, and even lose direction, implying that the open-ended structure of the book exemplifies a city's spatial network. Since most cities are built as spatial networks, what role does actually Venice play in this fiction? Is Venice a loose metaphor for Calvino's multi-faceted text, or does it bear wider significance for his literature? Through an analysis of Venice's history and geography and an analysis of Calvino's fiction, this chapter describes Venice and *Invisible Cities* as systems that resemble a probabilistic algorithm, that is, a structure with a small number of rules capable of producing a large number of spatial and narrative variations. It argues that from islands and building blocks to official histories and fables, Venice for Calvino is not simply an archetype for the literary imagination, but also a multitude of recombinant elements, capturing its spatial, social and mythical legacy. Taking inspiration from Polo's travels in *Il Milione* and other canonical texts, Calvino, found in Venice a combinatorial universe of artisanal craftmanship, like an ancient artifact of epic or myth, where the theme of multiplicity develops its variations.

Introduction

From cosmic particles to gold-leaf tarot cards, Calvino's fictions are variations on a theme, confronting literature, direct observation of the world, and knowledge as kaleidoscopic games of narrative possibility. In *Invisible Cities*, the theme of variations takes the form of 55 micro-texts and 18 dialogues grouped into an overarching text, a prose poem for cities that recounts how Marco Polo describes to Kublai Khan the cities of the great Khan's empire. To the

average reader, *Invisible Cities* is a collection of freely interrelated narratives that can be read in sequence or at random. What complicates matters more, as Kublai suspects, is that cities seem to exchange their elements and come to resemble each other. In a visit to Kin-Sai, a city in China built on a lake, the Great Khan asks Polo about his native city, Venice. To distinguish the other cities' qualities, Polo replies, he must speak of a "first city" which remains "implicit," and that every time he describes a city he says something about Venice. In response to Kublai's challenge to describe Venice "as it is," Polo remarks that once fixed in words, memories' images are erased: "Perhaps I am afraid of losing Venice all at once, if I speak of it. Or perhaps, speaking of other cities, I have already lost it, little by little" (Calvino 1974, 86).

Reminiscent of the 13th-century travelogue, *Il Milione*, and Moore's *Utopia*, *Invisible Cities* has Venice at its heart, as a "secret watermark" of the fiction.[1] The central role of Venice is reinforced by the position of this particular dialogue at the numerical centre of the book, immediately after the fifth chapter. Venice was Polo's native city, to which he returned at the end of his travels, eventually dictating his adventures to Rusticello da Pisa, a romance writer who wrote *Il Milione*, or *Books of the Travels of the World* (1295) (Man 2009). Venice was also an empire, like the Great Khan's, dominating over trading routes in the Eastern Mediterranean. Thus, Venice forms a context for *Invisible Cities*, a repository of Polo's memories, feeding his imagination in a continuous experimental process of cities created as Venice's variations.

Polo's hesitation to explicitly speak of his native city sets the thought of Venice in the mind of the Khan, and in the mind of the readers, stimulating a quest for the perfect city from which the others derive. *Invisible Cities* is meant to provoke thought rather than lead towards disclosure. Yet, as the final dialogue centres on the question of utopia, Venice features again *in absentia*, imperceptibly woven into the narrative. Alluding to the assortment of individual city-tales, Polo states that his perfect city is made of fragments: "I will put together piece by piece, the perfect city, made of fragments mixed with the rest, of instants separated by intervals, signals one sends out, now knowing who receives them" (Calvino 1974, 167).

The matching of expressions—"little-by-little" in the central dialogue on the lagoon city and "piece-by-piece" in the final one—recentres the fiction on Venice. Poised between being lost through the narration of other cities presented as narrative fragments, and being regained through the same mechanism of fragments, Venice is revealed as a template for the entire fiction. Calvino implies that *Invisible Cities* contains multiple other Venices, gradually building up a fiction that is comparable to Venice. But these other cities inspired by Venice may also threaten the coherence of the "first city" and hence, the novel. In *Six Memos for the Next Millennium*, Calvino (2009) described *Invisible Cities* as a space into which the reader must enter, roam around, and even lose direction, indicating that the open-ended structure of the book exemplifies a city's spatial network:

> The book in which I think I managed to say most remains Invisible Cities, because I was able to concentrate all my reflections, experiments, and

> conjectures on a single symbol [the city]; and also because I built-up a many-faceted structure in which each brief text is close to the others in a series that does not imply logical sequence or a hierarchy, but a network in which one can follow multiple routes and draw multiple ramified conclusions. (Calvino 2009, 71)

In spite of the author's illuminations, *Invisible Cities* remains an enigmatic book blurring the distinction between fact and fiction, reality and imagination. These strategies create disorientation, strengthening the need for intelligibility. The questions Kublai asks Polo and his search for a model that makes his empire cohere mirror the questions in the readers' mind: what makes a story out of these units, a fiction out of micro-texts, a whole out of these fragments? Each time the emperor, and we the readers, think we have discovered a thread, we find ourselves back where we started, confounded by allegories and mist effects.

Can *Invisible Cities* illuminate Venice, and can the city explain the enigmatic qualities of Calvino's fiction?

In what follows there are two interwoven accounts, Venice's history and urban form, and Calvino's literary strategies in the novel, engaging the morphological and conceptual exchanges between the two artefacts. I approach this subject neither as a literary critic nor as geographer or urban planner, but as an architect-scholar, looking at what makes literary form 'speak' to space and form in cities and architecture. It is important, though, to issue a few words of warning: first, by focusing this study on Venice, the range of fantastic and real-world cities in Calvino's text inevitably recedes to the background. This does not mean that the contribution these other cities make to the fiction should be underestimated. Second, the common factors in Venice and *Invisible Cities* must not be taken literally or exaggerated. Throughout its history, Venice defined itself as a mythical place. Yet it is a real-world context experienced through spatial immersion and direct observation. *Invisible Cities*, on the other hand, is a work of fantastic literature, experienced in thought through ambiguity and metaphor.

I argue that Venice in *Invisible Cities* is an analogical model for literature, constructed with extraordinary care through a play of textual symmetries, adventurous combinations, and echoes. In his attempts to capture the unspeakable variety of cities and the visible world through language, Calvino locates Venice at the border between the sayable and the unsayable, dream and reality, as the eternal place of urban and literary pleasures. Mentioned only a few times in the text, Venice, I suggest, is not explicitly constructed through words, but in the spaces between one word and another. Ultimately, Venice in *Invisible Cities* reveals itself as the quintessential city for space-making and story-making, the architectural and literary imagination.

The City and Literature as Networks

Venice has a long history as an archipelago reaching back to the Dark Ages in the sixth century, when residents from the Paduan plains fled to the Venetian lagoon to escape the

Lombards' invasion. The city emerged from the lagoon century after century, conquering new territory by dredging, annexing pieces of land, and linking isolated islands. By the late 15th century, Venice had been transformed into a compact city, criss-crossed by canals, an extensive pedestrian network, and a dense urban fabric. The earliest map of the city shows a landmass perforated by canals.[2] Some 90 churches are shown on this map, most of which are still standing in the same squares, or *campi*, as the squares are known in Venice. If we look closely at the churches and *campi* of Venice, we see that they are joined in a pervasive network of routes by a property that in network theory is called 'betweenness centrality', figure 1 (Psarra, 2018). This property captures the simplest paths that are most frequently crossed by movement between any pairs of streets in an urban complex. When we connect the canal and pedestrian networks at the points in which they overlap through loading steps, and disconnect them at the bridges, we see that the squares are still interlinked in a network of continuous routes (ibid.) figure 2. This means that the squares feature as nodes in the overlap of the two networks, canals and alleys. The nodal position of the *campi* can be traced to the time the islands were separated and *campi* were directly serviced by boat. As the islands were joined, the squares became interconnected by both water and land, facilitating the unloading of merchandise and people.

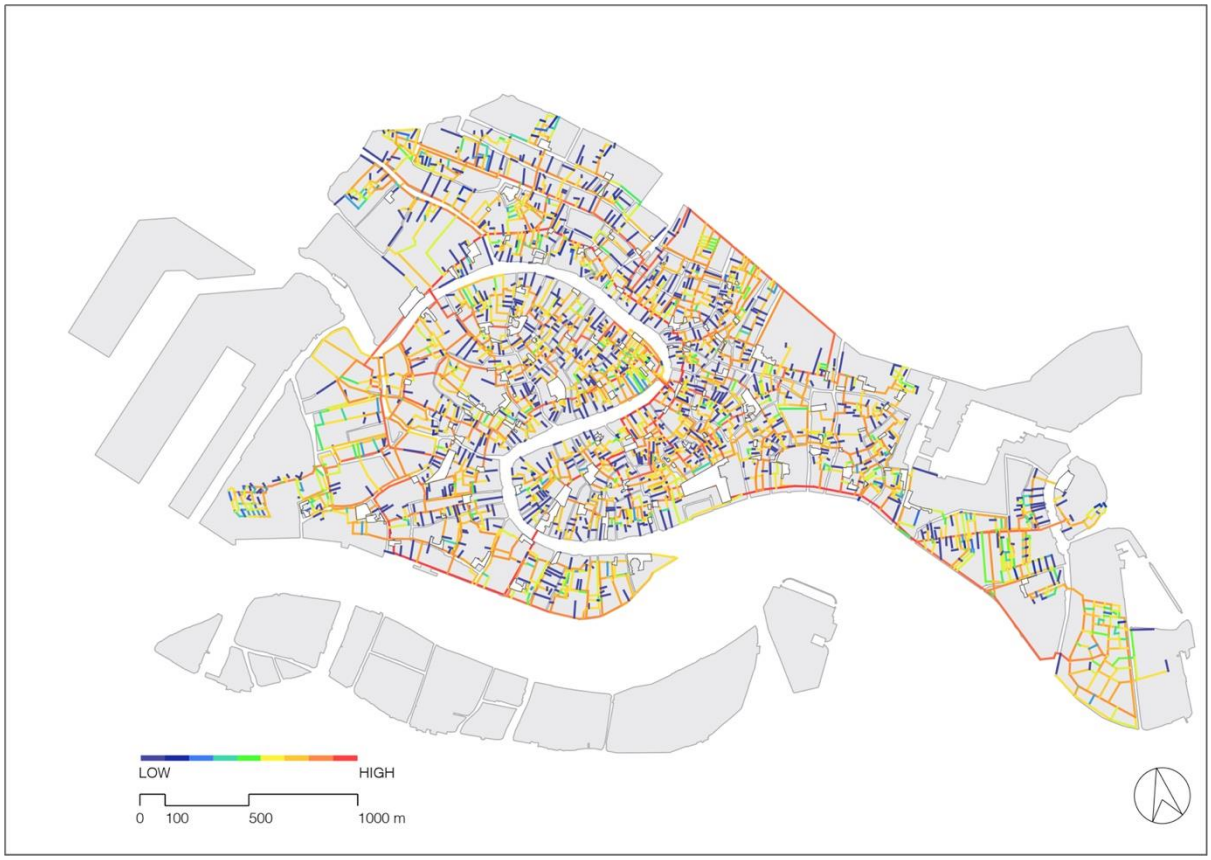

Figure 1. Betweeness centrality values, capturing the most frequently crossed paths of the pedestrian network – Drawing by Sophia Psarra, (2018) The Venice Variations:

This property captures a pattern of evolution based on social and economic activity since early times. The *campi*, the churches, and houses built around them were the urban and social nuclei of parish islands that dotted the archipelago (Howard 2002). Parish squares formed semi-autonomous community centres that contained the houses of leading families. They

were places of worship, accommodating markets and artisans' shops and serviced by their proximity to a canal. Squares also facilitated the collection of fresh water. This is evident through the wellheads, hundreds of which are still present in Venice today. The parishes were the fundamental units of the Venetian society, with many nurturing their own social and economic identity and allegiance to particular saints (Muir 1981). The network of parish squares and their nodal position in the two infrastructural systems therefore, embodies the origins of the urban and social structure of Venice in island communities, each serving as a "microcosm of the city as a whole" (ibid. 148).

For Calvino (1984), cities are all, or almost all, the result of successive adaptations to various functions, not foreseen in their previous plan. Similarly, "a work of literature is one of these minimal portions in which the existent crystallizes into a form, acquires a meaning—not fixed, not definitive, not hardened into a mineral immobility, but alive as an organism" (Calvino 2009, 70). In *Invisible Cities*, the organic metaphor is set against the metaphor of the mineral as a paradigm of knowledge, as many of the cities Polo describes undergo transformations, expanding in concentric circles, adjusting their streets in response to a recurring dream, or growing to amorphous suburbs. The organic metaphor also relates to the ways in which *Invisible Cities* was born, one piece at a time, with the individual units written on different pieces of paper (Calvino 1993). Calvino gradually grouped these units into "an overarching macrotext with the frame, a beginning, a middle and an end"[3] (McLaughlin 1998, 100). As to the composition of the fiction, Venice's urban structure—based on islands separated by canals and threaded by alleys—seems analogous to the individual city-tales, circumscribed by the dialogues and clearly distinguished from the rest of the text, like water and land, by italics.

Figure 2. Betweeness centrality of combined pedestrian and canal networks, Venice (3b) – Drawing by Sophia Psarra, in (2018) The Venice Variations: Tracing the Architectural Imagination, UCL Press

The second key characteristic Calvino draws from Venice is its urban networks. This is expressed by Esmeralda and Phyllis following the dialogue on Venice. Consisting of alleys and canals, the two cities offer many optional routes on dry land or water. To these itineraries, Calvino adds the discontinuous pathways of "cats, thieves and illicit lovers" on balconies and rooftops, the subterranean networks of the sewers, and the invisible parabolas of the birds, "all marked in different coloured inks […] solid and liquid, evident and hidden' (1974, 80). Images of networks proliferate in the fiction, in the caravan routes, branches of the past, strings between houses marking social relationships, and the emperor's atlas containing the ships' routes between the "most illustrious metropolises and the most opulent ports" (ibid., 136). Calvino admired Borges' "The Garden of Forking Paths," a short story referring to a labyrinthine novel and a garden. In *Invisible Cities*, he encourages readers to engage with the narrative in the same way people employ multiple itineraries in the lagoon city, taking experimental pathways through the fiction. However, Venice is not simply a figure for circulation. It is also a storehouse of urban forms, from monuments to everyday structures. Similarly, Calvino's cities consist of a wide range of figures exchanging objects or trading memories "at every solstice and every equinox" (ibid., 36).

Interchangeable Data and Permutations

As Venice's islands coalesced, squares, churches, palaces, warehouses, trading posts, and markets combined to produce familiar typological structures. These structures comprise in turn a collection of micro-elements: balconies, windows, steps, loading bays, bridges,

wellheads, and bell towers. *Invisible Cities* is also characterised by an excess of features, events, and human types, from monuments to materials and wares, from the living to the dead and the unborn, including preoccupations, memories, and desires. Calvino valued classic texts from Homer, Lucretius, Ovid, and Dante to modern classics (McLaughlin 1998). In *Six Memos for the Next Millennium* (2009), he attributed Lucretius' dissolution of the world into minimal units to the value of lightness, making language into a cloud "or better, perhaps, the finest dust or, better still a field of magnetic impulses" (ibid., 15). Inspired by Lucretius's weightless atomic constructions, he depicted cities as entities that are infinitely divisible, dissolving them into minimal units and micro-structures.

The mechanisms that render cities divisible are not only the glass theatres, pinnacles, skyscrapers, pistachio nuts, wine, or tobacco leaves, but also the images resulting from their combinations. In one of the dialogues, Kublai thinks of his empire as "a reflection in a desert of labile and interchangeable data, like grains of sand" (Calvino 1974, 22). In Zenobia, the inhabitants imagine a quite different city by combining features from an ideal model. Isaura, Zenobia, Armilla, Sophronia, and Octavia (Thin Cities) are lightweight constructions consisting of roughly similar elements—showers, reservoirs, windlasses, weathercocks, and fountains—in different combinations. In Clarice, a given number of objects are shuffled, repurposed, and assembled over time. In Melania, typical roles such as the "tyrant," the "benefactor," or the "hypocrite" are exchanged between people. In the penultimate dialogue, even real cities are made of combinations out of a catalogue of forms. In New York, previously called New Amsterdam, Polo and Kublai recognise the Dutch city of Amsterdam and the English city of York, a hybrid of deep canals and glass towers, a fusion of names and urban types.

To the strategy of permutation Calvino adds the motifs of rarefaction (e.g., Thin Cities), bifurcation (the Borgesian theme of forking paths), multiplication, scaling, and *mise en abyme*. In Eutropia, multiple copies of the city are scattered over a vast rolling plateau. In Fedora, miniature models of the city are placed in glass globes inside a museum. In some cases, the exchange occurring from one place to the next concerns not individual things but their meanings. In Hypatia, "the traveller realises he had to free himself from the images which in the past had announced to him the things he sought" (ibid., 48). Images of machines with turning wheels, carousels, and dirigibles in Polo's tales strengthen the idea of combinations, implying a generative network of elements and experiences. Through repetition, such images install the notions of permutation, transformation and combinatorial possibility in the readers' minds.

Resulting from pre-industrial craftmanship, the architectural heritage of Venice also has a legacy of familiar configurations, producing composite urban structures. The *campi* are the most characteristic ensembles, comprising a church with its tower, one or more wellheads, a palace accessible from a canal and a *campo*, one or more canals bordering the *campo*, one or more bridges arching over the canals and loading steps, all laced together and repeated throughout the city's quarters. The *campi* differ from each other in terms of shape, size, and orientation, but are all enlivened by the same scenes and built forms. In between these

elements, one finds other more mundane activities and features: cafes, restaurants and shops frequented by residents and visitors, benches with gossiping locals, children playing, tourists resting on the curved steps of the wellheads, and boats unloading materials and delivering supplies. As with the squares of Diomira and Isidora, arousing memories in the traveller's mind, Venice's squares awaken a multiplicity of sensations and associations, related to neighbourhood congregations, histories, chronicles, festivals, celebrations, and records. Venice's *campi* are spatial, semantic, and cognitive crossroads, joined together into a network of periodic composite structures.

Calvino had an interest in mathematical patterns going back into his other works and the experiments of the Oulipo,[4] particularly those by Raymond Queneau and George Perec, who explored possibilities in literature through mathematical constraints. *Invisible Cities* opens with a list of contents, outlining the work's structure. Based on this list, the micro-texts can be assembled into a diamond shape representing the organisation of the book with its cities, thematic categories, index numbers and chapters (figure 3) (McLaughlin 2002). Latently present in this diagram is combinatorial possibility, through four symmetries expressed in mathematics as transformations that allow all nodes to shift on a plane (translation), mirror each other (reflection), mirror and shift place (glide reflection) and revolve returning to the starting point (rotation). Whether reflected on water (Valdrada - reflection) or moving on a vast plateau (Eutropia – translation), or copying the innovations of its underground city (Eusapia – glide reflection), or departing and returning to the same place (Sophronia - rotation), cities in the individual texts evoke conceptual relationships that express variations in the tessellation (Psarra 2018). Embedded in the city descriptions alongside the motifs of rarefaction, bifurcation, multiplication, scaling and *mys-en-byme*, these transformations construct the representation of the narrative as a combinatorial network in the readers' mind. Kublai's interest in a paradigm, a perfect city, a chess game, a splendid hard diamond or a diaphanous pattern that explains how the empire - and by analogy the fiction - coheres is thus, reflected in this diamond shape and the embedded symmetries that structure the book's contents.

Calvino wrote about the "long tradition of thinkers for whom the world's secrets were contained in the *combinatoria* of the signs used in writing", (2009, 26). The generative capacity of literature is one of his main preoccupations in *Invisible Cities*. Once divisible units and their transformations register in our perception, there opens up a vast field of probabilities in the composition of cities, memories, and desires. Against Venice's secret watermark, Calvino exposes readers to a wealth of unexpected associations, training their imagination so that they can produce their own invisible cities.

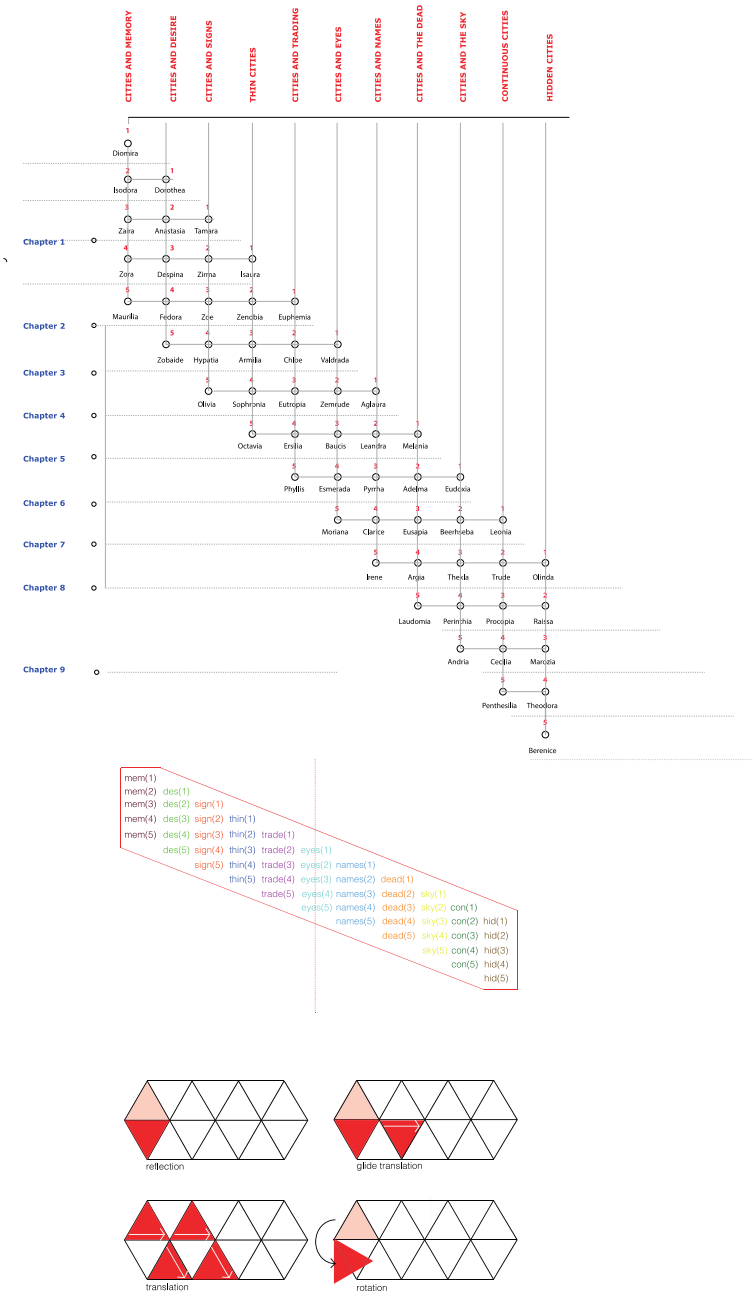

Figure 3 The network of thematic categories (top) and four symmetries in a tessellation (bottom). Drawing by Sophia Psarra, (2018) The Venice Variations: Tracing the Architectural Imagination, UCL Press

Venice and its Discourse

At the numerical centre of the text—between chapters five and six—Polo describes a bridge, alluding to bridges linking Venice's islands. Comparable to Venice's waterways establishing a global network of communication, the interstitial material of the dialogues provides a foreground network of discourse framing the narrative fragments. Calvino's proposition is that, although the descriptions of cities have their own independent existence, the dialogues illuminate them. If our understanding of anything is associated with the language used to describe it, our knowledge of cities cannot escape the ways in which they are represented in discursive, linguistic, symbolic, and cultural systems. Discourse is language used in a

context, in social action and interaction, including a social construction of reality as a form of knowledge (Markus and Cameron 2002). The constitution of the two characters and their production of reality, therefore, is based on their social status, practices, and enunciations.

Calvino explains that Kublai Khan personifies the "intellectual tendency towards rationalisation, geometry and algebra, reducing knowledge of his empire to the combinatorial pieces on a chessboard" (2009, 72). The emperor thrives on autocratic power, order, rules, classifications, diminishing the heterogeneity of cities, people and wares to a splendid hard diamond, a model city, a chess game (Breiner 1988). The Venetian merchant, on the other hand, rejoices in the rich variety of the things he buys and sells, the memories and experiences he collects in his travels. The Khan is the instrument of *imperium*, "the boundless extension of territories [he has] conquered" (Calvino 1974, 5). Polo, instead, sails out from a unique bounded city, a maritime empire that thrives because of trading and people like him, the agents of *emporium.*

Across the chessboard of the great Khan and over his atlas, two empires (i.e., China and Venice) exchange domestic products and foreign treasures. The dual identity of Venice as imperium and emporium is clearly manifested in Jacopo de Barbari's woodcut, presenting an aerial view of the city from an imaginary view point over San Giorgio Maggiore (Schultz 1978). Depicting Venice in naturalistic detail, the woodcut draws the viewers towards the particulars of its topography. However, the artistic composition and the mythological figures of Neptune, god of the seas, and Mercury, god of commerce, give emphasis to the Piazza San Marco and the Rialto. Produced at the turn of the 16th century, Jacopo's print represented what Venice had become to its visitors and inhabitants: a remarkable urban environment, an empire of ideal government and perfect institutions. Between the early stages of Venice in the sand bars and the Venetian Republic lies a protracted, anonymous, and intricate process.

As Venice's islands coalesced, the morphological changes in the city led to recognisable macro-structures. The pervasive centralities of the parish squares are juxtaposed with two major centres picked up by the measure of closeness centrality, the Piazza San Marco and the Rialto, attracting Venetians and visitors from wide orbits (Psarra 2018) (figure 4). The Rialto was the mercantile centre of Venice where bulk commodities—iron, flour, wine, coal, oil—had to be weighted and assessed for tax (Goy 2006, 11-12). The Piazza and the Piazzetta mainly constituted the ceremonial and administrative centre of the city. They contained the Basilica of St Marc and the highest strata of government, that is, the Doge and the governing councils. Venice's identity as imperial and mercantile power were manifested not only in the urban geography, but also in the governing-merchant class, a patrician elite that presided over the governance of the city in the Piazza, and traded at the Rialto and their Palazzi (Romano 1987). Had the emperor and the merchant met in Venice, Polo would have conducted his business at the Rialto. The Khan instead would have presided over the room with maps and globes in the Ducal Palace at San Marco.

Figure 4 Closeness centrality values (Integration) of pedestrian network in Venice. Integrated spaces are easy to reach from every other space in a layout, constituting the spaces of where movement paths converge. In contrast, segregated spaces can be accessed through paths that involve many changes in direction. Drawing by Sophia Psarra, in (2018) The Venice Variations: Tracing the Architectural Imagination, UCL Press.

Superimposing an artificial coherence onto Venice, Jacopo's print is a didactic work depicting the floating city shrouded in its own mythopoesis. Known as "The Myth of Venice," a loose collection of medieval legends was converted into a republican ideology within historical discourse by Venetians Humanists regarding their social and political world. Venice became known as *La Serenissima*, the Most Serene Republic of 1000 years, a realised utopia of ideal outward beauty and institutions (Muir 1982). In the 16th century the Rialto, the Piazza, and St Mark's Basin were transformed by large-scale projects of physical reconfiguration. Significant architectural works appeared with the emergence of architecture as liberal art in the Renaissance. Re-imagined by Jacopo Sansovino, Andrea Palladio, and patrician patronage, the reconfiguration of the Piazza and the aquatic landscape of the Basin were the results of state-sponsored urban management (Tafuri 1995). Parallel processes of centralization in administration suppressed the social structures and rituals of the parish-islands, appropriating their popular mythologies into official historiography, so that attention would turn to the political and architectural imaginaries of statecraft, spectacularly performed in the Piazza (Muir 1982). The Venetian transformation from the island settlements to a commune and an imperial state "is a narration of the interplay between the mercantile city and the imperial city, the island communities and the centralised city-republic governed by a closed patriciate" (ibid., 305). Drawing from Venice's rich history, Calvino dramatizes the encounter of utopian abstract ideology with the multiform free-wheeling practices of cities—in the paradigmatic figures of the Great Khan and the Venetian explorer.

Projecting itself as a perfect city, Venice played a key role in the development of Western political values, until Napoleon put an end to the *Serenissima*. At the very moment of the end of this era, a second cycle of intense influences began as the railway and other 19th-century modernisations brought the artists and writers of the Grand Tour to Italy, revising interest in the ancient and Renaissance worlds. To the early 19th-century Romantic travellers, Venice was not only a beautiful city, but also a symbol of loss and labyrinthine decay, central to taste in the picturesque (Cosgrove 1992). Transfigured into the distressed image of decadence and decrepitude, Venice's Myth continued exercising influence over urban design and politics, becoming a central site for the European imagination (Tanner 1992). Venice had re-invented itself as the quintessential place of the artistic and popular imagination, modelling since then an arts city, a festival city, and a tourist city far and wide (Gold and Gold 2021).

Venice and Language

Venice provides a real-world context to understand Calvino's work as a resilient city adjusting its mythology to succeeding ages. The second contribution Venice makes in *Invisible Cities* is the analogy of its own morphology to that of the fiction, shifting attention from what things mean to *how they mean* through the interstitial relationships among cities, language, and other media of communication. Focusing on the question of communication, the dialogues between Polo and Kublai take multiple forms. From Polo's hesitation to speak of Venice to the multiform exchanges between the two characters, including their communication through silence, and from the diamond-shaped network to the combinatorial symmetries of elements, the fiction is replete with Calvino's speculations about the constitutive and constraining medium of language. Calvino described his investigations in *Invisible Cities* and literature through two different pathways:

> One path goes into the mental space of bodiless rationality, where one may trace lines that converge, projections, abstract forms, vectors of force. The other path goes through a space crammed with objects and attempts to create a verbal equivalent of that space by filling the page with words, involving a most careful, painstaking effort to adapt what is written to what is not written, to the sum of what is sayable and not sayable. (Calvino 2009, 75).

In *Invisible Cities*, these pathways are expressed by a constellation of opposite signs: Kublai and Polo; imperium and emporium; the dreamed-of city and the actual city; splendour and ruin; formed and formless; celestial and terrestrial; solid and skeletal; the diamond shape organising the text and the discursive surface of the text constructing rich visual images of reality. Each of these pairs of concepts refers to a core idea: Venice the *unwritten* world with the invisible relationships of its morphology of canals, alleys, squares, buildings, practices, products and people; and *Invisible Cities*, a *written* world constructing visual representations of cities in language. Both pathways and their interstitial relationships are integral to the book and its meaning.

Writing about cities and architecture, Hillier (1996) uses an analogy of the morphological properties of urban and architectural space with the rules of syntax and semantics in language:

> In language we can distinguish ideas we think *of*, that is, the words and what they represent, and ideas we think *with*, that is, syntactic and semantic rules which govern how we deploy words to create meaning. The words we think *of* seem to us like things, and are at the level of conscious thought. The hidden structures we think *with* have the nature of configurational rules, in that they tell us how things are to be assembled, and work below the level of consciousness (Hillier 1996, 26).

Hillier explains that because buildings and cities are configurational, their most important spatial, social, and cultural properties are non-discursive. Venice in *Invisible Cities* features as an unspoken real-world context and unwritten real-world space, corresponding to Hillier's notion of the non-discursive. The configurational properties of its spatial and formal elements are analogically linked with the non-discursive formal relationships of narrative elements, which the theme of silence between Polo and the Khan so artfully dramatizes. Venice is analogically present in the diamond-shaped network also, through the combinatorial agency of its urban ensembles, its macro- and micro-structures. Venice is in the interstices between Calvino's city-texts and dialogues, between the words, and in "the void not filled with words" (Calvino 1974, 38), the possibilities entailed in the combinatorial imagination.

However, considering Calvino's view that cities need a discourse, his understanding of cities extends beyond the non-discursive properties of configuration to include their discursive and semantic aspects as constitutive factors of their reality. Venice has both an analogical and interactive relationship with language, emerging from Calvino's text in three main dimensions: an abstract Venice of spatial-formal properties; an empirical-historical Venice of practices, artefacts, and people; and a discursive Venice comprising the desires of its inhabitants and the myths of its foundations, the historiographies of its Humanists and the ruins of the Romantics, the tourists' imaginings, the visitors' dreams, and the immigrants' aspirations.

Venice and the Future of Cities

If Venice provides *Invisible Cities* with its manifold multiplicity, what can Venice, and cities in general, learn from Calvino's fiction? For Calvino, the survival of cities depends not only on their productive industries and physical environment, but also on a paradigm, a representation or image they develop of themselves.

> Each city has an implicit program that must be found every time it is forgotten lest that city face extinction. The ancients represented the spirit of the city with just that bit of vagueness and precision that the operation requires, invoking the names of gods who had presided at its foundation. These names correspond either to personifications of vital attitudes of human behaviour that

> guarantee the real calling of the city or to personifications of environmental elements – a water course, a land form, a type of vegetation – that guarantee the persistence of the image of the city in its successive transformation as an aesthetic form as well as an emblem of ideal society. A city can go through catastrophes and dark ages, see different generations follow one another in its houses, see those houses change stone by stone, but at the right moment and in different forms it must finds its gods once again (Calvino 1984, 7).

The transformations of Venice over the centuries belong to a long course of imaginaries, reaching back to the city's origins in the archipelago. From an inchoate collection of medieval legends to the Most Serene Republic in the Renaissance, and from a mythical locale of the European imagination to the city of tourism and culture in the 19th and 20th centuries, Venice has successively adjusted its "gods" along with the irreversible effects of time. As environmental pressures and mass tourism threaten Venice's survival, Venice must revise both its productive industries and its myths. Like Andria's astronomers, adapting and re-arranging celestial patterns in response to terrestrial innovations, Venice must, once again, re-imagine itself.

As to general lessons that cities can extract from Calvino's book, the multiple representations of Venice in the fiction suggest that cities have many modes of existence. They are lived spaces of everyday life with an innate configurational and functional order. But they also provide places where values and meanings are created, contested and celebrated. The actual and the mythical, the unwritten and the pictured city, influences the lived city and vice-versa. Through a gradual process of accretion, cities become as much the world of streets and social actions from the inside, as the perception by minds from the outside. For Henri Lefebvre, they are produced by and consist of representations, symbols, and spatial practice (1991). Cities are at once material and immaterial, shaped by a few as well as many minds. They are manifold instances of activity, language, memory, and desire. The multiplication and adaptability of their industries and discourses is essential to their vibrancy and survival.

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1 Calvino (1999) used this expression in response to Jorge Luis Borges' literature, suggesting that in Borges' work the secret watermark of the universe is always about to appear.

2 A map produced by Fra Paolino, a Venetian monk in the island of Murano, dating from the second half of the 14th century (Schultz 1970).

3 The frame refers to the dialogues between Polo and the Khan framing the narrative of the 55 cities.

4 *Ouvroir de littérature potentielle*.