

Architecture and Narrative

The formation of space and cultural
meaning

Sophia Psarra



Architecture and Narrative

Looking at how meaning is constructed in buildings and how it is communicated to the viewer, this intriguing study will be of interest to anyone concerned with architecture and culture; from architects to museum specialists and exhibition designers.

Arrangement of spaces, social relationships and cultural content is fundamental to how buildings are shaped, used and perceived. Narrative enters architecture through the ways in which space is structured to achieve specific effects on our perception. Architects employ conceptual-formal patterns independently from a viewer's experience, but also organize space from the viewpoint of an observer. The act of perceiving is linked with the sequential unfolding of information as our bodies pass through space.

Examining the notions of conceptual, perceptual and social space, *Architecture and Narrative* explores the ways in which these three dimensions interact in the design and life of buildings.

Sophia Psarra is Associate Professor of Architecture at the Alfred Taubman College of Architecture and Urban Planning at the University of Michigan, USA. She has collaborated with leading cultural institutions in the UK and the US on issues of spatial organization, planning of exhibitions and visitor experience.

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To Eleni and Panayotis

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Preface

Architecture and Narrative explores the relationship between architecture and cultural meaning. It looks at how architecture and meaning are conceived through abstract relations and how they are perceived through embodied experience. The conceived and perceived notions of space are often cast in architectural theory as a powerful opposition. On one side there is architecture as an orchestration of concepts in the mind, and on the other as a perceptual condition experienced by bodies moving in space. This work argues for a unified approach that can explain the two fields as opposed to the division between mental and physical.

The book is divided into four parts. Part One, Foundations, sets the framework and the intellectual theme that permeates this work through the study of three buildings that foreground their aesthetic and morphological value over the architectural programme. This characteristic enables an inquiry into the spatial construction of cultural meaning separate from the social purposes carried by function. Part Two, Architecture and Narrative in Literature, is an examination of the conceptual and perceptual in literature where the narrative content understandably gains greater significance over the formal codes of language. It explores the literary work of Jorge Luis Borges, and the use of architecture as a model for the theoretical ideas in his fictions. The purpose is to examine how the ordering mechanisms in literature can inform the construction of experience in architecture. Part Three, Spatial and Narrative Interactions, focuses on the interaction between spatial and narrative codes in museums and galleries. It looks at how the spatial layout relates to the conceptual messages of exhibitions and the visitors' experience. Finally, Part Four, Theoretical Synthesis, draws together ideas developed in the individual chapters. It leads to a theoretical discussion about architecture and meaning in the areas of morphological study, historical and theoretical analysis.

The book is the outcome of a long-term engagement with this subject through studio teaching, research and architectural practice. The intention is not just to demonstrate the contribution of morphological analysis to the theoretical discussion of conceived and perceived space, but also to assert the ways in which historical and theoretical knowledge can enrich the morphological study.

Acknowledgements

In this book the reader will encounter my interest in geometrical concepts and my fascination with discovering them in buildings, myth and literature. The ideas in *Architecture and Narrative* emanate from an early classical education. As constants in the modern Greek educational system, Homer and Euclid were for me less the objects of interest in themselves than ways of imagining and ways of thinking, shaping a passion for the irrational workings of poetry and the rational mechanisms of geometry, a passion for contradictions and contrasts.

The mind gravitates towards the patterns it prefers and so my interests were channelled in the university years into architecture. But my studies at the MSc course for Advanced Architectural Studies at the Bartlett University College London opened a new way of looking at buildings beyond geometry and the role it plays in their conception. As a student of Bill Hillier and Julienne Hanson I learned to think about how architecture and space are experienced as social realities. But the emphasis they placed on how spaces are put together to formulate relationships renewed my fascination with the conceptual logic of form by the newly discovered workings of space. My interests in these two areas were met with enthusiasm from John Peponis, then at the Bartlett and now at Georgia Institute of Technology. He encouraged me to embrace explorations that were related to the ways in which architects think. His continuing work in this direction and his analysis of Italo Calvino remain a constant source of inspiration. I would first like to thank Bill, Julienne and John for teaching me new ways of thinking and for their constant emphasis on intellectual inquiry and innovation.

This book was developed as a result of my experience in three countries, Greece, the United Kingdom and the United States, a trajectory that has been unconsciously mapped in its chapters, from the Parthenon and the Erechtheion in Athens, to Soane's Museum in London, four other museum buildings in the UK and, finally, the latest expansion of the Museum of Modern Art, New York (MoMA). The chapters on the Barcelona Pavilion and Borges' fictions form digressions, but are imbued with the ways in which ideas in architecture, literature and art travelled in this direction, from the Mediterranean world to Western Europe and to America. I wish to thank my teachers and my colleagues in the institutions in which I studied and taught in the three countries, especially those in the Taubman College of Architecture and Urban Planning, University of Michigan, and in the Welsh School of Architecture, Cardiff University for their generous support and collegiality. Names are too many to record, but special thanks go to Doug Kelbaugh, former Dean of the Taubman College, and his successor Monica Ponce de Leon, to Jean Wineman, Tom Buresh,

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I would like to give special thanks to my colleague and close friend Sylvia Harris and the staff in the library of the Welsh School of Architecture, Cardiff University, to Rebecca Price and her colleagues in the Arts, Architecture and Engineering Library of the University of Michigan and to Susan Palmer and the library staff in the Sir John Soane's Museum. I thank Sandy Patton and Carole Kent from the Taubman College for their tremendous support in obtaining copyrights for the illustrations in this book and applying for funding. I am also thankful to the Taubman College and the Rackham School of Graduate Studies in the University of Michigan for funding the study on the Museum of Modern Art, New York (MoMA).

I wish to thank Glasgow Museums, the Museums of Scotland, the Natural History Museum, London and the Museum of Modern Art, New York for their interest in our work and their support in undertaking these projects. I am especially grateful to Mark O'Neil from Glasgow Museums with whom Tad Grajewski and I worked closely on the Art Gallery and Museum, Kelvingrove, Glasgow and the Burrell Collection, Glasgow, and to Sarah Ganz from the Museum of Modern Art, New York (MoMA) for her helpful comments on the eighth chapter.

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I have reserved a special mention for the late Tad Grajewski with whom I shared four years of friendship and intensive work in the area of museums and galleries. Without his energy and continuous support a great deal of this work would not have been accomplished. Tad had the skill to make things happen effortlessly and the capacity to share the enthusiasms of his colleagues and turn them to his own. He left a gap no one can replace, refusing to distinguish the value of work from the value of friendship and collaboration.

Between originating the idea for a book and delivering the final manuscript there are momentary periods of elation, endless periods of frustration, sleepless nights and monastic detachment. Throughout all of this I have had the constant support of Tony Mulhall whose reassuring normality kept me anchored. Together with his steadfastness he has provided me with the encouragement to take risks, when it might be easier not to. I would also like to pay tribute to Rhea Psarra, who translates my writings in Greek and gives them new meaning. And to Athena, who is now starting her classical education. I hope one day she finds this work rewarding.

This book is dedicated to Eleni Psarra, who in telling the story of Oedipus to me ignited at an early stage a passion for dreaming and inquiring; and to Panayotis Psarras who brought home his cartographic instruments, ink pens, setsquares, compasses and theodolites, and first explained the role of geometry in mapping space and thinking. *Architecture and Narrative* is permeated by their impalpable gifts: language and drawing.

Introduction

We must then, in my judgment, first make this distinction: what is that which is always real and has no becoming, and what is that which is always becoming and is never real? That which is apprehensible by thought with a rational account is the thing that is always unchangeably real; whereas that which is the object of belief together with unreasoning sensation is the thing that becomes and passes away, but never has real being.

– Plato: The *Timaeus* of Plato, trans. F. M. Cornford, London: (1937), *Plato's Cosmology* Routledge & Kegan Paul.

Labyrinth

There'll never be a door. You're 'inside'
and the keep encompasses the world
and has neither obverse nor reverse
nor circling wall nor secret centre.
Hope not that the straightness of your path
that stubbornly branches off in two,
and stubbornly branches off in two,
will have an end. Your fate is ironbound,
as is your judge. Forget the onslaught
of the bull that is a man and whose
strange and plural form haunts the tangle
of unending interwoven stone.
He does not exist. In the black dust
hope not even for the savage beast.

– Borges, J. L. (1968), *Nueva Antología Personal*,
Buenos Aires: Emecé Editores.

Formulating the question

Put plainly, this book is about architecture, spatial cognition and meaning. It looks at how spatial and cultural meanings are constructed in buildings and how they are communicated to their viewers. The choice of *Architecture and Narrative* for the title is meant to convey exactly this. Architecture carries content through the arrangement of spaces, materials, social relationships and the cultural purposes with

which it is invested. It is underpinned by agencies and the systems of thought that are involved in its production. But since narrative is often considered as something quite different – a story, a sequence of successive actions and events – it is important to begin by explaining this focus on architecture and narrative, and clarify the way in which the notion of narrative is used in this work.

Narrative is often seen as a form of representation bound with sequence, space and time (Cobley 2001: 3). But it is also regarded 'as structure, a particular way of combining parts to make a whole' or as narration, as the process or 'the activity of selecting, arranging and rendering story material in order to achieve specific time-bound effects on a perceiver' (Bordwell 1985: xi). A narrative requires a narrator and a reader in the same way in which architecture requires an architect and a viewer. A narrative, therefore, is not only the content of the story that is narrated, or the way in which it is interpreted by readers, but also the way in which it is structured and presented to an audience by an authorial entity, a writer, a film-maker, an architect or the curator of an exhibition. The relationship between narrative structure, perceptual experience and representation is the aspect of narrative that is most relevant to architecture and the subject of this book.

Narrative enters architecture in many ways, from the conceptual 'messages' it is made to stand for to the illustration of a design through models, drawings and other representational forms.¹ This aspect of architectural expression, what the design *speaks of*, is relevant to narrative as representation. It concerns the semantic meanings of buildings and places, and the contribution of architecture to the expression of social and cultural messages. But architecture does not only express meaning. It also participates in the construction of meaning through the ordering of spaces and social relationships. Architects respond to this ordering by orchestrating relations independently of a viewer's perception, and visualizing space as a perceptual condition, from the hypothetical viewpoint of a spatially situated observer. Relating visualizations of three-dimensional spaces and abstract frameworks of rules, architects arrange conceptual and perceptual layers of order.

Two main questions are raised in this work: first, how can we explore the relationship between conceptual structure and perceptual experience, the field of abstract relations and that of bodies experiencing space? And, second, how do these fields contribute to the formation of cultural content? The relationship between the conceptual and the perceptual was discussed in the second half of the twentieth century as part of two powerful and interrelated oppositions: form and function, form and meaning. These binarisms arose as a reaction to the utopian visions of Modernism and its underlying assumption that by manipulating building forms we can affect the ways in which we live in spaces, shifting the emphasis away from social performance to social meanings. Symptomatic of this response was the reaction to any notion of order and formal description. The implication is that morphological relations do not bear on what architecture can possibly mean, since meaning is indeterminate and socially produced, subject to contextual histories, nostalgic symbolisms, multiple identities and freedoms. In recent years order is rarely discussed, laden as it is with failed utopian dreams of social order no longer

considered relevant. It is charged with de-contextualizing places and disguising through the transparency myth dominant modes of production.

But if morphological order does not matter, then we could do away with architecture as a social and aesthetic practice or let it happen by chance. Conversely, if architecture has any social significance at all, we cannot afford its isolation from society through arguments that split it into empty forms and social meanings. This book does not adopt the view that architects are the only agents responsible for social content. Underlying all of these chapters is the assertion that there are multiple factors contributing to its formation, social, economic and political, including those external to the agencies directly involved in the design and production of buildings. The relationship of form to meaning should not be reduced to a simplistic binary opposition, but broadened to a more complex theoretical and analytical description. In addition, it should expand to include space as we confront it in daily life in buildings. This book investigates how architecture is *conceived* in the abstract realm of formal and spatial relations, how it is *perceived* in the physical and social space of embodied experience, and how the conceptual and perceptual affect cultural content. It addresses this subject within the cultural context in which buildings are situated, looking also at how architectural theory and practice affect its construction. *The interest is less in identifying the narrative dimension of buildings or their intended signification than in describing the formal, spatial and cultural mechanisms that give different shape and form to meaning in different buildings. More importantly, the concern is in exploring the potential of architecture to overcome conventional cultural norms, generating instead a rich potential for meaning.* This discussion leads naturally to a question addressed in the final chapter: how is it possible to approach the study of architecture in terms of its potential for innovation?

Running throughout the discussions in the book are two fundamental propositions: first, meaning is not exclusively in the morphological properties of space themselves, nor in the cultural processes of its formation and interpretation, but in the dynamic network of spatial, social, intellectual and professional practices that embody and produce different kinds of social knowledge. Second, architecture cannot be reduced to the duality of the conceptual realm and the reality of bodies in physical space. This duality appears as a long-standing division between mind and body endorsed by architectural and philosophical theories. In architectural practice it is often manifested as a poetic *illusion* of a dichotomy, advancing either the humanist view of a universe ordered by abstract relations or the romantic view of individual sensibility and freedom. It is argued that architecture orders experience through *space-time relationships* that interface the realm of the conceptual and the world of the senses, away from the traditional binary model of abstract and physical.

Conceptual, perceptual and narrative

The first architect to recognize that the conceptual and the perceptual aspects of space are expressed in the recent history of architecture through a dominant opposition was Bernard Tschumi. 'On the one hand, architecture as a thing of the mind, a dematerialized or conceptual discipline with its typological and morphological varia-

tions, and on the other, architecture as an empirical event that concentrates on the senses, on the experience of space' (1999: 83). Tschumi argues that the conceptual aspects (or 'Pyramid of concepts') and the perceptual characteristics of architecture ('the Labyrinth of experience') are interdependent and mutually exclusive. This is because one can never go outside of the Labyrinth and see the whole. 'Architecture constitutes the reality of experience while this reality gets in the way of the overall vision' (49). The relationship between the conceptual and the perceptual characteristics of space, between patterns we can hold in our mind at once and those we grasp gradually through movement, is one of the main concerns of this book. It does not consider the two kinds of relations as mutually exclusive, as Tschumi suggests, but as different and interacting systems of ordering experience. It explores how relationships are formed and experienced through these layers of ordering and how they communicate cultural meanings. The conceptual-perceptual question is also a matter of knowledge and cognition. It refers to how buildings are grasped as manipulations of space and form, implying a cognitive link between architecture, the designer and the viewer.

In Tschumi's view the perceptual aspects of architecture are sequences of spaces and events, 'configurations-en-suite, enfilades, spaces aligned by a common axis' (155), implying the movement of an observer. Events are about 'social and symbolic connotations' or 'programmatic sequences' (154). As he explains, an implied narrative exists, combining 'the presentation of an event (or chain of events) with its progressive spatial interpretation (which of course alters it)' (163).² Architecture is not a story or a sequence of events, but this book sees the conceptual properties, perceptual experience and the organization of the cultural message as its potential instruments for narration.

The encounter of architecture and narrative is studied here in museums, galleries and cultural buildings, examining how the arrangement of space relates to the arrangement of objects and the design of exhibitions. Exhibition narratives are different from other narratives in that they are constructed by the interpretation of a collection of artefacts. This means that objects are classified and arranged in space according to some aesthetic principle or some conceptual underlying framework that orders knowledge in a particular field. While narratives in other media are based on representations of time and space, museum narratives are organized *in* space depending on the ways in which the artefacts are positioned in a layout. Objects can be viewed for their own importance, but the design of the exhibition has the potential to construct additional meanings for each piece based on the spatial and visual interrelationships with others. Given these characteristics, museum narratives can illuminate the ways in which the conceptual and perceptual characteristics relate to the conceptual mechanisms governing the display. Additionally, the analysis of museums can explain how the organizing principles of space and the collection relate to the exploration patterns of visitors and, therefore, how these buildings become sites for different types of narration.

For the analytical discussions this work studies nine buildings that are widely known for their architectural quality and their pervasive influence on the discipline of architecture. Some of these buildings are examined in pairs, using

comparison as a strategy to clarify similarities and differences and sharpen their description. Others are discussed individually, developing the intellectual threads that permeate the book. In addition, there are two chapters whose starting point is literature instead of architecture. These chapters examine four metaphysical stories in *Ficciones* by Jorge Luis Borges. The reason for analyzing works of literature is because, similar to the sequential motion of perception through language, buildings are experienced gradually through movement. Borges used architectural models as symbols of knowledge and of the mind, expressing his ideas of the world as a 'garden of forking paths' and as an infinite library composed of hexagonal galleries. But he also employed conceptual strategies, such as fictions contained within fictions, reflections, symmetries, doublings and bifurcations in space and time. These strategies resemble the conceptual mechanisms used to organize spatial relations in architecture. Together with the sequential unfolding of his text, they serve as a basis for exploring whether the architectural construction of experience can be informed by the construction of experience in a literary work. This I propose is possible through the notion of *structure* and *sequence* in a text, and the notions of conceptual and perceptual in architecture.

Theoretical premise

Before presenting the individual chapters, the theoretical considerations underlying the analysis will be introduced. The discussion of meaning is approached, first, by looking at the intrinsic characteristics of buildings and, second, by examining them in relation to areas of knowledge extrinsic to the morphological system. Such areas include the conceptual structures used by curators to organize the exhibitions as educational, institutional, political, religious or mythical messages, and the theoretical concepts used by architects to justify their design decisions. This is to allow an analysis of building morphology, as well as of the way in which buildings embody or destabilize extra-spatial systems of abstractions and semantic relations.

The morphological study is based on the notion of interrelatedness of parts or the structural relationship of parts to other parts and to a whole. This idea can be best captured by Bill Hillier's notion of 'configuration'. An intuitive definition of configuration is as 'a set of relationships among things all of which inter-depend in an overall structure of some kind' (1996: 33). A formal expression of this idea is provided by the relationship between two spaces and the ways in which this changes when we connect one or both with a third space. Configuration then is founded on interconnectedness, where each relation is defined in association to all others (35). Hillier explains that spatial configurations are 'non-discursive'. We understand them intuitively, but have no words by which we can discuss them analytically. This problem is characteristic not only of architecture but also of other forms of cultural expression. In language, for example, we may believe that in constructing sentences we handle words. However, it is the configurational syntactic and semantic rules that enable us to understand how words are assembled into meaningful arrangements rather than the individual word units. These rules operate as hidden structures we 'think with' that 'tell us how things are to be assembled, and work below the level of consciousness' (40).

These ideas underpin the framework within which buildings are discussed in the book as spatial arrangements. But it is important to explain that the notion of configuration is not simply about abstract rules. Firstly, it is relevant to the spatial and formal properties we experience through everyday use and our embodied presence in buildings. It concerns characteristics we observe as we move and change spatial positions. Secondly, it is associated with social relations in the sense that it spatializes in a variety of ways functional differences in buildings and the relations among the social groups that inhabit them (36). Through their configurational rules some buildings embody and reproduce social knowledge reflecting how things happen and where. However, configuration is also the means by which buildings can overlay a field of possibility on social knowledge, generating social co-presence and movement. It can shape the spatial conditions for social interaction to take place as a realization of a potential rather than as determinant.

Together with describing morphological properties the book engages the varied ways in which such properties express semantic content. This requires a clarification of the distinction between two types of meaning: one based on configuration and the other on signification. As explained, the former refers to the notion of interdependence of elements that are intrinsic to architecture seen as a system of spatially situated practices and embodied experience. The latter concerns what architecture refers to beyond its own pattern of space, like power, religious structures, and social or political ideology. Discussing how buildings become intelligible Hillier suggests that a theory of signification must be based first on a theory of significance, 'as an instance of the ordering possibilities we call architecture' (1985: 67). 'We must, if you like, have a theory of how architecture can mean anything at all, before we have a theory of what architecture might actually mean.' The description of buildings in the book moves in this direction: from social meaning achieved through the ordering mechanisms of space to meaning constructed through cultural association. The reason is that attributing semantic content to architecture prior to examining content deriving from its own properties confuses the properties themselves for the meanings that are represented.

This observation brings us back to the role of language in analyzing space. It is sometimes believed that a linguistic or etymological study can illuminate the ideas found in texts or buildings as in Indra McEwen's analysis of concepts in archaic and classical Greece (1993). It is important to know the history of words and what they meant in the context in which a building was produced. However, such history refers to what a concept means collectively for the society that uses it, rather than explaining the complex spatial characteristics embodied in buildings. The need for a morphological study is based on the insufficiency of language in describing spatial arrangements. We must provide an account for morphological characteristics since words signify concepts rather than describe morphological properties. Only then must we turn to consider what the words contemporaneously used to express these concepts might have meant at that time.

And, yet, when it comes to language what matters most is not the words themselves but how architecture is discussed in different social realities and contexts. This allows the introduction of the second theoretical consideration that

is drawn on in the book. While it is essential to establish a theoretical and analytical difference between social knowledge based on spatial laws and knowledge external to the morphological system, it is also crucial to recognize that these types of knowledge are neither static nor self-contained. Instead, they overlap and change over time. Buildings are examined within their historical context to see how certain historical realities, values or social processes implicated in their production can enrich meaning (Marcus and Cameron 2002: 10). In addition to this, the work is interested in how spatial and social practices are related to the ways in which buildings are described through theoretical models and interpretations. Architecture is not equivalent to words or to the various theories used to describe it. As Henri Lefebvre observes, a spatial code 'is not simply a means of reading or interpreting space: rather it is a means of living in that space' (1991: 47). But, the kinds of knowledge used by architects or other specialists also constitute the way in which space is lived, produced and conceptualized (41). So, the codes describing how space works in daily life overlap with space as discourse and theoretical knowledge. These suggestions are explored in the concluding chapter of the book, suggesting that morphological analysis should be placed within the study of models of thought that have underpinned architecture and their historical evolution.

Analytical framework

Coming to the analytical framework for studying how designs interface the conceptual with the perceptual order, the book focuses, first, on geometric properties independently of a situated observer, such as symmetry, rhythm, alignment, congruence, or repetition. Second, it examines buildings as perceptual fields and explores those parameters that are observable by a viewer located within space, and those configurational properties that can be discovered by real time experience. These characteristics are described using simple analytical tools from 'space syntax' – a theory and method founded by Hillier and Hanson that describes space and relates it to social meaning. These methods are rooted in embodied experience. Visual axes, visibility fields, sequences of visual information and diagrams of spatial connections are examples of these tools. They encapsulate how spaces are visually linked in sequence, how they are interrelated or how simple or complex it is to approach other spaces starting from a particular place in a building.

In the cases of the Barcelona Pavilion and the Soane's Museum discussed in the second and fifth chapters the investigation is extended to include the visual fields constructed through reflective materials. Except for these cases the book does not account for the wide range of perceptual factors such as light, sound, texture and temperature or how construction methods and materials impact on perception. It is important to explain that the main intention is not to promote an ocular-centric view of architecture, but to isolate one among the multiple factors affecting experience, and provide a focused study of the conceptual and perceptual founded on visibility.

Structure, content and argument

The book is structured so as to explore the relationship between architecture and narrative in three ways: first, by focusing on buildings of an iconic architectural status

that are freed from social programme (Chapters 1 and 2); second, by analyzing works where the medium is language unfolding in a linear sequence, as in the case of literature (Chapters 3 and 4); and, third, by examining buildings whose social purpose has a strong narrative dimension (Chapters 5 to 8). So, the discussion moves from buildings where space and form take predominance over the semantic content of function (first part of the book), to literary narratives where the representational content is foregrounded over formal codes (second part), and, finally, to examples like museums and galleries that balance codes of space and form with those of representational narrative content (third part).

The first part discusses three buildings whose aesthetic value has turned them into idealized abstractions of permanent significance: the Parthenon, the Erechtheion and the Barcelona Pavilion. The Parthenon and the Erechtheion projected the political and religious image of fifth-century BC Athens. The Barcelona Pavilion has been often considered as a representation of the Weimar Republic in the 1929 International Exposition (Bonta 1979: 131–224). However, in spite of their cultural content the three buildings did not order a set of social relations through their interior spaces. The aesthetic value of these works and the absence of programme enable a study of the spatial construction of meaning separately from those meanings associated with social functions.

The second part examines Borges' fictions where language and representations of space intersect so that it is often impossible to consider them separately. The progression from the first to the second part of the book facilitates a discussion of how architecture and literature order experience. The former organizes a set of abstract relations and visual fields that we explore through movement. In the latter space is represented rather than being physical. However, similar to architecture where conceptual codes articulate spatial relations, conceptual relations in the text give the discourse an abstract spatial dimension. In addition, similar to physical space perceived in linear progression, the literature text creates a set of relations among narrative elements that are perceived in sequence.

The third part explores the encounter between the spatial formation of meaning and the conceptual organization of meaning, through the arrangement of the collection in museums and galleries. Exhibition narratives are different from literary narratives in that they arrange objects in physical space. The spatial interrelations of objects enable a focused study on how space and the content of the exhibition interact. This examination looks at how spatial and cultural narratives are brought together through physical relations of building elements, and physical and conceptual relations among artefacts.

Coming to the discussion of the individual buildings, the opening chapter studies the Acropolis in Athens and its important structures, the Erechtheion and the Parthenon, emblems of the city 'where sculpture and architecture converge and to distinguish them becomes not only impossible but irrelevant' (McEwen 1993: 2). The Parthenon integrated the sculptural narrative with a regular and formal physical fabric. In contrast, the Erechtheion accommodated a series of emblems associated with the mythical origin of the city in a building that is irregular and idiosyncratic. Between the poles of the two temples lies a dialogue between properties that are

conceptually accessible in 'fixity' or in an instant and those that can be grasped experientially through movement. This dialogue sets in motion the dialectic between the religious and sculptural content of the two temples expressing the fifth-century perception of the *polis* on one hand, and archaic perceptions of Athens through local myths and religious practices on the other. The first chapter constructs the intellectual framework for the rest of the book. But it also initiates a larger dialogue about notions of the mind and the body, intellectual and sensual, regular and irregular, formal and informal, knowledge and imagination, nature and artifice. Gelernter observes that the opposition between abstract ideas we grasp with our mind and the characteristics we observe through our senses is built into Western design theory from an early stage as a subject-object problem (1995: 27). It is beyond the context of the present work to resolve the philosophical dilemmas involved in these dichotomies either through the discussion of the Parthenon and the Erechtheion or the subsequent chapters. However, in its sampling of buildings, literary texts and works of art, the book discusses ideas that make their appearance as contrasts either implicitly in certain examples of Western architecture, or explicitly through philosophical and cultural demarcations, such as Rationalism and Empiricism, Classical and Romantic.

While the Parthenon and the Erechtheion are examples of pre-modern space, the other buildings discussed in the book date from the nineteenth and twentieth centuries. The intention is not to remove the two temples from their historical context and identify similarities or differences between ancient and contemporary structures. The purpose is rather to introduce the notions of the conceptual, perceptual and cultural meaning through two examples that in spite of their immense influence have been mainly approached from the point of view of harmonious systems and numbers. It is also to address these notions through two buildings that were contemporary to philosophical developments that generated a split between the intellectual world of abstract concepts and the natural world of sensual appearances. So, the analysis of the two temples aims, first, to explore a set of ideas that have their roots in Classicism by focusing on formal and spatial characteristics rather than mathematical patterns; second, to explore the relation of these characteristics to the cultural and political content of the two buildings through their respective mythical narratives; and, finally, to draw attention to the ways in which architectural discourse has been affected by a contrast between mental and physical. The underlying proposition is that the relationship between the two realms can be addressed only through a joint analysis of the conceptual properties of space and those properties we observe through spatial experience.

No other building encompasses such contrasts or more strikingly demonstrates their tensions more successfully than Mies van der Rohe's German Pavilion in Barcelona. Together with the short life of the pavilion and its legacy in defying meaning, these oppositions have attracted diverse interpretations, ranging from a classical temple (Padovan 2002: 110) to a small landscape (Constant 1990), and from a symbolic house (Padovan 2002: 110) to a 'palace of reflections' (Quetglas 2001: 136). Recent literature on Mies showed a shift from the 'realm of the autonomous form' to the real world of experienced time (Krauss 1994: 134). This change of

interest from the formal to the experiential is symptomatic of a perceived dichotomy between abstract order and observable patterns discussed earlier. The second chapter of the book attempts to explore this dichotomy, looking at the Pavilion in terms of geometrical symmetry and visual symmetry constructed out of reflective materials (Evans 1997: 233–72). Rethinking the building in these terms shows that Mies used partial geometrical symmetries, which are not evident in the surface appearance of the building. He also employed geometrical alignments to control the position of surfaces in relation to issues of optical experience. Finally, he used reflections not only to create multiple symmetries but also to construct the perception of a unified enclosure. Mies, it is suggested, did not oppose the power of geometry to regulate, but resisted the dominant role of geometry to guide our understanding prior to the real unfolding of the world in front of our eyes through embodied experience.

Symmetry and reflections in decomposing and restoring coherence are used extensively in Borges' fictions. Not only are mirrors and symmetrical structures incorporated in his work, but also conceptual symmetries link happenings outside the sequential unfolding of the narrative as a causal chain. The third chapter examines three of Borges' detective stories in terms of narrative structure and the linear progression of the text. It also focuses on the architectural models that appear in his stories, expressing systems of thought associated with classical architecture and the Romantic landscape movement. Architecture and literature for Borges coalesce in the interaction between relations grasped synchronically and those we perceive sequentially. This is expressed through the notion of the 'labyrinth' – a building or a text – that can be conceived by its 'architect' all at once from outside its space, and by its 'explorer' who experiences it sequentially through time (Faris 1988: 4). Borges' use of symmetries, mirrors and labyrinths remind us of Tschumi's notions of the 'pyramid of concepts' and 'labyrinth of experience'. But while Tschumi sees a division between these concepts in recent architectural theories, Borges uses them to create aesthetic juxtapositions. His purpose is to express that the conceptual structures architects, theorists and scientists use to represent the world and the real world do not necessarily coincide.

In the *Library of Babel* Borges' narrator is an archivist who searches for modes of order in a chaotic space that merges with language through meaningless books and infinitely expanding hexagonal galleries – 'a storehouse of the culture of several millennia' (Eco 2006: 115). The fourth chapter attempts to construct a model path inside Borges' Library as a mechanism for navigating through the philosophical ideas of the fiction. It proposes that Borges *speaks of* units of language and architecture that rotate and recombine *ad infinitum*, but it is primarily the tools he *speaks with* that construct the idea of infinite combinations. Symmetrical relations in the paragraph content create associations among ideas so that they eventually merge into infinite combinations. These ideas express philosophical dilemmas between real and ideal, finite and infinite, absolute and relative. In this fiction Borges articulates his view of the labyrinth as the domain of culture, or as the space of Western knowledge where the creator/designer and the explorer/wanderer are mirror reflections of each other. Meaning derives not from the antagonistic relationship between these two

notions, but from the ways in which a work articulates their creative tensions, fusions and juxtapositions.

The role of reflections in Sir John Soane's house-museum is the subject of the fifth chapter. Situated between Enlightenment thought and the Romantic tradition, the house is the epitome of the influence of Classicism and Le Camus de Mézières' theory of sensation on Soane (Watkin 2000: 20, Pelletier 2006: 6). Le Camus considered architecture as an expressive language conveying specific emotions through light, shade and theatrical effects. In ordering the house and its contents Soane constructed a rich field of visual interconnections incorporating these effects and reflective surfaces that suggest the idea of boundless space. These strategies and Soane's informal arrangements of ruins, mirrors and narrative curios turn the house into a combinatorial exercise of spatial and semantic relations relevant to Soane's interest in the union between poetry and architecture. They open it to a larger universe of history, but also fold it back onto itself, in multiple ways, to express the personal narrative of its owner and his mind.

The Soane's Museum works as a bridge between the study of meaning in architecture and literature in the first two parts of the book, to a more concentrated study of the relationship between space and narrative in museums, whose programme specifically engages the production and transmission of knowledge and cultural content. The sixth chapter concerns the Victorian stage of museum development based on the nineteenth-century view of museums as 'texts' using classification practices to map knowledge seen as objective and universal. It compares the Natural History Museum in London with the Kelvingrove Art Gallery and Museum, Glasgow, which reflect two antithetical attitudes to the study of nature in Victorian Britain. The axial symmetry and the visual separation among spaces in the former express a hierarchical structure analogous to the classificatory strategies employed in the study of nature, which broke up specimens by hierarchical principles of similarity and difference according to the visible patterning of their form. The visual integration in the Kelvingrove museum, on the other hand, enables an interaction of the study of the natural world with other areas of knowledge. The essence of the former is in naming things and ordering them through a relationship between language and taxonomy (Foucault 2002: 226). In the Kelvingrove the spatial interconnection of natural history, industry and trade introduce a fluid relationship between the order of nature, the order of making things, and the order of exchange. Objects are no longer fixed through language in their unchanging positions, but enter relations over and above their spatial location in gallery rooms by virtue of being spatially inter-visible.

Visions of nature in the two buildings are interwoven with perceptions of identity as the Natural History Museum celebrates knowledge on the divine project of nature mediated by the imperial collection, while the Kelvingrove grounds secular knowledge of nature on the Scottish national industrial project. The next chapter addresses the relationship between the spatial characteristics, the approach to nature, display and identity through two contemporary buildings: the Museum of Scotland by Benson and Forsyth in Edinburgh, and the Burrell Collection by Gasson, Meunier and Anderson in Glasgow. Between the two Victorian and contemporary museums there is a century of significant changes, the most important of which

is the replacement of knowledge as 'objective' and scientific by the notion of interpretation. Museum architecture follows these changes, shifting from shaping and displaying knowledge to expressing the curatorial message, and from a public monument to an educational and leisure destination.

The two museums respond to a particular vision of identity, the national identity of Scotland on one hand and the personal identity of William Burrell, the donor of the Burrell collection, on the other. Both show an influence from John Soane, one through the treatment of space, light and the integration of the displays with the design, and the other by building a portrait of Burrell and incorporating fragments and ruins into the building. But in spite of similar influences they demonstrate striking contrasts. The Museum of Scotland is situated in the historical centre of Edinburgh, making history the subject of the display, while the Burrell is built in a park, turning the woodland to a central theme of the installation. The former has a conceptual and experiential centrality, and an exhibition arrangement that advances in historical sequence from the basement to the roof terrace. The Burrell lacks both the 'coherence' of a centre and thematic coherence in the collection. It is arranged as a 'walk in the woods' that integrates the building against the backdrop of nature. The two buildings and their narrative organization advance contrasting conceptual strategies: history as progress based on rectilinear development, and its reverse metaphor, history as an idealized form of nature or as Arcadian model. But, more importantly, the two buildings provide two different models of arranging space and arranging exhibitions. The first one subjects the structure of space to the overpowering message of the collection. The second one contrasts the semantic orientation of narrative in the areas devoted to Burrell with the generative power of space to create aesthetic juxtapositions in the rest of the gallery spaces.

The museum most characterized by a 'progressive' identity is the Museum of Modern Art in New York, containing one of the world's most comprehensive collections of twentieth century art. Its organization was based on a historical precedent of a comprehensive narrative proposed by Alfred Barr's classification of early twentieth-century art into a 'rational' and an 'intuitional' current (1936: 19). But in its latest expansion the museum contrasts the notion of a synoptic view of history with alternative narrative strategies. The eighth chapter investigates the relationship between architecture and narrative in the new building and the ways in which it can be understood through the ordering of space and the movement patterns of visitors. It argues that the new installation changes the earlier display concept, encouraging interrelations among works, styles and historical movements. But at the same time it adheres to Barr's historic interpretation, demonstrating an ambiguity regarding its commitment to history and to innovation.

The ninth chapter offers, first, an investigation of the conceptual and perceptual through a brief review of discourse, attempting to place the questions raised in this book in a wider context. Second, it provides a theoretical synthesis of the individual chapters. The theoretical review discusses the roots of the conceptual-perceptual relationship in a philosophical dilemma of subject and object, the mind and the world, originating in the pre-Socratic philosophers and Plato. This dilemma influenced architectural theory as a question of the relationship among mathematical

proportions, geometrical forms and the ways in which they register in perception. With the rise of the importance of space in architectural inquiry in the eighteenth and nineteenth centuries and later with Modernism, the theoretical basis of the conceptual and the perceptual shifted from form and its visual perception to space and embodied experience. The work of Tschumi, Lefebvre and Hillier and Hanson is discussed next, providing a theoretical and analytical framework to describe spatial relations.

In the comparative review of buildings I show that the interaction between the conceptual and the perceptual is conditioned by different degrees of geometrical control imposed on visual fields experienced through movement. High degrees of geometrical co-ordination of visual information, as in a classical villa, result in low degrees of perceptual variation, channelling understanding towards a simple geometrical idea, which turns into a representational formal syntax. In contrast, a decrease in the levels of geometrical structuring of visual fields increases variation of perceptual information, releasing a variety of the ways in which buildings can be grasped as formal and spatial arrangements. The Barcelona Pavilion and the Soane's Museum fall into this last category, balancing the geometric co-ordination of parts with diverse and changing visual experiences.

Moving from the conceptual and perceptual to the cultural message, the comparative discussion reveals that the buildings discussed in the book divide into two broad categories: on the one hand are buildings that create a correspondence between the morphological orientation towards a simple geometrical concept and the conceptual orientation of the display or cultural programme towards one message. On the other hand are examples in which conceptual polyvalence goes hand in hand with the aesthetic and semantic polyvalence in the organization of the collection. The former operates according to a conventional or conservative mode that is concerned with signification in an explicit way, eliminating interpretive ambiguity by a definitive message. The latter functions as a system that is open to interpretive ambiguity. It is concerned with interpretation as process rather than message, stimulating spatial exploration and an engagement with its own mechanisms of construction.

The notions of a conventional and an unconventional mode are related to Umberto Eco's interpretation of art works as 'closed' or 'open', based on information theory (1989: 13). Closely related to this theory are the ideas of a *conservative* and a *generative* mode of space proposed by Hillier (2005: 98). The former describes cultural meaning embedded in space to reproduce a cultural pattern. The latter captures a rich potential of meaning generated by the spatial arrangement. Against the theoretical background of these propositions *Architecture and Narrative* shows that geometry, space and their interrelation order experience either through the reproduction of knowledge and conventional meanings, or through the generation of new knowledge of spatial and cultural relations.

These observations have the capacity to inform design theory, museum theory and the design practice of cultural buildings and exhibitions. A portion of this study confirmed these interpretations by looking at how visitors move in museums to explore the collections. In the context of this work it was shown that the *conservative* planning of space reduces the potential for spatial exploration by

channelling movement of viewers in a predetermined way. The *generative* mode encourages more variation in the exploration patterns of visitors, facilitating multiple and new ways of seeing the work while at the same time sustaining patterns of social co-presence. The exploration patterns of visitors have been addressed in other publications by this author, and in similar studies by other scholars.³ Although it is an important theme of this work, the priority is on studying the relationship of spatial morphology to the display and the models of thought that can illuminate these museums.

Returning to the conceptual and the perceptual, the ninth chapter argues that architecture is not an affair of the mind or of the senses; neither abstraction nor physical reality, but a dynamic relationship between abstract structures and those relationships that are discovered by moving in buildings. The ways in which the two interact might foreground one realm over the other, creating the *illusion* of a dichotomy, as in a classical building, where the unchanging views along an axial route highlight the abstract stable order at the expense of a varied visual experience, and in an eighteenth-century garden, where the impression is created of the absence of order. The dichotomy illusion presents an opportunity for some writers, architects or artists such as Borges, Mies and Soane to exploit the supposed gaps between the two aspects. The contrast between the mirror and the labyrinth in Borges' fictions is an expression of the tension between the conceptual symmetries found in the story and the understanding of the text as a linear progression. The Barcelona Pavilion and the Soane's Museum also use reflective surfaces and contrived spatial sequences, juxtaposing symmetry with a diversity of views discovered through movement. By employing multiple partial symmetries and long but distorted axes of sight they bring a level of conceptual understanding down into the experiential aspects of space. By creating a variety of perceptions, their architects resist the overall control of geometric and formal relations over perceptual experience. The creative tension of the two realms in the work of these architects unbalances the illusion of a binary opposition. It is the imaginative synthesis of the two models of spatial knowledge that can create a space where rational explication is measured against the enjoyment of spatial discovery, and where meaning is so fluid and rich that it can never be resolved in a single interpretation.

Architecture and Narrative raises the question of the relationship between how buildings are conceived as abstract patterns, how they are perceived as patterns grasped through sensual experience, and how these patterns relate to the structure of messages in cultural contexts. It does not undertake a comprehensive investigation of this subject. Rather through specific examples it demonstrates how the conceptual, the perceptual and narrative affect experience and meaning. These examples are not exhaustive but mainly suggestive, highlighting lines of development in what otherwise constitutes a varied picture.

The discussions of buildings and texts in the book contribute to the study of architecture through a set of theoretical propositions: *social meaning passes through the morphological properties of buildings themselves*. The distinction between form and meaning (Colquhoun 1985: 190), between form being