



T TYPOLOGY AND BUILT ENVIRONMENT

by

ALAN TATE B.A. (Hons) Dip. L.D. P.P.L.I. C.S.L.A.

Thesis submitted to the Edinburgh College of Art / Heriot Watt University
in fulfilment of the requirements of the Degree of Doctor of Philosophy

2010



© Alan Tate December 2010

ACKNOWLEDGEMENTS

This thesis is dedicated to Dr Marcella Eaton without whose support and encouragement it would never have been started ... let alone finished. I am also grateful for support and assistance from:

- numerous students in the Faculty of Architecture at the University of Manitoba, including those in the History of Landscape + Urbanism courses in 2009-10 and 2010-11, and in an Urban Parks elective in 2009-10, who responded to questionnaires about toponyms and assisted in the analysis of responses. More specific assistance was received from Christine Wilson (bibliographic search); Tamara Marajh (scouring gazetteers) and Shawn Stankewich (digital and manual map manipulations); and Shannon Loewen (iWorks advice);
- academic colleagues and administrative staff at the University of Manitoba who facilitated the scheduling of my work to allow me to complete this thesis;
- Mary Lochheed and staff in the Architecture and Fine Arts Library at the University of Manitoba for their assistance in unearthing and/or ordering often obscure source material;
- Larry Laliberté in the Elizabeth Dafoe Library at the University of Manitoba for assistance in finding figure-ground plans of Winnipeg, and David Taylor in the School of Landscape Architecture at Edinburgh College of Art for making plans of Edinburgh available;
- Moira Seftor, the ever-efficient administrator in the offices of the School of Architecture, and Elaine Dickson, Research Administrator at Edinburgh College of Art, and one of the most helpful people a doctoral student could be fortunate enough to work with;
- Leslie Forsyth, Head of the School of Architecture at Edinburgh College of Art throughout my period of study and a consistently supportive Second Adviser;
- Dr Miles Glendinning from the School of Architecture at Edinburgh College of Art for acting as Chair for the *viva voce* examination;
- Professor Ali Madanipour from the School of Architecture, Planning and Landscape at the University of Newcastle and John Stuart Murray from Edinburgh College of Art, External and Internal Examiners respectively, for their careful reading of the work and for ensuring that the examination led to significant improvements in the final document;
- Dr Faozi Ujam, my Principal Adviser, for allowing me to be "the most difficult doctoral student" he "ever worked with". Thank you Faozi for your fortitude in the face of frequent intransigence.

But, above all others, I am eternally indebted to Marcella for her support; for her critiques of my work; for her necessary chastisements; for her forthright honesty; for her sense of humour; for her love - and for being my *True Companion*.

CONTENTS

ACKNOWLEDGEMENTS

ABSTRACT

INTRODUCTION

1:	MOTIVATIONS FOR STUDY	1
2:	BACKGROUND	3
3:	DEFINITION OF TERMS	8
4:	AIMS AND OBJECTIVES OF THESIS	9
5:	RESEARCH METHODOLOGY	11
6:	LITERATURE REVIEW	13
7:	OVERVIEW OF CONTENTS	14
8:	NOTES ON FORMAT	15

CHAPTER ONE: URBAN FORM AND URBAN SPACE

1.1	INTRODUCTION	17
1.2	WHAT ARE CITIES?	18
1.2.1	<i>Overview</i>	
1.2.2	<i>Lynch: Good City Form (1981)</i>	
1.2.3	<i>Marshall: Cities, Design and Evolution (2009)</i>	
1.2.4	<i>Other Interpretations of Cities</i>	
1.3	MOVEMENT AND CITY FORM	25
1.3.1	<i>Overview</i>	
1.3.2	<i>Evolution of Urban Movement</i>	
1.3.3	<i>Webber and the Nonplace Urban Realm</i>	
1.4	WHAT IS PUBLIC SPACE?	30
1.5	PUBLIC SPACE CHANGES SLOWLY	31
1.5.1	<i>Overview</i>	
1.5.2	<i>When Change does Occur</i>	
1.5.3	<i>Figure-ground Plans of Edinburgh and Winnipeg</i>	
1.6	MANIFESTOES FOR CITY FORM	36
1.6.1	<i>Overview</i>	
1.6.2	<i>Jacobs and Appleyard: Toward an Urban Design Manifesto (1987)</i>	
1.6.3	<i>Performance Dimensions for the Twenty-first Century</i>	
1.7	CONCLUSIONS	41

CHAPTER TWO: APPROACHES TO KNOWLEDGE, COMPREHENSION AND CATEGORIZATION

2.1	INTRODUCTION	43
2.2	THE ENLIGHTENMENT AND THE RISE OF SCIENCE	44
2.2.1	<i>Enlightenment and Renaissance</i>	
2.2.2	<i>The Scientific Revolution</i>	
2.2.3	<i>The Rise of Empiricism</i>	

2.3	REACTIONS TO SCIENCE AND EMPIRICISM	53
2.3.1	<i>Romanticism</i>	
2.3.2	<i>Imagination and Aesthetics</i>	
2.3.3	<i>Immanuel Kant (1724-1804)</i>	
2.3.4	<i>Kant's Critiques</i>	
2.3.5	<i>Philosophy and Politics</i>	
2.4	INDIVIDUALITY AND INTERPRETATION	70
2.4.1	<i>The Emergence of Existentialism</i>	
2.4.2	<i>Authenticity in the Built Environment</i>	
2.4.3	<i>Hermeneutics</i>	
2.4.4	<i>Phenomenology</i>	
2.4.5	<i>Phenomenology and Built Environment</i>	
2.5	LANGUAGE, NAMING AND MEANING	110
2.5.1	<i>Structuralism</i>	
2.5.2	<i>Language and Logic</i>	
2.5.3	<i>Naming and Meaning</i>	
2.5.4	<i>Meaning and Architecture</i>	
2.5.5	<i>Architecture as Language</i>	
2.6	CATEGORIZATION, ARCHETYPES AND THE COLLECTIVE UNCONSCIOUS	147
2.6.1	<i>Classification in Other Disciplines</i>	
2.6.2	<i>Archetypes and the Collective Unconscious</i>	
2.7	CONCLUSIONS	157

CHAPTER THREE: TYPE AND TYPOLOGY IN ARCHITECTURE AND URBAN DESIGN

3.1	INTRODUCTION	161
3.2	VOCABULARY AND PURPOSES OF TYPOLOGY	162
3.2.1	<i>Vocabulary of Typology in Architecture</i>	
3.2.2	<i>Purposes of Typology in Architecture</i>	
3.3	EMERGENCE AND RE-EMERGENCE OF TYPOLOGY IN ARCHITECTURE	168
3.3.1	<i>Laugier and Quatremère</i>	
3.3.2	<i>Other Proclamations in French Architecture</i>	
3.3.3	<i>The École des Beaux-Arts and Greek Revival Architecture</i>	
3.3.4	<i>Gothic Revival Architecture</i>	
3.3.5	<i>From Beaux-Arts to Modernism</i>	
3.3.6	<i>Herman Muthesius and the Deutscher Werkbund</i>	
3.3.7	<i>The Emergence of Modernism</i>	
3.4	ARCHITECTURE AND TYPE IN ITALY	198
3.4.1	<i>The Casabella-Continuata Circle</i>	
3.4.2	<i>Rossi and The Architecture of the City (1967)</i>	
3.4.3	<i>Rossi's Locus and Analogical Architecture</i>	
3.5	TYPE AND DIAGRAM IN ARCHITECTURAL DISCOURSE	203
3.5.1	<i>Eight Essays on Type in Architecture</i>	
3.5.2	<i>Three Studies of Types</i>	
3.5.3	<i>Diagram-driven Morphogenesis</i>	
3.5.4	<i>Durability of Type in Building Design</i>	

3.6	TYOPOLOGICAL STUDIES IN URBAN DESIGN	222
3.6.1	<i>Studies in Urban Morphology</i>	
3.6.2	<i>Form-based and Use-based Studies</i>	
3.6.3	<i>Alexander's Ideas</i>	
3.6.4	<i>New Urbanism</i>	
3.6.5	<i>Other Urbanisms</i>	
3.6.6	<i>Postmetropolis</i>	
3.7	CONCLUSIONS	244

CHAPTER FOUR: TYPOLOGICAL STUDIES OF URBAN SPACE

4.1	INTRODUCTION	245
4.2	EUROPEAN ROMANTICISM	246
4.2.1	<i>Camillo Sitte (1843-1903)</i>	
4.2.2	<i>The Brothers Krier</i>	
4.3	CATEGORIZATIONS OF STREETS AND SQUARES	249
4.3.1	<i>Precedent Studies</i>	
4.3.2	<i>Other Commentary on Streets and Squares</i>	
4.3.3	<i>Collage and Recombination</i>	
4.4	OTHER TYPOLOGICAL STUDIES OF URBAN SPACE	257
4.4.1	<i>Overview</i>	
4.4.2	<i>Eight Typological Studies</i>	
4.5	SOCIO-POLITICAL PERSPECTIVES ON URBAN SPACE	269
4.5.1	<i>Two Socio-Political Studies</i>	
4.6	CONCLUSIONS	273

CHAPTER FIVE: URBAN SPACE TYPOLOGY - RATIONALE AND APPLICATION

5.1	INTRODUCTION	275
5.2	RATIONALE	275
5.2.1	<i>Basis for Analysis of Space / Name Types</i>	
5.2.2	<i>Naming Practices</i>	
5.2.3	<i>Classification and the Role of Typology in Design</i>	
5.2.4	<i>Difference and Commonality as Bases for Typology</i>	
5.2.5	<i>Odonymic Practices</i>	
5.3	APPLICATION	283
5.3.1	<i>Urban Spaces in Edinburgh and Winnipeg</i>	
5.3.2	<i>Placing Names</i>	
5.3.3	<i>Graphic Plotting of Space Names</i>	
5.3.4	<i>Observations on Graphic Plots</i>	
5.3.5	<i>Tabulation of Space Names</i>	
5.4	ANALYSIS OF SPACE NAMES COMMON TO EDINBURGH AND WINNIPEG	298
5.4.1	<i>Overview</i>	
5.4.2	<i>Denotations of Common Space / Name Types</i>	

5.5	DISTINCTIVE OR ARCHETYPAL SPACE / NAME TYPES	306
5.5.1	<i>Overview</i>	
5.5.2	<i>Survey Responses</i>	
5.5.3	<i>Observations on Survey Responses</i>	
5.6	CONCLUSIONS	311

CONCLUSIONS

1:	OVERVIEW	313
2:	REVIEW OF FINDINGS	314
3:	APPLICATION OF FINDINGS	319
4:	FURTHER INVESTIGATIONS	322

BIBLIOGRAPHY

BOOKS AND JOURNALS	325
BOOK REVIEWS	343
NEWSPAPERS	343
WEB SITES	343
PERSONAL CORRESPONDENCE	344
DICTIONARIES AND ATLASES	344

APPENDICES

APPENDIX A	345
Numbered Definitions of Urban Space Suffix Names used in Edinburgh and Winnipeg	
APPENDIX B	348
Numbered Definitions of Urban Space Suffix Names used in Edinburgh Only	
APPENDIX C	356
Numbered Definitions of Urban Space Suffix Names used in Winnipeg Only	

LIST OF FIGURES

CHAPTER ONE

<i>Figure 1.1</i>	<i>Figure-ground of Edinburgh in 1890s</i>
<i>Figure 1.2</i>	<i>Figure-ground of Edinburgh in 2009</i>
<i>Figure 1.3</i>	<i>Streets and Building Lots in Winnipeg in 1910</i>
<i>Figure 1.4</i>	<i>Figure-ground of Winnipeg in 2010</i>

CHAPTER THREE

<i>Figure 3.1</i>	<i>Maison Carré, Nîmes, France</i>
<i>Figure 3.2</i>	<i>Barrière de la Villette, Paris</i>
<i>Figure 3.3</i>	<i>Ledoux's Plan for Chaux</i>
<i>Figure 3.4</i>	<i>Entrance, Arc-et-Senans</i>
<i>Figure 3.5</i>	<i>Director's House, Arc-et-Senans</i>
<i>Figure 3.6</i>	<i>British Museum, London</i>
<i>Figure 3.7</i>	<i>Sir John Soane's House, London</i>
<i>Figure 3.8</i>	<i>Royal High School, Edinburgh</i>
<i>Figure 3.9</i>	<i>Royal Circus, Edinburgh</i>

- Figure 3.10 *Royal Institution / Royal Scottish Academy, Edinburgh*
 Figure 3.11 *National Gallery, Edinburgh*
 Figure 3.12 *St Pancras / Midland Hotel, Edinburgh*
 Figure 3.13 *St Giles Church, Cheadle*
 Figure 3.14 *Oxford University Museum*

- Figure 3.15 *Bibliothèque Ste-Geneviève, Paris*
 Figure 3.16 *L'Opéra, Paris - Façade*
 Figure 3.17 *L'Opéra, Paris - Gallery*
 Figure 3.18 *Monadnock Building, Chicago*
 Figure 3.19 *Auditorium Building, Chicago*

- Figure 3.20 *Carson Pirie Scott, Chicago*
 Figure 3.21 *Robie House, Chicago*
 Figure 3.22 *Notre-Dame-du-Raincy, Paris*
 Figure 3.23 *Bauhaus Building, Dessau*
 Figure 3.24 *Farnsworth House, Wisconsin*

- Figure 3.25 *TD Centre, Toronto*
 Figure 3.26 *Notre-Dame-du-Haut, Ronchamp*
 Figure 3.27 *Unité d'Habitation, Marseilles*

CHAPTER FOUR

- Figure 4.1 *Model of New Town, Edinburgh*
 Figure 4.2 *Statue of David Hume, Old Town, Edinburgh*

CHAPTER FIVE

- Figure 5.1 *Typical Winnipeg Street Signs*
 Figure 5.2 *Names occurring in both Edinburgh and Winnipeg (27)*
 Figure 5.3 *Names occurring in Edinburgh Only (77)*
 Figure 5.4 *Names occurring in Winnipeg Only (11)*
 Figure 5.5 *All Names occurring in Edinburgh (104)*

 Figure 5.6 *All Names occurring in Winnipeg (36)*
 Figure 5.7 *All Names occurring in Edinburgh or Winnipeg (115)*
 Figure 5.8 *Street Sign in Birmingham, England*
 Figure 5.9 *Examples of Distinctive Space / Name Types*

LIST OF TABLES

CHAPTER TWO

- Table 2.1 *Peirce's System of Signs*

CHAPTER FIVE

- Table 5.1 *Distribution of All Space Names Occurring in Edinburgh or Winnipeg on Continuum from Being Primarily Destination to Being Primarily Route*
 Table 5.2 *Distribution of All Space Names Occurring in Edinburgh or Winnipeg on Continuum from Reflecting Form to Reflecting Function*
 Table 5.3 *Location of 27 Space Names Common to Edinburgh and Winnipeg on a Continuum from Being a Destination to Being a Route*
 Table 5.4 *Location of 27 Space Names Common to Edinburgh and Winnipeg on a Continuum from Reflecting Form to Reflecting Function*
 Table 5.5 *Space / Name Types Common to Edinburgh and Winnipeg Tabulated as Destinations or Routes on Basis of their Generic Names*
 Table 5.6 *Suggested Denotations of Common Space Name Types*
 Table 5.7 *Survey Responses on Archetypal Space / Name Types from 115 Names Occurring in Edinburgh or Winnipeg*
 Table 5.8 *Survey Responses on Archetypal Space / Name Types from 27 Names Occurring in Edinburgh or Winnipeg*
 Table 5.9 *Suggested Connotations of Distinctive / Archetypal Space / Name Types*

ABSTRACT

This thesis examines and seeks to validate typology – the study and/or listing of types – in the comprehension and design of the built environment, particularly public urban space. It addresses typological thinking as a way of indexing knowledge in post-Enlightenment and post-Renaissance thought and presents a critical analysis of the application of type and typology in architecture, including rule-driven approaches to building design. The thesis demonstrates that urban space in western cities is primarily generated by systems of movement and access, and (through examination of the spatial structure of Edinburgh, Scotland and Winnipeg, Canada) that, once created, it has greater permanence than the buildings that front onto it. The thesis argues that typology, including the identification of archetypes and ideal types, remains a common approach to human comprehension of complex phenomena. The thesis notes, however, that typology has gone in-and-out of fashion in architecture – particularly as a basis for the design of buildings – but has been applied more consistently in urban design, both as a vehicle for comprehension and to inform design decisions. The study culminates with a series of quasi-experimental exercises, undertaken with design students, in categorizing space types in Edinburgh and Winnipeg on the basis of their suffix names (odonyms). This includes an examination of the denotations of the 27 space / name types common to both cities and identification of nine distinctive space / name types – *gardens, square, park, bridge, promenade, avenue, path / pathway / walk, boulevard, street* – that are proposed as constituents of a common vocabulary for urban designers.

INTRODUCTION

1: MOTIVATIONS FOR STUDY

This thesis examines and seeks to validate the application of typology – the study and/or listing of types – in the comprehension and design of the built environment. Its principal focus is on types of urban space – what Edward Soja called “urban spatial specificity”, comprising “the relatively fixed qualities of a *built environment*, expressed in physical structures (buildings, monuments, streets, parks, etc.)” (Soja 2000: 8). The focus, therefore, is on publicly accessible – whether publicly or privately provided and/or managed – physical urban space. The thesis addresses types of urban space in the context of typological thinking in architecture and relative to ways of thinking in other disciplines, particularly philosophy, linguistics and psychology.

The attraction of examining different types of public urban space emerged from a detailed study of city parks. Writing the book *Great City Parks* (2001) brought the realization that urban parks are only one – albeit very important but nevertheless relatively specific – type of urban space. It became apparent that the value of urban parks might be increased if they were conceived, planned, designed, managed and used as part of inter-connected networks of urban space. This accords with the observation from Paul Goldberger, architecture critic for *The New Yorker*, that “[i]f I have learned anything about what makes a city feel comfortable as a work of design, it is that streets matter more than buildings” ... “urban delight is not the same thing as architectural pleasure, and good buildings are no guarantee of it” (Goldberger 2009: 222).

An early outline for the study expressed an intention to “define and position type” – starting from the “historical strands of Laugier, Quatremère de Quincy, Blondel, Boullé, Durrand [sic], Semper et al, though to Argan, Rossi, Vidler, Moneo, Krier and Venturi” – as an element of architectural theory. That outline anticipated the

principal aim of the study being “to develop a new classification of urban space types” with a view to “increasing my own and other people’s understanding of different types of public urban space, and assisting students and practitioners to design and manage public urban space”.

Supporting aims included identifying the difference between type and typology; addressing methods for exploring, comparing and categorizing architectural types; critically examining existing typologies, including the idea of archetypes; and exploring, on the basis of comments in Georges Perec’s *Species of Spaces*, typological analysis based on the suffix names (odonyms) of urban spaces. A sabbatical based in Edinburgh in 2005-06 made it clear that in that city alone, there are far more than the twenty English-language suffix names for urban spaces identified by Perec. And, as noted by (the customarily more deconstructive) Jacques Derrida, “[e]ach architectural place, each habitation has one precondition: that the building should be located on a path, at a crossroads at which arrival and departure are both possible” (Derrida 1986b: 319).

It also became clear during that sabbatical year that a far broader and deeper study would be needed in order to address fully the questions about type and typological analysis of urban space that first prompted this research. Such a study demanded a critical examination of the subject from multiple perspectives – an examination that addressed, inter alia, philosophical approaches to interpretation generally and to interpretation of the built environment in particular; the origins and applications of typological thinking in architecture and urbanism; human practices of categorization generally and of scientific classification in order to understand the world; and the use of language to describe and communicate our understanding of the world, including the built environment.

This thesis might be seen, then, as simply the product of an exploratory journey following on from an investigation of city parks and culminating in a typological analysis of the generic names given to public spaces. But its main outcome is a

robust validation of the contribution that typological analysis can make to the comprehension and design of the built environment. It can contribute to comprehension by setting phenomena – in the case of this thesis, urban spaces – in a contextual relationship to each other as part of an interrelated system. Typological analysis of tectonic precedents can contribute to design of the built environment by increasing the body of knowledge available to designers, without suggesting ready-made applications.

2: BACKGROUND

The study is located within the domain of architectural studies. This is seen to be appropriate, first, because architecture is an umbrella design discipline for study of the built environment and, second, because the idea of type has consistently re-emerged in post-Enlightenment discourse in architecture. The history of architectural theory is a record of endless endeavours to establish and apply principles for the discipline. These have taken various forms, including the expression of noble aspirations; promotion and attempted imposition of rules, standards and guidelines; or simply the generation of manifestoes, dicta and slogans.

Some of these principles have, to use Johnson's phrase, been "generalizable to theory" (Johnson 1994: 13) by virtue of their wide acceptance within the discipline. Accordingly, "[w]hen a wide audience is persuaded by a design theory, it gains its own kind of legitimacy" (Groat and Wang 2002: 84). But even when such ideas do become widely accepted, they remain no more (or less) than normative theory (as opposed to positive, empirically testable, scientific theory). This is, as literary theorist and Professor of Law, Stanley Fish put it, "theory-talk", which "is itself a practice and is therefore consequential to the extent that it is influential or respected or widespread" rather than theory proper, which "stands apart from all practices (and no such discourse exists)" (Fish 1989: 14).

Architectural "theory-talk" dates back at least to Vitruvius's *De Architectura*, from the first century CE, with its thesis that the conditions for "well building" (as Henry

Wotton's 1624 translation put it), are *firmitas*, *utilitas* and *venustas*, translated as "firmness, commodity and delight". These three conditions have continued to underpin architectural theory. Alberti's *De re aedificatoria libri decem*, produced in the fifteenth century, re-applied Vitruvius's theory, paying particular attention to the interpretation and application of the Classical Orders and rules of proportion. This was followed, in due course, by treatises that advanced the work of Vitruvius and Alberti, including Palladio's *I Quattro libri dell'architettura* (1570) – conceived, by all accounts, when he was illustrating Barbaro's edition of Vitruvius (Jobst 2003: 110).

Then came Scamozzi's *L'idea della architettura universale* (Ground Rules for the Art of Building) published in 1615; Claude Perrault's translation of Vitruvius into French (1673) and his "Treatise on the Five Orders of Columns in Architecture" (1683). This was followed by Colen Campbell's *Vitruvius Britannicus* (1715-25) and then, James Gibbs's "Rules for Drawing the Several Parts of Architecture" (1732) and Isaac Ware's "Complete Body of Architecture" (1756).

By that time the first of what Vidler identified as three occurrences of typological thinking in architecture had emerged (Vidler 1977a). This began, as examined in Chapter Three, with Laugier's *Essai sur l'Architecture* (1753) which identified and promoted the primitive hut – a roof supported by simple columns hewn from tree trunks and based on the model of a Greek temple – as the archetypal building. Quatremère de Quincy (1755-1849) also promoted the idea of an "original building", primarily to validate architecture as an art derived from nature, and this led on to his distinction between the "idea of *type* (the originating reason of a thing)" and "the idea of the model (the complete thing) which compels a formal resemblance" (Younés 1999: 255-6). In this context, the "word *type* presents less the image of a thing to copy or imitate completely, than the idea of an element which must itself serve as a rule for the model" (Ibid: 254). The model, by contrast, "is an object that should be repeated as it is", whereas the *type* "is an object after which each artist can conceive works that bear no resemblance to each other" (Op. cit: 255).

Quatremère's work formed part of endeavours in France to quell the ideological excesses of the Baroque. These endeavours also materialized in the work of Étienne-Louis Boullée (1728-99) and Claude-Nicholas Ledoux (1736-1806), students of Jacques-François Blondel (1705-74), whose *Cours d'architecture ou Traité de la Décoration, Distribution et Construction des Bâtiments* was published from 1771-77. Blondel's *Cours* called for a rationalist approach to architecture, and his students' work exhibited a pre-revolutionary fervour for the individual character of buildings to express their function ... and embodied their own ideological excesses.

The quest for rationalism was taken further by Quatremère, as secretary of the *École des Beaux-Arts* from 1816-39, and by Jean-Nicolas-Louis Durand (1760-1834), Professor of Architecture at the *École Polytechnique* from 1795 to 1833. Durand's major publications – *Recueil et parallèle des édifices de toutes genres* (Depiction and Comparison of all Types of New and Old Buildings – 1800) and *Précis des leçons d'architecture* (1802-5) – reflect a changing emphasis in architectural theory. The *Recueil et parallèle* was the history of architecture on the basis of building types (Curl 2006: 250); the *Précis des leçons* extolled a prescriptive, function-based approach to architecture that began a long-running challenge to the Vitruvian triad.

This changing emphasis was eventually made more emphatic by Adolf Loos's book *Ornament und Verbrechen* (Ornament and Crime – 1908) and Louis Sullivan's infamous dictum, from 1918, that “form ever follows function”. These functionalist slogans arose around the time of what Vidler saw as the second era of typological thinking in architecture – the period of transition from Arts and Crafts to Modernism. This transition was reflected in the clash, at the first conference of the *Deutscher Werkbund* in 1914, between Hermann Muthesius – who argued for architectural standardization – and Henry Van de Velde – who argued that putting type before style was tantamount to putting effect before cause. Despite these differences, Muthesius's manifesto “became an article of faith in the 1920s among those who were to become protagonists of the Modern Movement” (Curl 2006: 514) including its arch exponent, Le Corbusier (1887-1965). This era, and particularly Le Corbusier's paralleling of

architecture and machines in *Vers une architecture* (1923), constituted Vidler's "second typology".

Le Corbusier remains one of the more enigmatic figures in the history of architecture. Whereas Mies van der Rohe – whose "less is more" was a consistent progression of the rationalist, utilitarian idea of function as the principal determinant of form – remained faithful to his dictum, Le Corbusier seems to have oscillated between adherence to industrially-based standardization (the *Dom-ino* House, 1914 and *Ville Radieuse*, 1935), to Classical proportioning systems (including his "Regulating Lines" – Le Corbusier 1923: 65-83 – and his *Modulor*, 1948), and to locally-inspired design proposals (Ronchamp, 1954). Overall, probably quite fairly, he is both respected and vilified as the arch exponent of the Modern Movement architecture that was seen as the *leitmotiv* of post-World War II urban redevelopment in Europe. And it was the somewhat nostalgic, primarily Italian-based, left-wing resistance to post-World War II standardization in urbanism and architecture that generated what Vidler (1977a) termed "The Third Typology".

It is an argument of this thesis that although typological thinking consistently underpins architectural comprehension, it is only actively articulated when it is seen to have an instrumental purpose. The architects and critics connected to the Milan journal *Casabella-Continuatà* in the 1950s and 1960s – Giulio Carlo Argan, Saverio Muratori, Gianfranco Cannigia, Carlo Aymonino, Ernesto Rogers and, best-known in the English-speaking world, Aldo Rossi – were engaged in resistance to the manifestoes of the *Congrès Internationaux d'Architecture Moderne* (CIAM), particularly its Charter of Athens (1933) and in a search for "a rationale other than 'functionalism' for modern architecture" (Forty 2000; 217). Rossi presented in *L'architettura della città* (originally published in 1966) his version of type as a complete theory of architecture – "the very idea of architecture" (Rossi 1982: 32).

Rossi's type embraced the whole city, which was seen as a phenomenon with continuity, and it promoted the value of monuments, collective memory, the Study

Area and what he called *locus*. For Rossi, therefore, the constantly evolving city was the embodiment of type, and type took priority over form in the generation of architecture. As such, Rossi used type as a vehicle to validate urban history as the basis for architectural form. And, for better or worse, Rossi's type – with its call for monuments, collective memory and, in effect, contextualism – became conflated with postmodern architecture and its tendencies towards the production of (sometimes ironic) neo-classical forms in non-traditional materials. Rossi's work has also been seen as “an important stimulus for New Urbanism” (Curl 2006: 662), contributing to a situation in which type and typology in architecture are seen as synonymous, yet again, with a particular agenda.

This reflects a continuing pattern, highlighted by Rayner Banham and by Jeremy Till, of the aptitude of architecture to redefine itself – often because of perceived threats to its intellectual or operational autonomy. This can be seen either as an admirable search for theoretical (or, at least, theory-talk) underpinnings to the discipline or architecture can be accused of becoming its own fashion industry – freely co-opting theories from philosophy and literature, and importing techniques from engineering and construction technology while being in thrall to digital technology, both in representation and fabrication – all as a means of both promoting and protecting itself.

By contrast, it can be argued that the practice (it is arguably not a discipline in its own right) of urban design, has tended to view type and typological thinking more consistently. Since the emergence of urban design with Camillo Sitte's *City Planning According to Artistic Principles* (first published in 1889), a number of practitioners have commented on the value to them of being able to identify and understand the component parts of urban environments. Kevin Lynch observed that “[w]e are continuously engaged in the attempt to organize our surroundings, to structure and identify them” (Lynch 1960: 90). Likewise, Marshall recognized that “there is a need to address the issue of street type by considering the full variety of possible kinds of form and function” (Marshall 2005: 27).

Another of the arguments of this thesis is that whereas the applications of typology in architectural discourse have been contingent, typological thinking has continued to maintain its currency as an integral aspect of urban design. It can be argued, however, that the concept of type is also a constant in the architectural psyche. Forty noted, for instance, that function-based classifications of building types have been “in constant use since the late eighteenth century” (Forty 2000: 304). This suggests that commentators like Vidler were drawing attention to the occasions when typology has become instrumental in the generation of architectural form or in the polemics of architecture redefining itself. In short, seeking to remain fashionable. Interestingly, the RIBA Awards for 2010 returned to being organized by type rather than by location (Olcayto 2010: 22-53), thereby supporting Forty’s argument.

3: DEFINITION OF TERMS

Before moving on to address the aims and objectives of this thesis, it is important to be definitive about the terms used in it. Johnson commented on usage of the words *type*, including its “correlates *archetype*, *prototype*, and *stereotype*”, and *typology* in architecture (Johnson 1994: 289). He gave an admirably concise order of precedence for each of them: “archetype – the abstracted image of a grouping; prototype – the ‘first-formed’ of the archetype from which a thing is (deemed) to be copied; stereotype – the replication; and type – the generalization or portmanteau term” (Ibid). Those definitions are adopted in this thesis.

Johnson also noted that “‘typology’ is frequently misapplied to situations in which ‘type’ is meant (as in Olcayto 2010), as is its adjective ‘typological’ for ‘typal’” and that since the 1960s architectural commentators, particularly Alan Colquhoun and Anthony Vidler, used type and typology interchangeably (Johnson 1994: 291). For clarity, therefore, the word “typal” is not used in this thesis and the word “typology” is only used to mean either the study of types or a list of types. Other terms that are central to the concerns of the thesis include built environment and public urban space.

Soja's description of "built environment" as being "expressed in physical structures (buildings, monuments, streets, parks, etc.)" was addressed in Section 1 of this Introduction. This term is taken to mean the assemblage of relatively permanent, human-made constructions including all forms of building and infrastructure for the movement of people, goods and services, and the spaces between them. This definition recognizes that many such human-made places are produced by non-designers or by the collaboration of engineers and designers from other disciplines, as well as by architects. The working definition of public urban space is addressed in some detail in Section 1.4 of the thesis. It is used to refer to outdoor space that is publicly accessible whether publicly or privately provided and/or managed. And the contention that "public space is almost by definition urban space" (Smith and Low 2006: 3) is adopted as a precept for the thesis.

4: AIMS AND OBJECTIVES OF THE THESIS

The principal aims of the thesis are to examine and validate the study of types as a vehicle for comprehension and design of the built environment, particularly public urban space. Associated objectives, in the order that they are addressed, comprise:

- evaluation of the role of transport systems in the shaping of cities and in the formation of matrices of public urban space;
- demonstration of the relative permanence (or "fixity") of these matrices – a precept that underpins the entire study;
- postulation of the purposes of urban space in the twenty-first century city;
- critical examination of approaches to human knowledge and comprehension;
- critical examination of categorization as a fundamental aspect of human comprehension of the phenomenal world;
- critical examination of the cyclical adoption and abandonment of typological thinking in architecture (compared its the relatively continuous application in urban design);
- presentation of a name-based typological analysis of public urban space as an approach to the comprehension and design of the built environment;
- identification of what might be termed archetypal urban space / name types.

It was also seen to be important to examine the nature of categorization and classification in other fields, and the relational nature of typological classification, as opposed to the empirical nature of taxonomic hierarchies. This is examined in Section 2.6 and leads to recognition of typology as a fundamental process of identifying and categorizing differences between, and within, groups of phenomena. A simple example is the categorization of phenomena as animal, mineral or vegetable – with each category having commonly understood characteristics resulting from their natural origination.

Design is taken in this thesis to be the purposeful creation of objects, including places, to fulfill operational requirements and to satisfy human aspirations for sensory enjoyment. It is argued that achieving these aims requires clear and extensive knowledge of appropriate materials and components, and of the manner in which they will be employed and are intended to operate in use. This kind of knowledge is amenable to categorization (and more detailed classification) by type. And the critical point here is that the aims and objectives of this thesis are underpinned by recognition of the enduring value to the design process (again, in whatever field) of Quatremère’s idea of the (more flexible) “type” as opposed to the (more prescriptive) “model”. Equally, in terms of the design of built environments, categorization of precedent examples on the basis of differences and similarities, is an essential part of the body of design knowledge that is drawn upon in design proposals.

Such knowledge provides a vocabulary both for design development and for the communication of design ideas to fellow designers, to clients, to government agencies, and to the public. It can deal with literal or denotational issues – which lead to fulfillment of operational requirements, or it can deal with more symbolic or connotational issues – which can help in the achievement of sensory aspirations. It is also important to note that the application of typological knowledge in the design of built environments is seen in this thesis as being independent of any particular stylistic agenda. It could be equally applicable to vernacular or to neo-classical design. In summary, therefore, typological knowledge is seen as contributing to

flexible design thinking and not to the rigid imposition of pre-conceived design solutions.

5: RESEARCH METHODOLOGY

Groat and Wang adopted a definition of research as “systematic inquiry directed toward the creation of knowledge” (Groat and Wang 2002: 7). The first part of this definition is relatively straightforward. It denotes a structured – rather than an accidental or serendipitous – approach to research work. This will be addressed in a moment.

The second part of the definition is more complex and begs the question of what constitutes knowledge. Groat and Wang addressed this question by outlining three research paradigms – Positivism, Interpretive and Emancipatory – each with their own ontology (theory of being) and epistemology (theory of knowledge) (Groat and Wang 2002: 32). Positivism can be equated with empiricism – the development of knowledge from experience only, and the testing of theories through repeatable, controlled experiments. Ontologically it is distinctly singular; epistemologically its practitioners regard themselves as being objective. The Interpretive (or Naturalistic) paradigm works with “socially constructed realities” and treats knowledge as being relative rather than absolute. The Emancipatory paradigm, which can be equated with Critical Theory, suggests that different realities derive from different value systems, and accordingly, that knowledge is conditioned by the (very broad) range of filters through which it is interpreted.

In much the same way, Wilhelm Dilthey (1833-1911), an early exponent of hermeneutical philosophy, “stressed the radical difference between natural sciences” ... which ... “seek causes and ask for *explanation*” ... and ... “the human or cultural sciences” ... which ... “seek *understanding* by means of interpretation” (Mautner 2005: 162). As such, and given Fish’s comments about “theory-talk”, work in the human and cultural sciences can be seen more as a matter of seeking to alter perspectives on a topic than as an exercise in producing definitive, repeatable results

that might be directly translated into theory. And in terms of the stated aims and objectives of this thesis, the epistemological intention can be expressed as “examining the validity of typological studies in the comprehension and design of the built environment”.

Groat and Wang distinguished between systems of inquiry, research strategies and research tactics such that the three elements can be seen as a related progression. Accordingly, the system of inquiry can be related to the three research paradigms mentioned above; the strategy or research design is the “action plan for getting from here [research questions] to there [derived knowledge]” (Groat and Wang 2002: 11); and the tactics are specific techniques to implement the strategy.

The system of inquiry for this thesis largely falls under Groat and Wang’s Interpretive or Naturalistic paradigmatic cluster, which, they noted, has also been termed “qualitative, phenomenological, hermeneutic, and interpretive / constructivist” (Groat and Wang 2002: 33). Subsequently they outlined seven different strategies for architectural research – Interpretive-Historical; Qualitative; Correlational; Experimental and Quasi-Experimental; Simulation and Modeling; Logical Argumentation; and Case Studies and Combined Strategies. The typological analysis of toponyms presented in Chapter Five is quasi-experimental in nature but is intended to support the primarily interpretive overall system of inquiry.

The Interpretive paradigm adopted here can be contrasted with positivist approaches in terms of what educationalist Egon Guba described as standards of credibility, applicability, consistency and neutrality (Groat and Wang 2002: 35). A range of techniques has been adopted in order to meet these standards. These include setting the thesis in a broad context, including perspectives from other disciplines such as philosophy and linguistics; referring to original rather than secondary sources; seeking to “triangulate” and ground theoretical positions by drawing on the work of multiple commentators; and engaging students as objective participants in the more experimentally-oriented part of the thesis. Adoption of these techniques reflects the

fact that the research has been conducted as an extensive literature review. This is addressed further in the next section of the Introduction.

In terms of Groat and Wang's strategies for architectural research, the thesis demonstrates aspects of their Interpretive-Historical and Qualitative types in that both strategies "seek to describe or explain socio/physical phenomena within complex contexts, and both seek to consider the relevant phenomena in a holistic manner" (Groat and Wang 2002: 179-80). In common with Interpretive-Historical research, at the strategic level "it entails epistemological points of view, acting as lenses", although tactically it is less concerned with "fact-finding, fact evaluation, fact organization and fact analysis" (Ibid: 165). So, it can be seen strategically as being epistemological and tactically as being relational or differentiating.

In summary, therefore, the thesis seeks to establish fresh perspectives on normative theories – that is, on descriptive and explanatory theories validated by their broad acceptability to informed observers, rather than by positivist theories that can be tested by scientific standards of empirical reality. Thus it is (no more or less than) "theory-talk" – but it does have the virtue of being the product of a detailed investigation, including a thorough examination of pertinent literature and a quasi-experimental exercise in typological analysis.

6: LITERATURE REVIEW

Groat and Wang described a literature review as "the totality of activities the researcher undertakes to use" ... "*the body of information ... that has conceptual relevance for a particular type of inquiry*" (Groat and Wang 2002: 46). To all intents and purposes, therefore, the literature review is an embedded aspect of research according to the Interpretive paradigm. And in this thesis a wide range of sources has been accessed and critically examined in order to situate categorization generally in a wider philosophical context; to investigate the application of typological thinking to the comprehension and design of the built environment; and to conduct a more detailed analysis of urban space types on the basis of their generic names.

The principal focus of this critical examination is on human approaches to knowledge, comprehension and categorization in the post-Renaissance and post-Enlightenment western world. This includes examination of the Scientific Revolution and empiricism, and reactions to them, including romanticism and the emergence of aesthetics; existentialism, hermeneutics and phenomenology, and their co-option by architects and designers; structuralism, linguistics, naming and meaning as applied to the built environment; and the roles of categorization generally and archetypes (and collective thought) in particular to human comprehension.

The examination of approaches to epistemology is conducted in the light of the foregoing critique of hermeneutics, existentialism and linguistics as the frame for research based on the Interpretive paradigm. The thesis proceeds, in Chapters Three and Four, to examine the role of type and typology in architecture and urban design – primarily from the perspective of their purpose(s) or instrumentality.

7: OVERVIEW OF CONTENTS

The thesis is divided into five chapters. Chapter One establishes a context for the thesis. It examines the evolution of urban form and urban space; it examines the impact of changes in transport and communication technologies on the form of cities, and introduces figure-ground studies of Edinburgh and Winnipeg at roughly 100-year intervals to demonstrate the relative permanence of public space – an important precept for the entire study – and that this space was largely generated by movement systems. It also sets a context for the thesis by positing suggested “meta-criteria” and “performance dimensions” for cities generally and for their public spaces.

Chapter Two provides the bulk of the critique of approaches to knowledge addressed under Literature Review (above). Chapters Three and Four examine typological thinking in architecture and urban design. Chapter Five presents, first, a rationale for typological study of urban space and, second, the quasi-experimental analyses of urban space on the basis of the 115 generic or suffix space names (odonyms) that occur in Edinburgh and Winnipeg. This was done by design students from the

University of Manitoba. First a group of 36 students each positioned all of the 115 names on two intersecting axes ranging from whether they suggest that the space is a “route” or a “destination” (regarded as more inclusive categories than the frequently used “street” and “square”) and whether they suggest primarily “form” or “function” (the conventional categories for architectural typology). This produced two inclusive typological continuums providing greater insight to the nature of these space types. This is followed by an analysis of how the students categorized the 27 place names common to both cities. Subsequently a different group of 35 students assessed all 115 names in order to identify what they regarded as "archetypal" space / name types. The thesis closes with an examination of the qualities of the top-ranked space / name types.

8: NOTES ON FORMAT

The document follows the *Research Degree Thesis Requirements* of Edinburgh College of Art as approved by the Research Degree Committee in March 2010. References are based on the Harvard Reference System, except that, in order not to break the flow of the script, all quotations have been incorporated into the text. Where italics were used in original texts, these words have been left in italics. Where italics have been added, they are followed by the note [my italics]. Where words have been omitted from quotations, this is denoted by closing and re-opening quotation marks with ... between them.

CHAPTER ONE: URBAN FORM AND URBAN SPACE

1.1 INTRODUCTION

This chapter outlines the forces that have contributed to the physical form and spatial configuration of cities in the western world and emphasizes the durability of those forms and configurations. Clearly, in terms of urban form, the western world is comprised of two, often contrasting, components – the “Old World” of Europe with what might be generally characterized as irregular city layouts, and the “New World” of North America, where gridded layouts predominate.

The chapter begins by looking at metaphors that have been used to describe the growth and form of cities. These have included arguments that cities are organic networks or organisms or machines. The chapter goes on to observe that city form is primarily a response to the physical and financial constraints and opportunities created by successive developments in the movement of people and goods. These developments have evolved from movement by foot to movement by horse, then horse-and-cart, followed by canals, inter-city railways, suburban and underground railways, and then trams and, eventually individually controlled motor vehicles.

These successive systems of mass movement of people and goods promoted the physical spread and decreasing density of cities with distance from their centres. And it is noted that although outward physical expansion of cities continues, the configuration of public spaces – routes and destinations – that it creates remains substantially unchanged over very long periods. Indeed, this is one of the fundamental precepts of the entire study. Accordingly figure-ground plans of central sections of the cities of Edinburgh, Scotland and Winnipeg, Canada at roughly one hundred year intervals are used to demonstrate the relative permanence of their networks of public space – although the buildings that front onto them generally last less long.

There has been growing recognition since World War II of the de-centred expansion of cities, particularly, but not exclusively, in North America (Webber 1964, 1968; Alexander 1969; Garreau 1991; Soja 1996, 2000). This pattern has been reinforced by developments in methods of remote communication, first the telephone and latterly the Internet, promoting what Webber termed the “non-place urban realm” (Webber 1964). This growth has been aided by the expansion of regional highway systems. The spread of suburbs has been followed by the development of places of commerce and employment at nodes on regional transport systems, creating “Edge” or “Node Cities”, again, primarily in North America, as part of what Soja (2000) has called “Postmetropolis” (addressed in Sub-section 3.6.6).

This chapter also sets out some of the other precepts that underpin the thesis. It concludes by offering “meta-criteria” and “performance dimensions”, particularly for public space, in the twenty-first century city in response to Lynch’s criteria for “Good City Form”.

1.2 WHAT ARE CITIES?

1.2.1 Overview

Various metaphors have been used by various commentators attempting to define, describe and comprehend cities. Two detailed examinations of such metaphors – from Lynch in *Good City Form* (1981) and from Marshall in *Cities, Design and Evolution* (2009) – will be examined here, together a number of other comments about what cities are ... and are not.

There are obvious exceptions to the simple characterization given earlier of irregular European cities and gridded North America cities. The earliest cities to be built on a planned grid were probably Harappan cities in the Indus valley from about 2000 BCE, followed by the Hellenistic cities of Miletus and Priene in Asia Minor from the fifth century BCE (Morris 1972: 31-2). Roman cities, other than Rome itself, were laid out around the principal cross routes of the north-south *Cardo* and the east-west *Decumanus* and the subsidiary block grid of *insulae* (islands). Although urban

development in Europe between the fall of the Roman Empire in the fifth century and the Renaissance is largely characterized by organic growth, numerous gridded *bastide* and “planted” towns were created between the eleventh and fifteenth centuries (Ibid: 92).

Gridded layouts continued to be used in post Renaissance European cities – both for the expansion of existing cities and for the creation of wholly new ones – like Mannheim at the junction of the Rhine and Neckar rivers in Germany, whose completion in 1799 looked like “a straightforward exercise in unimaginative drawing board geometry” (Morris 1972: 235). And developments like the residential squares in London, following the creation of the Covent Garden piazza in the 1630s and Craig’s design for the New Town in Edinburgh from the 1760s, demonstrate continuous use of rectilinear layouts in new sections of British cities.

Meanwhile, although many early settlements in New England comprised buildings scattered around church greens and common land, the Spanish Laws of the Indies proclaimed in 1573 established “uniform standards and procedures for planning of towns and their surrounding lands” (Reps 1969: 41). The Laws, which included prescriptions for the siting of towns, the size of the main plaza, and the arrangement of principal streets, remained virtually unchanged during Spanish rule in North America (Ibid: 41-69).

Other major influences on gridded development in the United States include individual reformers’ proposals – like William Penn and Thomas Holme’s plan of 1683 for a fire-proof Philadelphia and James Oglethorpe’s expandable cellular system for the development of Savannah, Georgia, commenced in 1733; the Land Ordinance of 1785, which established the pattern of six-mile square townships and one square mile sections for all land east of the Ohio River; and the Commissioners’ Plan of 1811 for Manhattan, justified on the basis that right-angled houses are cheapest to build and most convenient to live in (Lynch 1981: 83). The latter consideration validated the grid for division and allocation of land in urban

settlements across North America. And, as Edward Hall noted, “Americans who have become dependent on this pattern are often frustrated by anything different” (Hall 1966: 99).

This brief account tells us something of the sources of the form of western cities. And in the twentieth century new types of settlement were developed including garden cities and new towns, particularly in Britain, and new cities, or sections of existing cities, were developed from the ideas of Le Corbusier (1887-1965) and manifestoes of the *Congrès Internationaux d’Architecture Moderne* (CIAM), particularly its Charter of Athens (1933). But this still begs the question of how a city can be defined and described.

1.2.2 Lynch: Good City Form (1981)

Lynch posited first, three normative theories of “proper city form” (Lynch 1981: 73). These were the ceremonial or cosmic model (such as Beijing, Kyoto or Teotihuacan) – stable, hierarchical and perfectly ordered on the basis of cosmic patterns and/or military control; the “city as machine” – effectively the gridded city with the machine model guiding “land subdivision, traffic engineering, utilities, health and building codes” (e.g. Manhattan following the Commissioners’ Plan); third, the city “thought of as an organism” – self-regulating, self-organizing systems of “homeostatic dynamism” (Ibid: 73-89) as found in nineteenth century industrial cities. Lynch even equated the “city as organism” to the tree as a model of the city (Op. cit: 94) – an analogy already examined and discarded by Christopher Alexander (addressed in Sub-section 3.6.3).

Lynch also proceeded to discount his normative theories on the basis of the difficulty of the analogy itself. “Cities” he argued, “are not organisms, any more than they are machines, and perhaps even less so” (Lynch 1981: 95). He noted that they are “not autonomous entities” and that the idea of hierarchy, a human approach to comprehending complexity, “is difficult to maintain” ... “in very complex organizations such as cities” (Ibid: 95, 96). Equally, in terms of the organism

analogy, he noted that “[f]ew of the more complex elements of a city are separable organs with sharp boundaries” but that the “holistic view” ... “is the most important contribution of organic theory” (Op. cit: 98).

Lynch went on to question whether it is even “possible to create a connected normative theory” and therefore proposed a set of five “performance characteristics” as a “foundation on which to build a general normative theory about cities” (Lynch 1981: 99, 108). He called these “performance dimensions”, and in some respects they are equivalent to the intrinsic qualities that Vitruvius believed buildings should possess – firmness, commodity and delight.

Lynch’s *dimensions* were *vitality* – how well cities ensure human survival; *sense* – being clearly perceivable and “mentally differentiated and structured”; *fit* – capacity to facilitate required human activities; *access* – ability to reach other people, services and places; and *control* – the degree to which facilities are controlled by those who use them. To these he added two overarching “meta-criteria”: *efficiency* – achievement of all the dimensions without compromising any of them; *justice* – equitable distribution of environmental costs and benefits (Lynch 1981: 118-9). An alternative set of meta-criteria and dimensions for the twenty-first century is proposed at the end of this chapter.

1.2.3 Marshall: Cities, Design and Evolution (2009)

Marshall also identified “three key metaphors” that have been applied to cities – as a work of art (as opposed to Lynch’s cosmic city), as a functional machine, and as an organic entity (Marshall 2009: 121). He related the idea of “the city as a work of art” back to the Renaissance and interpreted it as “a designed object, the product of its creator’s will; a composition of definite form and fixed extent” (Ibid: 122). Similarly, Marshall interpreted the “city as a machine” as “a consciously designed object with a single overriding purpose” (Op. cit: 123). And he related it to Le Corbusier and the “Modernist city”.

Although Le Corbusier famously referred to the house as “a machine for living in” (Le Corbusier 1923: 107) he does not appear to have made the same comment about cities, although he did assert that “[t]he centres of the great cities are like an engine which is seized” (Le Corbusier 1925: 94). The tenets of the CIAM’s Charter of Athens certainly adopted a function-driven approach, citing the “keys to town planning” as being “found in the four functions: housing, work, recreation (during leisure), and traffic” (CIAM 1933: 139). The tenets were seen as a response to “the disorder introduced by the machine” and the four key functions were intended to ensure that “the city will no longer be the chaotic result of random enterprises” (Ibid: 137, 141).

In terms of traffic, the tenets called for “a network of roads exactly proportionate to the uses and purposes, and in conformity with the modern technology of transport” – meaning, of course, the motor vehicle (CIAM 1933: 140). The tenets also noted, perhaps surprisingly, that the time spent in “all sorts of vehicles” was causing loss “of the healthiest of all functions: walking” and even suggested that their city “will be a true biological creation made up of clearly defined organs capable of fulfilling to perfection their essential functions” (Ibid: 140, 142). But, overall, the dictatorial tone, including the assertion that “[a]rchitecture holds the key to everything” (Op. cit: 144), leaves little doubt that theirs was a highly mechanistic, form-driven approach.

Marshall argued that the widely-used organic metaphor (or metaphors – parks as lungs; roads as arteries, etc.) “captures the sense of the city as somehow flexible, sensitive and responsive” ... “something that is dynamic, subject to rhythms and cumulative adaptive change” in contrast to “the inanimate nature of the machine” (Marshall 2009: 124, 125). He noted that Patrick Geddes (1854-1932) who “was one of the foremost thinkers to draw insights from biology for understanding and planning cities” ... “pioneered what we would now recognize as an ecological perspective on urbanism” (Ibid: 129). This “gradualist approach” was, in effect, the direct opposite of the Modernist formula promoted by Le Corbusier’s claim that “we

strive for order, which can be achieved only by appealing to what is the fundamental basis on which our minds can work: geometry” (Le Corbusier 1925: 93). Geddes’s view reflects Julienne Hanson’s argument, in her review of the respective plans for reconstruction of the City of London after the Great Fire, that cities which grow by accretion may appear not to be ordered, but may nevertheless be well structured (Hanson 1989).

Hanson distinguished between what she termed order – “in the sense of principles based on some generally accepted notion of sameness, repetition, geometry, grid, rhythm, symmetry, harmony” – and structure – “in the sense of making places intelligible through creating local differences” and giving “a grasp of the relation between the parts and the whole” (Hanson 1989: 22). She argued that if concepts of order are to have a role in the architecture of cities, it should be “to confirm structure and not to disguise its absence” (Ibid: 22). Hanson went on to note that in fact the City was “rebuilt in accordance with a road widening and straightening program” ... “without any major dislocation in the complex network of land and property ownership” but that concepts of order “found a place not in plan but in elevation” ... presenting ... “a face which was, for the first time, not merely urban but urbane” (Op. cit: 37, 39). This demonstrates, of course, the powerful ongoing influence of private freehold land ownership on patterns of public space in western cities.

Marshall, noting that Jane Jacobs (1961) recognized “cities as problems in organized complexity” and that Michael Batty (see Sub-section 3.6.3) “explicitly identifies complexity theory as a ‘new paradigm’”, argued that cities “seem to be complex in an organic kind of way that sets them apart from works of art and machines” (Marshall 2009: 129, 130, 131). Marshall’s chosen metaphor, therefore, was the city as ecosystem, “a complex, dynamic, collective entity” in which the parts have “their own agendas” (Ibid: 140, 135).

1.2.4 *Other Interpretations of Cities*

Many other commentators have referred to cities as works of art, and as organisms and/or organic. Edmund Bacon did all three. Writing about design proposals for Philadelphia he described the city as a “total organism” and argued that the proposed city structure was unified “because each of its parts is related to the other by the principles of an organic growth process” (Bacon 1967: 301). And he concluded by suggesting that “the architecture of movement and architecture of repose, make up the city as a work of art”, and then called for designers to “see the city as a whole, dealing with it as a complete organism” (Ibid: 322).

Mario Gandelsonas (1999) was more measured in his comments. He noted in response to the idea of the city as a building that this “Renaissance architectural fantasy obscures the fact that the city occurs in the temporal dimension, that it is a process and not an object”, and that if it is to be seen as an object, its configuration is given “by its streets and squares rather than by its buildings” (Gandelsonas 1999: 14). He went on to note, in a comment that is germane to the next section of this chapter, that this idea “devalues the formal potential of the voids” (Ibid). Gandelsonas also observed that the skyscraper, since its emergence at the beginning of the twentieth century, has demonstrated a tendency for buildings in American cities to be more detached than the “‘collective’ fabric of *attached* buildings, as in the case of the European city” (Op. cit: 23).

William Mitchell (2005) did actually describe cities as “huge *machines* [my italics] for sorting their populations and organizing opportunities for face-to-face encounter and exchange” (Mitchell 2005: 7). And whether they are described as organisms / organic, as works of art, as buildings or as machines, there are three important aspects of cities that will be addressed in the following sections. First, the influence of transport systems on city form; second, that city form, and particularly its public space, changes relatively slowly; third, emergence, on one hand, of the “non-place urban realm” (Webber 1964) and on the other, of “Postmetropolis” (Soja 2000).

1.3 MOVEMENT AND CITY FORM

1.3.1 *Overview*

Traditional, accretive, city growth reflects the economics and technology of transport. The planning and construction of new settlements generally begins with a top-down approach to transport as the basis for their layout. And once established, this layout, and the land ownership pattern that it defines, creates the fundamental form of the city in perpetuity.

1.3.2 *Evolution of Urban Movement*

The somewhat pseudo-scientific Constantinos Doxiadis (1913-75), posited a theory of urban growth based on “kinetic fields” defined by the distance that can be travelled in 10 minutes by different modes of transport. Accordingly, he noted that settlements based solely on walking grew no larger than two kilometres square and had a population of no more than 50,000, and that “for thousands of years” this was “almost the only type of urban settlement”. He called this a city of “A-level organization” (Doxiadis 1969: 89). Under this terminology, the imperial cities of Rome, Constantinople and “Peking” (effectively Lynch’s “cosmic cities”), which expanded to be as large as six kilometres square, had “B-level organization”. This was achieved by adding another kinetic field through the use of horse-drawn carts and “for these they paved their roads and made them straight” (Ibid: 90).

Doxiadis termed Haussmann’s re-shaping of Paris in the 1850s and 1860s “B-level organization” while the C-level “started with the construction of subways in such cities as London, Paris and New York” (Doxiadis 1969: 91). It has been noted in this connection that “Julius Caesar was forced to ban carts from Rome’s streets during the daytime in favour of pedestrian traffic” (Morris 1972: 16) and that urban traffic congestion in London actually “started in earnest in the sixteenth century” (Moholy-Nagy 1968: 16). Doxiadis described the cutting of new highways through cities as “an attempt to provide higher speeds” and to achieve “D-level organization” and noted that, even in 1969, expanding metropolitan areas needed “E-level organization” to maintain his 10-minute standard (Doxiadis 1969: 92-4).

Despite his willingness to produce a certain amount of science fiction hocus-pocus, Doxiadis' account of the size of early settlements and transport as a principal limiting factor on urban growth seems perfectly acceptable. The econometrician Colin Clark (1905-89) provided a more comprehensive account in his essay "Transport – Maker and Breaker of Cities" (1958). Clark argued that the limited size of early settlements was initially a function of the distance over which food could be transported and that the "introduction of agriculture was a technical change" ... which ... "*reduced* the amount of transport needed to support any given number of people" (Clark 1958: 238).

Clark highlighted the "importance of water transport to ancient and medieval cities", that "the cost of sea transport by sailing ship varies much less with distance", and that a "really substantial change was brought about by canals" (Clark 1958: 239, 240, 241). But, he noted, after 1830, it was railways that "overthrew, for the first time in history, the natural barriers which had hitherto prevented too great a concentration of industry in any urban centre" (Ibid: 245, 242). This led to the concentration of industry in compact towns or directly along waterfronts until motor vehicles unfroze this concentration" ... and ... "provided the economic basis without which the present-day 'sprawl' of industrial towns would have been impossible" (Op. cit: 245).

Clark went on to note that although the population of London had increased significantly by 1841, the available buses were relatively expensive and "the great majority of Londoners were still dependent on walking" (Clark 1958: 247). By 1871 the "pattern of settlement" ... was ... "beginning to loosen" as a result of "horse-bus and horse-tramway services" but the "implement which really chiselled apart the compact Victorian city was the electric tram" (Ibid: 248). Similar expansion occurred first in other cities with electric railways, and then in cities worldwide through road transport.

As Marshall noted, CIAM-inspired "modern road planning" ... in Britain at least, altered ... "the fundamental relationship between routes and buildings" ... turning ...

“cities inside out and back to front” (Marshall 2005: 3). As a consequence, road networks were set up “as a separate system” ... and ... “street design became subsumed within the rather specialised discipline of road design” ... resulting in ... “dull or dysfunctional layouts” (Ibid: 6, 7, 9). Marshall noted that in the present day “urban land occupied by transport-related land uses” ... “can easily account for a third of the total land areas of cities” and that the “‘movement space’ constituted by streets forms the connective tissue of urban public space” (Op. cit: 11, 13). In short, Marshall called the change from horse power to motor vehicles “an urban revolution” (Op. cit: 15).

And Clark, ahead of Webber (1964), Alexander (1969), Garreau (1991) and Soja (2000), recognized that motor vehicle-based urban expansion could be virtually endless – with employers moving places of work closer to places of residence in periods of boom, and employees being prepared to travel further to work in economic downturns. His conclusion was that transport had “done its work all too well” and that it would lead to the “complete disintegration of the city” (Clark 1958: 250). His proposed antidote was a Christaller-like network of regularly spaced settlements with a population of 150,000.

Webber noted, however, that in the United States the “metropolitan area” had already become a new class of settlement which suggested that Clark’s antidote was soon to be a forlorn hope (Webber 1964: 82). Webber also noted that the “unique commodity that the city offers to location seekers is accessibility” and he interpreted city growth as “the story of man’s eager search for ease of human interaction” such that “large urban nodes are, in their very nature, massive communication systems” (Ibid: 85, 86). This led, to Webber’s thesis (addressed in Sub-section 1.3.3) about the “nonplace urban realm”. Alexander also foresaw, in the 1960s, “a radically different city from the cities we live in today” (Alexander 1969: 84).

Alexander anticipated cities with no Central Business District; with “hundreds of small residential islands, each with a different subculture” ... “surrounded by a sea of

employment and communal facilities” (Alexander 1989: 84). In effect, he was predicting the phenomenon that Joel Garreau identified in 1991 as “Edge City” – cities “with multiple urban cores” ... “in which the majority of metropolitan Americans now work and around which we live” (Garreau 1991: 3). This pattern, he noted, reflects “the culmination of a generation of individual American value decisions” and represents “on average, an improvement in per capita fuel efficiency over the old suburbia-downtown arrangement” – even if it does not do much for urban design (Ibid: 7, 8).

Garreau also noted that Edge City represented a new American standard and that “we have not built a single old-style downtown from raw dirt in seventy-five years” (Garreau 1991: 25). Dolores Hayden argued that “in the twentieth century, town design in the United States largely shifted from public to private control” and has been aided in this by government subsidies and highway programs that created “edge nodes” (Hayden 2006: 35, 36). This was accompanied by the average size of new houses in the United States rising from 800 square feet in 1950, to 1200 square feet in 1970, and 2100 square feet in 1990 (Ibid: 43).

Edward Soja has adopted a number of terms to describe ongoing patterns of urban growth, including postmetropolis, exopolis, and “off-the-edge cities”. One of his concerns about these patterns “is the increasingly out-of-whack geographical distribution of jobs, affordable housing and transit facilities” ... “where as many as 15 to 20 percent of residents must travel more than two hours each way to work” (Soja 2009: 265). What Soja was highlighting here is the progression from Webber’s “nonplace urban realm”. This is examined further in Chapter Three.

1.3.3 Webber and the Nonplace Urban Realm

Webber’s views of accessibility being the unique commodity of cities, and urban nodes being massive communication systems were already noted. He went on to argue that “urbanity” should be seen “as a property of the amount and variety of one’s participation in the cultural life of a world of creative specialists” (Webber

1964: 88) – in effect, an aspatial community. But, Webber suggested, whereas planners tended to focus on “the physical city, conceived as artifact” metropolitan planning should address spatial structure, including “spatial flows of information, money, people, and goods” ... and ... “the spatial form of the communication and transportation channel networks” (Ibid: 93, 96, 97).

This suggestion was based on his view that ideas about cities, regions and communities “have been traditionally tied to place” but that the “nonplace urban realm” is based on “interest communities” (Webber 1964: 108). And an urban realm in Webber’s view “is neither urban settlement nor territory, but heterogeneous groups of people communicating with each other through space” (Ibid: 116). So, decades before the development of the Internet, but in an age of impending space travel, Webber anticipated that the spatial configurations of urbanites’ interactions would “undoubtedly be increasingly disparate, less and less tied to the place in which they reside or work” (Op. cit: 146).

And, some four years later, Webber was even more adamant that a “revolution” was “unhitching the social process of urbanization from the locationally fixed city and region” (Webber 1968: 471). For him, signs of the “functional demise of the city” were “already patently clear among those groups whose worlds are widest and least bounded by parochial constraints” (Ibid: 473). But while Webber identified certain outcomes of increasing geographic mobility and mass communication, particularly in a North American context, he probably underestimated underlying social conservatism and the relative slowness with which buildings, let alone the spaces between them can physically change.

Soja noted in this context that “there is a renewed awareness of the simultaneity and interwoven complexity of the social, historical, and spatial dimensions of our lives, their inseparability and often problematic interdependence” (Soja 2000: 7). Soja interpreted much of what he called “urban spatial specificity” in the light of Henri Lefebvre’s *The Production of Space* (addressed in Sub-section 2.4.5). It is sufficient

to note here the re-emergence of spatiality as a counterbalance to Webber's "revolution".

1.4 WHAT IS PUBLIC SPACE?

Different interpretations of the terms "public space", "public sphere", "public realm", "public domain" and "commons" abound. It is timely to establish here some working definitions. Sociologists and cultural geographers tend to adopt a definition of "public space" along the lines of "social locations offered by the street, the park, the media, the Internet, the shopping mall, the United Nations, national governments, and local neighborhoods" (Smith and Low 2006: 3). In other words, their definitions include both physical space and virtual space. Perhaps this is because it is directed more to issues of public versus private than to issues of physical versus virtual space. By contrast, the term "public sphere is rarely if ever spatialized" (Ibid: 5) and is certainly less appropriate for this thesis. The expression "public realm" is regarded here as being similar to "public sphere".

As noted in the Introduction, this thesis addresses the part of what Soja called "urban spatial specificity" that comprises "the relatively fixed qualities of a *built environment*, expressed in physical structures (buildings, monuments, streets, parks, etc.)" but less what he described as "mappable patternings of land use, economic wealth, cultural identity, class differences, and the whole range of individual and collective attributes, relations, thoughts and practices of urban inhabitants" (Soja 2000: 8). The focus of this thesis is effectively the "hardware" of physical urban space but not the "software". And that hardware will be referred to as public space and/or urban space.

This, of course, begs the question of the interpretation of the word "public". Since this thesis is addressing outdoor space only – what Soja called the "streets, parks, etc." – it will be taken to mean outdoor urban space that is publicly accessible (whether publicly or privately provided and/or managed). Hajer and Reijndorp's *In Search of New Public Domain* is examined in Chapter Four, but it is worth

acknowledging here their definition of “public domain” as “an experience at a location where the ‘code of behaviour’ is followed by groups with which we are not familiar” (Hajer and Reijndorp 2001: 53) or experiences “that occur at the boundary between friction and freedom” (Ibid: 116). Their definition is not adopted in this thesis.

The “public domain” – although not addressed as such here – is taken to mean knowledge or intellectual property that is not covered by copyright, for instance the works of William Shakespeare. And in this context, it can be aligned with “intellectual commons” which, in turn, leads on to what Childs called “urban commons”, which are also addressed in Chapter Four. Suffice to say that, “public space is almost by definition urban space” (Smith and Low 2006: 3), and that “when we talk about public space we still always discuss the streets and the squares of the historic city centres” (Hajer and Reijndorp 2001: 29). Types of space that occur throughout cities in the western world are, however, examined in Chapters Four and Five.

1.5 PUBLIC SPACE CHANGES SLOWLY

1.5.1 Overview

Numerous commentators have referred to the phenomenon that Soja termed “the very fixity of the urban built environment” (Soja 2000: 99). The very adult Le Corbusier noted that “the childlike configuration of their beginnings has persisted without change in the very heart of the immense cities of today; they are strangled in this fatal and disorderly network” (Le Corbusier 1925: 94). The more temperate view of Edward Hall was that “[t]he layout of villages, towns, cities and the intervening countryside is not haphazard but follows a plan which changes with time and culture” (Hall 1966: 97). And even Le Corbusier noted that “perpetuation of the boundaries of properties has, almost without exception, preserved even the faintest tracks and footpaths of the old village and made streets of them” (Le Corbusier 1925: 169). This reflects the fact that, by and large (and exceptions will be examined

shortly), the form of a city is, as Bacon noted, “determined by the multiplicity of decisions made by the people who live in it” (Bacon 1967: 13).

Françoise Choay referred to this fixity as “the vice inherent in all built-up systems: a permanence and a rigidity which make it impossible for them to continually transform themselves according to the rhythm set by less ‘rooted’ systems” (Choay 1969: 31). Similarly, Gandelsonas noted that the changes in “urban configurations” ... “can be measured against a ‘datum’ of permanent elements, the plan, the monuments”; that urban form “*mutates*” and that while “transformations are measured in years, urban mutations” ... “are measured in centuries” (Gandelsonas 1999: 12). This same phenomenon was central to Rossi’s “typology” (addressed in Section 3.4).

The importance of the framework of streets and plots which “remains the controlling factor of the way we build” (Martin 1972: 10) is also addressed in Chapter Three. In the same vein, the United Kingdom government’s *Manual for Streets*, published in 2007, noted that “experience suggests that many of the street patterns built today will last for hundreds of years” (DoT 2007: 6). This is further evidence that buildings fronting onto public spaces change and are replaced more quickly than the spaces themselves change.

1.5.2 When Change does Occur

Generally speaking significant changes in the form of urban space only occur when major roads are built or when major public sector redevelopment takes place (or after major wars or catastrophes). In the first category, Morris cited historic examples of the new streets in Renaissance Rome designed by Domenico Fontana (1543-1607) for Pope Sixtus V; construction to the design of John Nash (1752-1835) of Portland Place and Regent Street in London; and Haussmann’s boulevards in the 1850s and 1860s in Paris (Morris 1972: 16). Subsequent examples of equivalent scale include post-World War II urban freeways and motorways, particularly in the United States

where they were intended to maintain accessibility along the lines referred to by Webber.

The second category includes major Modern Movement-inspired inner city housing projects, typified by high-rise comprehensive redevelopment areas in Britain and by the Department of Housing and Urban Development (HUD) “Projects” in the United States. Marshall presented a set of three time-lapse figure-ground plans of the Hulme area in Manchester – first the nineteenth century streets of terraced housing; then the redevelopment in the 1960s with four crescent-shaped, deck-access, high-rise housing blocks (ambitiously named for British architects Adam, Barry, Kent and Nash); finally, commencing in the 1990s, replacement of the blocks with low-rise housing on the basis of the re-shaped but still visible original road layout (Marshall 2005: 9).

Allan Jacobs (1995), whose approach to making figure-ground plans is examined next, noted that “street and block patterns change over time” but that, depending on the available evidence, “we might conclude that there is hardly any change, or that change takes place slowly and incrementally, or that change is dramatic in remarkably short periods” (Jacobs 1995: 261). This accords with Morris’s view. Jacobs used the example of downtown Boston in 1895, 1955 and 1980, showing a change from over 400 intersections and over 270 blocks to about 230 intersections and 170 blocks and concluded that “the land went to fewer and larger landholders-developers” including large public sector developers, and “[w]ith the land went the streets” (Ibid: 274).

1.5.3 Figure-ground Plans of Edinburgh and of Winnipeg

Figure-ground plans each of five kilometres square from the present day and from approximately one hundred years ago have been prepared for the central areas of the cities of Edinburgh and Winnipeg. These are similar in format to those presented by Jacobs in *Great Streets*, because, as he noted, “it is important to compare areas of the

same size and at the same scale” ... in order to ... “try to understand both the nature of a particular city or area and the differences between cities” (Jacobs 1995: 203).

The figure-ground plans are based as far as possible on Giambattista Nolli’s method for his 1748 mapping of open spaces in Rome – albeit a time when “public space, as a concept and legal fact, was” ... “virtually nonexistent” (Sommer 2009: 140). Nevertheless, mapping of this type, differentiating between land that is covered by buildings and land that is not, demonstrates the relative permanence of the street system in both cities, even though the individual buildings fronting onto those streets will have changed quite significantly.

These two cities were used for comparison because of certain similarities between them and for no worse reason than the author’s familiarity with them. Significant similar characteristics include:

- comparable population size – Edinburgh’s population in 2007 was 468,070, Winnipeg’s in 2006 was 636,177;
- relatively low overall population densities – Edinburgh had 1775 persons per hectare in 2007; Winnipeg had 1114 person per hectare in 2006 – a figure that is low, even by Canadian standards;
- the City of Edinburgh includes 3500 hectares of “significant open space” of which 1955 are publicly accessible, and substantial areas of rural land in its approximately 250 square kilometres (edinburgh.gov.uk), and Winnipeg has 4220 hectares of park space in its approximately 450 square kilometres (winnipeg.ca).

The two cities are, however, distinctly different in terms of age, topography, urban form, and climate. The settlement of Edinburgh dates back to 500 BCE, making it “one of the oldest known British settlements”; its organic “early medieval ridge-top beginnings with twin castle and monastery nuclei are a classic of their kind” and a direct contrast with the “planned Renaissance layout” of its New Town (Morris 1972:

275). Winnipeg, by contrast, was not settled by Europeans until the early nineteenth century and not incorporated until 1873.

The configuration of both cities is generally determined by their distinctive landform and water bodies, and by predominant modes of transport. The core area of Edinburgh reflects its early settlement being determined by historical needs for defence, and being primarily based on movement by foot and subsequently by horse, then by rail, and then by motor vehicle. Additionally, the landform of Edinburgh traversed by those modes of transport is distinctly variable, particularly when compared with the relative flatness of the land on which Winnipeg is located. Winnipeg does, however, have two major (and a number of minor) flood-prone rivers that impact its transport system and, in turn, its urban form.

The street pattern in Winnipeg is also determined by the allocation of land in the early nineteenth-century by the first European settlers on the basis of the French “river lot” system. These lots run perpendicular to the rivers and are up to three kilometres deep and 150 to 250 metres wide. The effects of this system are apparent in the matrix of differently aligned grids that define the spatial configuration of the city. Coincidentally, there is a superficial similarity in plan form between the river lots in Winnipeg and the long thin Closes running perpendicular to the High Street in the Old Town in Edinburgh.

The figure-ground plans presented on the following pages are derived, for Edinburgh, from 1 to 2500 scale Ordnance Survey maps from the 1890s (Figure 1.1) – and from Ordnance Survey plans provided via Edinburgh College of Art in March 2009 (Figure 1.2). No building footprint or figure-ground plans of Winnipeg in the late nineteenth / early twentieth centuries were available and the only available current building footprint plan was only updated for roads and commercial buildings. The plans presented here are therefore derived from a scaled-up street plan from 1909 presented as a block plan (Figure 1.3) and a manual amalgamation of the

current commercial buildings plan with residential footprints from the 1980s (Figure 1.4).

It is apparent from these two pairs of plans that in both Edinburgh and Winnipeg, the overall patterns of public space have remained noticeably unchanged. The difference between these two cities and Jacobs' findings in Boston could be accounted for by a number of factors. First, his study was for a relatively small central area of around 1.5 kilometres square compared with these areas of 5 kilometres square; second, Boston suffered the incursion of major freeways through the downtown in the 1950s with attendant street alterations, whereas no such highways were built through the centres of Edinburgh or Winnipeg in the twentieth century; third, a number of large scale government and commercial complexes were developed in Boston in the wake of the increased accessibility of the downtown. There have been far fewer comparable large-scale developments in Edinburgh or Winnipeg.

The comparisons between Edinburgh and Winnipeg demonstrate that the networks of urban space created after the advent of motor vehicles are coarser-grained and more orthogonal than networks generated by movement primarily on foot, particularly in the older part of Edinburgh. Similarly, spaces in the pre-automobile city are smaller and more varied in their form and function. The two cities are examined again in Chapter Five as subject cities for the development of typologies of public space based on their suffix names.

1.6 MANIFESTOES FOR CITY FORM

1.6.1 Overview

Lynch's two "meta-criteria" and five "performance dimensions" for cities were addressed in Sub-section 1.2.2. Before setting out an equivalent set of criteria as a background for this thesis, it is worth summarizing Allan Jacobs and Donald Appleyard's suggestions "Toward an Urban Design Manifesto" from 1987. These have elements in common with Lynch's suggestions.

1.6.2 *Jacobs and Appleyard: Toward an Urban Design Manifesto (1987)*

Jacobs and Appleyard began by reviewing the impact of the CIAM's Charter of Athens and of the Howard-inspired Garden City movement. They were "less than enthralled" by what either of them had "produced in the way of urban environments" (Jacobs and Appleyard 1987: 439). The former encouraged buildings that tended "to be islands, big or small" and which "could be placed anywhere"; the latter "reminded us more of suburbs than of cities" (Ibid: 439). They went on to suggest that "the phenomenological view of the city", inspired by the experiential approach of Cullen's *Townscape*, was challenged in the 1980s by architecture that had become "dilettantish and narcissistic" (Op. cit: 439).

The eight principal "problems for urban design" that Jacobs and Appleyard identified were, poor living environments; giantism and lack of control; large-scale privatization and loss of public life; centrifugal fragmentation; destruction of valued places; placelessness; injustice and rootless professionalism. And their seven "goals for urban life" were: livability; identity and control; access to opportunity, imagination and joy; authenticity and meaning; community and public life; urban self-reliance; an environment for all (Jacobs and Appleyard 1987: 442-3).

They followed their goals by identifying five physical characteristics that they saw as "central to urban life". These were, in summary: livable streets and neighborhoods; some minimum density of residential development; integration of activities ... in some reasonable proximity to each other; environment, particularly buildings, that defines space; many, many separate, distinct buildings – as opposed to few, large buildings (Jacobs and Appleyard 1987: 443). And in the context of buildings that define space, they emphasized the importance of "*public places* and a *public way system*" with the "most important public places being for pedestrians" (Ibid: 445).

1.6.3 *Performance Dimensions for the Twenty-first Century*

Two meta-criteria that might be paradigmatic for cities in the twenty-first century are economic viability, and health and safety (as opposed to Lynch's *efficiency* and

justice). Economic viability is critical for two principal reasons. First, cities in the western world nearly all grew up as manufacturing centres but have been obliged over the last 40 years to become service centres in order to remain viable; second, citizens are resistant to higher property taxes. In these circumstances, city governance becomes a matter of attracting alternative sources of income and investment – a search for what has been called “the Bilbao effect”. There are at least two aspects to the health and safety narrative. Taking the second first, despite actual crime figures, there is a lingering sense that cities, and particularly the centres of cities, are dangerous places. This contributes to the demise of city centres, particularly in North America, and promotes the continued growth of suburbs and personal movement by motor car. One of the consequences of this form of movement is that many city dwellers walk less than in previous generations – which contributes to growing levels of obesity and related diseases, not least diabetes.

So, performance dimensions that might support these meta-criteria and guide the direction of western cities comprise:

- *connection*: movement networks that are designed for pedestrian movement first, and through all types of space, and that provide ease of connection and mobility, including universal accessibility;
- *conduciveness*: indoor and outdoor public space which provides human comfort and facilitates social engagement, direct human experience and face-to-face communication;
- *integration*: built forms that recognize, respect and respond to their functional and visual role as an integral component and agency for the creation of public space;
- *energy efficiency*: transport systems, and building practices and selection of construction materials, methods and operating systems that promote efficient use of energy;
- *identity*: promotion of local identity and individuality through respect for pre-existing natural features and local cultural precedents.



Figure 1.1: Figure-ground Plan of Edinburgh in 1890s



Figure 1.2: Figure-ground Plan of Edinburgh in 2009



Figure 1.3: Streets and Building Lots in Winnipeg in 1910



Figure 1.4: Figure-ground Plan of Winnipeg in 2010

1.7 CONCLUSIONS

This chapter has addressed the growth and expansion of western cities in order to establish the context for examination later in the thesis of the range of public space types that occur within them. It has outlined the impact of evolving methods of transport of goods and people – by foot, by horse, by horse-and-cart, by water, by railway and by motor vehicle – on the form and spatial configuration of cities, and examined the subsequent growth of suburbs and then of privately controlled “edge cities”. It also observed that the process of urban growth has created relative permanence in patterns of public space when compared with the individual buildings that face onto it. This also reflects, in part, the ongoing influence of private land ownership in controlling the form of western cities. Major changes over the last hundred years in the spatial configuration of these cities have tended to be produced by new highways or by large-scale public housing redevelopment. Study of figure-ground plans for the cities of Edinburgh and Winnipeg provides evidence of the high level of “urban fixity” in those two cities. They are examined again in the toponymic analyses presented in Chapter Five.

It is argued that for western cities, appropriate “meta-criteria” for the twenty-first century, along the lines of those proposed by Lynch in *Good City Form* (1981), might be *economic viability*, and *health and safety*, and that appropriate “performance dimensions” might be *connectivity* of movement networks that are designed for pedestrian movement first; *conduciveness* of public space; *integration* of building forms and public space; *energy efficiency* of all construction materials; and *local identity* through respect for natural features and cultural precedents. And, although Lynch suggested that the idea of hierarchy is “difficult to maintain” ... “in very complex organizations such as cities” (Lynch 1981: 96), his observation (noted in the Introduction) that “[w]e are continuously engaged in the attempt to organize our surroundings, to structure and identify them” (Lynch 1960: 90) remains an important precept for this thesis.

This examination of the development of western cities also provides context for examination in Chapter Two of human approaches to knowledge, comprehension and categorization, and the role of typology in this process. It is followed by detailed examination in Chapters Three and Four of the applications of typology in the specific fields of architecture and urban design.

CHAPTER TWO: APPROACHES TO KNOWLEDGE, COMPREHENSION AND CATEGORIZATION

2.1 INTRODUCTION

This chapter focuses on ways of knowing and understanding the world in the post-Enlightenment age. As such it addresses the rise of scientific thought, including the rationalism of Descartes; the empiricism of figures such as Hume and the reaction of, in particular, Kant in developing counterbalancing critiques, and of the even more idealistic Hegel. Latterly theories of being (ontology), including the work of Schopenhauer, Nietzsche, Heidegger, Sartre and Gadamer came to counterbalance the dominance of theories of knowledge (epistemology). The work of those philosophers will be addressed here ahead of an examination of linguistics, including the work of Saussure and Wittgenstein, and then the work of the (primarily French) poststructuralists described by Schroeder as “philosophers of dispersion” (Schroeder 2005).

But it would be remiss to examine comprehension and categorization without first addressing the contribution of Plato (427-347 BCE) to questions of human cognition, particularly his “central metaphysical theory, the Theory of Forms” which are “absolute and changeless objects of knowledge” (Mautner 2000: 472, 470). They were “ideal realities such as Justice itself, Holiness itself, Beauty itself, Equality itself” – comparable, perhaps, to Lynch’s meta-criteria addressed in Chapter One – and which reflect Plato as a “systematic thinker who set the pattern of philosophy as a comprehensive explanation of all experience” (Ibid: 470, 472).

Tarnas noted that Plato’s Ideas or Forms are archetypes which “form the world and also stand beyond it” such that for him “[o]nly knowledge derived directly from the Ideas is infallible and can be justifiably called real knowledge” (Tarnas 1991: 6, 8). His Forms, therefore, are “changeless and eternal”; they “exist entirely in their own right”; they are “the fundamental elements of both an ontology ... and an epistemology”, and they are “absolutes behind the surface confusion and randomness

of the temporal world” (Ibid: 9, 10, 11). So, for the somewhat dogmatic and idealistic Plato, “the fundamentals of existence are the archetypal Ideas” ... and the ... “true structure of the world is revealed not by the senses but by the intellect” (Op. cit: 12).

Aristotle (384-322 BCE), a student for twenty years at Plato’s Academy, went on to oppose his teacher’s concept of Forms, supplanting it with his concepts of *categories* – a “basic classification of existing things”, and *primary substances* - “concrete things ... without which nothing else would exist” (Mautner 2000: 40-1). In short, Aristotle reversed Plato’s view of the Forms or Ideals being primary, supplanting them with the ultimate realities that people actually encounter. Nevertheless, both Plato’s Forms and Aristotle’s primary substances contributed to the philosophical context for Enlightenment investigation of the phenomenal world. They form important background for this chapter and for examination in Chapters Three and Five of the role of types and archetypes in the comprehension and design of the built environment.

2.2 THE ENLIGHTENMENT AND THE RISE OF SCIENCE

2.2.1 *Enlightenment and Renaissance*

The Enlightenment was a period of intellectual and cultural emancipation in Europe that reached its climax in the late eighteenth century. The Enlightenment both projected and critiqued the thinking of, amongst others, Nicolaus Copernicus (1473-1543), Galileo Galilei (1564-1642), Pierre Gassendi (1592-1655), René Descartes (1596-1650), John Locke (1632-1704), Isaac Newton (1642-1727), Gottfried Wilhelm Leibniz (1646-1716), David Hume (1711-76) and Immanuel Kant (1724-1804). From this group, Scruton singled out Kant, and suggested that the Enlightenment “is indelibly associated with Kant, as its most explicit and articulate exponent” ... “it was Kant who first ventured to define Enlightenment, as ‘the liberation of man [sic] from his self-imposed minority’” (Scruton 1982: 113).

The Enlightenment represents the intellectual beginnings of the predominantly secular, Modern, industrial era in Europe. But in many respects, and particularly in

the arts and architecture, this era began with the Italian Renaissance, a period of intellectual and artistic “rebirth” beginning in the late fourteenth century CE. The term Renaissance reflects a rebirth of interest in the art and architecture of ancient Greece and Rome. It also reflects a spiritual emergence in Western Europe from the Dark Ages (500-1000) following the fall of the Roman Empire and the ensuing high Middle Ages (1000-1400).

The Italian Renaissance followed a long and relatively “unenlightened” period in western Europe. It followed a period when religious dogma, monasticism and mysticism were commonplace; when government was largely the result of uneasy alliances between feudal rulers and the church – none more so than the Holy Roman Empire which lasted from 962 to 1648 – and when monumental architecture was typified by the construction of ever-taller and better-lit Gothic cathedrals.

But, whereas development of the structural techniques underlying Gothic architecture was evolutionary, the Italian Renaissance was more revolutionary. It was an intellectual and cultural movement that revived the study of classical thinking and design; that rediscovered the mathematics of musical harmony; that discovered the mathematics of perspective and that brought them together in what is referred to as humanism – an anthropocentric world-view “which adopted an ideal of the full development of the individual, rejecting religious asceticism, narrow scholasticism and humble piety alike” (Mautner 2000: 256).

The emerging spirit of inquiry is illustrated by the story of Italian poet and “father of humanism”, Petrarch (Francesco Petrarca – 1304-74) climbing the 1900 metre high Mount Ventoux in Provence, France. Petrarch, Rogers suggested, was following in the footsteps of the narrator in Dante Alighieri’s (1265-1321) *The Divine Comedy*, beginning his pilgrimage in a dark wood. By all accounts, in making the ascent, Petrarch’s “only motive was the wish to see what so great an elevation had to offer” (Rogers 2001: 125). This event is cited by Rogers and others as demonstrating “new confidence in human powers of reason” (Weiss 1998: 11).

Architectural historian Siegfried Giedion noted that “Florence around 1400, at the beginning of the *quattrocento*, was important not merely as the home of political and social experiments; it was also the place where the *esprit nouveau* of the Renaissance broke through most strongly” (Giedion 1941: 30). Florence has been termed “the birthplace of humanism” ... “an intellectual movement” ... “which espoused the study of human nature and a revival of classical learning” (Daniels and Hyslop 2006: 162). The competition in 1401 for the design of the Baptistery Doors in Florence is widely regarded as the starting point of the Italian Renaissance in the plastic arts. The commission was awarded to goldsmith Lorenzo Ghiberti (1378-1455). Ghiberti had trained with, and beat into second place in that competition, his lifelong rival Filippo Brunelleschi (1377-1446). Ghiberti and Brunelleschi went on to become two of the leading figures in the Italian Renaissance and two of the principal exponents of perspectival representation.

2.2.2 *The Scientific Revolution*

The Copernican system was taken up and advanced first by Italian astronomer, physicist and mathematician Galileo Galilei (1564-1642) and subsequently by French Roman Catholic priest Pierre Gassendi (1592-1655) and, somewhat later, by English scientist Isaac Newton (1642-1727). All three of them formed part of the “Scientific Revolution” that supported the Enlightenment. But it is French philosopher, mathematician and scientist René Descartes (1596-1650) who is generally regarded as the principal progenitor of the Enlightenment – also referred to as the Age of Reason or, in science and philosophy, the Modern Age.

Galileo Galilei was one of the first people to assert publicly that the laws of nature are mathematical. In his book *The Assayer*, published in 1623, he wrote, “the book of nature is written in the language of mathematics. The letters of its alphabet are triangles, circles, and other geometrical shapes” (Mautner 2000: 217). As Mautner went on to note, Galileo “was one of the earliest representatives of the modern scientific world-view: Aristotelian philosophy was rejected, physics was to be separated from philosophy, knowledge was to be gained by observation and

experiment” (Ibid: 217). Galileo paid a high price for his proclamations. Following publication in 1632 of his *Dialogue Concerning the Two Chief World Systems – Ptolemaic and Copernican* – he was imprisoned for life by the Roman Church. And it was only in 1992 that Pope John Paul II admitted that the world is not stationary.

Galileo’s contemporary, Francis Bacon (1561-1626) is widely regarded as the “first important figure in the history of British empiricism and in the development of the modern scientific world-view” (Mautner 2000: 59). According to Tarnas, Bacon saw science as “utilitarian, utopian, the material and human counterpart to God’s plan of spiritual salvation” and argued that the “true basis of knowledge was the natural world and the information it provided through the human senses” (Tarnas 1991: 273) – in contradistinction to Plato’s prioritization of intellect over the senses as the principal instrument for comprehension of the world.

The seventeenth century was “a turbulent world in which alchemy vied with physics theology and philosophy, politics with religion, nations with each other, individuals with their anguished souls” (Casey 1997: 137). Few souls were more anguished than Gassendi’s. He combined a fascination for the Copernican System and Galileo’s astronomical findings with an education in philosophy and theology. His oscillation between employment in the church and as professor of philosophy at Aix-en-Provence (1617-24) and of mathematics at the *Collège Royale* in Paris (1645-8) reflects the ambivalence of the age. Gassendi’s project “to present the ancient Epicurean atomism, revived and Christianized, as a replacement for the decadent Aristotelian philosophy of the universities” (Mautner 2000: 217), set him at odds with his contemporary, Descartes, who gave less credence to tradition and attached significantly more importance to mathematics as a medium for analysis and understanding of the world.

Descartes was schooled by Jesuits in the religious tradition that his work came to challenge. Philosophers suggest that he left two principal philosophical doctrines ... “a comprehensive physico-mathematical reductionism” ... “and a conception of the

mind lying outside the purview of physics” (Mautner 2000: 217). The first of these was explained in his *Regulae ad Directionem Ingenii* (Rules for the Direction of the Mind), written in the 1620s but not published until 1701. Under his Rule II – “*We must occupy ourselves only with those objects that our intellectual powers appear competent to know certainly and indubitably*” – Descartes stated “that in our search towards truth we should busy ourselves with no object about which we cannot attain a certitude equal to that of the demonstrations of Arithmetic and Geometry” (Descartes 1701: 5). Or, as Harold Joachim put it, “[t]his rule then asserts that we must not study anything which is not as certain as mathematics” (Joachim 1957: 28).

The certainty of Descartes’ belief in his work is reflected in the title of the preface to a set of three essays demonstrating his methods, the *Dioptrique* (optics), the *Météores* (meteorology) and the *Géométrie* (geometry), published anonymously in 1637 as *A Discourse on the Method of Rightly Conducting the Reason and Seeking the Truth in the Sciences*. Equally, in Part Two of his *Discourse*, Descartes related his dedication to order in his pronouncements on urban development. Suggesting that “those ancient cities that were once mere villages and in the course of time have become large towns are usually so poorly laid out, compared to those well-ordered places that an engineer traces out on a vacant plain as it suits his fancy ...” he argued that the differing buildings in ancient cities “make the streets crooked and uneven” ... through ... “chance rather than the will of some men using reason that has arranged them thus” (Descartes 1637: 7). Descartes’ principles were reflected in seventeenth century urbanism and the landscape designs of André Le Nôtre (1613-1700), and repudiated by, amongst others, Christopher Alexander (addressed in Sub-section 3.6.3) in the latter part of the twentieth century.

Descartes’ second principal philosophical doctrine ... “the conception of the mind lying outside the purview of physics” ... the “*cogito ergo sum*” (I think therefore I am) argument led to “Cartesian Dualism” – the separation of mind and matter? This is based, put simply, on the fundamental principle of the only certainty confronting

humankind being that I think and that I can reliably trust my capacity to think – rather than any ability to sense – as evidence that I exist. Descartes’ justification of this principle was, however, based on what is termed the “Cartesian circle”, whereby he invoked the existence of (the Christian) God “to underwrite the reliability of the mind’s perceptions” (Mautner 2000: 135).

Extension (*extensio*) – having spatial dimensions of length, breadth and depth – is the essential characteristic of matter and, as Casey noted, “is the core concept in Descartes’ view of space. Not only is it the common essence of matter and space, it determines the nature of quantity and dimension – and thus all measurement and distance as well” and that it is extension “as the common bond between matter and space” ... that ... “holds together the Cartesian world-picture” (Casey 1997: 153, 154). Descartes, then, was engaged in the task of “showing that a mathematical understanding of the physical world is more objective than one suggested by the senses, and that the human intellect is capable of forming this more objective conception” (Sorell 1987: 104). In effect, then, this was a return to Plato’s perspective.

As Russell put it, in its “whole theory of the material world, Cartesianism was rigidly deterministic” (Russell 1946: 519). And although Newton corrected “serious anomalies in the Cartesian theory of gravity, and of planetary motion and position”, and the suggestion that “philosophers in the English-speaking world are nowadays mostly agreed on the need to lay Descartes’s ghost” ... “[i]t says a lot for the power of Cartesian philosophy that the act of interring it still goes on” (Sorell 1987: 102, 104). Scruton, an inveterate sceptic about phenomenology, suggested “[s]ome ways of expressing the idea of a ‘phenomenology’ of perception are intolerably ‘Cartesian’” ... implying ... “results that I establish for myself alone, and which I cannot verify in the experience of others” (Scruton 1979: 78).

All this tends to suggest, despite Descartes statements about his belief in (the Christian) God (Anscombe and Geach 1954: 261), an anthropocentric approach to

the natural environment and a strongly ordered, mathematically driven approach to building design and construction. It represents the beginning of an age of mathematical reductionism. Lewis Mumford described Descartes as having “demonstrated that all the attributes of living organisms could be explained in terms of mechanism” and thus “[t]he machine, not man, became the measure of all things” (Mumford 1944: 242). And Casey noted that the “foundation of Cartesian physics and metaphysics lies in an insistent identification of space with *matter*, that is, with physical bodies possessing magnitude and shape. In making this move, Descartes at once distinguishes himself from Gassendi and Newton as recrudescing [becoming active again] atomists” (Casey 1997: 152) ... believing that “nothing exists except atoms and the void” (Mautner 2000: 54).

Mumford, however, lumped Galileo, Descartes, Spinoza, Newton and Locke together and described reading their work as being “like taking a bath in crystal-clear water. Their universe is clean, neat, orderly, without smells, without flavors, without the rank odors of growth, impregnation or decomposition: above all, without the complications of real life” (Ibid: 260) – driven, as was Plato’s world, by intellect rather than senses.

English physicist Isaac Newton, in his *Philosophiae naturalis principia mathematica* (1687), established physics as a systematic method of inquiry. The importance of his work with respect to questions of space was to view it “as an infinite container, in which objects could be situated at any point, but which had no boundaries, however far you were to travel in any direction” ... in short, “[s]pace just exists everywhere and forever” (Scruton 1994: 361). And, as Casey noted, “the aim of Newtonian geometrization is measurement” (Casey 1997: 147).

Architectural academic Dalibor Vesely, writing about the affinity between Baroque science and culture, noted that because “we see science as an independent domain of knowledge, we tend to overlook the fact that science was then an integral part of the general intelligibility of culture” (Vesely 2004: 176). Vesely went on to note that the

“influence of the Newtonian synthesis on contemporary science is understandable” ... whereas ... “its influence on other areas of culture, including architecture” ... “is less clear”. He did, however, suggest that “the Newtonian paradigm of knowledge transformed and silenced whole areas of creativity and culture as outdated and irrelevant” (Ibid: 230, 231). Again, a reflection of the hegemony of the intellect.

2.2.3 *The Rise of Empiricism*

Rogers noted that as Newton was “solidifying the basis of the Enlightenment and configuring the role of reason in human thought”, his contemporary, John Locke was asserting “that all knowledge of the world must rest on sensory awareness” and that Locke saw “the mind as an instrument for deductive reasoning and a theater for personal experience” (Rogers 2001: 22). This certainly reflects Mumford’s reference to Newton and Locke as having “working beliefs” ... “reached through the philosophy of sensation and experience” (Mumford 1944: 265).

Locke’s principal philosophical ideas are contained in *An Essay Concerning Human Understanding* (1690), which addressed the theory of knowledge and philosophy of science, and in the *Two Treatises of Government* (1689), which contained his political theory (Mautner 2000: 318). The latter, with its emphasis on the individual’s rights to life, liberty and property (see Sub-section 2.3.5), was influential in the development of the constitution of the United States of America and, in turn, the Thomas Jefferson-instigated Land Ordinance of 1785 (Freedman, July 2009).

The *Essay* addressed, primarily, epistemology and the philosophy of science. In it “Locke argues that all ideas are ultimately derived from experience; and that experience is twofold: external experience (‘sensation’) and inner experience (‘reflection’)” (Mautner 2000: 319). In this respect, he is the first in a succession of three highly influential British empiricists – the others being George Berkeley (1685-1753) and David Hume (1711-76). Russell, however, recognized Locke “as the founder of empiricism” ... “the doctrine that all our knowledge is derived from experience” and who argued that our “ideas are derived from two sources, (a)

sensation, and (b) perception of the operation of our own mind, which may be called ‘internal sense’” (Russell 1946: 556). In other words, Locke was the first of the empiricists to cast doubt on the existence of *a priori* knowledge – knowledge which is innate or independent of experience. And what we see here is a return to the Cartesian prioritization of the senses over the intellect as the basis of human knowledge.

Latter-day empiricist A(lfred) J(ules) Ayer (1910-89) suggested that Locke’s empiricism was a “valiant attempt to assemble” ... “a picture of the real world which accorded with the scientific theories of Boyle and Newton” (Ayer 1980: 21). But it was only with George Berkeley (1685-1753) and his *Principles of Human Knowledge* (1710) and David Hume (1711-76) and his *Treatise of Human Nature* (1738-40) – revised as *An Enquiry Concerning Human Understanding* (1748) – that the scepticism which underpinned “British Empiricism” really surfaced.

Hume, who described his *Treatise of Human Nature* (1739) as having fallen “dead-born from the press”, reproduced it in a reduced format in 1740 and re-cast it in his *Enquiry*. Ayer drew particular attention to Price’s treatment of Hume’s considerations of Constancy, “which has a primary role in causing the imagination to transform impressions into enduring objects ...”, and Coherence in comprehending repeated patterns of events – like the dying down over time of the fire in his room – as “unsensed sensibilia” or “unperceived perceptions” (Ayer 1980: 52-3).

Empiricism, then, was the philosophical counterpart to the rise of science. It denied the existence of innate (*a priori*) Platonic knowledge and ascribed all knowledge and comprehension to direct, visible experience alone. Empiricist perspectives were countered by a non-scientific romanticism in literature and the arts, and by the work of Kant and then Hegel.

2.3 REACTIONS TO SCIENCE AND EMPIRICISM

2.3.1 *Romanticism*

The eloquent, Swiss-born polymath, Jean-Jacques Rousseau (1712-78) and Hume, by whom Rousseau was supported during his exile from France in England in 1766-67, had diametrically opposing views. As Russell put it “Rousseau and his followers agreed with Hume that no belief is based on reason, but thought the heart superior to reason ...” or, more succinctly, “Rousseau was mad but influential, Hume was sane but had no followers” (Russell 1946: 611). Rousseau was also one of history's more disagreeable and disingenuous characters ... “sufficiently dependent on polished society to hate it, and sufficiently outside it coolly to understand its workings” (Ibid: 623).

Born and brought up as a Calvinist in the Republic of Geneva – whose political status he continued to champion – Rousseau relocated to France and converted to Catholicism. His principal political treatise, *The Social Contract* (1762) promoted the concept of the ‘General Will’ through which citizens collectively formed a sovereign legislative assembly based on the principles of democracy in the City States of ancient Greece (and Rousseau’s native Geneva) and, in particular, the principle that “relative economic equality” ... “could only be promoted within states whose members were obedient to laws they prescribed to themselves” (Mautner 2000: 491).

Following his return to France in 1767 Rousseau was “more drawn to communion with Nature than with other men” and his *Reveries du promeneur solitaire*, posthumously published in 1782, was “the most notable source of late eighteenth-century romanticism” (Mautner 2000: 491). They expressed “the joys of solitude, the raptures of drifting imagination and the wonders of a natural wilderness uncultivated by mankind” (Ibid: 492). Russell noted that *The Social Contract* “became the Bible of most of the leaders in the French Revolution” (Russell 1946: 636) and Mumford noted that Rousseau’s philosophy was made more significant by “the fact that Western man found himself face to face with nature in his colonization of the New

World” (Mumford 1944: 275). But what was Rousseau’s impact on the comprehension of the human-made environment?

Like Locke, Rousseau's thinking may well have influenced Thomas Jefferson’s approach to new settlement in America and it certainly influenced landscape architecture in Europe, particularly in France. Unlike Locke, however, Rousseau “contended that the establishment of property and government had deformed our nature, estranging individuals from themselves and from each other” (Mautner 2000: 491). Nevertheless, Rogers noted that Rousseau’s novel *Julie* (1761) “thematically prefigured, and probably helped inspire” ... “Jefferson’s anti-urban vision of the virtuous republic composed of yeoman farmers” (Rogers 2001: 264). There is, of course, a similarity between the naturalistic views and values of Rousseau (1712-78) and those of his contemporary, Abbé Marc-Antoine Laugier (1713-69), proponent of the primitive rustic hut, the exemplar for the Greek temple, as the archetypal building (see Sub-section 3.3.1).

Appropriately, Rousseau’s body was disinterred after the French Revolution, and in 1794 his remains were entombed in the Panthéon in Paris. Originally designed in 1755 by Jacques Germain Soufflot (1713-80) as the church of Ste-Geneviève, the Panthéon was the first French neo-classical building designed, in principle, according to Laugier’s model of the Greek temple – a roof supported by simple columns (Nuttgens 1997: 223). The windows were filled-in (in 1791-2) to designs by Antoine-Chrysostôme Quatremère de Quincy (1755-1849) – about whom more will be said in Chapter Three – “not to strengthen the structure, as is erroneously supposed, but to give it the character of a mausoleum” (Curl 2006: 615).

2.3.2 *Imagination and Aesthetics*

Joseph Addison's essays *On the Pleasures of the Imagination* (1712) preceded Hume's *Enquiry Concerning Human Understanding* (1748) and presaged Hogarth's *Analysis of Beauty* (1753), and Burke's *Philosophical Enquiry into the Origin of our Ideas of the Sublime and the Beautiful* (1757). These demonstrate, in follow-up to

Locke's interest in human understanding, the early development of ideas in the field of aesthetics – “the study of what is immediately pleasing to our visual or auditory perception or to our imagination” ... “[t]he word was first used in this sense by Alexander Baumgarten (1714-62) in a dissertation of 1735...” (Mautner 2000: 8).

Joseph Addison (1672-1719) and his lifelong friend and fellow Whig Richard Steele (1672-1729) were early exponents of political satire published in magazine format – Steele produced *The Tatler* between April 1709 and January 1711 and they produced *The Spectator* together between March 1711 and December 1712. They also contributed to the establishment of the “essay” as a literary form in English-language periodicals (Allen 1970: v). And of significance to this thesis is Addison's “rather daring experiment” ... “in the interest of improving the critical faculties of their readers” of running in consecutive issues, (Numbers 411-421) from Saturday 21 June to Thursday 3 July 1712, eleven essays on the pleasures of the imagination (Ibid: xiii). Pre-dating Kant's *Critique of Judgement* by nearly 80 years, Addison began these essays by stating that “Sight is the most perfect and most delightful of all our Senses” ... it ... “furnishes the Imagination with its Ideas” (Addison, 1712a: 397). And in *The Spectator* No. 415 (of 26 June 1712) Addison described architecture as “that particular art which has a more immediate tendency than any other to produce those primary pleasures of the imagination”.

Despite Addison's reference to architecture, Forty suggested that landscape design was “the art where his theory found its readiest application in eighteenth century Britain” (Forty 2000: 209). But of importance here is that, in an era when philosophy was dominated by the empiricism of Locke, Berkeley and Hume, Addison was making a call to imagination that was prescient of later phenomenological work such as Gaston Bachelard's *Poetics of Space* (1958). Before examining the impact of Kant's *Critique of Judgment* (1790), it is worth noting that most English language references to the “Beautiful” (its status as a Platonic Ideal notwithstanding) and to the “Sublime” emanate from the work of William Hogarth (1697-1764) and Edmund Burke (1729-97) respectively.

Although better known as a painter, print-maker, political satirist and cartoonist, Hogarth identified six principles of beauty in an analysis that contrasted with the synchronous dominance of empiricism in British epistemology. Hogarth's principles of fitness, variety, uniformity, regularity or symmetry, simplicity or distinctness, intricacy, and quantity (Hogarth 1753: 13, 16, 18, 21, 25, 29) constituted pre-set concepts comparable to Plato's Ideals or Forms. Hogarth also promoted widely his idea of the serpentine "waving line, or line of beauty" ... "being composed of two curves contrasted, becomes still more ornamental and pleasing, insomuch that the hand takes a lively movement in making it with pen or pencil" (Ibid: 39).

This idea of beauty was reflected in the emergence of the smooth-flowing pastoral estates of the English landscape movement. Paulson, in his Preface to an edition of *The Analysis* produced to celebrate the tercentenary of Hogarth's birth, argued that its importance "has been obscured largely because its argument lies outside the main tradition of writing on art" ... "[i]ts argument is anti-academic ..." (Paulson 1997: xi). It was also unempirical. And it was eclipsed by the publication only four years later of Burke's *Philosophical Enquiry* (Ibid: xii).

Burke, a counter-revolutionary politician and author, is also better known for that aspect of his life and for books other than his *Philosophical Enquiry*. But Burke's is still the most widely-quoted definition of the sublime – "[w]hatever is fitted in any sort to excite the ideas of pain, and danger, that is to say, whatever is in any sort terrible, or is conversant about terrible objects, or operates in a manner analogous to terror" (Burke 1757: 36). His definition of beauty – "that quality or those qualities in bodies by which they cause love [*that satisfaction which arises to the mind upon contemplating any thing beautiful, of whatsoever nature it may be, from desire or lust'] or some passion similar to it" (Ibid: 83) – despite its Platonic tone, has been less enduring.

Less mention is made, however, of Archibald Alison (1757-1839), an Edinburgh-born philosopher and Anglican priest who spent twenty years as a priest in

Shropshire. He returned to Edinburgh in 1800 and spent 34 years as senior priest at Old St Paul's church. Alison wrote broadly about aesthetic sensations. Although his *Essays on the Nature and Principles of Taste* (1790) were published in exactly the same year as Kant's *Critique on Judgment* – of which Alison is unlikely to have had any prior knowledge. The *Essays* addressed taste as “that faculty of the human mind, by which we perceive and enjoy whatever is beautiful or sublime in the works of nature or art” (Alison 1790: vii). His fundamental argument was that the “*peculiar* pleasure of the Beautiful or the Sublime is only felt when” ... first ... “the production of some simple emotion, or the exercise of some moral affection” ... and second ... “the consequent excitement of a peculiar exercise of the imagination” ... “are conjoined” ... and that ... “the qualities of matter are not beautiful or sublime in themselves, but as they are, by various means, the signs or expressions of qualities capable of producing emotion” (Ibid: xi, xii). This principle of comprehension by way of imagination is wholly consistent with the synchronous reactions to British empiricism.

2.3.3 *Immanuel Kant (1724-1804)*

So far the emergence has been seen in post Renaissance Europe of what Tarnas termed “two distinct streams of culture, two temperaments or general approaches to human existence” (Tarnas 1991: 366). These can be characterized as rational, sceptical, experience-based, scientific empiricism – represented at its most extreme by Hume – on the one hand, and on the other as spiritual, imagination-based romanticism – represented at its most extreme by Rousseau. Both streams were anthropocentric – continuing the humanist focus of the Renaissance – but Enlightenment empiricism was directed towards sensing, reasoning and direct perception (the non-Platonic “senses”) whereas romanticism focused on human emotion, self-awareness and individual rights in a world with underlying structure (the Platonic “intellect”). These divergent paths were eventually transected by Kant.

Born, bred and permanently based as a bachelor in Königsberg – formerly in eastern Prussia, now Lithuania – Kant eventually, in 1781, began his “attempt to answer three

fundamental questions: ‘What can I know? What ought I to do? What may I hope for?’” (Mautner 2000: 291). One measure of his success is that he “opened wholly new horizons for philosophy, for the sciences and the humanities”. Lavine and Critchley joined Scruton in describing Kant as “the greatest modern philosopher” (Lavine 1984: 198 / Critchley 2001: 13 / Scruton 1982: 1). The emphatically empiricist Bertrand Russell, by contrast, disagreed with this description and cited Kant as the “founder of German idealism” – a movement that Russell held responsible for Hegel’s philosophy and the eventual emergence of National Socialism (Russell 1946: 639, 653).

But what of Kant’s answers to those fundamental questions? Kant’s project was, essentially, to differentiate between the rationalist perspective typified by Descartes, Spinoza and Leibniz – in which thought was based on reason, and the empiricist perspective of Hume – who argued that knowledge was derived from experience obtained solely through direct sensory impressions.

It is important to note here that seventeenth and eighteenth century philosophers “did not draw the distinction” ... “between philosophy and the natural or social sciences” ... “they regarded every form of scientific enquiry as philosophical. For them, the main division was between natural philosophy, which concentrated on the physical world, and moral philosophy, which Hume called the ‘the science of human nature’” (Ayer 1980: 33). This duality is reflected in the work of Swiss-German mathematician Johan Heinrich Lambert (1728-77) who coined the word *phenomenology* to describe how things appear to the human mind (Mautner 2000: 421).

Scruton identified Kant as also being “the first philosopher to suggest that the sense of beauty is a distinct and autonomous employment of the human mind comparable to moral and scientific understanding” and that his “division of the mental faculties, into theoretical, practical and aesthetic” ... “provided the starting point for all later investigations” (Scruton 1979: 1). Kant’s initial impact related to the differences

between Leibniz and Hume. This has been summarized as being “the first [Leibniz] claimed that we could have objective knowledge of the world uncontaminated by the point of view of any observer; the second [Hume] claimed” ... “that we could have objective knowledge of nothing” (Scruton 1982: 19).

Kant’s output during the 1750s and 1760s was primarily scientific. His thinking was underpinned by convictions about the truth of Newton’s physics, but he “did not dogmatically accept one fixed metaphysical system as the only possible explanation of the world” (Mautner 2000: 290). Kant claimed to have been prompted into action by his reading of the work of Hume, which, by all accounts, awakened him from his “dogmatic slumber” (Tarnas 1991: 341). Kant was also strongly influenced by Rousseau – particularly his *Émile* (1762) – which reciprocated the fundamental liberalism of Kant’s political and theological values. But Hume’s “dissolution of causality [on which Newtonian science was based] also appeared to undercut the claims of natural science to necessary general truths about the world” and it was that which prompted Kant to ponder the question “[i]f Newton had attained certain knowledge, and yet Hume had demonstrated the impossibility of such knowledge, how could Newton have succeeded?” (Tarnas 1991: 341, 342). Kant’s response was contained in his *Critique of Pure Reason* (1781). This was based on the argument that knowledge cannot be derived either from experience alone or from reason alone. In Plato’s terms, the absolute supremacy of senses or intellect could not be accepted.

2.3.4 *Kant’s Critiques*

Scruton expressed this argument as ... experience “provides content without form” whereas reason provides “form without content. Only in their synthesis is knowledge possible; hence there is no knowledge that does not bear the marks of reason and of experience together” (Scruton 1982: 27). In short, knowledge relies on multiple sources. The aims of the *Critique of Pure Reason* (1781), therefore, were to demonstrate, “in opposition to Hume” ... “that synthetic *a priori* knowledge is possible, and” ... “in opposition to Leibniz” ... “that ‘pure reason’ alone, operating outside the constraints placed on it by experience, leads only to illusion, so that there

is no *a priori* knowledge of ‘things-in-themselves’” (Ibid: 31). The essence of Kant’s response to these aims was to recognize that “[i]n the act of human cognition, the mind does not conform to things; rather, things conform to the mind” (Tarnas 1991: 343).

These conclusions were reached by reversing the approach taken by the philosophers whose views Kant challenged. Where they “had taken nature as primary, and asked how our cognitive capacities could lay hold of it”, he took “those capacities as primary, and then deduce[d] the *a priori* limits of nature” (Scruton 1982: 39). The point of dispute here between Hume and Kant was over the nature of human experience – with the latter arguing that experience already “contains intellectual structure” ... “and is organized in accordance with ideas of space, time, substance and causality” (Ibid: 39). In Kant’s view, therefore, space and time, two major concerns for design of the built environment, are forms of sensibility that are preconditions of human experience. They are not observable entities but they “constitute that context within which all events are observed” (Tarnas 1991: 343). And it is to those “preconditions of human experience” that archetypes belong.

In short, therefore, Kant held in his *Critique of Pure Reason* that space and time are *a priori* forms of intuition. That is, they derive from the human mind rather than from the phenomena that humans experience. And these fundamental intuitions are essential for human cognition of the phenomenal world – they are a subjective “part of our apparatus of perception” (Russell 1946: 642). Russell stated that Kant’s doctrine of space and time were the most important part of his first *Critique* – and then sought to discredit it.

Kant’s *Critique of Practical Reason* (1788) addressed morality and focused, in particular, on the centrality of duty in his moral vision. In Kant’s view, freedom belongs to the “transcendental realm to which categories like causality do not apply” ... “[a]nd, in knowing ourselves to be free, we know ourselves” ... to be ... “members of a transcendental world” and that this freedom “is the ability to be

governed by reason”, and thus to be moral and rational human beings (Scruton 1982: 75, 80). And Kant argued that this gave rise to “categorical imperatives” – unconditional moral obligations that are ends in themselves – including the principle of universalization; to “always so act that you are able to will that the maxim of your action be also a universal law” (Mautner 2000: 89).

Hume, by contrast, would probably have denied that morality is a matter of duty, “saying that an action must proceed from some motive other than a sense of its morality if it is to be morally good” since behaving well out of a sense of duty “suggests that one is deficient in natural benevolence” (Ayer 1980: 107). Russell did at least acknowledge that if Kant’s principle is taken to mean that “all men [sic] should count equally in determining actions by which many are affected” ... it ... “may be regarded as giving an ethical basis for democracy” (Russell 1946: 645). In any event, the second Critique was, effectively, Kant’s response to then current issues in moral philosophy (Hume’s “science of human nature”) where *The Critique of Pure Reason* had been his response to issues of natural philosophy, addressing the physical world.

Kant went on to expound his “Transcendental [effectively, *a priori*] Idealism” as a middle course between Leibniz’s rationalism and Hume’s empiricism. This doctrine held that humans “have *a priori* knowledge only of ‘appearances’” ... but not of ... “‘things-in-themselves’” (Scruton 1982: 55). In this connection Kant developed the antinomy (or paradox) of phenomena – objects of possible experience or empirical knowledge ... real objects of scientific investigation, and noumena – unknowable, transcendental “object[s] of awareness not produced by sensory experience” (Mautner 2000: 391).

This pairing allowed, in the first case, for empirical discovery by scientific analysis, and in the second, for the existence of things-in-themselves - including (the Christian) God. These unknowable things-in-themselves are transcendental ideas, like freedom – which Kant interpreted as the ability to be governed by reason, and

that belonged in the world according to Rousseau but which would have been out of place in the empiricist world of Hume. It is also germane to note here that, according to Rogers, Kant kept a picture of Rousseau above his desk (Rogers 2001: 358). In effect, therefore, Kant severed the link, mentioned earlier with respect to Hume, between scientific enquiry or natural philosophy and moral philosophy. “Henceforth, philosophy concerned itself largely with the clarification of epistemological problems, with the analysis of language, with the philosophy of science, or with phenomenological and existential analysis of human experience” (Tarnas: 353).

The Critique of Judgment (1790) has been described by Scruton as both “the most important work of aesthetics to have been composed in modern times” ... and “disorganized and repetitious” (Scruton 1982: 97). Equally, its first translator into English, J. H. Bernard, described Kant’s style as “repulsive” (Bernard 1892: x). Kant, however, was the first to realize that metaphysics and morality would remain incomplete without a theory of aesthetics, because it is “only in the aesthetic experience of nature, Kant suggests, that we grasp the relation of our faculties to the world, and so understand both our own limitations, and the possibility of transcending them” (Scruton 1982: 99-100). Despite its ostensible organizational shortcomings, the *Critique of Judgment* is one of the pieces of philosophical writing that remains most germane to the design of the human environment.

The critique is divided into two Parts – the *Critique of Aesthetical Judgment* (§1-§60) and the *Critique of the Teleological Judgment* (§61-§91) [where teleology is the explanation of something in terms of its purpose]. Each Part is then split into two Divisions – the Analytic and the Dialectic of the Aesthetical Judgment and of the Teleological Judgment respectively. The First Division of the First Part – the *Analytic of the Aesthetical Judgment* – comprises two Books, *Analytic of the Beautiful* and *Analytic of the Sublime*. The first of these books, the *Analytic of the Beautiful*, comprises four “Moments of the judgment of taste” according, in turn, to quality; to quantity; to “the relation of the purposes which are brought into consideration therein”, and to “the modality of the satisfaction in the object”. These are, of course,

the titles of the four sets of three categories each that made up the twelve Categories or Forms – in addition to the intuitions of space and time – through which, Kant believed, the human intellect structures all experience. The comparability of Kant's Categories with Plato's Forms (see Section 2.1) is self-evident.

Bernard noted that Kant “borrowed little from the writings of his predecessors” but quoted “with approval from Burke’s *Treatise on the Sublime and Beautiful* [sic], which was accessible to him in a German translation: but is careful to remark that it is as psychology, not as philosophy, that Burke’s work was of value” (Bernard 1892: xiii). Bernard did not mention Alison’s work. Bernard also noted, following Kant’s four main categories, that “the aesthetical judgment about Beauty is according to *quality* disinterested” ... “[a]s to *quantity*, the judgment about beauty gives universal satisfaction, although it is based on no definite concept” ... “[a]s to *relation*, the characteristic of the object called beautiful is that it betrays a purposiveness without definite purpose” and “the satisfaction afforded by the contemplation of a beautiful object is a necessary satisfaction” (Ibid).

In terms of Kant’s distinctions between the Sublime and the Beautiful, Bernard noted Kant’s view that “[i]f the pleasure taken in beauty arises from a feeling of the purposiveness of the object in its relation to the subject, that in sublimity rather expresses a purposiveness of the subject in respect of the object” (Bernard 1892: xiv). In other words sublimity resides in the mind of the observer and not in the scene observed. Furthermore, “Beauty is found” ... “only in beauty of form, the idea of sublimity is excited rather by those objects which are formless and exhibit a violation of purpose”, and in judgments about “the Beautiful the mind is in *restful* contemplation; but in the case of the Sublime, a mental *movement* is excited” (Ibid).

Kant himself described the *Judgment* as the middle term “in the family of higher cognitive faculties” ... lying ... “between the Understanding and the Reason” (Kant 1790: 9-10, 26). He went on to state that “[i]n a Critique of Judgment the part containing the aesthetical Judgment is essential, because this alone contains a

principle which the Judgment places quite *a priori* at the basis of its reflection on nature; viz, the principle of a formal purposiveness of nature, according to its particular (empirical) laws, for our cognitive faculty, without which the Understanding could not find itself in nature” (Ibid: 23).

This question of the “purposiveness of nature” is fundamental to the *Critique of Judgment*. When we are impressed by the intelligibility of natural phenomena and feel comfortable with them, we judge their forms aesthetically and deem them to be beautiful; when we are overcome by their vastness, we are fearful and unable to judge them aesthetically we bring teleological [explanation by purpose served] judgment to bear and deem them to be sublime (Kant 1790: 153-4). Issues addressed in the *Critique* that are germane to design of the human environment include Kant’s multiple definitions and digressions on beauty, the sublime and taste, and of terms that arise from them, including form, genius, imagination and, of particular interest here, beauty in relation to architecture.

The beautiful and/or beauty, then, is “that which apart from concepts is represented as the object of a universal satisfaction” (§6) ... “that which pleases without a concept” (§9) (Kant 1790: 33, 40). The Sublime according to Kant is “to be found in a formless object, so far as in it or by occasion of it *boundlessness* is represented” ... “that which excites in us, without any reasoning about it, but in the mere apprehension of it” ... “and, as it were, to do violence to the Imagination” (§23) (Ibid: 61, 62). He described taste as “the faculty of judging of an object” ... “by an *entirely disinterested* satisfaction or dissatisfaction. The object of such satisfaction is called *beautiful*” (§5) (Op. cit: 33).

Kant’s accounts of beauty, the sublime and taste also refer to a number of other important topics – including imagination, gardens, architecture, form, imitation, poetry and even laughter. Stating, much as Hogarth had, that “[a]ll stiff regularity” ... “has something in it repugnant to taste”, Kant went on to suggest “that with which Imagination can play in an unstudied and purposive manner is always new to us, and

one does not get tired of looking at it” ... and, probably unknown to its practitioners, that ... “in the English taste in gardens [Kant (1724-1804) was more or less a contemporary of Brown (1716-83) and Repton (1752-1818)] the freedom of the Imagination is pushed almost near to the grotesque” (Kant: 59). Kant reflected here Addison’s validation of imagination some eighty years earlier.

In terms of architecture and horticulture, Kant wrote, “so far as they are beautiful arts” ... “the *delineation* is the essential thing; and here it is not what gratifies in sensation but what pleases by means of its form that is fundamental for taste” (Kant 1790: 45). Equally sweeping but no less important in considering authenticity in the arts, was his comment that “[o]f all the arts *poetry* (which owes its origin almost entirely to genius and will least be guided by precept or example) maintains the first rank” [in the “beautiful arts”] (Ibid: 128).

Architectural historians and theorists record varying interpretations of the impact of Kant’s writings on the discipline. Johnson noted that “architecture does not fit Kant’s scheme neatly as an art of pure contemplation” ... having called “its beauty ‘mere’ and ‘appendant’” ... causing architecture to reel away ... “dazed and confused”. Johnson went further, blaming him for the fact that “for almost two hundred years since Kant, architecture has been haunted by the specter of beauty being mere appendage ...” (Johnson 1994: 405). This might, of course, simply be a case of *post hoc ergo propter hoc* reasoning on Johnson’s part.

Forty was equally disdainful of the *Critique of Judgment* and on a similar basis – that “the purpose and utility of things were declared to lie outside aesthetic judgment”, whereas “Kant found landscape gardening, whose utility was nil, more congenial an art than architecture” (Forty 2000: 105-6). Forty’s disdain was also directed at Kant’s validation of “*delineation*” (design in Forty’s version), suggesting that Kant was referring to “the long-standing trope of drawing (or design) *versus* colour” ... and ... “also to it as the manifestation of ‘form’” – being, of course, the quality to which Kant attributed beauty (Ibid: 138).

When Forty specifically addressed form as one of three central concepts (with space and design) in architectural Modernism, he was a little kinder to Kant, acknowledging that the philosopher had been instrumental in the emergence of aesthetics as an independent field of knowledge. And fundamental to that field was “realization that the source of beauty lay not in objects themselves, but in the process by which they were perceived” (Forty 2000: 154). Form, according to Forty, was therefore separated by Kant from content or meaning in architecture – in much the same way, as noted earlier from Scruton, that Kant had been taking a lead in the division of mental faculties into the theoretical, the practical and the aesthetic.

Scruton continued his championing of Kant in relation to the field of architecture by stating that the “philosopher wishes to describe aesthetic experience in its most general terms, so as to discover its precise location in the human mind”, and that “philosophy is not interested in any particular person’s ‘concept’ of architecture”, whereas architectural criticism has adopted a more specific focus in that “theories of architectural appreciation have tended to concentrate not so much on its form as on its object” (Scruton 1979: 2-3). Scruton argued, as did Kant himself, that the functional qualities of architecture are its essence and what sets it apart from other arts, particularly “music, literature and painting, which are”... “objects of free critical choice” (Ibid: 13).

In writing about the postmodern mind, Tarnas noted that “[i]magination is no longer conceived as simplistically opposed to perception and reason; rather, perception and reason are recognized as being always informed by the imagination” (Tarnas 1991: 405). This is a clear reflection of developments from Kant’s work. Kant had entered a world defined by Hume’s divisions into natural philosophy and moral philosophy and he left one in which mental faculties were defined by their theoretical, practical and aesthetic dimensions – and he legitimized aesthetics as an independent branch of knowledge. As such, Kant validated imagination and speculation as counterbalancing forces to empiricism, and laid the foundations for the relativistic thinking that followed and which underpinned phenomenology and structuralism, and this thesis.

2.3.5 *Philosophy and Politics*

Another outcome of Kant's work was that of his fellow German, Georg Wilhelm Friedrich Hegel (1770-1831). Russell, as noted earlier, was no great admirer of Kant. And he saw Hegel, whose "philosophy of history profoundly affected political theory", as someone whose "system could never have arisen if Kant's had not existed" (Russell 1946: 639, 661). That system, Hegel's dialectic, comprised three parts – thesis, antithesis and synthesis. When applied in a logical manner to the analysis of a particular question, this system led to the "Absolute Ideas" that contributed to Hegel's (recklessly) holistic view of the world. Hegel is, of course, better known for his influence on Karl Marx (1818-83), author of *The Communist Manifesto* (1848), and the increasing impact of philosophical thought on government will be examined here.

Russell identified Thomas Hobbes (1588-1679), author of *Leviathan* (1651), apart from the "much more limited" Machiavelli (1469-1527), as "the first really modern writer on political theory" (Russell 1946: 509). Russell – and numerous others – have noted the effectiveness of Locke's *Two Treatises of Government* (eventually published in 1689) in supplying "a wholesome counterblast to the *Leviathan*" (White 1967: 177) published in 1651, and in which Hobbes famously described life in "a state of nature" (without government) as "solitary, poor, nasty, brutish and short" (Garvey 2006: 43). The fundamental distinctions between Hobbes and Locke can be characterized as the former (probably) being an atheist who supported absolute monarchy whereas the latter was a Christian who championed the concept of a property-owning democracy.

As was also noted earlier, Rousseau, lamenting that "man is born free but everywhere he is in chains", promoted his concept of the "General Will" with citizens collectively forming a sovereign legislative assembly based on principles of democracy similar to those in ancient Greece or his native Geneva. The regrettable result of this kind of system was that anyone who refused "to obey the general will must" in Rousseau's words be "forced to be free" (Garvey 2006: 79). And that type

of thinking led, in turn, to the kind of tyranny that followed the French Revolution and that was eventually effected in the names of Hegel and Marx.

So why did German Idealism, and the work of Hegel in particular, have so much influence on first, the philosophy and then, the politics, of much of the nineteenth and most of the twentieth centuries? Following on from the German literary eminence Johann Wolfgang von Goethe (1749-1832) – who argued that the “human spirit does not simply imply its order on nature, as Kant thought” ... but, rather, that ... “nature’s spirit brings forth its own order through man, who is the organ of nature’s self-revelation”, Hegel presented “a conception of reality that sought to unify man and nature, spirit and matter, human and divine, time and eternity” (Tarnas 1991: 378, 379).

In his posthumously published *Philosophy of History* (1837) Hegel described history as “the progress of the consciousness of freedom” – a reflection of his belief that humankind was on a long journey to truth (Singer 1983: 15 / Tarnas 1991: 381). His seminal text, *The Phenomenology of Spirit* (or *Mind*) was completed on 13 October 1806, the day that Napoleon occupied Jena where Hegel was then living, and published in 1807. The ambitious universality of Hegel’s project notwithstanding, his writing has been variously described as perplexing, impenetrable and even unspeakable, and Russell called him “the hardest to understand of all the great philosophers” (Russell 1946: 661).

Hegel held that “humanity is not distinct from ultimate reality, but a finite part of it” (Garvey 2006: 93). In his view, therefore, “all dimensions of existence” are “dialectically integrated into one unitary whole” (Tarnas 1991: 379). He called this whole “the Absolute”. And in making this claim he went beyond Kant’s belief that there are limits to what can be known. As Tarnas put it, “while, like Kant, he recognized the human mind’s constructive role in knowledge, he nevertheless perceived man’s [sic] true relation to nature as overcoming the Kantian dualism” (between things-as-they-appear and things-in-themselves) (Ibid: 378).

In terms of impact on the design of the built environment, Locke's liberal democracy was manifested in the English landscape movement, Hegel's dialectic was reflected in the work of his near contemporary Karl Friedrich Schinkel (1781-1841), and neo-Hegelianism was eventually reflected in the work of Albert Speer (1905-81), architect to the Third Reich. Vesely described Schinkel as "probably the first to accept the classical style as thesis, the Gothic as antithesis, and the present as a synthesis – principles well known to all German Romantics – and to develop these as a consistent dialectic of invention" (Vesely 2004: 264). Meanwhile Curl described the Speer-designed Chancellery in Berlin as "his masterpiece" ... "designed to awe the visitor by suggesting stability, opulence, and power" (Curl 2006: 730) ... very Hegelian!

The longevity of Hegelianism is remarkable. Garvey suggested that it "went on in earnest for more than a hundred years after the publication of the *Phenomenology*" ... "and was probably the dominant philosophy, in both Europe and America, right up until the start of the twentieth century" (Garvey 2006: 94). Karl Marx (1818-83) was the "Young Hegelian" best known for the *Communist Manifesto*, written with Friedrich Engels (1820-95) and published in 1844. Described as "short, sharp, clear and visionary", it proposed, in brief, a formula to overcome the alienation of the working class under the capitalist system (Ibid: 103). Tarnas suggested that after the decline of Hegel "there passed from the modern intellectual arena the last culturally powerful metaphysical system claiming the existence of universal order accessible to human awareness" (Tarnas 1991: 383).

Tarnas argued that decline of belief in universal infallibility prompted, in turn, the development of "a Romantically influenced science", particularly the investigation of the workings of the human mind, eventually reflected in the work of Sigmund Freud (1856-1939) and Carl Jung (1875-1961) – including (as examined in Section 2.6) Jung's work on the collective unconscious and its archetypes (Tarnas 1991: 384). Another enduring consequence of Hegelian thinking was the growing recognition of the principle, embedded in his *Philosophy of History*, of the world being subject to

processes of evolution – which underlay the coining of the word *ecology* in the 1860s.

2.4 INDIVIDUALITY AND INTERPRETATION

2.4.1 *The Emergence of Existentialism*

There was, however, more immediate intellectual opposition to Hegel's collectivism. This was first articulated, quite directly, by the less idealistic Arthur Schopenhauer (1788-1860) and subsequently by a long line of, primarily French and German ("Continental"), existentialists and phenomenologists. This group included (Danish!) Søren Kierkegaard (1813-55), Friedrich Nietzsche (1844-90), Wilhelm Dilthey (1833-1911), Edmund Husserl (1859-1938), (Spanish) José Ortega y Gasset (1883-1955), Martin Heidegger (1889-1976), Jean-Paul Sartre (1905-80), Simone de Beauvoir (1908-86) and Maurice Merleau-Ponty (1908-61).

Thus, as Merleau-Ponty put it, "[a]ll the great philosophical ideas of the past century, the philosophies of Marx, Nietzsche, existentialism and psycho-analysis had their beginning in Hegel" (in Garvey 2006: 94). Schopenhauer, some eighteen years Hegel's junior, was a professor at the University of Berlin at the same time as his rival. They were diametrically opposed in their thinking. Whereas Hegel is generally recognized as having been an optimist, Schopenhauer and his philosophy have been described as "spectacularly pessimistic" (Garvey 2006: 95). It is no surprise, therefore, that having "had the conceit to put his lectures at the same hour as Hegel's" he failed to lure away his adversary's audience (Russell 1946: 682).

Schopenhauer's single book, *The World as Will and Representation* (originally published in 1818) was based on the principles that "the world appears to us as representation, but its underlying nature is will" ... and that ... "the entire world of appearance is nothing but objectified will" (Garvey 2006: 96). For him, the inner life and motivation of all forms of life – whether human, animal or plant – was this all-consuming, irrational, "blind and violent" ... "mindless and insatiable craving, meaningless impulse" (Ibid: 99) – comparable to Hobbes's life in a "state of nature".

So, “according to Schopenhauer, the body is the appearance of which will is the reality” ... and the ... “cause of suffering is intensity of will; the less we exercise will, the less we shall suffer” (Russell 1946: 683, 684).

Schopenhauer developed his argument from Kant’s distinction between the inaccessible noumenal world of “things-in-themselves” and the phenomenal world of appearances or everyday experience in which “every object” ... “is determined by its relations to all other objects” (Mautner 2000: 509). He effectively reduced Kant’s twelve categories of understanding (see Sub-section 2.3.3) to one – causality. He claimed, in contrast to Kant, that the noumenal [objects of empirical knowledge] and the phenomenal worlds are the same thing viewed in different ways, and that the relationship between them “is not causality; it is identity” (Garvey 2006: 98).

Søren Kierkegaard (1813-55) is widely recognized as the founder of existentialism – a name applied by Sartre to a broad range of philosophers with a “shared concern for the individual and for personal responsibility” (Mautner 2000: 187). Stressing “the importance of passion, free choice and self-definition” Kierkegaard was a proponent of religious existentialism, a value system directly opposed to Hegel’s universalism and collectivism (Ibid: 295). This led him to commit himself to Christianity – as opposed to “Christendom” which he equated with Hegelian collectivism, and particularly so in the form of the Lutheran church in his native Denmark.

For Kierkegaard, Christianity was the only authentic antidote to the anxiety and despair of the otherwise universal human condition. He emphasized the adoption of practical reason and the importance of personal choice and “responsibility rather than overall rationality” (Mautner 2000: 296) and it was from Kierkegaard that Sartre developed his “emphasis upon individual conscious existence, instead of upon Hegelian essence” (Lavine 1984: 341). Kierkegaard’s rejection of Hegel’s collectivism in favour of individualism has caused him to be compared with Nietzsche – “both Kierkegaard and Nietzsche, like Marx in the middle years of the

nineteenth century, perceived the Western world to be approaching a time of crisis” (Ibid: 325) – although they each offered quite different solutions to that crisis.

Kierkegaard and Nietzsche reflect and represent the emergence of philosophies that attended to the existence of the individual human and to human psychology. Indeed, Nietzsche has been described as “the soul of existentialism” (Cogswell 2008: 56). It has also been suggested, however, that “the peculiarities of Nietzsche’s output have had a consequence he would himself have found deeply annoying: he has become nearly all things to all men” (Flew 1984: 247) – including being linked with Kierkegaard and existentialism by Karl Jaspers; with ontology by Heidegger, and, alongside Marx and Freud, with modern hermeneutics by Michel Foucault.

Nietzsche’s antithesis to Christianity is most clearly expressed in *Thus Spoke Zarathustra* (1885). Written as fiction, this addressed first the idea that humankind (or, given Nietzsche’s misogyny, mankind) cannot depend on God or any supernatural being and then presented his ideal of the *Übermensch* or superman, a “superior type of human being who rejects existing morality, who overturns existing values by affirming the positive value of earthly life and of the active, creative individual ...” (Mautner 2000: 387). The *Übermensch* “affirms his will without compromise” and reflected Nietzsche’s rejection of “Schopenhauer’s pessimistic conclusions by arguing that the will is not merely a blind impulse” (Garvey 2006: 125).

Nietzsche also had little respect for Kant whom, Russell noted, he called “a moral fanatic *à la* Rousseau” (Russell 1946: 688). His fundamental difference from Kant lay in the latter’s belief that there is “a real external world which transcends the world of experience”, whereas, for Nietzsche, “the only world is a Heraclitean one of flux, upon which we impose, through the will to power, our particular perspectives and orderings” (Mautner 2000: 387). And, along with the many other things for which he has been blamed, Nietzsche can be credited for having “realized within himself the epochal crisis that would finally come when the modern mind became

conscious of its destruction of the metaphysical world” (Tarnas 1991: 412). While there can be no doubting the political dimensions of this crisis, it can be argued that existentialism, phenomenology and structuralism maintained a metaphysical resistance to the normative forces that Nietzsche identified.

In terms of his influence on thinking about aesthetics and architecture, Nietzsche’s most important publication was his first, *The Birth of Tragedy* (1872). This drew on the Greek deities Apollo – the orderly, rational, self-disciplined sun god, and Dionysus – also known as Bacchus, the god of wine, antidote to inhibition and inspiration to creativity in music and poetry. Nietzsche used these deities to express a distinction between the Apollonian plastic arts of architecture, painting and sculpture and the Dionysian art of music. Whereas the plastic arts “relieve mankind from the harshness of reality by turning its objects into timeless and pleasing forms”, the Dionysian arts “transmit an intoxicating enthusiasm which defies and transcends the narrowness of ordinary life” ... they are ... “not subject to principles of beauty and not concerned with creating pleasant forms” (Cogswell 2008: 61).

Nietzsche argued that “the continuous development of art is bound up with the Apollonian and Dionysian duality: just as procreation depends on the duality of the sexes ...” (Nietzsche 1872: 1). And his statement that “it is only as an *esthetic phenomenon* that existence and the world are eternally *justified*” (Ibid: 17) was certainly prescient of Modernist thinking in architecture. His view that “art is the highest task and the proper metaphysical activity of this life” and his concept of the *Übermensch* are reflected in his *Beyond Good and Evil* (Nietzsche 1886: iv). They are personified in architect Howard Roark, “the solitary master of a sublime world”, in Ayn Rand’s novel *The Fountainhead* (Rand 1943: 695). In this respect, Nietzsche wrote that “at present it belongs to the conception of ‘greatness’ to be noble, to wish to be apart, to be capable of being different, to stand alone, to have to live by personal initiative; and the philosopher will betray something of his own ideal when he asserts: ‘He shall be the greatest who can be the most solitary, the most concealed, the most divergent, the man beyond good and evil ...’” (Nietzsche 1886: 94).

In terms of his direct impact on architecture, Krufft noted that Louis Sullivan's "emotional and flowery language" ... "owes much to Nietzsche"; that "[i]nfluenced by Nietzsche in his early writings, [Peter] Behrens was one of the most successful German architects in the early years of the twentieth century but was not a particularly original thinker" and that Le Corbusier found a "Nietzschean tradition of élitism which was to inform his entire outlook" ... and ... "convinced himself with almost willful determination that he was destined for the role of tragic revolutionary, a martyr come to redeem the world – by architecture" (Krufft 1994: 356, 371, 396). It should come as no surprise, then, that as recently as 2000, Anthony Vidler also drew a direct comparison between Roark and Le Corbusier (Vidler 2000a: 51-64).

Other contributors to Existentialism include José Ortega y Gasset (1883-1955); Martin Heidegger (1889-1976), who participated in most of the philosophical movements of the middle fifty years of the twentieth century – including, at continued cost to his reputation, National Socialism; Karl Jaspers (1883-1969) and Gabriel Marcel (1889-1973); Jean-Paul Sartre (1905-80), who is generally regarded as the leading proponent of the movement; his partner and collaborator, Simone de Beauvoir (1908-86), and their one-time colleague Maurice Merleau-Ponty (1908-61).

The principal common focus of these commentators was their adherence to a philosophical belief in individual freedom and individual responsibility. Or, put another way, they had a common reaction against the rule of scientific rationalism; against Kantian romanticism and against the cult of collectivism promoted in Hegel's *Phenomenology of the Spirit*. Whereas Kierkegaard was a devout Christian and Nietzsche was an avowed atheist – having declared the death of God (Mautner 2000: 208), they were in many ways distinctly different, even though they both "attacked 'the herd'" in their defence of the individual (Mautner 2000: 187).

Spanish philosopher and politician Ortega y Gasset used the word "masses" in the same sense as Kierkegaard and Nietzsche – not as a reference to the working classes – in the title of his *The Revolt of the Masses*. He described "mass-man" as "he whose

life lacks any purpose, and simply goes drifting along” and lamented that “though his possibilities and his powers be enormous, he constructs nothing” (Ortega y Gasset 1930: 49). Ortega y Gasset’s philosophical perspectives were inevitably shaped by his social background and by his experience as an active politician. He came from a wealthy background and declared that he “upheld a radically aristocratic interpretation of history”, but noted that “the ordinary man is to-day made up of the same ‘vital repertory’ which before characterized only superior minorities” (Ibid: 20, 24).

Equally, Ortega y Gasset engaged in active political protest against the regime of military dictator Miguel Primo de Rivera (ruled 1923-30), including resigning his professorship. His distaste for dictatorship and his opposition to Hegel’s view of the state is embodied in the title of Chapter 13 of *The Revolt of the Masses* – “The Greatest Danger, The State”. And in Chapter 14 – “Who Rules the World?” – Ortega y Gasset described the “rebellion of the masses” as both “fabulous”, in the “increase that human existence has experienced in our times”, and “fearsome” with respect to “the radical demoralization of humanity” (Ortega y Gasset 1930: 125). Here he echoed his earlier statement that “[t]o live is to feel ourselves *fatally* obliged to exercise our *liberty*, to decide what we are going to be in this world” (Ibid: 48).

Ortega y Gasset went on to reflect that “[t]hree principles have made possible this new world: liberal democracy, scientific experiment, and industrialism, the two latter may be summed up in one word: technicism” (Ortega y Gasset 1930: 56). Cogswell noted that Ortega y Gasset addressed “many of the same themes as Heidegger – in most cases earlier and in more down-to-earth vocabulary” (Cogswell 2008: 142).

Heidegger’s fundamental concern was *da-sein*, the meaning of “to be”, and in his view ontology or *being* had been concealed behind issues of knowledge and science. Heidegger also contributed to a number of the other themes of existentialist thought. These themes have been described as “existence precedes essence” ... we choose what we become; “time is of the essence” ... human existence is time-bound;

“humanism” ... focussing on people rather than science; “freedom/responsibility” of each individual; and “ethical considerations are paramount” ... particularly with respect to living authentically (Flynn 2006: 8).

Despite Heidegger’s concern with *da-sein*, and although he is most commonly associated with phenomenology as a philosophical movement, he provided many of the formative ideas and much of the vocabulary adopted by “hardcore” existentialists. His *Being and Time*, for instance, is widely acknowledged as having a powerful influence on the thinking of Sartre, de Beauvoir and Merleau-Ponty. Equally, Kierkegaard’s and Nietzsche’s calls to individual identity notwithstanding, it was Heidegger “who gave us the special use of the term ‘authenticity’ [*Eigentlich* in German ...], which soon came to be perceived as the central existentialist virtue” (Flynn 2006: 65). And both Heidegger and Sartre adopted the word *facticity* to describe the unchosen and unchangeable facts confronting human life – who our parents were; where we were born; when we were born; indeed, that we were born at all, and the fact that we will die.

The word *existentialism* itself came into common usage following a public lecture by Sartre in October 1945. Entitled *Is Existentialism a Humanism?*, it projected his claim that “existence precedes essence” – that our facticity, our being “thrown into the world”, occurs before we exercise our freedom to become what we choose. This was a kind of reversal of the Cartesian “cogito ergo sum” to become “I am therefore I think” – a return, in effect, to platonic fundamentals. Sartre’s lecture possibly provoked Heidegger’s *Letter on Humanism* (1947) criticizing the humanist view of humans as animals with language. In Heidegger’s view, this “sells man short and easily leads to the kind of technological society that defines man in terms of productivity and assesses all values in terms of personal social utility” (Flynn 2006: 51).

Schroeder, however, summarized the significant similarities between Heidegger and Sartre as illustrating the core tenets of existentialism (Schroeder 2005: 208). These

included contesting Husserl's more scientific approach to phenomenology (addressed in Sub-section 2.4.4), and thereby being "less concerned with certainty, methodological purity, and philosophical foundations and more concerned with descriptive incisiveness, overturning traditional assumptions, and 'living truth'"; regarding human existence as being "essentially temporal – persons always transcend the present toward the future" and "essentially practical – pursuing goals by utilizing whatever tools are available"; taking the "everyday human condition to be mystified" and able to be revitalized only through "more primordial experience, which will allow people to recover an authentic relationship to themselves, the world and other people"; and stressing "the ultimate contingency [facticity] of human existence" (Ibid: 208-9). The latter point gave rise to their common belief that "people must give themselves goals and meaning" (Op. cit: 209).

Schroeder also argued that "both Heidegger and Sartre could be clearer on how authenticity is achieved in practice" and pointed out the potential risks of pursuing authenticity without ethics (Schroeder 2005: 240-1). But he did note, however, that both of them "saw an essential social relatedness between self and other (Sartre) or self and cultural tradition (Heidegger)" (Ibid: 240). This is somehow more reassuring than Scruton's view (in an attack on phenomenology – although he claimed that "there is no such thing") that "it is only what is publicly accessible that is important: nothing else, I should like to argue, can make any difference to our lives" (Scruton 1979: 267 and 78).

The differences and distinctions between existentialism and phenomenology will be examined shortly, along with the work of leading phenomenologists including Heidegger's professor, Edmund Husserl (1859-1938), of Heidegger himself, and of Merleau-Ponty. It is sufficient to note here that Merleau-Ponty suggested that Husserl's process of "phenomenological reduction [exclusion from consideration of anything transcendent – i.e. not realizable in experience] belongs to existential philosophy" and that Heidegger's "'being-in-the-world' appears only against the background of the phenomenological reduction" (Merleau-Ponty 1945: xvi). In other

words, the two philosophical movements were deeply intertwined, not least through the persons involved with both of them.

Although Sartre's lecture in October 1945 raised public awareness of existentialism, a similar term and many of its fundamental ideas had been addressed by German psychiatrist-turned-philosopher Karl Jaspers (1883-1969) in his *Psychologie der Weltanschauungen* (Psychology of Worldviews) published in 1919. There Jaspers identified, probably for the first time, the commonalities in thinking between Kierkegaard and Nietzsche, and introduced the concept of *Existenz*, as "being genuinely oneself and making sense of one's life" (Mautner 2000: 288). Gadamer also noted that Jaspers "was the first to give a new accent to the concept of existence in contrast to all cultural forms of philosophizing" (Gadamer 1963: 137). This was, of course, prescient of Heidegger's *Da-sein*.

Similarly, French philosopher and playwright Gabriel Marcel (1889-1973) is credited with coining the name existentialist and applying it to the work of Sartre and de Beauvoir. But being "an outspoken critic of contemporary society", Marcel referred to himself as "neo-Socratic" rather than existentialist (Flynn 2006: 89). The title of Marcel's book *Man Against Mass Society* (1951) has a similar ring to Ortega y Gasset's *Revolt of the Masses* and he held similar political views, arguing that philosophers should "work for a social order that will free as many as possible from" ... their ... "mass condition". Like Kierkegaard, Marcel became a devout Christian and, like Jaspers, he insisted "that the true value of the human lies in his or her ability to move beyond their condition towards openness to the transcendent" (Ibid: 90).

The French existentialists who worked most closely with Sartre were his partner Simone de Beauvoir, and Maurice Merleau-Ponty. They had been classmates at the *École Normale Supérieure*, two years behind Sartre. Together they founded the left-leaning journal *Les Temps Modernes* – named after the Charlie Chaplin movie "Modern Times" – an epic of the individual fighting "Fordism". First issued in 1945, the same year as Merleau-Ponty's *Phenomenology of Perception*, it became the voice

of post-World War II scepticism about mechanisms of mass production and mass control.

But while Sartre and de Beauvoir remained partners, Merleau-Ponty stopped working on the journal in 1952 gradually distancing himself from his colleagues over Sartre's growing affinity for communism and the "privileging of the subject-object relationship in Sartre's phenomenology" (Lechte 2008: 52). De Beauvoir continued to be a major figure in her own right, producing plays, novels, memoirs, and philosophical treatises, including *The Second Sex* (1949), an analysis of the historic suppression of women containing the seminal feminist existentialist phrase "one is not born a woman, one becomes one" (Flynn 2006: 99).

2.4.2 Authenticity in the Built Environment

The idea of authenticity, one of the principal tenets of Nietzsche's philosophy and of existentialism, arises occasionally in writings about architecture and, probably more frequently, in writings about urban design. Spanish architect Ignasi de Solà-Morales, in his 1991 essay "Existentialism and Architecture", noted that after World War II existentialism was part of "a cultural climate that brought with it a re-ordering of ethical and aesthetic viewpoints" (Solà-Morales 1995: 42).

Citing a manifesto from a 1947 issue of *Baukunst und Werkform* that "urged 'for housing, only what is simple and valid should be pursued'", Solà-Morales suggested "the simple and the valid constituted an appeal, in effect to the very opposite of the new and experimental" and that the "manifesto hoped to restore a grounding in experience and a restoration of the authentic" (Solà-Morales 1995: 42). He noted in this connection that younger members of the CIAM began to reject the pre-war dedication to functionalism and to apply "terminology of existentialism – a language of humanism, emotions, spiritual growth, authenticity and validity" (Ibid: 43).

Equally, Vidler noted that Gaston Bachelard's book *La Terre et les reveries du repos*, also completed in 1947, was a "clear rejection of urban contemporaneity" (Vidler

1992: 64). Vidler pointed out that Bachelard's stance reflected "the anti-modern discourse that, since the early 1930s, had been gaining ground with critics skeptical of progress, and its supposed benefits" and that philosophers of different political persuasions had "contributed to this sensibility" (Ibid: 65). Not least among these, of course, was Heidegger, whose "traditionalist" *Building, Dwelling, Thinking* was published in Germany in 1951.

More recently, Jeremy Till suggested that *Building, Dwelling, Thinking* has led "architectural theorists into believing that there are 'authentic' aspects to dwelling that can in turn be reflected in 'authentic' approaches to the design of architectural space" (Till 2009: 129). He went on to argue that "too many phenomenologists of space fall into the trap of replacing one privileged view of space (the Cartesian) with another privileged version based on the elevated values of the authentic" and that ideas about authenticity are "too often reflected in architectural obsessions with vague notions of poetics, the authentic situation, the retreat from everyday living into idealized notions of dwelling" (Ibid: 129).

The arguably elitist nature of Heideggerian authenticity, together with Merleau-Ponty's body-based perception, will be examined later in this chapter. It is worth noting here, however, that Till also cited Heidegger's *Being and Time* as addressing the challenge of the inauthentic mass of humanity, and identifying his "three symptoms of inauthentic averageness – idle talk, curiosity, ambiguity" as leading to "the real problem with the notion of authenticity, namely that it is an all-or-nothing condition" (Till 2009: 131). Gadamer suggested, however, that Heidegger's "embracing of authenticity" led, against his will, to him becoming "a kind of philosopher of existence" (Gadamer 1963: 141). And from this perspective, he still projects an affinity for ontology.

In the Foreword to his *Existence, Space and Architecture* Norwegian architect Christian Norberg-Schulz (1926-2000) described his "theory of 'existential space'" as being based on the idea that "architectural space" contributes to human's "general

orientation or ‘being in the world’” (Norberg-Schulz 1971: 7). The Heideggerian phenomenological context is therefore clear from the outset. Nevertheless his Chapter 2, “Existential Space”, is largely a study of urban space or urban design rather than enclosed space within buildings.

Norberg-Schulz defined existential space as a unifying concept embracing elements that “have a certain invariance, such as universal elementary structures (archetypes) and socially or culturally conditioned structures” ... which make up ... “man’s ‘image’ of his environment” ... as ... “a stable system of three-dimensional relations between meaningful objects” (Norberg-Schulz 1971: 11). He contrasted “existential space” with “perceptual space”, a category derived from Piaget’s work on “space consciousness”, based on “operational schemata, that is, experiences with things” (Ibid: 11).

As such, Norberg-Schulz treated existential and perceptual space as two of six space concepts – (my italics) “the *pragmatic space* of physical action [integrating humans with the natural environment], the *perceptual space* of immediate orientation [essential to human identity]” ... “*existential space* [integrating humans in a social totality]” ... “the *cognitive space* of the physical world [thought-about space] and the *abstract space* of pure logical relations [allowing description of the preceding four types]” (Norberg-Schulz 1971:11). To these five Norberg-Schulz added “*expressive or artistic space*” which he termed “*architectural space*”. He conceived the six as a series with pragmatic space at the bottom; abstract space at the top, and architectural space alongside cognitive space directly below abstract space. It is easy to understand Cuthbert’s view that “Norberg-Schulz’s typological schemata are” ... “closer to Jungian archetypes than” ... “to everyday descriptions of place” (Cuthbert 2006: 71) – a question that will be addressed in due course.

Interestingly, Norberg-Schulz quoted in passing the work of art historian Dagobert Frey (1883-1962), who developed “the concepts of ‘path’ (*Weg*) and ‘goal’ (*Mal*) to describe spatial structures’ (Norberg-Schulz 1971: 14). These concepts, Norberg-

Schulz noted, have the virtue of being applicable both to (his definitions of) architectural and existential space. He quoted from Frey that “[a]ll architecture is a structuring of space by means of a goal or path” (Ibid: 14). This is relevant because more or less the same terms – Route and Destination – will be applied in Chapter Five to categorize different urban space types.

Norberg-Schulz went on to note the pivotal role of prominent philosophers, particularly Heidegger, Bachelard and Merleau-Ponty, in the application of phenomenology to comprehension of the built environment. He stuck, nevertheless, to the term existential space as a way of advancing from what he saw as the “relatively superficial” nature of studies based on geometry or visual perception (Norberg-Schulz 1971: 16). Then, applying Piaget’s studies of how children learn, he addressed the concept of place (based on ideas of proximity, centralization and closure) as a system of spaces in which “places are the basic elements of existential space” (Ibid: 20). In this concept, directions / paths and areas / domains were identified as constituent elements, and interiority became important as a condition of “dwelling” in the Heideggerian sense of living authentically.

Norberg-Schulz’s paths and areas are redolent of Lynch’s system of five elements – paths, edges, nodes, landmarks and districts – employed in the development of cognitive maps in *The Image of the City* (1960). Lynch, however, did not refer in that study, or his later *Good City Form* (1981), to phenomenology. Norberg-Schulz’s 1980 book, *Genius Loci: Towards a Phenomenology of Architecture*, was immersed in phenomenology as a vehicle for comprehension of the built environment. That book will be examined after an examination of phenomenology as an approach to comprehension of the built environment.

But before leaving the subject, it is worth noting that Norberg-Schulz posited a scale-based categorization of existential space extending from geographic through landscape, urban, and the house to “the thing”. These categories, he suggested, formed “a structured totality which corresponds to the structure of

existence” (Norberg-Schulz 1971: 32). In what appears to be a direct paraphrase of Heidegger, Norberg-Schulz concluded that within this structured totality “[e]xistence and existential space cannot be separated” (Ibid: 34). He also noted, however, Melvin Webber’s recognition in the 1960s of the emerging “non-place urban realm”, addressed in Chapter One, reflecting interest-based as opposed to place-based patterns of social interaction.

More recently, Finnish architect Juhani Pallasmaa (about whom more in Sub-section 2.4.5) argued that “[t]rue architectural values always arise from existential meanings” ... which ... “cannot be invented or created, as they are bound to reflect human existence itself” (Davey 2010: 21). Pallasmaa continued, again, very much in the vein of Heidegger, “instead of searching for an architecture that ... assists ‘man’s homecoming’” ... “we have ‘placelessness and alienation’” (Ibid: 21).

And before moving on to examine hermeneutics, it is also worth noting Cuthbert’s comment, in his review of urban design in the twenty-first century, that “two of the most significant concepts for urban designers working today are the related ideas of authenticity and symbolic representation” and in his view, “[t]he idea of the authentic is bound to all aspects of urban design” (Cuthbert 2006: 113). Cuthbert traced what he projected as the fate of authenticity in relation to tourism, involving evolution from authentic experience in the 1950s to shopping malls designed as theme parks and, eventually, “alternative realities in cyberspace” (Ibid: 115).

Cuthbert’s perspective on this, much like Sorkin’s in his *Variations on a Theme Park* (1992), is that “[f]or urban designers, authenticity and symbolic representation” ... are ... “central to the idea” ... of expressing ... “an accepted urban meaning in certain urban forms” and that “[m]anifestations of authentic experience are inexorably tied to place, and placemaking” (Cuthbert 2006: 115). In the introduction, Sorkin described his book as a plea “for a return to a more authentic urbanity, a city based on physical proximity and free movement” (Sorkin 1992: xv).

The phrase “place-making” possibly originated with English landscape architect Lancelot “Capability” Brown (1716-83) who referred in a letter written in 1775 to “ideas on Gardening and Place-making” – although he was probably referring to “place” in the sense of a country house and its estate (Stroud 1984: 157). Latterly it has been used by planners to comprise the way that “human beings transform the places in which we find ourselves into places in which we live” (Schneekloth 1995: 1). And, in a Heideggerian way (again), Schneekloth commented that over “the last century we have been losing our ability to make our places locations for dwelling” and that “placemaking has been assigned to and appropriated by design-related professionals and academics who claim expert status regarding the knowledge of making places” (Ibid: 1-2).

But commentators like landscape historian and critic J. B. Jackson have been sceptical about the ability of designers to create a “sense of place”, which he viewed as being associated “not so much with architecture or a monument or a designed space as with some event” (Jackson 1994: 159). Equally, Schneekloth suggested “placemaking is not just about the relationship of people *to* their places; it also creates relationships *among* people in places” (Schneekloth 1995: 1). Cuthbert’s interpretation of place-making seems more strongly tied to the idea of what Alexander Pope (1688-1744) called the *genius loci* or spirit of the place or, in phenomenological vocabulary, the essence(s) of a place.

Clearly, then, there is a widespread affection amongst architects and urban designers for (the idea of) authenticity in the built environment. This can be equated with the centrality of authenticity in existentialist philosophy. Equally, many of these same designers also emphasize what has been broadly described as “place-making”.

2.4.3 Hermeneutics

Hermeneutics is generally defined as interpretation or the “generation and possession of viable meaning” (Madison 1990: 115). It is named after Hermes, Greek messenger of the gods. It is also used in the sense of inquiry into the nature or methods of

interpretation. As such, it derives from Biblical hermeneutics – the interpretation of Christian scriptures. The theory of philosophical hermeneutics arose in the nineteenth century, and its operation is reflected, in particular, in the work of Hegel and Marx, both of whom engaged in the interpretation of history. Equally, Nietzsche’s ideas, with his valuation of personal will as opposed to acceptance of the external ordering of the world, might (amongst the many other labels that have been applied to him) also be termed hermeneutic. And, given that hermeneutics, along with existentialism and phenomenology, examines and values the richness of lived experience, it seems reasonable to situate Nietzsche in this field.

Other, more instrumental, figures in the development of hermeneutics include Friedrich Schleiermacher (1768-1834); Wilhelm Dilthey (1833-1911); Martin Heidegger (1889-1976) and, perhaps the most instrumental, Hans-Georg Gadamer (1900-2002). This section of the thesis will examine the contribution of each of these figures and at how hermeneutics relates to the design of the built environment. It is important to preface this examination by introducing the concept of the “hermeneutic circle” according to which the search for meaning (in a text or other matter) is contextual. It requires prior understanding of the parts and of the whole to which the matter under consideration belongs and vice versa.

Schleiermacher was a contemporary of Hegel and “personally knew many of the writers of the German Romantic movement” (Schroeder 2005: 152). And whereas hermeneutics had previously addressed religious texts, Schleiermacher applied it more widely and, probably because of his familiarity with the authors whose work he was interpreting, included a psychological dimension to his work. In terms of the hermeneutic circle, therefore, he included not just understanding the whole and its parts but also, inserting oneself into the mind of the author.

Dilthey also adopted this psychological approach, seeking to “grasp an action or expression from the agent’s standpoint, not from an impersonal third-person viewpoint” (Schroeder 2005: 154). Heidegger and Gadamer, as will be examined, did

not adopt it. But Dilthey believed that human existence is circumscribed by past meanings, future goals and present demands and that, as such, “lived experience overflows all reflective efforts to comprehend it” (Ibid: 154). He made a clear distinction between comprehension in the natural sciences – which seeks *explanations*, and in the cultural sciences – which seeks *understanding*, including understanding of an author’s (or designer’s) intentions.

Schroeder noted that Dilthey identified three reasons for this distinction – first, the natural sciences seek “to subsume particular events under general laws” rather than trying “to understand the uniqueness of the specific event”; second, “socialized participants can understand social complexities without the aid of science”; and third, human events are organic wholes “in which the parts are internally related, whereas events in nature are usually related only externally” (Schroeder 2005: 155-6).

Heidegger developed Dilthey’s thesis that interpretation is integral to human existence. In doing this, Heidegger reflected, amongst other things, Dilthey’s framing of human existence within parameters of past, present and future. Heidegger was also impressed that as well as “being a historian of culture, Dilthey tried to do for history what Kant had done for the natural sciences, to spell out the basic *a priori* conditions that enable us to study history” (Inwood 1997: 98).

Heidegger proclaimed *Da-sein* (a verb form of the noun *dasein*, being there or, more literally, *existence* in German) as the principal focus of the human world. His view incorporated perspectives that drew together the past, present and future of *Da-sein*. These perspectives were articulated in what philosophers generally regard as his masterwork, *Being and Time*, first published in German in 1927. The relationship of his work to architecture and the built environment (addressed in Sub-section 2.4.5), was most fully expressed in a series of later lectures and essays published as *Poetry, Language, Thought* in 1951 but not translated into English until 1971.

Heidegger's fundamental concern, therefore, was the meaning of "to be" and the way that being had been concealed behind issues of knowledge and science. For him, the primary question was "not the world, space, time, or history, but Dasein's being in the world, Dasein's spatiality, Dasein's temporality, or Dasein's historicity" (Inwood 1997: 87). This made *Da-sein* his "primary locus of truth" (Ibid: 50). And in examining the question of being, Heidegger suggested, in Section 2 of *Being and Time*, "that questioning is always implicitly guided by what it seeks" and this is "a key hermeneutic claim: questioning is organized by background expectations that determine acceptable answers and methods" (Schroeder 2005: 161).

And in Section 3, Heidegger noted that "every science presupposes a basic experience of the being of entities it studies" ... which ... "implies that unmediated access to things themselves cannot exist. Background presumptions condition any inquiry" (Schroeder 2005: 161). This is a basic tenet of philosophical hermeneutics. What Heidegger was looking at, then, was human beings in their practical engagement with the world precedent to their development of theories or principles. And he demonstrated that philosophical hermeneutics is an exercise in ontology (study of the nature of being) rather than methodology. Heidegger was followed, fully and thoroughly, in this field by his former student, Hans-Georg Gadamer.

Linge noted that there is "a close parallel between the relation of being and thinking in Heidegger's late writings and Gadamer's conception of the relation of tradition and understanding" (Linge 1976 : liv). Linge went on to suggest that language made a significant contribution to the thinking of both of them and that "language and the understanding of transmitted meaning" ... "are affirmed by Gadamer as one and the same" (Ibid: xxviii). But, as noted earlier, Gadamer, in contrast to Schleiermacher and Dilthey, regarded the "subjective intention of the author" ... as ... "an inadequate standard of interpretation because it is nondialectical, while understanding itself" ... "is essentially dialectical" (Op. cit: xxvi).

Gadamer revealed the lingering influence of Hegel in this connection; an influence that is also reflected in his somewhat conservative historicism. So, Gadamer's focus was the language and the text itself, and his intention was "to illuminate the human context within which scientific understanding occurs and to account for the necessity for repeated attempts at critical understanding" (Linge 1976: xviii). Gadamer himself described the "central question of the modern age" ... as being ... "how our natural view of the world – the experience of the world that we have as we simply live out our lives – is related to the unassailable and anonymous authority that confronts us in the pronouncements of science" and described language as "the fundamental mode of operation of our being-in-the-world and the all-embracing form of the constitution of the world" (Gadamer 1966a: 3).

Gadamer recognized three features that are peculiar to language: first, its "essential forgetfulness" ... the ... "more language is a living operation, the less we are aware of it"; second, its "I-lessness" ... that "to speak means to speak *to* someone"; and third, its "universality" ... there "is nothing that is fundamentally excluded from being said" (Gadamer 1966b: 64-7). He went as far as to suggest that Wittgenstein's argument (examined later) that the meaning of a word is given by its use – "the autonomous meaning of spoken language" – had "dissolved ... the antimetaphysical passion of logical positivism" (Gadamer 1960b: 75).

In the latter respect Gadamer and Wittgenstein shared the view that "the rules of a language game are discovered only by observing its concrete use in interpersonal communication" (Linge 1976: xxxv). And in developing his argument about the "fundamentally linguistic character of our experience of the world", Gadamer took what might be seen as a hefty swipe at semiotics, stating that "there is no liberation from the orbit of language by introducing artificial sign systems, since all such systems already presuppose natural language" (Gadamer 1960b: 77-8).

In his essay on semantics and hermeneutics, Gadamer noted that, on the one hand, hermeneutical reflection "is universal in its possible application" and, on the other,

that the “method of modern science is characterized” ... by excluding ... “all that which actually eludes its own methodology and procedures” (Gadamer 1972: 93). Gadamer also examined the application of hermeneutics to art and aesthetics. And, consistent with his exclusion of the author from the hermeneutic circle, he described a work of art as “the expression of a truth that cannot be reduced to what its creator actually thought in it” because the work of art “communicates itself”. Furthermore, he argued that the “hermeneutical perspective is so comprehensive” ... “that it must even include the experience of beauty in nature and art” (Gadamer 1964: 95-6).

But Gadamer also noted that “ a work of art does not satisfy in a ‘purely aesthetic’ way, in the same sense as a flower or perhaps an ornament does” (Gadamer 1964: 97). And whereas Kant’s philosophical aesthetics in his *Critique of Judgment* included ideas of beauty in nature, Gadamer was confining his hermeneutics to the interpretation of the products of human expression. And the work of art “says something to each person as if it were said especially to him [sic]” (Ibid: 100). As a consequence, “the work of art is an object of hermeneutics” because hermeneutics “operates wherever what is said is not immediately intelligible” (Op. cit: 98). Gadamer concluded, perhaps inevitably, by referring to the “language of art” and argued that “the individual art work gathers into itself and expresses the symbolic character that, hermeneutically regarded, belongs to all human beings” (Op. cit: 104).

Given that philosophical methods like hermeneutics are procedures that are intended to uncover “truth”, the idea of truth as it relates to design of the built environment will be examined shortly. First, however, it might be helpful to summarize how Gadamer’s hermeneutic method can be applied in practice and then to position Gadamer’s work relative to synchronous theoretical discourse.

G. B. Madison developed a breakdown of Gadamer’s methodological principles for a phenomenological hermeneutics primarily from his masterwork, *Truth and Method* (1960). This exercise in identifying appropriate criteria for the “rational judgment” of a text recognized, in paraphrase: *coherence* (unified and not self-contradictory);

comprehensiveness (all of the author's work should be considered); *penetration* (identification of underlying intentions); *thoroughness* (addressing all questions posed by the text); *appropriateness* (based only on questions raised by text itself); *contextuality* (acknowledging historical and cultural context); *agreement 1* (agreeing with what author actually says); *agreement 2* (based on accepted interpretations of an author); *suggestiveness* (original observations that suggest further investigations); *potential* (truth is contingent on future validity) (Madison 1990: 28-30).

Dottori, in the introduction to his conversations with Gadamer in 1999-2000, noted that, because Gadamer relied "above all, on the persuasive power of words and therefore on rhetorical modes of argumentation, he positions himself between neo-pragmatism and deconstruction" and that the "key term" in Gadamer's philosophy is not hermeneutics or interpretation "but rather, as he himself said over and over again, *phronesis*, 'wisdom'" (Gadamer 2003: 15,17). And Gadamer noted that *phronesis*, which he also described as "practical knowing" founded on ethics and rhetoric, "cannot be gauged with a scientific concept like mathematics" (Ibid: 53). There is a clear parallel between Gadamer's *phronesis* and what Nigel Cross termed "designerly ways of knowing" (addressed in Chapter Three).

It is self-evident that this examination of hermeneutics and its practitioners has looked, so far, at a succession of German philosophers. And it is feasible, if somewhat elementary, to talk in terms of German hermeneutics, American pragmatism, and French deconstruction and post-structuralism. Contradictions and crossovers are, however, inevitable with such a crude categorization. American pragmatism and German hermeneutics, for instance "shared an important assumption" ... "that philosophy must find its home in, and preserve its link with, everyday life" (Finlayson 2005: 18).

American pragmatism and, in particular, the work of Richard Rorty (1931-2007), will be examined after looking at the work of its founder, Charles Sanders Peirce (1839-1914), on semeotics. But it is worth noting here that Marxian German

philosopher / sociologist Jürgen Habermas (b. 1929) was inclined more towards pragmatism than towards hermeneutics and that this led him to become involved in (an eventually resolved) conflict with Gadamer. By contrast it seems that Gadamer did not resolve his differences with French theorist Jacques Derrida (1930-2004).

The differences between Habermas and Gadamer included issues of the purpose of language in philosophy and of political inclination. Habermas promoted the “linguistic turn” in social philosophy, the main difference between him and Gadamer being that whereas the latter afforded continuity to language as being central to the traditional practice of philosophy, Habermas developed a pragmatic theory of meaning that focused “not on what language *says*, but on what language *does*” (Finlayson 2005: 32). It was, as such, a theory of language *use*. But their major difference was over authority – particularly when Habermas worked with Gadamer at Heidelberg. Gadamer noted that after Habermas left Heidelberg, he “occupied himself with social science” ... “doing the one thing that is of the least importance to me, namely, reaching out to the citizenry and not to the human being as such” (Gadamer 2003: 87). Their difference therefore appears to have boiled down to the left-leaning Habermas regarding Gadamer and his philosophical hermeneutics as a continuation of essentially conservative traditions that reasserted existing power structures and Gadamer seeing Habermas as something of a populist or social activist (Ibid: 94-100).

By contrast, his difference with Derrida appears to have revolved around Derrida’s sense that Gadamer’s “will to understanding” also suggested a will to metaphysics (Gadamer 2003: 58-61). In his chapter “Beyond Seriousness and Frivolity: A Gadamerian Response to Deconstruction”, Madison gave a strong riposte to Derrida from a philosophical perspective. He suggested that whereas Derrida failed to say what he meant by hermeneutics, three central theses of Gadamer’s hermeneutics are: first, that “all understanding is interpretation”; second, “all understanding is essentially bound up with language”, and third, “the understanding of the meaning of text is inseparable from its application” (Madison 1990: 109).

Madison also argued that Gadamer was “equally as antimetaphysical as Derrida” but that it is difficult to understand “the positive, *philosophical* significance of the critique of metaphysics and epistemology” in Derrida (or Rorty) and that “Derrida’s critique of metaphysics lands us, for all practical purposes, in” ... “a kind of philosophical nihilism” (Madison 1990: 107-8). Madison noted that whereas Derrida’s deconstruction is “essentially a *critique*” – albeit “a kind of theoretical vandalism”, Gadamerian hermeneutics “is not primarily a technique for reading and interpreting texts” so much as an endeavour “quite simply, ‘to discover what is common to all modes of understanding’” (Ibid: 110).

And in terms of meaning, for Derrida “language does not refer to anything outside itself; it refers to itself in an endless, disseminating deferral of any definite referent” while for Gadamer “understanding is not only thoroughly *linguistic* in character, it is also *transformative, productive* of new meanings”, and as a consequence, “his hermeneutics overlaps with deconstruction” (Madison 1990: 111, 114). Truth, clearly, from the title of his principal book, was a central concern for Gadamer and he stressed (unlike Barthes, as will be seen) that “interpreters and texts have equal claims to truth; neither can be allowed to dominate the other” (Schroeder 2005: 165).

Madison noted, “[I]anguage for Gadamer, is not, as it is for the (post)structuralists, a kind of self-enclosed, self-subsisting entity” (Madison 1990: 116). “Truth” for Gadamer referred “to the self-enrichment and self-realization that occurs as a result of the play of meaning” (Ibid: 117). There is, of course, a strong contrast here with the pragmatist Rorty’s suggestion that truth should be no more important to philosophers than justification – “I cannot bypass justification and confine my attention to truth ...” (Rorty 1998: 19). Gadamer’s riposte to this was that if Rorty “limits himself to” ... “pragmatic reasonableness” ... “without referring it back to the good – then he won’t be able to recognize what the better is in relation to the good, that is, what the better actually is” (Gadamer 2003: 43).

While looking at Gadamer's quest for truth, it is appropriate also to examine the question of truth in architecture. Forty identified three such "senses of truth" – "expressive, structural and historical" ... "all developed in the nineteenth century" (Forty 2000: 290). These he described as, respectively, "the sense of a work being true to its inner essence" and "the expectation that the outward appearance of a work should conform to its structural system" ... "the requirement that a work should be of its time" (Ibid: 289).

In terms of "being true to its inner essence", Ruskin argued in his *Lamp of Truth* that "[W]e may not be able to command good, or beautiful, or inventive architecture; but we can command an honest architecture" (Ruskin 1849: 69). He went on to describe three "deceits" – "suggestion of a mode of support other than the true one" ... "painting of surfaces to represent some material of which they do not actually consist" ... "use of cast or machine-made ornaments of any kind" (Ibid: 69-70) and in this respect came close to Pugin's argument about structural integrity that "*there should be no features about a building which are not necessary for convenience, construction, or propriety*" (Pugin 1841: 1). These views will be examined further in Sub-section 3.3.4).

Equally, some hundred years later, Auguste Perret, in his *Contribution à une Théorie de l'Architecture* (1952), identified truth as the path to beauty, and equated it with structural support. "Truth" he wrote, "is in everything that has the honour and effort of supporting or protecting. This truth, it is proportion which makes it resplendent, and proportion is man himself" (Britton 2001: 236-7). Forty equated historical truth in architecture with Hegelian historicism and cited Pugin, Viollet-le-Duc and James Fergusson in his *History of the Modern Styles of Architecture* (1862) as its leading proponents (Forty 2000: 302). But of more immediate relevance to this thesis is Forty's observation that "recent arguments for the existence of an inherent and essential truth of works of art are various, but are all derived from phenomenology" (Ibid: 292).

And this Sub-section can be closed, on the one hand, with Gadamer's recognition, cited by Forty, that since the Enlightenment, "art and nature" have been contrasted as "appearance and reality" (Gadamer 1960a: 82) and on the other, with the recognition that Gadamer's hermeneutical method and Heidegger's phenomenology were both staunchly anti-Cartesian (unlike Sartre).

2.4.4 *Phenomenology*

The word phenomenon derives from the Greek *phainómenon* – "that which appears or is seen" (Barnhart 1988: 796). The word phenomenology was coined in 1764 by Johann Heinrich Lambert (1728-77) to "designate the study of physical phenomena as they appear to the senses" (Casey 1997: 53). Phenomenology as a philosophical movement can be both compared to, and contrasted with, the tenets of the Enlightenment. The principal similarity is the central importance attached to the position of humankind in the cosmos; the principal difference is the credence afforded by Enlightenment thinking to the physical sciences, particularly geometry, in explaining the world, including nature, and human perception of it.

So, whereas empirical scientific methods seek to develop knowledge based on the analysis of causes, phenomenology addresses phenomena on the basis of their psychological effects. Phenomenology, therefore, is a method of inquiry or a way of interpreting experience. It deals in essences and does not seek to be predictive; but it does seek to validate subjective experience.

Principal figures in phenomenology include Wilhelm Dilthey (1833-1911), Edmund Husserl (1859-1938) and his pupil Martin Heidegger (1889-1976) in Germany, and Jean-Paul Sartre (1905-80) and Maurice Merleau-Ponty (1908-61) in France – all of whom built on the work of George Wilhelm Friedrich Hegel (1770-1831) whose *Phenomenology of Spirit* was published in 1807, and to an extent, the work of Friedrich Nietzsche (1844-1900), whose scope was as broad as Heidegger's. The contribution of Sartre to phenomenology was addressed in the preceding examination of existentialism. The contribution to phenomenology, particularly the

phenomenology of bodily perception, of his one-time colleague, Merleau-Ponty, will be addressed in this Sub-section.

It was noted when addressing hermeneutics that Dilthey believed that the natural sciences seek “to subsume particular events under general laws” ... whereas ... “socialized participants can understand social complexities without the aid of science” (Schroeder 2005: 155). Dilthey therefore stressed the difference between the natural sciences, which look for causes and explanations, and the cultural sciences, which look for interpretations and understanding. But it was Husserl who sought to establish phenomenology as a rigorous scientific philosophy with a strong methodological foundation. This much was clearly outlined in the Introduction to an entry on Phenomenology that he wrote for the *Encyclopaedia Britannica* (1927).

Husserl described “phenomenology” as designating, first “a new kind of descriptive method” and second, “an a priori science derived from it” ... “which is intended to supply the basic instrument for a rigorously scientific philosophy” (Husserl 1927: 22). Schroeder has noted, however, that “the precise meaning of ‘phenomena’ differs for different phenomenologists” with the “basic division” being “between transcendental and existential phenomenologists” (Schroeder 2005: 174). The fundamental differences are that whereas the former group takes an approach that “seeks certainty”, the latter group embraces the “complexity of lived experience” (Ibid: 174). Their principal commonalities are the avoidance of metaphysical hypotheses and the provision of clear descriptions of experience.

Schroeder went on to categorize prominent phenomenologists by type. This included Husserl, originally a mathematician, as “the exemplary transcendental phenomenologist”; his pupil Heidegger (and Schutz) as “exemplary hermeneutical phenomenologists”; and Merleau-Ponty (and Sartre) as “exemplary descriptive phenomenologists” (Schroeder 2005: 181). Husserl, as a transcendental (not realizable through experience) phenomenologist, developed a method of insight into essence that would produce certainty; a procedure that would lead “to a recognition

of truth” (Welton 2003: 7). Gadamer, however, was somewhat sceptical about Husserl’s certainty. Gadamer regarded it as “simply not possible in philosophy to isolate a methodological technique that one can learn independently of its applications and their philosophical consequences” (Gadamer 1963: 143).

Husserl developed a process that he called “phenomenological reduction” – and described it as a fundamental method in psychology. This comprised, first “the methodical and rigorously consistent epoche [suspension of assumptions about the way one normally interprets the world] of every objective positing in the psychic sphere” and second, “seizing and describing of the multiple ‘appearances’ as appearances of their objective units and these units as units of component meanings accruing to them each time in their appearances” (Husserl 1927: 24-5). Husserl described this method as leading to “the only genuine ‘inner experience’ in the sense meant by any well-grounded science of psychology” calling it an “eidetic [the intuition of essences] science” (Ibid: 25).

Husserl’s process, therefore, did not “ask directly and simply about these objects, but rather about their ‘ways of being known’” (Welton 2003: 22). As such, he was working “in the tradition of transcendental philosophy as it was established by Kant” – the concept of *a priori* knowing of “things-in-themselves” from Kant’s *Critique of Pure Reason*. (Ibid: 22). Gadamer described Husserl’s “development of transcendental phenomenology” as appearing to many phenomenologists as “nothing more than an inexplicable relapse into Neo-Kantian idealism” (Gadamer 1963: 143). And although Husserl adapted his approach, Schroeder identified five subsidiary types of phenomenology adopted by Husserl during his career – correlational; eidetic; verificational; genetic; static-constitutional – but noted that “[a]ll of them presuppose the transcendental reduction” (Schroeder 2005: 185).

Gadamer was critical of what he interpreted as Husserl’s assertion that “phenomena such as the idea of justice and punishment” ... “bear their meaning within themselves” and cannot be understood “in terms of utility or pleasure” (Gadamer

1963: 131). Here, again, is an example of the Platonic or Kantian thesis of transcendent knowledge and its antithesis, of meaning derived from use in practice. In summary, therefore, Gadamer regarded Husserl's phenomenology as being "unable to gain public attention to the degree that existential philosophy later attained it", whereas Heidegger's "shattering of the exclusiveness of academic philosophy" through his approach in *Being and Time* "had a tremendous effect, not only in Germany but also in the whole world" (Ibid: 130, 140).

Merleau-Ponty's early studies were in empirical psychology and that background underscored his view of the "lived body" as the essential vehicle for human comprehension of the world. He also studied at the University of Louvain where he worked with Husserl's papers, which, having been protected from destruction by the National Socialists, were taken there after World War II. And, giving Husserl far more credit than did Gadamer, Merleau-Ponty argued that Heidegger's *Being and Time* was "no more than an explicit account of the 'natürlicher Weltbegriff' [natural conception of the world] or the 'Lebenswelt' [lifeworld] which Husserl, towards the end of his life, identified as the central theme of phenomenology" (Merleau-Ponty 1945: viii).

Noting that Kant (and Descartes) worked on the basis of first establishing their own existence before being able to comprehend the existence of an object, Merleau-Ponty was also less dismissive of Husserl's "Neo-Kantian" transcendental approach to ways of knowing. He commended Husserl for having adopted his own "'noemic reflection' which remains within the object" rather than a "noetic [knowing something immediately from the intended act itself] analysis which bases the world on the synthesizing activity of the subject" (Merleau-Ponty 1945: x). He went on to suggest that Husserl regarded Kant's philosophy as "being 'worldly' because it *makes use* of our relation to the world" ... "and makes the world immanent [internal to the mind as opposed to transcendent] in the subject" (Ibid: xv).

Merleau-Ponty argued, in a somewhat pragmatic fashion, that perception “is the background from which all acts stand out” and that it “is not a science of the world, it is not even an act, a deliberate taking up of a position” (Merleau-Ponty 1945: xi). His thesis was that it is “primarily through our lived body that we have access to what both he and Husserl call the ‘primary world’” (Casey 1997: 229). Or as Merleau-Ponty himself put it, “our body is not an object for an ‘I think’, it is a grouping of lived through meanings which moves towards its equilibrium” (Merleau-Ponty 1945: 177).

This meant that for him, “[l]ooking for the world’s essence” ... “is looking for what it is as a fact for us, before any thematizations” (Merleau-Ponty 1945: xvii). This suggests, then, that Merleau-Ponty’s personally perceived world is equivalent to Husserl’s *Lebenswelt* but his “unique take on phenomenology would not have been what it is without the influence of existentialism” (Diprose 2008: 10). This is reflected in his statement that “[a]ll my knowledge of the world, even my scientific knowledge, is gained from my own particular point of view” (Merleau-Ponty 1945: ix).

However, Merleau-Ponty’s emphasis on perception being the product of the lived body deriving meaning from encounters with phenomena (“meaning happens”), can be contrasted with Sartre’s “philosophy of the subject” ... with ... “its primary focus” ... “on subjectivity as consciousness” (Busch 2008: 31). Indeed, Merleau-Ponty’s phenomenology involved rejection of empiricism and of individualism (whether Cartesian or Sartrean) because they disregarded perception from “dynamic interactions with its external setting and conditions” (Carman 2008: 55).

Whereas Sartre wrote plays and novels as well as philosophical tracts, Merleau-Ponty commented quite widely on perception in the arts, including architecture, and on language. Silverman noted in this connection that, to Merleau-Ponty, “[a]rchitectural meanings are like linguistic meanings – they arise only in that one sign is profiled against other signs. There is no place in this circulation of a meaning

for pure meaning” (Silverman 2008: 104-5). So, for Merleau-Ponty, language was an indirect source of meaning, whereas for structuralists, as will be seen in the next section, meaning “is a purely linguistic affair” (Flynn 2006: 109). Similarly for Sartre, humans exercise choice over language systems and use them as instruments “for appropriating the world rather than the means for constituting it” (Ibid: 111).

The contributions of Heidegger – student of Husserl and professor of Gadamer – to the fields of hermeneutics, existentialism and phenomenology were referred to earlier. It is sometimes suggested that Heidegger only wrote “one great work” – *Being and Time* (1927) – and that the question of being (*Da-sein*) was central to his work because it “enters into a variety of contrasts” ... “in the first place, with ‘knowledge’ and with ‘science’” (Inwood 1997: 9, 13). It has also been suggested that “[i]t was Heidegger who rendered phenomenology hermeneutical” and that *Being and Time* “is one extended effort to articulate our pre-understanding of Being that makes our own existence problematic to us” (Flynn 2006: 120). Schroeder described Heidegger’s phenomenology as a search for universally applicable essences that might “facilitate a different way of living – a more authentic way” (Schroeder 2005: 176).

2.4.5 Phenomenology and Built Environment

Sharr suggested that “Heidegger’s three key essays concerning architecture” were *The Thing; Building, Dwelling, Thinking*; and *Poetically Man Dwells*, “all of which were written when Germany was undergoing massive political and social rebuilding following World War Two” (Sharr 2007: 21). The lecture that became *Building, Dwelling, Thinking* (*Bauen, Wohnen, Denken* in German) was given as part of a conference addressing the re-building of post-World War II Germany. Heidegger noted that *Bauen* originally meant “to dwell” and that “[d]welling and building are related as ends and means” (Heidegger 1951a: 101, 100). In this respect he was relating back to his central concern, first expressed in *Being and Time*, of what it means to live – that “truth is the unconcealment of Being [*Da-sein*]” (Heidegger 1969: 122).

And so, when examining building, he listed three principal themes: “[b]uilding is really dwelling” ... “[d]welling is the manner in which mortals are on the earth” ... “[b]uilding as dwelling unfolds into the building that cultivates growing things and the building that erects buildings” (Heidegger 1951a: 102). In *Poetically Man Dwells*, he argued first that “[m]an [sic] acts as though he were the shaper and master of language, while in fact language remains the master of man” (Heidegger 1951b: 111). And, having established this relationship, he went on to argue that “dwelling occurs only when poetry comes to pass”; that poetry “is the primal form of building”, and that “[a]uthentic building occurs so far as there are poets” (Ibid: 117-8). This led to Heidegger’s conclusion that “[w]hen the poetic appropriately comes to light, then man dwells humanly on this earth” (Ibid: 119).

This has been described as “a standard move in Heidegger” where most phenomena are inextricably related back to the question of *Da-sein* (Inwood 1997: 87). He also suggested that “in earth, sky, divinities and mortals together consisted the primary circumstances of existence” ... “‘the fourfold’ (*das Geviert*)” (Sharr 2007: 31). And he emphasized the activities of building and dwelling as part of being rather than any idea of buildings as artefacts in their own right – “[f]or Heidegger, places, like things and buildings, were primarily understood through use and experience” (Ibid: 52).

Sharr also noted that Theodor Adorno (1903-69) a prominent member of the left-leaning Frankfurt School, felt that concealed in “Heidegger’s jargon” was the idea that “comfortable domesticity remained a safe and reliable constant in Germany, before, during and after the Nazi era” (Sharr 2007: 89). Heidegger’s preferences, most certainly, would have been for rural vernacular building. As mentioned earlier, this reflects the somewhat elitist nature of Heidegger’s thinking.

Sharr noted the reflection of Heidegger’s thinking in the work of Juhani Pallasmaa and Peter Zumthor, including the title of Zumthor’s book *Atmospheres: Architectural Environments – Surrounding Objects* (2006) and his widely praised thermal baths at Vals in Switzerland (Sharr 2007: 92, 95). And Till described the baths as “exactly the

project of *Being and Time* to clear away the inauthenticity of the everyday in order to reveal” ... “the essential character of Being” but noted, much as Adorno had suggested, that such investigations are “generally conducted in rarefied conditions” (Till 2009: 131). Sharr also noted the influence of Heidegger on Karsten Harries, Dalibor Vesely and Steven Holl, amongst others, but that Norberg-Schulz was the principal figure “who raised the profile of Heidegger’s work in English speaking architectural culture” (Sharr 2007: 98).

Gaston Bachelard’s *The Poetics of Space*, first published in the 1950s, continued in a similar vein to Heidegger’s work. Describing himself as a “phenomenologist who is looking for the roots of the function of inhabiting” (Bachelard 1964: 30), Bachelard’s book is a phenomenological investigation of an intimately known house and its contents. He suggested “the house we were born in has engraved within us the hierarchy of the various functions of inhabiting. We are the diagram of the functions of inhabiting that particular house” (Ibid: 15). In this respect, Bachelard promoted phenomenological meditation as a way of facilitating the inhabitation of familiar space.

Christian Norberg-Schulz’s *Existence, Space and Architecture* (1971), as noted earlier, addressed what he called “existential space”. In the essay *The Phenomenon of Place* (1976) and the book *Genius Loci* (1980), he used the term “phenomenology” more extensively and dealt more specifically with public urban space rather than interior space. Nevertheless, he maintained in his essay a strongly Heideggerian interpretation of “dwelling” as “the total man-place relationship” which implied, for him, a distinction between “space” – which gives humans “orientation”, and “character” – which enables “identification” (Norberg-Schulz 1976: 133).

The Preface to the far more expansive *Genius Loci* explicitly described architecture as meaning “to visualize the *genius loci*” and “the task of the architect being to create meaningful places, whereby he [sic] helps man [sic] to dwell” (Norberg-Schulz 1980: 5). Norberg-Schulz first addressed *Place* – describing it as “a qualitative ‘total’

phenomenon” ... that ... “means something more than location”; *Natural Place* – comprising “thing and order” ... which ... “are spatial (in a concrete qualitative sense)” ... together with ... “character and light” which “refer to the general atmosphere of a place”, and *Man-Made Place*, created places which “express the essence of being” (Ibid: 8, 10, 32, 50).

In the potentially reductive manner subsequently adopted by Rob Krier (addressed in Chapter Four), Norberg-Schulz went on to describe “the *street* and the *square*” as the “basic phenomena of the urban environment” and as belonging “to the categories of path and centre” (Norberg-Schulz 1980: 56). The latter categorization is more congruent with the examination of urban space in Chapter Five of this thesis. Norberg-Schulz illustrated his arguments with case studies of Prague, Khartoum and Rome – which, like Edinburgh, are established capital cities with strong natural features – before returning to the theme of *Place* (and *Place Today*). This led him to argue that places “where natural and man-made elements form a synthesis are the subject-matter of a phenomenology of architecture” (Norberg-Schulz 1980: 170).

This interpretation, which did not take into account the interior phenomenology of buildings in the manner of Bachelard, was strongly focused at the scale of the city as a whole. And towards the end of *Genius Loci*, Norberg-Schulz was writing about settlements as much as about individual buildings, characterizing Modern architecture as “formalistic” rather than “existential” and suggesting, for instance, that while “Rossi’s conception of ‘typology’ is certainly important” ... “it remains sterile as long as the local circumstances are left out” (Norberg-Schulz 1980: 198).

Norberg-Schulz certainly “extended Heidegger’s inspiration” in suggesting that architecture should direct itself towards “the discovery of what already exists prior to it” (Solà-Morales 1995: 98). Solà-Morales went on to suggest, Norberg-Schulz’s comment about Rossi notwithstanding, that place “occupied a key position in the thinking of individuals as seemingly dissimilar as Aldo Rossi and Robert Venturi” (Ibid: 98). But whereas Rossi saw architecture as a continual return to

established archetypes, Venturi and Scott Brown certainly acknowledged context as “an essential element because meaning can derive from context” (Venturi 2004: 10).

Norberg-Schulz’s work in the 1970s and 1980s influenced a number of architectural theorists and/or practitioners who can be regarded as “architectural phenomenologists”. Many of them taught and/or studied at the University of Essex in the 1970s. This group includes Polish-British architectural historian Joseph Rykwert (b. 1926); Czech-born British academic Dalibor Vesely (b. 1934); Finnish architect and academic, Juhani Pallasma (b. 1936); Swiss architect, Peter Zumthor (b. 1943) whose *Atmospheres* was discussed earlier; American architect, Stephen Holl (b. 1947); Mexican-Canadian Professor at McGill University in Montréal, Alberto Pérez-Gómez (b. 1949); and David Leatherbarrow, Professor of Architecture at the University of Pennsylvania.

Vesely has projected views that are sometimes in agreement with Norberg-Schulz’s approach but that are also wary of it. Vesely argued, particularly in his book *Architecture in the Age of Divided Representation* (2004), that there is a “deep and very often intricate relationship between technology and culture, which in many cases remains hidden” (Vesely 2004: 306). In his view the instrumental role of architecture has continued to increase since the Renaissance while its communicative role has diminished. This has led to a situation in which technological developments have enabled engineering disciplines to “enjoy the privilege of ignoring the phenomenal world to concentrate only on elements relevant to their narrow viewpoint” (Ibid: 306).

A similar concern was expressed by Rykwert with respect to “the impotence of corporate capital to generate a socially cohesive environment” at the urban scale, with him characterizing the late twentieth-century city as a “pervasive and insidious city of networks ‘arranged’ by the traffic and sanitary engineers whose interstices are to be filled by the developer and speculator – the city of efficiency guiding profit” (Rykwert 2000: 227, 232).

Central to Vesely's argument was "that science is only a partial representation of reality" because "it takes into account only that which is susceptible to mathematical understanding" (Vesely 1985: 24). He suggested that by the end of the eighteenth-century, "character" – one of the atmospheric qualities that Norberg-Shulz referred to, "was related to the earlier tradition as a mode of being in architecture" ... but ... "was already seen as an abstract physiognomy which could be manipulated with greater freedom" (Ibid: 28).

Vesely steadfastly maintained "that architectural experience is not generated in the context of buildings as objects, but is always situational" (Vesely 1987: 24). He expressed concern, however, that in the use of the term "*character* we can see quite clearly a tendency to move towards the surface of a building, an interior or a garden, towards the experience of appearances" ... rather than ... "into the depth of architectural reality, towards an order still understood in terms of *ethos*" (Ibid: 28). Vesely also expressed concern that "[t]he persistence of primary symbols, particularly in the field of architecture, contributes" ... in turn ... "to the formation of secondary symbols" ... "and of *paradigmatic situations*" ... and he saw paradigmatic situations as being "similar to the nature of the phenomena described in different terminology as institutions, deep structures or archetypes" (Op. cit: 32).

Citing "[n]ostalgia for the pre-industrial city, a reversion to late eighteenth-century classicism, a typological explanation of character" ... and ... "indiscriminate borrowing from history", Vesely was wary of "our inability to see that an uncritical faith in symbolism, historical reference, meaning, etc., could be" ... "only a disguised form of technological rationality" (Vesely 1985: 36). And he, like other commentators, cited Heidegger as his inspiration in calling for a "deeper understanding of the relationship between architecture and engineering" that would be rewarding if, and only if, architecture is seen as an autonomous art rather than as synonymous with technology (Vesely 2004: 307).

It may be, however, that it was Vesely himself who was being nostalgic in this respect and that there should be less apprehension about “high tech” architecture if, as Solà-Morales suggested, architects such as Foster, Rogers and Nouvel have responded “with prophetic optimism” ... “to the need for a reconstructed relationship between new technology and new architecture” (Solà-Morales 1995: 128). Others, such as Lefebvre, whose work is addressed shortly, might simply interpret this as business-based, capitalism-compliant architecture that harnesses technology in support of the social status quo.

Nevertheless, Pallasmaa described the “timeless task of architecture” as being “to create embodied existential metaphors that concretize and structure man’s [sic] being in the world” (Pallasmaa 1994: 37). Also, citing Merleau-Ponty’s emphasis on the body as the focus of human perception, he described architecture’s task as being “to make visible how the world touches us” (Pallasmaa 2005: 46). And, using Heidegger’s phrase, he argued that “[a]rchitecture articulates the experience of being-in-the-world and strengthens our sense of reality and self”, while lamenting, much like Vesely, that buildings have been “turned into image products detached from existential depth and sincerity” (Ibid: 11, 30). Pallasmaa attributed this privileging of visual perception to Descartes and held it responsible for a world in which the “narcissistic eye views architecture solely as a means of self-expression” and the “nihilistic eye deliberately advances sensory and mental detachment and alienation” (Ibid: 22).

Holl saw the challenge for architecture as being “to stimulate both inner and outer perception” and “to heighten phenomenal experience while simultaneously expressing meaning” ... all ... “in response to the particularities of site and circumstance” (Holl 1994a: 42). Equally, Pérez-Gómez described “the inveterate concern of architecture” as being “the promotion and perpetuation of” ... “what constitutes a meaningful order for human life” (Pérez-Gómez 1994: 9). He too held Descartes “responsible for the ‘thinning’ and objectification of space” and, in the

same vein as Vesely, saw the separation of space from time facilitating the generation of architectural ideas “through a fixed system of reductive projections” (Ibid: 20).

Unlike his fellow phenomenologists, Leatherbarrow identified in his *Topographical Stories* the similarities between architecture and landscape architecture, but like his colleagues, he wondered how the design of a building can “acknowledge the particularity of place when construction practices” ... “obey no territorial obligations” (Leatherbarrow 2004: 21). He promoted the “idea of situation” as a vehicle for the “reformulation of [architectural] design as the poetic interpretation of natural situations” ... in ... “an attempt to preserve a necessary connection between architecture and the forces that transcend it” (Ibid: 198-9). And in his conclusion Leatherbarrow also commented that “preoccupation with objects, images and data restricts our grasp of latency” and noted that “[i]n modernist theory, space has been presented as the all-embracing framework of every particular circumstance ...” (Ibid: 250, 249).

Henri Lefebvre (1901-91) in *The Production of Space* (1974), addressed space from a different perspective – as social space rather than architectural space – but he also recognized, as did the phenomenological architects, that the modern world is dominated by technological development, capitalist control and reductive representation. For Lefebvre, first Cartesian logic ended “the Aristotelean tradition which held that space and time were among those *categories* which facilitated the naming and classing of the evidence of the senses” and then Kant separated it “from the empirical sphere: it belonged to the *a priori* realm of consciousness”, and then “mathematicians appropriated space, and time ...” (LeFebvre 1974: 1-2).

Lefebvre’s aim was to develop a “science of space” showing that “it represents the political use of knowledge”; that “it implies an ideology designed to conceal that use”, and that “it embodies at best a technological utopia” that is common in architecture and urbanism (Lefebvre 1974: 8-9). He went on to elaborate his distinction between “the extreme formal logico-mathematical abstraction” of

architectural space and the “practico-sensory realm” of social space and social practices (Ibid: 15). In this respect Lefebvre suggested that “the study of ‘real’ (i.e. social) space is referred to specialists” ... geographers, planners, etc., whereas “knowledge of ‘true’ (i.e. mental) space” ... “is supposed to fall within the province of the mathematicians and philosophers” (Ibid: 94). And he saw this structure being played out in a world where environmental designers “are bending their *demands* (from below) to suit *commands* (from above)” and adopting a reductive “posture of denial” to allow it to continue (Ibid: 94-5).

Lefebvre returned to this question of social space as an arena of suppression (whether deliberate or inadvertent) and conflict, such that it “tended to become indistinguishable from the space of planners, politicians and administrators, and architectural space, with its social constructed character, from the (mental) space of architects” (Lefebvre 1974: 300). And this space of architects and planners, he saw as “an empty space, a space that is primordial” ... “a *neutral* medium into which disjointed things, people and habitats might be introduced” (Ibid: 308). For Lefebvre this was “fluctuation and the ephemeral masquerading as stability” whereas the “section of space assigned to the architect” ... “has nothing innocent about it” ... “it is, quite simply, the space of the dominant mode of production” ... “the space of capitalism, governed by the bourgeoisie” (Ibid: 308-9, 360).

The nub of Lefebvre’s view about architectural space is that it is “visual space, a space reduced to blueprints, to mere images” ... “the enemy of the imagination” ... “accentuated and justified by the rule of linear perspective” (Lefebvre 1974: 361). As such it reflects the power structures that brought about its physical existence. But, he asked, “who can grasp ‘reality’ – i.e. social and spatial practice – without starting out from a mental space, without proceeding from the abstract to the concrete? No one” (Ibid: 425). Central to Lefebvre’s project, therefore, was the “reconstruction of a spatial ‘code’” ... “a language common to practice and theory, as also to inhabitants, architects and scientists” (Op. cit: 64).

Forty's examination of *The Production of Space* led him to question whether Lefebvre believed that architectural discourse about space "began long before the twentieth century" and to suggest, in Lefebvre's terms, that emergence of this discourse might have reflected the needs of "ruling power" to exert "dominion in the realm of space" (Forty 2000: 275). Similarly, Solà-Morales suggested that the "notion of architectonic space" ... was ... "fundamental to the new art born out of the crisis of classicism" ... and ... "adopted by avant-garde culture and criticism from Adolf Behne to Siegfried Giedion, from Frank Lloyd Wright to Mies van der Rohe, from Picasso to Duchamp" (Solà-Morales 1995: 95).

Correspondingly, ideas of space and time emerging from Einstein's physics were reflected in work like Giedion's *Space, Time and Architecture* (1941), and the bodily perception promoted by Merleau-Ponty was adopted by phenomenological architects as a more haptic (and less visual) basis for the appreciation of architectonic space. And it seems reasonable to suggest that what, Professor of Urban Design, Ali Madanipour identified as Lefebvre's scepticism about "any understanding of space that is not rooted in the political economy of its production" indicates that his project was motivated as much by political perspectives as by thorough knowledge of architectural discourse (Madanipour 1996: 18).

De Certeau, in *The Practice of Everyday Life*, projected a view comparable to Lefebvre's. He saw the "tactics of consumption" as "everyday practices" manifesting "the ingenious ways in which the weak make use of the strong" (de Certeau 1994: xvii). De Certeau also referred to "a cancerous growth of vision" as the principal medium of communication and, in terms of linear perspective, to the "scopic drive" ... "of architectural productions"... "materializing today the utopia that yesterday was only painted" (Ibid: xxi, 92). In an equally charged comment about designed spaces, de Certeau described "the geometrical space of urbanists and architects" as seeming "to have the status of the 'proper meaning' constructed by grammarians and linguists in order to have a normal and normative level to which they can compare the drifting of 'figurative language'" (de Certeau 1984: 100). And, much like

Lefebvre, he saw this “faceless ‘proper’ meaning” as being “merely ... fiction” (Op. cit: 100).

Concepts of space in architectural discourse, as well as having been related to concepts of time (not least by Giedion), are frequently related to the concept of place (addressed in Sub-section 2.4.2). These relationships were unambiguously addressed by Dutch Modernist architect Aldo van Eyck (1918-99) in concluding “that whatever space and time mean, place and occasion mean more, for space in the image of man [sic] is place, and time in the image of man [sic] is occasion” (van Eyck 1961: 237). Solà-Morales was more circumspect, describing place as “a conjectural foundation, a ritual of and in time, capable of fixing a point of particular intensity in the universal chaos of our metropolitan civilization” (Solà-Morales 1995: 104).

Others (of the many) who have commented on the relationship of space and place include geographers like Yi-Fu Tuan and Edward Relph; behavioural psychologists like Mayer Spivack and journalists such as Tony Hiss, who also wrote about the way humans experience and respond to their physical environment – what he called “connectedness” (Hiss 1990: 27-52). Tuan described “space” as being “more abstract than ‘place’” and about “undifferentiated space” ... becoming ... “place as we get to know it better” but that they both need each other for definition (Tuan 1977: 6). And, without referring directly to Heidegger, he went on to conclude that “the architect-planner” tends to “assume familiarity with a place rather than trying to understand what ‘being-in-the-world’ is truly like” (Ibid: 201).

Relph made a similar argument, “that the various forms of space lie within a continuum that has direct experience at one extreme and abstract thought at the other extreme” (Relph 1976: 8). This, he noted, was comparable to the concepts of “existential” and “perceptual” space addressed by Norberg-Schulz, and mentioned earlier (Norberg-Schulz 1971: 11). Relph went on to posit a “geography of places, characterised by variety and meaning” ... “which are often profound centres of human existence to which people have deep emotional and psychological ties” ...

and ... “placeless geography, a labyrinth of endless similarities” (Relph 1976: 141). There is a clear parallel here with Melvin Webber’s “non-place urban realm”.

Spivack listed 13 “behaviourally defined archetypal places”, reflecting a range of, largely indoor, daily activities and corresponding spatial requirements at different stages in the human life cycle. He claimed, nevertheless, that his theory was applicable “at any scale of study” ... “from a single bedroom flat to the receding boundaries of the megalopolis” (Spivack 1973: 49). And, like Tuan and Relf (writing later), Spivack suggested that what people do in these archetypal places “constitutes the ‘meaning’ of our environment. It is what makes a *place* out of space” (Ibid: 46).

Concepts of space and place have been variously adopted, interpreted and applied in the discourse of many disciplines. So too has the concept of phenomenology. Solomon, for instance, sought to equate phenomenological architecture with New Urbanism (Solomon 2008: 76) and Aravot wrote about “phenomenological place-making”. She argued that “place” is “basically a phenomenological term” (Aravot 2002: 207) but that phenomenology has been devalued, deconstructed and discredited by, amongst others, Barthes and Derrida (about whom more in Section 2.5), and that place might be seen, as suggested by Tafuri, as one of a number of “impotent and ineffectual myths, which so often serve as illusions that permit the survival of anachronistic ‘hopes in design’” (Tafuri 1979: 182). Aravot neatly side-stepped Tafuri’s Marxian pessimism by suggesting that “phenomenological place-making is more a guiding principle than a model” (Aravot: 209).

2.5 LANGUAGE, NAMING AND MEANING

2.5.1 *Structuralism*

This section examines the roles of language and naming in human comprehension and communication, and addresses the relationship between language and design of the built environment, including the question of architecture as a form of language. It looks first at the work of Swiss linguist Ferdinand de Saussure (1857-1913), including semiology and the theory of structuralism to which he made a major

contribution. Then, in a sub-section on language and logic, it examines the work of Charles Sanders Peirce (1839-1914) on semeiotics [sic]. This is followed by looking at Wittgenstein's work on language, particularly as it refers to naming.

The section then examines non-verbal communication in the built environment, including signs and symbols, followed by questions of meaning and naming, particularly toponymy (place naming) and, more specifically, odonymy (street naming), as processes of classification. It will then return to structuralism, looking at the work of Roland Barthes (1915-80) and Umberto Eco (b. 1932) and poststructural theory – to which Schroeder put the name “philosophies of dispersion” – including the work of Jacques Derrida (1930-2004), before looking at meaning and architecture.

Ferdinand de Saussure, Professor of Sanskrit and Indo-European Languages at the University of Geneva from 1891 until his death, gave his Course in General Linguistics between 1907 and 1911 (Lechte 2008: 176). The content of the Course was published posthumously in 1915 on the basis of his lecture notes and the notes of some of the students taking the course. The lasting significance of Saussure's work is twofold. He was the originator of semiology – the study of signs and symbols – and he was one of the earliest structuralist thinkers.

Saussure's semiology (as opposed to Peirce's semeiotics) was based on the principle of language as a “self-contained ‘relational’ structure whose constituent parts have no significance unless and until they are integrated within its bounds” (Hawkes 1977: 26). He distinguished between language (*langue*), “a self-contained whole and a principle of classification”, the established, homogeneous, diachronic evolutionary language, and speaking (*parole*), heterogeneous, synchronic, individual speech acts (Saussure 1915: 9, 90). Hawkes described this distinction between “structure and individual event” as providing for the “sameness and difference” on which the structuralist anthropology of Claude Lévi-Strauss (1908-2009), with its search for the “unconscious foundations” of social life, was based (Hawkes 1977: 42, 39).

Saussure also argued that “the linguistic sign links not a thing and a name, but a concept and a sound-image” and therefore proposed to use “the word *sign* [*signe*] to designate the whole and to replace concept and sound-image respectively by *signified* [*signifié*] and *signifier* [*signifiant*]” (Saussure 1915: 66, 67). Integral to this proposal was Saussure’s recognition of the arbitrary nature of the relationship between the auditory signifier or sound-image (e.g. *tree* in English; *arbre* in French; *baum* in German) and the concept of a woody perennial plant.

So, for Saussure, “signs function, then, not through their intrinsic value but through their relative position” and the “entire mechanism of language” ... “is based on oppositions” ... and ... “the conceptual differences that they imply” (Saussure 1915: 118, 121). And it was this “relational” view, in particular, that defined Saussure as a structuralist. The concept held that “the world is made up of relationships rather than things” and that “the full significance of any entity cannot be perceived unless it is integrated into the *structure* of which it forms a part” (Hawkes 1997: 18).

Structuralism was clearly defined by (also Swiss) child psychologist Jean Piaget (1896-1980) more than fifty years after Saussure’s *Course* had been published, and shortly before it burgeoned as the platform for semiotic analysis in literature, politics and many other social fields. Semiotics, and ensuing ideas of deconstruction, have also had a strong influence, as will be examined, on architectural thinking.

Piaget held that “the notion of structure is comprised of three key ideas” – wholeness; transformation and self-regulation (Piaget 1968: 5). Looking at these in turn, he argued that all structuralists, whether “mathematicians, linguists, psychologists, or what have you – are at one in recognizing as fundamental the contrast between *structures* and *aggregates*, the former being wholes, the latter composites” (Piaget: 6-7). Piaget went on to state that “all known structures – from mathematical groups to kinship systems – are, without exception, systems of transformation” and that “they are self-regulating” albeit, as in the case of linguistic structures, that their “transformations unfold in time” (Ibid: 11, 13, 15).

Piaget suggested that “the structural models of Lévi-Strauss, the acknowledged master of present-day social and cultural anthropology, are a direct adaptation of general algebra” (Piaget 1968: 17). He went on to suggest that Lévi-Strauss was the very incarnation of the structuralist faith in the permanence of human nature and the unity of reason. His structural models – neither functional, nor genetic, nor historical, but deductive – are in some manner paradigmatic; they show what could be achieved in the social sciences by applying structuralist methods (Ibid: 106) ... and that while Saussurian “structures inspired his search for anthropological structures, the really decisive discovery for him was” ... “that kinship systems are instances of algebraic structures – networks, groups and so on” (Op. cit: 110).

Lévi-Strauss himself talked in 1977 about the structuralist approach as “the quest for the invariant, or for the invariant elements among superficial differences” but described structuralism in linguistics or anthropology or similar fields as “nothing other than a very pale and faint imitation of what the ‘hard sciences’ have been doing all the time” in that science “has only two ways of proceeding: it is either reductionist or structuralist” (Lévi-Strauss 1979: 8, 9). Lévi-Strauss also discussed his impression that “more and more the sense data are being reintegrated into scientific explanation as something which has a meaning, which has a truth, and which can be explained” but that today “we use more of our mental capacity than we did in the past” ... but ... “we use considerably less of our sensory perceptions” (Lévi-Strauss 1979: 6, 18).

Indeed, Lévi-Strauss went on to talk about differences being “extremely fecund” and the only vehicle for “progress” whereas “the more a civilization becomes homogenized, the more internal lines of separation become apparent; and what is gained on one level is immediately lost on another” (Lévi-Strauss 1979: 20). Equally, he pointed to the growing ability of science “to explain not only its own validity but also what was to some extent valid in mythological thinking” and noted that whereas it had adopted “a purely quantitative outlook in the seventeenth to nineteenth centuries” it was also “beginning to integrate the qualitative aspects of reality” (Ibid:

24). This change, he suggested, is comparable “from a logical point of view” to what happened after the Renaissance “when myth disappeared as a literary genre and was replaced by the novel” (Op. cit: 54).

This, then, is somewhat similar to a phenomenologist lamenting rational science squeezing the esprit or essence out of the ethereal world. It certainly underlines the view in Lévi-Strauss’s later work that “music and mythology, as aural/oral, ‘nonliterate’ modes of art” ... “function trans-historically as entities whose non-discursive *forms* give information above and beyond any discursive *content*” (Hawkes 1977: 58). And, as Lechte put it, for Lévi-Strauss, myth became “the third dimension of language” – a vehicle for reconciling the dimensions of *langue* and *parole* – and evidence “that human beings belong to a single humanity, but that the presence of others is essential if we are to constitute our differences” (Lechte 2008: 117, 119).

It is worth noting here the view of Jean La Marche that the “emergence of typology in post-World War II architectural theory parallels the work of Claude Lévi-Strauss” ... who ... “disseminated his conviction concerning, and attempt to uncover, universal mental structures, an endeavor which came to be known as structuralism” (La Marche 1994: 222). In other words, La Marche was suggesting that the typological study of built works (which will be addressed in Chapter Three), like linguistic and anthropological structuralism, can be seen as an exercise in comprehension and categorization on the basis of recognizable differences between entities.

2.5.2 *Language and Logic*

The impact of John Locke on matters such as systems of government, including the constitution of the United States, on empirical thinking, and on the English landscape movement, were addressed in Sub-section 2.2.2 and 2.3.5. In Book 3 of *An Essay Concerning Human Understanding* (1690) he addressed the epistemological role of words and language (Garvey 2006: 49). Consistent with his empiricist perspective,

he argued, first, that ideas are not innate – that they come from experience; and second, that they come from one of two sources – from our senses or from reflection ... “*perception, thinking, doubting, believing, reasoning, knowing, willing ...*” (Locke 1690: 1-2).

Locke’s argument continued that “God having designed man [sic] for a social creature” gave humans language for the communication of ideas (Locke 1690: 62). He went on to note, again consistent with the empiricist imperative of obtaining knowledge by experience, “how great a dependence our words have on sensible idea” (Ibid: 63). Locke then called for an investigation “to find the right use of words; the natural advantages and defects of language; and the remedies that ought to be used, to avoid the inconveniencies of obscurity or uncertainty in the signification of words ...” (Op. cit: 65).

Locke was looking, therefore, for language to be a direct and universally applicable expression of human thought – an aim, as will be shown later in this chapter, that is comparable to Wittgenstein’s intention in his earlier, positivist work, *Tractatus Logico-Philosophus*. Thus, Locke was making “a sharp distinction between our ideas and thoughts”, which are complex “mental phenomena and language which is considered to be a social device” (McLachlan 1981: 191).

Peirce scholar T. L. Short argued that Locke pre-figured Saussure “in making the intentionality of speech to be dependent on the intentionality of the mind” – whereas Peirce believed “that language can only be understood in the concrete context of its use” (Short 2007: 18, 19). This, as will be seen shortly, is similar to Wittgenstein’s later views on language. Short did suggest, however, that it was from Locke that Peirce took the word “*semeiotic*”, used in *An Essay* for “a new doctrine of signs” (Ibid: 2).

Unlike the relatively straightforward dyadic relationship of *langue* and *parole* in Saussure’s semiology, Peirce’s “*semeiotic*” or theory of signs is manifested in a

series of triadic relations. And, just to add to the difficulty of comprehending it, Peirce himself never made a consistent written record of his theory – perhaps because it was in a constant state of evolution. The following description is therefore synthesised from secondary sources – primarily Professor of English, John K. Sheriff's *The Fate of Meaning: Charles Peirce, Structuralism and Literature* (1989) and Short's *Peirce's Theory of Signs* (2007).

The three principal components of Peirce's system were the sign, the interpretant, and the object. The sign (or *representamen*) is "something which stands to somebody for something in some respect or capacity"; this sign "creates in the mind of that person an equivalent sign" ... "the *interpretant* of the first sign"; the sign or representamen stands for the object "in reference to a sort of idea" ... "sometimes called the *ground* of the representamen" (Sheriff 1989: 56, from Peirce's Papers). So, in summary, a *sign* or representamen stands to somebody (creates an *interpretant*) for something (its *object*), in some respect. In effect, therefore, Peirce added the interpretant, the sign in the mind, to Saussure's sign / object and signifier / signified relationship (Ibid: 57).

Peirce went on to describe the sign or representamen as a First; the object as a Second and the interpretant as a Third – which are bound together in a triadic relationship – and maintained that "the triadic relation of sign-object-interpretant is the irreducible character of any sign that signifies" (Sheriff 1989: 59). In other words, the three are potentially in an endless, cyclical process of unlimited semeiosis in which signs are translatable into other signs by way of an interpretant.

Peirce then identified the three categories of Firstness, "the mode of being that consists in something being what it is without reference to anything else" – a sense, a feeling, a possibility; Secondness, actuality, reaction-sensations or direct physical contact; and Thirdness, the "tendency of things" ... "to come together in such a way as to be predictable" (Sheriff 1989: 63). Moore clarified this by noting that Firsts and Seconds are "what in contemporary terminology are called 'brute givens'; they

cannot be defined verbally”, whereas thirdness, the “intellectual concept” is the only type of idea that can be defined verbally (Moore 1972: 17).

Peirce related his sign triad to these three categories such that a sign, its object and its interpretant are set out down the rows on the left side of a table and the categories (Firstness, Secondness, Thirdness) are set out above the columns, thereby creating a matrix demonstrating his three trichotomies of trichotomies (see Table 2.1 – below). This shows that “a sign is one of three kinds (Qualisign, Sinsign, or Legisign); it relates to its object in one of three ways (as Icon, Index, or Symbol); and it has an interpretant that *represents* the sign as a sign of possibility, fact, or reason (that is Rheme, Dicient Sign, or Argument)” (Sheriff 1989: 66).

<i>Phenomenological or Formal Categories</i>	<i>Ontological or Material Categories</i>	Firstness (Quality)	Secondness (Brute facts)	Thirdness (Law)
Firstness (<i>Representamen</i>)	A sign is:	QUALISIGN a mere quality representing only itself (eg: a colour)	SINSIGN = ‘only once’; an actual existent (eg: storefront shingle)	LEGISIGN A general law established in order to signify (eg: traffic light)
Secondness (<i>Object</i>)	A sign <i>relates</i> to its object in having:	ICON some character in itself; a resemblance (eg: portrait)	INDEX some existential relation to that object (eg: sundial)	SYMBOL sign of an object assigned by a rule of interpretation (eg: a logo)
Thirdness (<i>Interpretant</i>)	A sign’s interpretant <i>represents</i> it (the sign) as a sign of:	RHEME a possibility (eg: a concept)	DICENT SIGN a fact (eg: a descriptive statement like yelling <i>FIRE!</i>)	ARGUMENT reasoning; process leading to a conclusion

TABLE 2.1: PEIRCE'S SYSTEM OF SIGNS

(Based on Copley and Jansz: 31-4; Lechte: 173; Sherrif: 67; Short: 208-34)

Peirce did not, in fact, complete a comprehensive semeiotic taxonomy but, as Table 2.1 demonstrates, the principles behind it can be established such that a sign “is divided triadically, as monadic, dyadic, or triadic; so also, what a sign is in relation to its object is divided triadically; and so also, what it is in relation to its interpretant is thus divided. Any sign will belong to one each of each of those three triads” (Short 2007: 207). This gives rise to 27 possible combinations of which Peirce ruled out 17 on the basis that “symbols alone may be arguments and legisigns alone may be symbols” and therefore “legisigns alone may be arguments”; and that “since qualisigns can only be icons and icons can only be rhemes, qualisigns can only be rhemes. And so on” (Ibid: 236).

The end result of this set of exclusions is the 10 classes of sign that Peirce suggested in 1903 – qualisigns; iconic sinsigns; rhematic indexical sinsigns; dicent indexical sinsigns; iconic legisigns; rhematic indexical legisigns; rhematic symbols; dicent symbols; arguments. But he continued to refine and redefine these entities and their relationships.

Clearly Peirce’s repeatedly triadic semeiotic, directed as it was towards logic and language, is distinct from and became far more complex than Saussure’s dyadic semiology. Short suggested “Peirce’s early semeiotic [which has been examined here] was a theory of mind” that “identified thoughts as signs interpreting signs” and that he “gave the term ‘Meaning’ no special place in his semeiotic and that his theory of the interpretant” ... “is his technical counterpart to the tangled uses ‘meaning’ has in ordinary language” (Short 2007: 289, 263). For Short, “the two doctrines are fundamentally incompatible” (Ibid: xiii).

In fact, Short described Saussure’s semiology and the structuralism that it inspired as suggesting that the “multitudinous, concrete, historical facts of human existence can be explained on the basis of an abstract representation – precise, complete, certain” (Short 2007: 16). Short went on to describe as paradoxical the idea that “meaning is created out of two systems of pure differences arbitrarily paired” and

questioned why Saussure “does not explain, or even attempt to explain, how thought and language manage to be about the world”, and this, for Short, put Saussure in line with Locke (and Aristotle) in seeing, as noted earlier, “the intentionality of speech to be dependent on the intentionality of the mind” (Ibid: 18).

Short argued against the relatively common suggestion that the difference between the two systems is simply that Saussure’s was dyadic whereas Peirce’s was triadic. He described Saussure’s system as “semiological arbitrariness, usually misunderstood as conventionalism” and described “the conclusion that all significance is conventional” as “pernicious” and its implication “that the natural world – human nature most of all – is a human construction, subject to revision at whim” as a form “of ‘postmodern’ relativism” that is the antithesis of Peirce’s philosophy” (Short 2007: 21).

Short also suggested that there is more similarity between Peirce’s semeiotic and the ideas of Augustine of Hippo (354-430 CE) on signs than between the Peirce and Saussure’s systems. In *De doctrina christiana* (397-426 CE), Augustine used the word *signum* to refer to words and signs, and made fundamental distinctions between *signa naturalia* – which have no *intention* of signifying, like smoke from a fire, and *signa data* – replicable, representative types such as papal mitres or military uniforms instituted by man or God, and between *signa propria* – such as words, and *signa translata* – combinations of a primary and secondary signification which might be metonyms or other tropes (Ladner 1979: 225-6 / Short 2007: 23-6).

Short drew a parallel between Augustine’s *signa data*, which he saw as “purposeful” and Peirce’s idea of legisigns. It is also consistent with the example in Chapter Five of this thesis to draw a parallel between the non-signifying *signa naturalia* and prefix or specific names of urban spaces, and between *signa data* and their (arguably purposeful) generic suffix names.

Sheriff, like Short, was dogmatic about the superiority of Peirce's theory compared with theories derived from Saussure – because, first, “it incorporates meaning”; second, it “makes mind and language interdependent”; third, it “incorporates signs of quality and actual existents as well as signs of signs”; fourth, it “expresses the inseparability and interdependency of thought and reality”; fifth, it “emphasizes that humans are freed, rather than enslaved, by language”; and sixth, it is “more comprehensive than any of the structuralist theories” (Sheriff 1989: 136-42). Peirce's system also sought to be more scientific, extending well beyond the field of linguistics and well beyond Saussure's concern with meaning in synchronic discourse.

Peirce is also regarded as the founder of pragmatism, a theory or practical philosophy, also known as instrumentalism, developed in the post-Civil War United States and based on the fundamental view that things are true only if they work. Other leading figures in the development of pragmatism as a distinctly North American philosophy were William James (1842-1910) and John Dewey (1859-1952), and latterly, Richard Rorty (1931-2007).

Peirce's background as a chemist led him to see his system of ideas as being equivalent to atoms. Pragmatism for Peirce was therefore a means of discovering the individual ideas of which a more complex idea is composed (Moore 1972: 16). Rorty credited Peirce with being a genius, but was less appreciative of his contribution to the theory, describing his contributions as being limited to providing its name and encouraging James (Rorty 1982: 161).

Rorty saw James and Dewey, in contrast to Nietzsche and Heidegger, as having exuded a “spirit of social hope” and asking us “to give up the neurotic Cartesian quest for certainty” (Rorty 1982: 161). Rorty went on to characterize pragmatism, first, as anti-essentialist with respect to “objects of philosophical theorizing”, such as “truth”, “knowledge”, “language”, “morality”; second, as disavowing “the myth that rationality consists in being constrained by rule” – which, as has been noted, is what

Descartes and Kant sought to do; and third, as being a doctrine in which the only constraints on inquiry are “the remarks of our fellow inquirers” but that there are no “wholesale constraints derived from the nature of objects, or of the mind, or of language” (Ibid: 162-5).

Rorty also pointed to the risk that pragmatism, as he characterized it, might be interpreted as indecisive relativism. But, from his perspective, there is no value in choosing between incompatible philosophical theories which have sought (or invented) external explanations of human practices – what he called “the Enlightenment’s misguided search for the hidden essences of knowledge and morality” (Rorty 1982: 170).

By contrast, analytic philosopher and mathematician Bertrand Russell, writing in post-World War II Britain, dismissed Dewey’s world as “one in which human beings occupy the imagination” and pragmatism (which Russell preferred to call instrumentalism) as “attractive to those who are more impressed by our new control over natural forces than by the limitations to which that control is still subject” (Russell 1946: 737). It was Russell, of course, who acted as professor and promoter at Cambridge University of Austrian-born Ludwig Wittgenstein (1889-1951).

Wittgenstein was originally an engineer. He developed a fascination with language and logic. His first book, *Tractatus Logico-Philosophicus* (1921), was written while he was serving in the Austrian army during World War I. It was set out as a series of decimally numbered sub-statements amplifying seven fundamental propositions: “The world is all that is the case” ... “What is the case – a fact – is the existence of states of affairs” ... “A logical picture of facts is a thought” ... “A thought is a proposition with a sense” ... “A proposition is a truth function of elementary propositions” ... “The general form of a truth function is [mathematical expression]” ... “What we cannot speak about we must pass over in silence” (Wittgenstein 1921: 5, 12, 22, 43, 70, 89) .

The book was intended to be a definitive statement of the logical structure and scope of language. At that time Wittgenstein believed “that the meaning of a word is what the word stands for” (Garvey 2006: 160). Statements 3.202, 3.203 and 3.221 argued that “The simple signs employed in propositions are called names” ... “A name means an object. The object is its meaning” ... “Objects can only be *named*. Signs are their representatives” (Wittgenstein 1921: 15). As Russell noted, in the Introduction to the *Tractatus* (at that time) Wittgenstein was “concerned with the conditions for a logically perfect language” (Russell 1922: x).

Latterly Wittgenstein came to believe that his claim (about the meaning of a word) was too literal and he refuted it in his posthumously published *Philosophical Investigations* (1953) arguing that “to come to grips with language, one” ... “must try to understand how words get used by living people” (Garvey 2006: 162). Like his earlier book, *Philosophical Investigations* was set out on a numerical basis. In §40 he stated “it is solecism to use the word ‘meaning’ to signify the thing that ‘corresponds’ to a word”; and in §43, “the meaning of a word is its use in the language” (Wittgenstein 1953: 24, 25). In other words, there is nothing essential to words themselves that gives them meaning; their meaning is dependent on the social context or “language-game” in which they are used (Garvey 2006: 163-4).

Wittgenstein’s work inevitably provoked strong reactions. Gadamer, for instance, did not “believe that everything for him is just language games” but that “[t]he decisive thing is that Wittgenstein generally omits any opinions about such things as death and life” (Gadamer 2003: 75). De Certeau likened Wittgenstein’s work on language to Loos’s defence in *Ornament and Crime* of “functionalist austerity against the decorative degeneracy of Vienna” (de Certeau 1984: 12). And de Certeau argued that, on the one hand, Wittgenstein combatted “the professionalization of philosophy” but, on the other, he made it “possible for science to produce and master an artificial language” (Ibid: 10).

Charles Taylor suggested, however, that “the great contribution of writers like Heidegger and Wittgenstein is that they carefully deconstructed the epistemological picture which ‘held us captive’” and thereby “discredited the whole procedure of arriving *ex ante* at some view of what knowledge has to be, and then dictating to reality from that standpoint” (Taylor, C. 1990: 264). In this respect Taylor saw Heidegger and Wittgenstein as reversing the tendency for epistemology to dominate ontology.

Sheriff, as noted earlier, regarded “Peirce’s definition of a sign” as being “consistent with the linguistics of Wittgenstein” whereas he regarded Saussure’s linguistics as implying “that language is something arbitrarily added to preexisting objects” (Sheriff 1989: 71-2). So, Sheriff, who argued that “human values and choices and language and reality are interdependent”, saw Saussure as inspiring his followers to find “only formal sign relations” whereas the logicians, Peirce and Wittgenstein, “both insist that we have no choice but to unite linguistic signs, objects and mental activity” ... “and treat them as dependent rather than independent entities” (Ibid: 141, 72).

Saussure scholar Roy Harris noted, in his *Language, Saussure and Wittgenstein*, that “surprisingly little” had been written comparing their views on language, perhaps because their backgrounds were in different disciplines (Harris 1988: x). His thesis, however, was that “the views of Saussure and Wittgenstein show an important convergence” ... “specifically in their belief that the most enlightening analogy one can entertain in seeking to understand how language works is the analogy between a language and a rule-governed game” (Ibid: x). Harris noted that they also had in common the fact that they both completely changed their views on language in the course of their academic careers (Op. cit: 2). He believed, however, that “there is no indication that Wittgenstein had ever read” Saussure’s *Course in General Linguistics* and that the “mutual independence” ... of their ... “thinking about language appears to be beyond dispute” (Op. cit: 1).

Harris also saw a convergence in their “common concern to expose certain misconceptions about language” – in particular, the “nomenclaturist” view (embedded in the Book of Genesis) “that words function essentially as names of objects or properties already given in advance of language” (Harris 1988: 7). This he saw as being “doubly defective”, first, because “language is above all a social phenomenon”, and second, because it “fails to represent correctly the reality of language from the individual’s point of view” (Ibid: 12-13).

Harris went on to suggest that both Wittgenstein and Saussure adopted the analogy of language and rule-governed games as a form of resistance to the dominance in the nineteenth-century of “positivism in Western academia” – a resistance that admitted the “ordinary language user” ... to ... “the game everybody can play” (Harris 1988: 126, 127). Certainly Harris’s perspective contradicts the suggestion from Sheriff, who possibly wrote from a more religion-based position, that whereas Peirce and Wittgenstein were unified in their views of language, Saussure operated in a separate world of formal sign systems.

For the purposes of this thesis, at least, a number of guiding principles can be adopted from this examination. First, from *Philosophical Investigations* (§49), Wittgenstein’s view that “naming and describing do not stand on the *same* level: naming is a preparation for describing” (Wittgenstein 1953: 28). Second, from Saussure, the principle that words can only obtain meaning as part of systems of differences. Third, from *Philosophical Investigations* (§43), that “the meaning of a word is its use in language” ... “[a]nd the *meaning* of a name is sometimes explained by pointing to its *bearer*” (Ibid: 25). And finally, recognition that toponymy and odonymy are, amongst other things, language games in their own right.

2.5.3 Naming and Meaning

The study of signs and meaning has been of particular interest to, amongst others, geographers and analysts of environmental behaviour. It is therefore appropriate to examine briefly some aspects of human comprehension and responses to human-

made environments. This sub-section will examine the work of an academic from each field. Yi-Fu Tuan (b. 1930) describes himself as a humanist geographer (rather than a human geographer) and worked on concepts of space and place from an experiential perspective. Amos Rapoport (b. 1929) was educated as an architect but developed a particular interest in environmental behaviour and the meanings of built environments, including the study of non-verbal methods of communication. Both Tuan and Rapoport, therefore, examined human reactions to human-made places.

Tuan, in his essay “Signs and Metaphors”, defining signs as stimuli to physical action rather than to mental contemplation, argued that “[i]n routine activities, human beings respond more or less automatically to signs in the environment” and that this trait “makes for that essential order or stability without which innovation cannot arise” (Tuan 1978: 364). He also noted that all animals, including humans, react instinctively to signs, particularly signs of danger, in order to survive.

This informed Tuan’s categorization of human behaviour into three types of reaction to three different types of signifying stimuli. These are *signs*, which prompt *actions*; *affective signs* which prompt *feelings*; and *symbols* which prompt *thought*, with synesthesia (the blending of sensory experiences, e.g. sound and vision) serving as a foundation for metaphorical thought (the co-joining of images for the purpose of greater emphasis) and simile (explicit, albeit exaggerated, comparison) as “way stations to symbolic thought” (Tuan 1978: 365). In this connection, Tuan described a symbol as going “beyond the simile” and being “an abstracted affective sign that has lost its direct link with a human subject in a specific context”, and which “carries a greater proportion of articulable ideas” than an affective sign or metaphor (Ibid: 369, 370).

There is a parallel here with Rapoport’s concept of levels of meaning in the built environment. But, before looking at that, it is worth noting Tuan’s observation that it is feasible to design “for other people” ... “because human behavior, like that of other animals, is routinized” ... and ... “depends on the habit of responding to

environmental signs in an appropriate manner” (Tuan 1978: 370). Tuan cited the work of Robert Venturi in this connection as an illustration of architecture incorporating signs that “deliberately introduce ambiguity” (Ibid: 371).

And, Venturi himself suggested, in *Architecture as Signs and Systems for a Mannerist Time*, a number of historical building types that engaged “architecture as sign” (Venturi and Scott Brown 2004: 24-5). These included Greek and Roman temples; facades of French gothic cathedrals; Zen gardens of Kyoto; and the American billboard. Venturi also wrote about this being a time “where form accommodates functions rather than form follows function” and reiterated his view that the “Decorated Shed is the essential form of an Architecture as Communication, where meaning rather than expression is the quality sought” (Ibid: 37, 35).

For Rapoport “the human mind basically works by trying to impose meaning on the world through the use of cognitive taxonomies, categories and schemata” ... and built forms are ... “physical expressions of these schemata and domains” (Rapoport 1982: 15). And, working on the basis that “physical elements of the environment *do* encode information that people decode”, he went on to suggest that whereas designers “react to environments in perceptual terms” ... “the lay public” react in “associational terms” (Ibid: 19). This led Rapoport to direct his attention to the question of the meanings of built environments to their various users.

Rapoport was dismissive of most signs, and semiotics generally, for comprehension of the built environment, because it “becomes so broad as to become trivial” (Rapoport 1982: 37). Nevertheless, Rapoport was committed to the view that meaning, which he identified as symbolism, is “central to all environments” and that the process of design is the “translation of symbols into form” (Ibid: 44, 45). He also argued in this connection that signs have only one meaning, whereas symbols are multivalent.

In his Epilogue, added in 1990, Rapoport identified three types of communication – semiotic / linguistic, symbolic, and non-verbal – and three levels of meaning – High, Medium and Low (Rapoport 1982: 220). He related high-level meanings to “cosmologies, cultural schemata, world views, philosophical systems, the sacred, etc.” (Rapoport 1988: 325). This is comparable to Johnson’s observation (addressed in Sub-section 3.2.1) that certain iconic forms, pyramids etc., are “brimful of meaning”.

Rapoport described middle-level meanings as “those communicating identity, status, wealth, power, etc.” and lower-level meanings as “everyday and instrumental meanings: mnemonic cues for identifying the uses for which settings are intended” (Rapoport 1988: 325). These levels are comparable to “networks of social communication that operate in a ‘high symbolic voltage’ and such that operate in ‘low symbolic voltage’ in relation to the transmission of symbolic messages” (Azaryahu 2009: 54-5). And, as will be seen in Chapter Five, Azaryahu assigned street names to “low symbolic voltage” networks.

It is significant for this thesis to note that Rapoport also included under low-level meanings, “movement and way-finding; and other information which enables users to behave and act appropriately and predictably, making co-action possible” (Rapoport 1988: 325). These types of meaning, he suggested, are “mundane and common, known to all users” (Ibid: 329). As such, low-level meanings are consistent with basic human requirements for comprehension and appropriate conduct in the urban public realm and they can be related to the denotational (as opposed to connotational or medium) level of cognition required to comprehend the generic names of urban spaces.

Rapoport suggested that Nonverbal Communication (NVC) is particularly applicable to “the study of the everyday low and middle-level meanings that built environments have for users” (Rapoport 1982: 241). He noted that *all* forms of communication require, at the least, “sender, receiver, channel and context” (Ibid: 220). And he

suggested that “nonverbal behavior tends to be received visually” (Rapoport 1988: 320). This suggests, in turn, that differences (that word again!) which can be perceived visually – like height, colour, age, location, materials, layout, shape – are particularly expressive of low-level meaning (Rapoport 1982: 115-6). This approach, to use a linguistic analogy, is paradigmatic rather than syntagmatic. The NVC approach is, as Rapoport put it, simple and direct” ... being ... “based in the first instance, on observing or recording cues and making inferences” (Rapoport 1988: 324).

Tuan also wrote about the interdependent relationship of space and place and, in particular, his view that human cognition of “space” can lead to its comprehension as “place” (Tuan 1977: 6). He used as an example children, when they are learning to speak, wanting first to know the names of familiar objects. This, he argued, reflects a propensity to think that “[t]hings are not real until they acquire names and can be classified in some way” (Ibid: 29). This set the scene for his later examination of the role of language in the transformation of “space” into “place”. Tuan noted that “speech – the right to name and have that name ‘stick’ – is empowerment” (Tuan 1991: 685). Vuolteenaho and Berg, writing nearly 20 years later, put this a bit more bluntly. They argued that “naming a place is always a socially embedded act, one that involves power relations” but that “understandings of place that ignore its embeddedness in uneven power relations have not been uncommon” (Vuolteenaho and Berg 2009: 9).

Nevertheless, Tuan made a number of observations in his essay which remain defensible and which are germane to this thesis. He noted, for instance, that “[p]lants and animals become a part of the human socioeconomic order when they appear in a classificatory scheme” and, using the example of “Mount Misery”, that “[g]eneric names are not as powerful evocators of place as are proper names” (Tuan 1991: 686, 688). All this begins to establish a pattern, which will be examined further in Chapter Five, of the allocation of generic, suffix names to public spaces being relatively “low-level” or of “low symbolic voltage”. But Tuan also noted that all acts

of naming have significance because “words – names, proper names, taxonomies, analyses, and so on” ... “draw attention to things: aspects of reality hitherto invisible, because unnoticed, become visible” (Tuan 1991: 692-3). In short, “[w]ords have consequence” (Ibid: 693).

2.5.4 *Meaning and Architecture*

For a period of about 25 years from the late 1960s, several architects, academics, and critics, largely based in the Anglo-American world, and including Charles Jencks, George Baird, Geoffrey Broadbent, Françoise Choay, Alan Colquhoun, Diana Agrest and Mario Gandelsonas, and Donald Preziosi wrote about semiotics and/or meaning in architecture. They were influenced in this endeavour by the writings of, primarily European, structuralist linguists, semioticians and theorists.

The work of some of these linguists, semioticians and theorists will be examined here and then the question of “architecture as language” addressed. It is important to stress, at the outset, that this examination will consider questions of meaning in the built environment from the perspectives of two groups whose normal modes of production and communication are quite distinct. The customary output of the theorists is largely verbal – whether written or spoken – and for the architects, it is, of course, largely material and visual.

Roland Barthes (1930-2004) was essentially a literary and cultural analyst. He wrote extensively. He became a celebrity. He is still celebrated as “a structuralist, perhaps *the* structuralist”; he stands for “the pleasures of reading and the reader’s right to read idiosyncratically”; he was “a champion of the avant-garde” whose “deepest love” was “French literature from Chateaubriand to Proust”; he was the “agent of what he called ‘the death of the author’, the elimination of this figure from the central place in literary studies and critical thinking” ... and yet he was, above all else, an author and, for many years, an authority on a wide range of cultural issues (Culler 2002: 1-3).

One way of describing those issues is to note Culler's chapter titles – literary historian; mythologist (where “‘myth’ means a delusion to be exposed” ... “a form of communication, a ‘language’, a system of second-order meaning”); critic (suggesting that literature should “problematize the meanings we automatically confer or assume”); polemicist (objecting most strongly to the “concealment of ideology as common sense”); semiologist (where he saw “semiology as a perspective that questions other established disciplines”); structuralist (perhaps the most common description of him); hedonist (writing about his pleasures); and writer – which is how he saw himself in *Barthes par Barthes* (Culler 2002: 23, 25, 44, 50, 58, 87).

Schroeder noted that Barthes contributed to “the development of Saussure's approach in the analysis of cultural myths and of literature” – including endorsement of Saussure's *langue / parole* distinction – but eventually transcended “the scientific aspirations of structuralism” (Schroeder 2005: 249, 250). It is worth noting here Culler's observation that in the 1960s “there seemed no reason to try to distinguish structuralism and semiology” but that, eventually “semiology (or semiotics) came to be seen as a field of study” ... “of sign systems of all sorts” ... “while ‘structuralism’ came to denote” ... writings ... “that sought to describe the underlying structures of a range of human activities” (Culler 2002: 66).

Barthes also confirmed “the value of Saussure's two types of structural analysis: syntagmatic and paradigmatic” (Schroeder 2005: 251). Schroeder used architecture to illustrate this distinction, relating the syntagm to “parts of the finished building” and paradigm to “possible variations in each of the parts (different type of doors, insulation, roof ...)” (Ibid: 251). Schroeder also noted Barthes's interest in denotation (the literal) and connotation (the suggested) – analytical terms which, as will be demonstrated in Chapter Five, were applied by Eco to architecture and which can be applied to onomymy – but that, as he moved out of his structuralist phase, Barthes ceased his “search for an underlying system” and concentrated on “complex interactions of various levels of meaning” (Op. cit: 251, 253).

This ran contrary to “the ultimate goal of structuralism” which can be described as the scientific endeavour of reducing “surface multiplicity to systematic order using a minimum of contrasting elements and rules of combination” (Schroeder 2005: 263). And, as Sheriff noted, it demonstrates “one of the fundamental points of the poststructural critique of structuralism” that, because of “our structuralist assumptions, whatever we wish to study eludes us” (Sheriff 1989: 26). This led Barthes to “assert explicitly what was always implicit in his essays – the joy of comprehending complex nuances” (Schroeder 2005: 263).

It is clearly beyond the scope of this thesis to look at Barthes’s work in great depth. This examination will therefore address three pieces that illustrate his thinking and that relate to the design of the built environment. These are “Myth Today” from *Mythologies* (Barthes 1957); a lecture “Semiology and the Urban” (Barthes 1967), and “The Death of the Author” from *Image – Music – Text* (Barthes 1968).

Myth Today

Barthes described myth as a “type of speech” and a “mode of signification” that “belongs to the province of a general science, coextensive with linguistics, which is *semiology*” ... “a science of forms, since it studies significations apart from their content” (Barthes 1957: 109, 111). This led him to re-emphasize that “semiology can have its unity only at the level of forms, not contents: its field is limited, it knows only one operation: reading and deciphering” (Ibid: 114). Barthes used a cover photograph from the magazine *Paris-Match* to demonstrate this operation. The image showed “a young Negro in a French uniform” saluting the French flag “with his eyes uplifted, probably fixed on a fold of the tricolour” (Op. cit: 116). He noted that to him this signified “that France is a great Empire, that all her sons, without any colour discrimination, faithfully serve under her flag, and that there is no better answer to the detractors of an alleged colonialism than the zeal shown by this Negro in serving his so-called oppressors” (Op. cit: 116).

Barthes then broke down this “semiological system” into the signifier – the black soldier giving the salute; the signified – “a purposeful mixture of Frenchness and militariness”, and the “presence of the signified through the signifier” (Barthes 157: 116). He went on to suggest that the “signifier of myth presents itself in an ambiguous way: it is at the same time meaning and form” and that myth is defined by “this constant game of hide-and-seek between the meaning and the form” (Ibid: 117, 118). In this game, therefore, “meaning is always there to *present* the form: the form is always there to *outdistance* the meaning” and it is the “duplicity of the signifier which determines the character of the signification” (Op. cit: 123, 124).

Barthes described “the very principle of myth” as being that “it transforms history into nature” (Barthes 1957: 129). Looking again at the *Paris-Match* cover, for the myth-reader “everything happens as if the picture *naturally* conjured up the concept” of revolving signification, “the myth exists from the precise moment when French imperialism achieves the natural state” (Ibid: 129-30). And, Barthes argued, “what allows the reader to consume myth innocently is that he [sic] does not see it as a semiological system but as an inductive one” (Op. cit: 131).

Adopting his polemicist role (and sounding like Lefebvre and de Certeau rolled into one) Barthes argued that “everything, in everyday life, is dependent on the representation which the bourgeoisie *has and makes us have* of the relations between man [sic] and the world” and that “we constantly drift between the object and its demystification, powerless to render its wholeness” (Barthes 1957: 140, 159).

Semiology and the Urban

Barthes opened his “Semiology and the Urban” by noting the complexity of the city and the difficulty of outlining “a semiotics of the city” (Barthes 1967: 166). This is comparable to Deleuze and Guattari’s recognition of cities as “schizoanalytic subjects” (Ballantyne 2007: 81). And his description of modern cartography as “a kind of obliteration” ... “imposed on signification” is redolent of de Certeau’s lament that “the map has slowly disengaged itself from the itineraries that were the condition

of its possibility” (de Certeau 1984: 120). No great surprise, then, that Barthes should see urban planners as having given “a very reduced place to the problems of signification” ... which they see as being “in complete opposition to objective data” (Barthes 1967: 166, 168).

Barthes did, however, read the five categories from Lynch’s *Image of the City* (path, edge, node, district, landmark), as “units that would easily become semantic categories” (Barthes 1967: 167). And, again similar to de Certeau, he described the city as a discourse that “is truly a language: the city speaks to its inhabitants, we speak our city, the city where we are, simply by living in it, by wandering through it, by looking at it” (Ibid: 168). He went on to suggest that “semiology (in the widest meaning of the term)” might contribute to transition “from metaphor to analysis when we speak of the language of the city” (Op. cit: 168).

Barthes then made three “remarks” (about symbolism, structuralism and semiotics) which, by his own admission, related to the then current state of semiology (rather than to “the city”), before going on to liken a city to “a poem which unfolds the signifier and it is this unfolding that ultimately the semiology of the city would try to grasp and make sing” (Barthes 1967: 172). This lecture certainly suggested a broader scope for semiotic analysis; it presented a different perspective from which to “read” cities, and it opened up issues that, as noted earlier, were also taken up by Lefebvre and de Certeau. But the three “remarks” might have been as easily applied to, say, the making of pancakes.

The Death of the Author

Barthes’s essay *The Death of the Author*, on the other hand, was directly related to his literary interests and demonstrates the development of his thinking beyond structuralism. The essay re-echoes Wimsatt and Beardsley’s reader-oriented “Intentional Fallacy” which argued that “the meaning of a piece of work is not what the writer had in mind” ... “during composition of the work” ... “but, rather, what he or she succeeded in embodying in the work” (Culler 1997: 66). Similarly Barthes

argued that the “*explanation* of a work is always sought in the man or woman who produced it” and he therefore sought to help “restore the place of the reader” (Barthes 1968: 143). The problem, as Barthes saw it, was that “giving a text an Author is to impose a limit on that text, to furnish it with a final signified, to close the writing” (Ibid: 147).

All of this, of course, is in complete contrast to Schleiermacher and Dilthey’s approach to hermeneutics (addressed in Sub-section 2.4.3) which deferred to the author’s intentions and is “a *hermeneutics of recovery*” as opposed to “a *hermeneutics of suspicion*, which seeks to expose the unexamined assumptions on which a text may rely” (Culler 1997: 67-8). This move towards a hermeneutics of suspicion and a call for greater openness in the interpretation of texts will be seen again in the following critique of Derrida’s work.

Beloved of literary theorists, disavowed by many (primarily English-speaking) philosophers, and admired by a clique of architects, Jacques Derrida (1930-2004) can best be described as a theorist. Much of his writing was “in response to other texts” and most of his “theories force a reassessment of the nature of language” (Schroeder 2005: 280, 281). Sheriff described Derrida’s “project” as “an attempt to get at what is most fundamental to language, yes, what is immanent to language” (Sheriff 1989: 42). Like the later Barthes, Derrida espoused open-endedness and his writing ventured into many fields. He has been described as a poststructuralist in that his work built on and critiqued Saussure’s structuralist approach to language. Hill, however, pronounced Derrida’s work to have “little, if anything to do with that largely non-existent theory sometimes given the meaningless, if not entirely vacuous name of ‘French post-structuralism’, a term never used by Derrida” (Hill 2007: 116).

Derrida himself argued that the “*post-s* and *posters* which proliferate today (poststructuralism, postmodernism, etc.) still surrender to the historicist urge” (Derrida 1986a: 324). But this all depends, of course, on the definition of poststructuralism that you adopt. If you accept it as “a theory or group of theories

concerning the relationship between human beings the world and the practice of making and reproducing meanings” (Belsey 2002: 5), then Derrida was probably a poststructuralist. Perhaps it is easier simply to adopt Schroeder’s term “philosophies of dispersion”.

In any event, for his disciples, “Derrida radically transformed the contemporary philosophical, theoretical and literary landscape as few others were able” ... even though he... “founded no school of thought, authored no official body of doctrine, fathered no philosophical institution that bore his name” (Hill 2007: 115). But for his detractors, his work is “not merely incomprehensible but mystificatory, and that so far as it can be understood it represents an attempt to call into question the very possibility of rational inquiry” (Mautner 2000: 132). Sheriff, as noted earlier, was strongly antithetical to Saussure and no less critical of Derrida. Noting that, for structuralists signs do not have meaning in themselves but that differences between them “allow meaning”, he argued that for Derrida, “all meaning is supplementarity, an ideality exterior to the process of language” ... “a product of structurality” (Sheriff 1989: 53, 34).

So what was Derrida’s position? He “took a certain style of thinking” from Husserl but determined that Husserl’s phenomenology “had turned out to be another failed attempt at the restoration of metaphysics” (Hill 2007: 14, 15). He challenged Saussure’s phonocentrism – the privileging of the spoken word over the written word, for which he developed the term “logocentrism” and sought to “displace” the centrality of speech “by the idea of *différance*” ... “a vital part of his theories of deconstruction” (Cuddon 1998: 477). And he maintained an interest in Sartre’s work, which he saw as testifying “to the enduring importance of a close dialogue between literature and philosophy” (Hill 2007: 14). But Derrida’s principal interest lay in written text, which he saw “as an endless sequence of signifiers which can have no ultimate or determinate meaning” (Cuddon 1998: 225).

Schroeder argued that, for Derrida, “meaning is not a function of the speaker’s intent” but that it is “determined from many directions by context” (Schroeder 2005: 282-3). There is a remarkable similarity here with J. B. Jackson’s observations, noted in Sub-section 2.4.2, about the creation of a “sense of place” being beyond a designer’s capacity. And in much the same way, Derrida saw meaning as the product of multiple overlapping forces in variable contexts. Sheriff argued, however, that “Derrida’s method is to deconstruct, to confuse and confound a way of looking at the world that is solely dyadic, binary, by using the very principle it deconstructs – the dyadic sign and binary oppositions” (Sheriff 1989: 130).

Derrida described his approach to reading philosophical texts as “deconstruction” – seeing a text as “saying something different from what it appears to be saying” or reading it “as carrying a plurality of significance” (Cuddon 1998: 210). This was a way of addressing texts “with finesse, nuance, and all available sophistication” (Hill 2007: 117). But – unlike, say, Hegel’s dialectic – Derrida’s deconstruction did not lead ultimately to a synthesis. For him, “the two sides of the distinction will mutually challenge one another endlessly without producing any final result” (Schroeder 2005: 286). The idea of *différance*, a homonym for the French spelling of *différence* (difference) was integral to Derrida’s deconstruction. He insisted that it was “properly neither a word nor a concept” (Hill 2007: 15) but it provides a self-evident demonstration of the intelligibility of distinctions in the written word that cannot be heard in the spoken word. And, it reflects (if it does not embody) Saussure’s argument that “a language is a system of differences” (Culler 1997: 57) and the “simple inference that meaning is differential, not referential” (Belsey 2002: 10).

So how does all this relate to the design of the built environment? Derrida, who became implicated in designs for Parc de la Villette in Paris by Bernard Tschumi (b. 1944) and Peter Eisenman (b. 1932), was quite explicit that “[d]econstruction is not simply – as its name seems to indicate – the technique of reversed construction” (Derrida 1986b: 321). And, with the comments that “[o]ne lives in writing” and “[w]riting is a way of living” (Ibid: 321), he made the case for viewing

architecture as a form of text. This is implicit in the title of his essay “Why Peter Eisenman Writes Such Good Books” and reflected in his call for “the opening of architecture, as the beginning of a non-representative architecture” (Op. cit: 322).

Derrida’s essay “*Point de Folie*” described Tschumi’s proposed grid of 25 bright red, cuboid “follies” at la Villette, as “the ‘largest common denominator’ of this ‘programmatic deconstruction’” (Derrida 1986a: 325). “The *folies*”, he argued, “deconstruct first of all, but not only, the semantics of architecture” ... demonstrating that “there is an architecture of architecture” (Ibid: 326). In this connection, Derrida identified four “invariables” ... that ... “remain, constant, through all mutations of architecture” ... traversing “the whole history of architecture” (Derrida 1986a: 326-7). These can be (very crudely) paraphrased as dwelling, historicism, functionality, and values of beauty and harmony. He saw these invariables as translating “one and the same postulation: *architecture must have a meaning*, it must *present* it and, through it, *signify*” (Ibid: 326). And, he continued, “[t]he signifying and symbolical value of this meaning must direct the structure and syntax, the form and function of architecture” (Op. cit: 326).

But in Derrida’s reading, Tschumi’s *folies* “destabilize” ... “the meaning of meaning” ... they ... “put in question, dislocate, destabilize or deconstruct the edifice of this configuration” ... and ... “they do battle with the very meaning of architectural meaning” (Derrida 1986a: 328). Derrida concluded that the “red cubes are thrown like the dice of architecture” ... anticipating ... “the architecture to come” (Ibid: 336). It is, nevertheless, difficult to understand how anything “thrown like dice” can produce a rigid orthogonal grid. It is not surprising that Curl suggested that the “meaning, if any, of these follies is indecipherable, and the sense of a gag having gone flat adds to the anaesthetized uneasiness of the place” (Curl 2006: 793). And in his own deconstruction of *Deconstructivism*, Curl noted “certain formal similarities to some aspects of Russian Constructivism” and suggested that it “undermines conventional notions of harmony, unity, and apparent stability” (Ibid: 228).

Curl also suggested that deconstructivism “has been seen as intentional aggression on human senses” ... designed to ... “generate anxiety and discomfort” and that “[i]f this is a new paradigm, it could be cause for even deeper concern” (Curl 2006: 229). Curl was probably referring here to the writings of Charles Jencks and, in particular, *The New Paradigm in Architecture: The Language of Post-Modernism* (2002). Equally, Leach, from whose “reader” the preceding writings from Derrida and the ensuing writing from Eco were drawn, decried “the shortcomings of Jencks’s appropriation of the term ‘postmodernism’ to refer in the main to a select group of often commercial office buildings characterized by the use of historicist motifs” (Leach 1997: xvi).

Before looking at Eco’s work on the semiotics of architecture and the question of architecture as language, it is worth noting the ease with which a word like *difference* can be drawn into architectural discourse. It was adopted, for instance, by Solà-Morales as the title for his collection of essays published in 1995. In the Introduction he stated that “*differences*” ... “delimit the specific conditions of each individual subject, or work of art” and in the essay “Difference and Limit” he wrote about “the architecture of repetition and difference” – with difference being an architectural virtue (Solà-Morales 1995: 7, 110). Nevertheless, despite assimilating poststructuralist vocabulary, Solà-Morales also saw the “evident formalism that dominated” deconstructivism as revealing “cultural emptiness and nihilism more than self-absorbed aestheticism” (Ibid: 100).

Umberto Eco’s work covers many fields, including philosophy, medieval history and aesthetics. Eco is best-known for his novels, including *The Name of the Rose* (1983), but he is “perhaps above all, a semiotician” whose principal focus is on the “aspects of past and present theories of signs” (Cobley and Jansz 1997: 155 / Lechte 2008: 156). As a semiotician, Eco has sought the middle ground of “intersubjective meaning arrived at by a community in semiosis” as a means of avoiding Peirce’s “unlimited semiosis” (Cobley and Jansz 1997: 161). And he distinguished between open and closed texts directed, respectively, towards the “model” reader and the

“average” reader, thereby mediating between Schleiermacher’s deference to the intentions of the author and Barthes’s call for the “Death of the Author”. In this way he has avoided “an understanding of language as either univocal or deferring to infinite meaning” (Leach 1997: 181).

Eco noted particular difficulty in addressing the semiotics of architecture because “most architectural objects are” designed to function but are “not designed to communicate” (Eco 1973: 182). He described the function of objects, including buildings, as “conventionally denoted meaning” which indicates “inhabitability” and went on to suggest that “form follows function” might be restated as “*the form of the object must, besides making the function possible, denote that function clearly enough to make it practicable as well as desirable*” (Ibid: 185-6).

He also noted that “besides denoting its function the architectural object could connote a certain ideology of the function” (Eco 1973: 187). Eco identified under the heading of *utilitas* the existence of primary and secondary functions, for which he used the example of a throne – working first, on the denotative level, as a seat and secondly, on the connotative level, as a symbol of regality. There is, of course, a parallel here between function and *utilitas* from the Vitruvian trio of *firmitas*, *utilitas* and *venustas* (firmness, commodity and delight) and it is argued, as will be seen, that what Eco termed “secondary functions” could be subsumed under *venustas*.

Eco identified three varieties of code within which architecture operates – technical codes, syntactic codes and semantic codes. Technical codes are normative, legally enforceable, building codes and standards. Syntactic codes include form-based building types (circular, Greek-cross etc) and syntactic conventions (corridors do not run through classrooms). Semantic codes “concern significant units of architecture, or the relations established between individual architectural sign vehicles” ... “and their denotative and connotative meanings” (Eco 1973: 193). Semantic codes, he suggested, might be “subdivided as to whether, through them, the units (a) denote *primary functions*” ... “(b) have connotative *secondary functions*” ... “(c) connote

ideologies of inhabitation” ... “or (d) at a larger scale have typological meaning under certain *functional and sociological types*” (Ibid: 195-6).

Eco argued that, “as communicative systems go” these codes appear “limited in operational possibilities” and to offer only “ready-made solutions, not open forms for extemporary ‘speech’ but fossilized forms” functioning “as a system of rhetorical formulas and already produced message-solutions” ... “that may be taken for granted” (Eco 1973: 194, 195,197). He suggested that architecture can only “move in the direction of innovation and higher information-content” ... on ... “the basis of a code of some kind” and that any such code would have to embrace “systems that lie outside architecture” (Ibid: 197).

Eco’s proposal, therefore, was to divide architectural design into three “systems” – a system of forms; a system of functions and a system of “social exigencies” – with the possibility of describing “*the units of each of these three systems independently*” (Eco 1973: 197-8). The third of these systems – “the anthropological system” addressing “proxemics, let us say” – would require that the other two systems be “broken down” to accommodate it because “the architect finds himself obliged in his work to *think in terms of the totality*” (Ibid: 199). Eco’s conclusion to all this was that “*the architect should be designing for variable primary functions and open secondary functions*” (Op. cit: 200).

This does not seem on the surface to be particularly revolutionary. After all, how much difference is there between “open” secondary functions or signs or symbols, and the relatively broad term *venustas*? It is important to recall, however, that Eco wrote this piece in Italian in the 1960s. And at that time Barthian critique and Derridian discourse were becoming increasingly vogue. Furthermore, concern was growing about the efficacy of Modern Movement-inspired post-war architecture. These were perfect preconditions for English-speaking architectural theorists to assimilate European semiotics into their lexicon, and then to promote “postmodern”

architecture as the ideal antidote to the perceived excesses of the Modern Movement. This led, in turn, to re-emergence of the idea of architecture as language.

2.5.5 *Architecture as Language*

Paul-Alan Johnson described “the notion of architecture as language” as part of “arguably the longest-standing set of ideas in architectural theory” (Johnson 1994: 15). He related the notion to “the rediscovery of Vitruvius and the classical manners of three centuries” followed by *architecture parlante*, the term coined by Léon Vaudoyer in 1852 “to explain buildings, like a number of those by Ledoux, designed as three-dimensional metaphors”, then “recent dalliance with postmodernist revivalism” and its continued application in architectural education (Ibid: 15, 421).

In his chapter “Language Metaphors” Adrian Forty alerted readers to the distinction “between saying that architecture is *like* a language, and saying that architecture *is* a language” (Forty 2000: 64). He went on to identify six “general categories” of language metaphor that have been used in architecture. Arranged in chronological order, these were: against invention in architecture; describing what made architecture an art; describing the origins of architecture; discussing architecture as a medium of communication; architecture as analogous to grammar, and application of semiotic and structuralist thinking to architecture (Ibid: 63-85).

In terms of resistance to innovation, Forty cited Fréart de Chambray in 1650 objecting to the use of the composite order on the grounds that it was like inventing words, and, some two hundred years later, Ruskin’s “[o]riginality in expression does not depend on invention of new words” (Forty 2000: 65 / Ruskin 1849: 282). Forty noted that there was “a recurring need in architectural circles” in the seventeenth and eighteenth centuries “to establish that architecture was a liberal and not a mechanical art”. This entailed, in particular, the “use of language metaphors” ... “to show that architecture conformed to Horace’s conception of poetry” as, in paraphrase, the right words in the right order (Forty 2000: 66-7).

The contributions of Laugier and Quatremère de Quincy to typological thinking in architecture will be examined in Chapter Three. For both of them this involved the question of the origin of architecture. And for Quatremère this was inextricably bound up with the idea of architecture as a language. This is demonstrated by the title of Sylvia Lavin's *Quatremère de Quincy and the Invention of the Modern Language of Architecture* in which she argued that "the marriage between language and architecture belongs to a process of creative intellection that began in the eighteenth century" (Lavin 1992: x).

Lavin noted that, according to Quatremère, "language and architecture each had innate operating systems" and in his view "architecture was not merely like language but was itself a language" and that in 1825 he was "still arguing that 'the forms, types and details of Greek architecture' ... 'are nothing other than what words are, so to speak, to the art of writing'" (Lavin 1992: 97, 114, 116). She concluded that the "most transformed yet still most legible trace left by Quatremère's work is the idea that architecture is language" (Ibid: 184). Younés, however, in his translation of Quatremère's Dictionary of Architecture, suggested that the strength of this linguistic analogy was a reflection of an age that privileged language and that "the usefulness of the linguistic analogy in architecture depends precisely on it remaining on the level of analogy" (Younés 1999: 42).

The fourth language metaphor identified by Forty, architecture as a medium of communication, referred to buildings being legible in the manner of a book. He noted that Vaudoyer's description of Ledoux's work as *architecture parlante* "was not intended to mark approval" (Forty 2000: 71) but that many nineteenth century commentators, including Victor Hugo, John Ruskin and William Morris, believed that all living art and architecture should be legible texts that "tell a story" (Ibid: 74).

Forty noted that consistent with this view of architecture as written text was the view of it as spoken language. He attributed the "forceful and persistent view of architecture as a vernacular language" to developments in the theory of language as

part of the Romantic movement in late eighteenth century Germany (Forty 2000: 75). Forty suggested, however, that architectural communication has the distinct disadvantage of being one-way only (Ibid: 77). Architecture is certainly not a spoken language and it is not surprising that “early modernist architects and critics almost entirely abandoned all analogies with language” (Op. cit: 77).

Forty’s fifth language metaphor – analogies with grammar – reflects the role of Durand in seeking to codify architecture as if it were a form of grammatical construction, with particular emphasis on syntax. This will be examined in Chapter Three. Forty also referred to Christopher Alexander’s *A Pattern Language*, which will be examined in Chapter Four, but, surprisingly, did not refer to the work by fellow Bartlett Professor Bill Hillier on *Space Syntax*. The most recent and by far the most convoluted of Forty’s six language metaphors is the application of semiotics to architecture. This relationship emerged from discontent with Modernist architecture in Italy after World War II and emanated as much from semioticians, like Eco, as from architects. Developments in architectural theory in Italy at that time will also be examined in Chapter Three.

The earliest English-language writing on the subject of architecture and semiotics appears to have been an essay by George Baird published in 1967. Baird opened it by conflating language, architecture and communication systems, but did go on to note that the “three-centuries-old-attempt to ‘get to the bottom’ of architecture has” ... “now quite clearly shown that there is no such thing” (Baird 1967: 25, 28).

Baird cited Hannah Arendt’s statement that “utility established as meaning generates meaninglessness” which was, of course, completely contradicted in Eco’s view about the notative importance of *utilitas* (Baird 1967: 29). Equally, as Hawkes put it, “nothing in the human world can be *merely* utilitarian: even the most ordinary buildings organize space in various ways, and in so doing they signify, issue some kind of message about the society’s priorities ...” (Hawkes 1977: 134). But these were early days in the association of architecture and semiotics.

Two years later Baird and the hyper-productive Charles Jencks edited the unambiguously titled book *Meaning in Architecture*. In the opening essay, Jencks stated that two points were “relevant to my purpose” ... “that every act, object and statement that man [sic] perceives is meaningful (even ‘nothing’)” ... and ... “that the frontiers of meaning are always, momentarily, in a state of collapse and paradox” (Jencks 1969: 13). And, like Baird, Jencks conflated “fashion, language, food and architecture” and argued that they “all convey meaning” ... “through opposition or association” which he called “context and metaphor” (Ibid: 21).

This identification of opposition with context is, to say the least, confusing and not entirely congruent with what was noted earlier when looking at phenomenology and the built environment. Norberg-Schulz, writing in the same book, restored some clarity to the role of context in environmental design with his argument that “[a]ll objects are experienced as part of situations; they are connected with other objects. These relations make up their structure as well as their meaning” (Norberg-Schulz 1969: 228).

Alan Colquhoun began his essay “Historicism and the Limits of Semiology” (1972) by drawing attention to “the fact that semiology is derived from the study of language” and that signification in non-linguistic systems like architecture is therefore dependent on the extent to which they are “reducible to something which they have in common with language” (Colquhoun 1972b: 129). And he noted that whereas Saussure was operating in a discipline where relations between the signifier and the signified are arbitrary; “where a ‘kit of parts’ provides freedom of combination” ... “because the units already have arbitrary meanings attached to them”, this is simply not the case for architecture (Ibid: 138).

Colquhoun’s conclusion was that “[i]f a language of any sort is merely an arrangement of minimal structures” ... then they ... “must already be full of given meanings, as they are in language” (Colquhoun 1972b: 138). In other words, the

equation of linguistics and architecture is precarious. Linguistics deals with the comprehension of systems of arbitrary signs, architecture (which is inherently prescriptive) “cannot usefully be reduced to a collection of arbitrary elements” (Ibid: 137).

Agrest and Gandelsonas also went a long way towards disentangling concurrent commentary on architecture, semiotics, communication theory, and semantics, which they felt were being applied “in a random and arbitrary fashion” (Agrest and Gandelsonas 1973: 114). They drew attention to the distinction between communication, “a characteristic that is common to all systems of signs” and signification, which “indicates internal relation within a system” (Ibid: 115). And they identified the devices that generate signification as the subject matter of semiotics.

They also pointed out that Jencks (1969) was suggesting that the built environment communicates “meaning which is determined by what has ‘motivated it’” whereas “an architectural object” does not have “inherent meaning which is ‘natural’ to it” because meaning is “the result of cultural convention” (Agrest and Gandelsonas 1973: 117). This is compatible with J. B. Jackson’s argument, discussed earlier in connection with place-making, and Marc Treib’s argument, addressed in Sub-section 2.6.2, that significance in the design of the built environment is not the product of the maker but is created by users. As Agrest and Gandelsonas put it “the theoretical object of a semiotics of the built environment must be the development of an abstract conceptual structure which explains the production of signification in the configuration of the built environment” (Ibid: 119).

Nevertheless, the conflation continued. English architectural academics like Dunster (1976) and Broadbent (1978) produced essays that made no reference to the fact that meaning in architecture arises from cultural convention and is not intrinsic to the designed object. And in the United States, art historian Donald Preziosi’s *Architecture, Language and Meaning* was published in 1979. It is, as Curl said of

Tschumi's writing, "opaque". Or, as an academic reviewer put it, after observing that "architecture does not convey information or signify in the way that a sentence or statement does", Preziosi's "style and addiction to jargon" ... "make the book almost unreadable" (Tilghman 1980: 219).

Jencks weighed back into the subject with the suggestion that "we may hope soon we'll have a fully developed theory of archisemiotics and a detailed, critical use of it" (Jencks 1980: 9). Johnson described that and other writings by Jencks "about sign, syntax and code as surrogate esthetic topics in architecture" as "semiotic obscurantism" (Johnson 1994: 401). But by the time of the seventh edition of Jencks's *The Language of Post-Modern Architecture*, there was only one reference to semiotics. And that was to inform readers that postmodern architecture had resolved any qualms that Johnson may have had: "[s]ocial research and architectural semiotics have demonstrated the interpersonal, shared response to metaphor, journalists and the public have celebrated the highly charged, suggestive building, and the new tradition has emerged" (Jencks 2002: 34). *Et voilà!*

C. F. Munro suggested that "the case for taking architecture as a semiological system might just be" ... "still in session" (Munro 1987: 116) but could not persuade his fellow Australian, Johnson, to that effect. For Johnson, despite "use of the word 'language' in architectural titles" ... e.g. Summerson's *The Classical Language of Architecture* ... "no language of architecture has been established" and, he argued, little advance had been made in this respect since 1969 (Johnson 1994: 16, 17). It might be appropriate to stop here with Ballantyne's observation that "architecture is what happens when we encounter a building and bring culture to bear on it" (Ballantyne 2002 : 49). Johnson did note, however, that forms such as pyramids, ziggurats and domes are "brimful of meaning arising particularly from their use in religious buildings across cultures" (Johnson 1994: 16). And while he did not support the idea of architecture as a language, he did suggest that there is value in encouraging students to develop "a *repertoire* of architectural elements" thereby "offering endless opportunities for development" (Ibid: 424).

Having followed the structure of Forty's chapter on language metaphors in this review of language and architecture, it is worth noting two of his closing thoughts. First, that "[i]n architectural circles, it is now as customary to condemn linguistic analogies as it was thirty years ago to invoke them", and second that this "all-or-nothing attitude" ... "conceals the fact that for certain aspects of architecture, language provides a workable ... metaphor" (Forty 2000: 84-5). Overall, however, it has to be concluded that while architecture inevitably carries meaning, it is only in this metaphorical sense that it can be regarded as a language.

2.6 CATEGORIZATION, ARCHETYPES AND THE COLLECTIVE UNCONSCIOUS

2.6.1 *Classification in Other Disciplines*

Wittgenstein's observations about naming being a "preparation for describing" was noted in Sub-section 2.5.2 and Tuan's argument that names and taxonomies "draw attention to things: aspects of reality hitherto invisible" was noted in Sub-section 2.5.3. Sociologist Kenneth Bailey, writing more generally about classification techniques, particularly in the social sciences, noted that classification, which he described as "the general process of grouping entities by similarity" ... is ... "arguably one of the most central and generic of all our conceptual exercises" ... "the foundation not only for conceptualization, language, and speech, but also for mathematics, statistics, and data analysis in general" (Bailey 1994: 1, 4). Bailey went on to suggest that "[t]ypology is another term for classification" and that "two characteristics distinguish typologies from generic classifications". He saw typologies as "generally *multidimensional* and *conceptual*" whereas "a taxonomy is empirical" (Ibid: 6). And what can be noted here, then, is the distinction between categorization (general grouping of phenomena) and classification (including typologies and taxonomies).

This distinction will be examined further in Sub-section 3.2.2. And, before looking at Bailey's comments on type in the social sciences, including the work of Max Weber on ideal types, it is important to look at the work of Carl Linnaeus (1707-78).

Linnaeus's binomial system of plant taxonomy brought respectability to the business of identifying and naming different phenomena, and he was, incidentally, a contemporary of Laugier (1713-69).

Classifying – the process of naming and ordering phenomena – is fundamental to scientific study and to many other human activities. Its “main function ... is [no more or less than] to convey information” (Okasha 2002: 103). The system of classification developed by Linnaeus – the Linnean system – is hierarchical – “a number of species are nested in a single genus, a number of genera in a single family, a number of families in a single order, and so on” ... “and as we move upwards, we find fewer taxa at each level” (Ibid: 104). The Linnean system of classification is cladistic (from the Greek *klados*, a branch), meaning that it is based on shared characteristics assumed to derive from common ancestry.

As such the Linnean system prefigured the findings of Charles Darwin (1809-82) published in his *On the Origin of Species*. Darwin argued that “[f]rom the first dawn of life, all organic beings are found to resemble each other in descending degrees so that they can be classed in groups under groups” ... and that ... “there is a constant tendency in the forms” ... of life in a limited area ... “which are increasing in number and diverging in character, to supplant and exterminate the less divergent, the less improved, and preceding forms” (Darwin 1859: 303, 304). As such, Darwin believed that “the natural system is founded on descent with modification; that the characters which naturalists consider as showing true affinity between any two or more species are those which have been inherited from a common parent ...” (Ibid: 309).

The reciprocity between Darwin's findings and Linnaeus's system are reflected in Darwin's statement that the “importance of an aggregate of characters, even when none are important, alone explains” ... “that saying of Linnaeus, that the characters do not give the genus, but the genus gives the characters” (Darwin 1859: 307). This reflects the fundamental principle of cladistics “that all taxonomic groups, be they

genuses, families, superfamilies, or whatever, must be *monophyletic* [descended from a common ancestor or ancestral group]” (Okasha 2002: 108). Pheneticists, by contrast, classify organisms on the basis of their visible (hence *pheno*) characteristics without regard to evolutionary considerations. The results of phenetic classifications are somewhat subjective, whereas “cladism provides a genuine rationale for why biological classification should be hierarchical” (Ibid: 112). The typology presented towards the end of this thesis (in Chapter Five) is distinctly phenetic (or phenomenological) rather than being cladistic.

Historian-philosopher-critic Michel Foucault (1926-84) decried Linnaeus for “holding that all of nature can be accommodated within a taxonomy” (Foucault 1966: 137). Foucault showed more sympathy for the views of Georges-Louis Leclerc, Comte de Buffon (1707-88), “holding that it [nature] is too rich and various to be fitted within so rigid a framework” (Ibid: 137). Foucault went on to argue that “the meticulous observation of living beings” was essentially a Cartesian project and that “natural history” ... “is the space opened up in representation by an analysis which is anticipating the possibility of naming” (Ibid: 139, 141).

For Foucault, “Enlightenment reliance upon universal principle and reason is always incipiently totalitarian” ... “a system of control” ... that ... “will always exclude what it makes marginal, simply by seeing it as non-rational” (Butler 2002: 46). And so it should come as no great surprise that for him, natural history was “nothing more than the nomination of the visible” with sight “being the sense by which we perceive extent and establish proof, and, in consequence, the means to an analysis” ... “acceptable to everyone” (Foucault 1966: 144).

Foucault went on to argue that such classifications are based on four variables – form, number, location and relative size – and that this kind of “pre-linguistic sifting” allows structure “to be transcribed into language” (Foucault 1966: 146, 150). Similarly, he argued that the “theory of natural history cannot be dissociated from that of language” and that it “orders the knowledge of beings so as to make it

possible to represent them in a system of names” (Ibid: 171, 172). And, in stating that “to know nature is, in fact, to build upon the basis of language a true language, one that will reveal the conditions in which all language is possible”, Foucault appeared to be veering towards the structuralism (explanation of human phenomena in terms of unconscious underlying structures) that he so strongly disavowed (Ibid: 176, xv).

As Gutting noted, given that “structuralism was an avowedly non-historical (synchronic rather than diachronic) approach, there was point to Foucault’s protest” (Gutting 2005: 61, 62). Nevertheless, in the Preface to *The Order of Things*, Foucault argued that order is “that which is given in things as their inner law” ... “that determines the way they confront one another” (Foucault 1966: xxi). And again, while this might suggest a structuralist perspective, it demonstrates one of the central themes of *The Order of Things*, and Foucault’s other works, that rather than “enhancing autonomy, the human sciences normalized populations into conformity” (Schroeder 2005: 274).

Foucault adopted a similar perspective on the capacity of architecture and urbanism to promote liberty. This is demonstrated in an interview from 1982, in which Foucault argued “it can never be inherent in the structure of things to guarantee the exercise of freedom” and that in “a place” ... “where liberty is effectively exercised, one would find that this is not owing to the order of objects, but, once again, owing to the practice of liberty” (Foucault 1994: 355). As was noted with Derrida (in Sub-section 2.5.4), challenging the status quo was fundamental to Schroeder’s “philosophers of dispersion”.

By contrast with Foucault, Georges Perec (1936-82) has been described as a writer “waiting for structuralism to happen” and someone who saw language as “a raw material to be enjoyed and worked on” (Sturrock 1997: xv). Perec’s *Species of Spaces* reflects his sheer joy in the use of words and his affection for the range of spaces that he encountered – from the space on the piece of paper that he was writing on to “imagining a Métro in the heart of the countryside” (Perec 1974: 5).

Likewise in *Penser / Classer* (one of the *Other Pieces* in Sturrock's translation) Perec wrote about his penchant for classifying in terms that Foucault might have found risible: “[s]o very tempting to want to distribute the entire world in terms of a single code. A universal law would then regulate phenomena as a whole: two hemispheres, five continents, masculine and feminine, animal and vegetable, singular, plural, right left, four seasons, five senses, six vowels, seven days, twelve months, twenty-six letters” (Perec 1974: 190).

Foucault would probably have agreed with Perec's conclusion on the matter. “Unfortunately, this doesn't work, has never even begun to work. Which won't stop us continuing for a long time to come to categorize this animal or that according to whether it has an odd number of toes or hollow horns” (Perec 1974: 190). Also of relevance to this thesis is Perec's observation about names of spaces that separate buildings ... “we, in our towns, have at least seven (*rue, avenue, boulevard, place, cours, impasse, venelle*), and the English at least twenty (street, avenue, crescent, place, road, row, lane, mews, gardens, terrace, yard, square, circus, grove, court, green, houses, gate, ground, way drive, walk)” (Ibid: 192). As noted in Chapter Five, there are in fact more than one hundred suffix names for such spaces in Edinburgh alone. But one important point that Perec made here is that putting names to urban spaces – or any other phenomena – can be liberating rather than limiting.

Returning here to Bailey, it is worth exploring the concept of the “ideal type” developed by German sociologist Max Weber (1864-1920). Bailey described this as “the most famous type concept in social science” outlining that Weber actually “specified three varieties of the ideal type” ... “the nonabstract historical ideal type” ... “the nonabstract generalizable ideal type” ... “the abstract ideal type”, and that of these three, the second is “an ingenious noncomputerized means of dealing with” ... “a large, complex, and unwieldy classification” (Bailey 1994: 17). It was “not a moveable, hypothetical type or a ‘fiction’ or imaginary entity, but rather the ultimate criterion type” ... an exemplar which cannot be found empirically (Ibid: 19).

Weber described the ideal type as “a mental construct for the scrutiny and systematic characterization of individual concrete patterns which are significant in their uniqueness” (Weber 1904: 100). In other words the ideal type was essentially a non-empirical device for comparative analysis of social patterns in the cultural sciences. And its purpose was “to make clearly explicit not the class or average character but rather the unique individual character of cultural phenomena” (Ibid: 101). Expressed in that way it would be feasible to conceive of ideal types for urban open spaces – but only as mental constructs or generalized non site-specific, and primarily function-based models.

Weber’s thinking about ideal types remains the subject of extensive debate and literature. Bruun noted that between 1904 and 1920 “in Weber’s work, the term ‘ideal type’ progressively disappears and ‘thins out’ into much more frequent, but much less distinctive and specific, references to ‘types’” (Bruun 2007: 42). Equally, Burger suggested that Weber “remained acutely aware of the precarious methodological status of ideal-typical construction” and did not confuse “the construction of models with accounts of empirical reality” (Burger 1976: 43).

All this suggests that, in terms of an investigation of types of urban open space, Weber’s ideal type may be a useful conceptual tool but one that could become a highly reductive or standardizing instrument when applied to the built environment. It is, nevertheless important to bear in mind the growing use of case study methods in design research (see, for instance, Groat and Wang 2002: 341-73) and the fact that such cases may be susceptible to being regarded as ideal types.

2.6.2 *Archetypes and the Collective Unconscious*

One of the most widely used typologies – the Myers Briggs Type Indicator (MBTI) – is a psychometric system for classifying human personality, based on the ideas of Carl Jung (1875-1961). Jung’s concept of the “collective unconscious”, first articulated in his *Psychology of the Unconscious* (1912) was directly opposed to the assumptions of Sigmund Freud (1856-1939) about the individuality of the

unconscious mind. The idea of the collective unconscious underpins the MBTI and is relevant to this thesis in two main ways – first, because Jung described it as being composed of a number of functional units which he called “archetypes”; and second, because the design of the built environment is substantially predicated on (often implicit) assumptions about human cognition particularly with respect to visual stimuli.

Jung found unacceptable two of the basic assumptions of Sigmund Freud – that human motivation is exclusively sexual, and that “the unconscious mind is entirely personal and peculiar to the individual. Jung developed the concept of a dynamic psychic substratum, common to all humanity, on the basis of which each individual builds his or her private experience of life” (Stevens 1994: 22). Archetypes, as Jung called them “are ‘identical psychic structures common to all’, which together constitute ‘the archaic heritage of humanity’” (Ibid: 47). They can be equated with what structuralists called “deep structures”. Jung’s archetypes are “an inherited mode of functioning” common to all humanity but they “manifest themselves in every human being in a way peculiar to him or to her” (Ibid: 52, 50). Different archetypes – including ideas like mother, father, child, hero, maiden – become more or less important at different stages in the development of the individual.

Jung posited the idea of the Self, “a central nucleus, responsible for integrating the whole personality” (Stevens 1994: 48) and for coordinating the lifelong sequence of common archetypes that influence each individual’s unconscious. This was expressed in Jung’s concept of “individuation” or the realization (and in terms of psychiatry, the direction) of the Self. And individuation was congruent with certain tenets of existentialism in that it recognized individual existence as a lifelong process of learning to relate to unconscious archetypes, and thus of becoming increasingly self-aware.

Tarnas, a philosopher and psychologist, noted that “discovery of the collective unconscious and its archetypes radically extended psychology’s range of interest and

insight”; that “Jung’s insight into the collective psyche’s tendency to constellate archetypal oppositions” introduced a “new dimension” to Hegel’s dialectic; and that his “granting the status of empirical phenomena to psychological reality” ... “gave substance to ‘internal’ experience as Kant had to ‘external’ experience” (Tarnas 1991: 385-6). In other words Jung’s archetypes were neither as far-reaching or as universally applicable as Weber’s “ideal types” or Plato’s Forms, the latter being “ideal exemplars that provide standards of judgement” (Mautner 2000: 423).

Positioning Jung’s findings in the evolution of modern epistemology, Tarnas argued that the progression from Descartes through the empiricists Locke, Berkeley and Hume to Kant “depended on increasingly acute analyses of the role played by the human mind in the act of cognition”, and that “Kant was correct when he saw that human experience was” ... “permeated by a priori structures” but, being based on his belief in Newtonian physics, his formulation “was inevitably too narrow and simplistic” (Tarnas 1991: 423). Tarnas argued that Freud was similarly restricted by his Darwinian perspectives, whereas Jung propounded “a vast archetypally patterned collective unconscious” ... as ... “the primordial foundation of the psyche itself” (Ibid: 424).

Despite the primary applicability of Jung’s ideas in the field of psychology, his work has a number of strands that are relevant to other fields and to this thesis. These include its relationship to concurrent developments in structuralism; his concept of synchronicity; his use of opposites to develop typologies – perhaps reflecting structuralist and poststructuralist attachment to difference as an indication of meaning, and the way that his idea of the collective unconscious can and has been applied in the design of the built environment.

Jung’s theories are comparable to the ideas of Claude Lévi-Strauss (1908-2009) in structural anthropology, identifying unconscious infrastructures as being “responsible for all human customs and institutions” and of Noam Chomsky on “deep structures” in linguistics (Stevens 1994: 52). Lévi-Strauss has, however, been described as “a

closet universalist” ... “and when he doth protest too much that he is *not* setting forth universal human paradigms, he is, I think, simply expressing his terror that he might be mistaken in the dark for Jung” (Doniger 1995: xi).

In the later stages of his work Jung developed his ideas on “synchronicity” – an intuitive concept that suggested “an acausal archetypal order at the root of all phenomena” (Stevens 1994: 58). In other words, he was suggesting an association or continuum of mind and matter that reflects some form of universal order. And, as mentioned earlier, Jung engaged in the development of a psychological typology which, although it does not “explain the individual psyche” ... it does provide ... “an understanding of psychological types” ... which ... “opens the way to a better understanding of human psychology in general” (Ibid: 99). The same can, of course, be said of most typologies, including those that address the built environment – they can facilitate collective understanding of common phenomena.

Stevens suggested that Jung’s typology of personalities, based as it was on four categories, reflects the “natural propensity [of the mind] to orientate itself through a tetrad of paired oppositions” – like the magnetic compass, “the four blood types of Aristotle and four humours of Hippocrates” – and that it is “best used as one would use a compass” ... “to establish those co-ordinates that one is using to chart one’s course through life” (Stevens 1994: 97, 101). Interestingly, Plato, Kant and Heidegger also favoured fourfold categorizations (as does the example of a tetrad typological analysis in Chapter Five of this thesis).

As noted at the beginning of this chapter, Plato held that there were four levels of knowledge and four corresponding levels of reality. These were – “rational intuition”, directed towards the Forms themselves; “understanding”, directed towards geometrical objects; “belief”, relating to physical objects; and “conjecture” relating to shadows and reflections as images of physical objects (Mautner 2000: 427). Kant used four sets of three categories each to establish his forms and Heidegger’s “primary circumstances of existence” were the fourfold of Earth, Sky, Divinities and

Mortals (Sharr 2007: 24). Similarly multiples of four are used in Chinese divination (geomancy); and there were four rivers in the biblical Garden of Eden, and in Islamic paradise.

Just as Jung's identification of archetypes was based on common psychic reactions in human development, architect and landscape architect Geoffrey Jellicoe (1900-96) explored the role of the subconscious (preferring that word to the psychologist's "unconscious") in human perception of designed environments. Citing Jung in support of his gestalt perspective on environmental perception, Jellicoe suggested in 1966 that "the structure of the subconscious in the realm of landscape architecture appears to be universal" (Jellicoe 1966: 91). And in 1970, again citing Jung, Jellicoe claimed that the square "has been accepted by man as the earthly manifestation of the mystery of the circle" (Jellicoe 1970: 9). It is questionable whether Jung himself was quite as specific in this respect as Jellicoe suggested, but Jung did make a number of clear statements about his interpretation of symbols, including that "a word or an image is symbolic when it implies something more than its obvious and immediate meaning", and that whatever "the unconscious may be, it is a natural phenomenon producing symbols that prove to be meaningful" (Jung 1966: 20, 102).

Jellicoe went on to argue that "the designed landscape has always been a projection of the human psyche into its natural environment. The creative powers of the subconscious have in the past consistently informed those of the conscious ..." (Jellicoe 1983: ix). In his lecture on *The Creative Subconscious in Landscape Design*, Jellicoe argued that "in art there are two worlds, the visible and the invisible" ... and that ... "an abstract or subconscious idea can create the visible design down to the smallest detail" (Ibid: xi).

Jellicoe's affinity for the employment in his designs of analogy, allegory and what he described as "analytical psychology" was somewhat zealous. It did, however, provide a basis for applying Jung's ideas of the collective unconscious to the design of the built environment – and for the suggestion that there are common human

responses to common physical features in that environment. And, as will be seen in Chapter Four, many typological studies of urban space treat “the street” and “the square”, in particular, as generic or archetypal forms. Equally, Patrick Condon, also a landscape architect, developed a typology (examined in Section 4.5) comprising 14 designed landscape space types which might be described as archetypes.

Jellicoe’s work would clearly fall into the last of the five approaches to significance in landscape design identified by Marc Treib as “the Nearchaic, the Genius of the Place, the Zeitgeist, the Vernacular Landscape, and the Didactic” (Treib 1995: 49). But, in much the same way that J. B. Jackson suggested that “sense of place” is associated with events rather than “with architecture or a monument or a designed space” (Jackson 1994: 159), Treib argued that significance “is not the product of the maker, but is, instead, created by the receivers. Like a patina, significance is acquired only with time” (Treib 1995: 60).

Nevertheless, Jung’s concepts of archetypes and the collective unconscious have proven remarkably durable. Raya Jones noted that, to Jung, “the psyche is unequivocally the organizer” ... “whence meaning emerges” and there are “hereditary residues of ancestral experiences in all spheres of culture – religion, science, ethics and art” (Jones 2007: 59, 63). She also noted that although “postmodern psychologists locate the organization of experience in the narrative itself”, Jung’s theory of archetypes still “alludes to the possibility of a universal index for typical human situations” (Ibid: 59, 84). And it is worth repeating here that Jung’s identification of common psychological patterns parallels the synchronous emergence of structuralism.

2.7 CONCLUSIONS

This chapter addressed Plato’s Forms or Ideals as a background to examining the development of post-Enlightenment thinking, primarily in terms of the emergence of scientific rationalism and empiricism, followed by the growth of romanticism, aesthetics and less science-driven modes of interpreting the world. This response

commenced with Kant's *Critiques* and was amplified by Hegel in his promotion of "the Absolute". Late nineteenth and early twentieth century philosophy advanced ontology as much as epistemology and promoted the importance of language in this process. Gadamer, for instance, described language as "the fundamental mode of operation of our being-in-the-world" (Gadamer 1966a: 3). The chapter concludes, much as it began, by asserting the relevance of categorization and of archetypes to human comprehension.

Hillier noted in this context that "[n]ames *create* understanding, and it is against the background of the organized picture of the world already given to us by language and culture that theorization begins" (Hillier 1994: 70). This echoes Saussure's statement that the operation of language "is based on oppositions" ... and ... "on the conceptual differences that they imply" (Saussure 1915: 121). As Belsey noted, for the structuralist Saussure, "meaning is differential, not referential" (Belsey 2002: 10).

Piaget elaborated on this in noting that "every word in a language designates a concept, which constitutes its signification" (Piaget 1968: 74). And it was noted that Saussure and Wittgenstein, probably without knowledge of each other's work, both understood language as a rule-governed game. As Hill suggested, "it did not matter what was used to make the pieces, how they were made, or even how they looked" ... "so long as the pieces could be differentiated from one another according to agreed rules" (Hill 2007: 18).

It is also worth noting that the name-based study of urban spaces presented in Chapter Five can be related to Saussure's fundamental principle of signifier – its name – and what is signified – its form or function, or whether it is a destination or a route. The highly complex and open-ended nature of Peirce's semeiotics makes it less amenable to the construction of a name-based typology of urban space. By contrast, it was noted that Eco's concept of connotative (suggested or symbolic) and denotative (literal or utilitarian) meanings, which he applied to architecture can also be applied to toponyms – with their generic (second) names being both denotative

(what Rapoport termed lower-level meanings) and connotative (what he termed middle-level meanings).

And for Rapoport “the human mind basically works by trying to impose meaning on the world through the use of cognitive taxonomies, categories and schemata” (Rapoport 1982: 15). Equally, for Tuan “speech – the right to name and have that name ‘stick’ – is empowerment” (Tuan 1991: 685). But in terms of architecture, it is argued that, despite zealous proclamations since the 1960s, buildings are not reducible to a semiotic system, and that while buildings inevitably carry (albeit embedded) meaning, it is only in a metaphorical sense that architecture can be regarded as a language.

Typological analysis in the cultural sciences, as noted from Dilthey, seeks *understanding* whereas investigations in the natural sciences seek *explanations* that can be subsumed under general laws (Schroeder 2005: 155). And while this might seem to limit the ambitions of the cultural sciences, Gadamer argued that an “adequate” standard of interpretation “is essentially dialectical” (Linge 1976: xxvi).

Heidegger argued that language, particularly poetry, “remains the master of man” (Heidegger 1951b: 111) and that authentic building is a form of poetry... and that building and dwelling are part of the all-important *Da-sein* – being. For Heidegger, use and experience brought understanding of places and buildings. And this can be paralleled with Vesely's call for understanding architecture in terms of *ethos* rather than in terms of “secondary symbols” or “*paradigmatic situations*” that might be interpreted as “institutions, deep structures or archetypes” (Vesely 1987: 32). Both Heidegger and Vesely display an element of elitism.

The less extreme perspective adopted by structuralists saw a world “made up of relationships rather than things” (Hawkes 1997: 28). Their world was understood on the basis of recognizable differences between entities. And whereas Wittgenstein's first major project, the *Tractatus Logico-Philosophicus*, sought to be a definitive

statement of the logical structure and scope of language – to put the meaning of language beyond debate, his posthumously published *Philosophical Investigations* recognized that language in use remains much as it was for Lewis Carroll’s Humpty-Dumpty, with words meaning what he chose them to mean. And so Wittgenstein also adopted a relativist perspective, concluding that “the meaning of a word is its use in language” (Wittgenstein 1953: 25).

Of particular relevance for this thesis is Wittgenstein’s view that “naming and describing do not stand on the *same* level: naming is a preparation for describing” (Wittgenstein 1953: 28) and that “the *meaning* of a name is sometimes explained by pointing to its *bearer*” (Ibid: 25). This supports the argument that toponymy and odonymy are systems with their own internal, relational logic. As Tuan put it “words – names, proper names, taxonomies, analyses, and so on” ... “draw attention to things: aspects of reality hitherto invisible, because unnoticed, become visible” (Tuan 1991: 692-3). In short, names reflect differences.

Tuan’s observations presage the phenetic examination of urban space types presented in Chapter Five – being based on visible characteristics rather than being cladistic. And whereas the sociologist Max Weber’s “Ideal Types” may not be particularly instructive in the comprehension or design of the built environment, Carl Jung’s archetypes – based on “identical psychic structures common to all” – are seen as having more validity. Indeed Jung’s archetypes can be related to Plato’s Ideas or Forms, addressed in the introduction to this chapter, and can contribute to what Johnson called “a *repertoire* of architectural elements” that offer “endless opportunities for development” (Johnson 1994: 424). The applications of type and typology in architecture will be examined in the next chapter.

CHAPTER THREE: TYPE AND TYPOLOGY IN ARCHITECTURE AND URBAN DESIGN

3.1 INTRODUCTION

Chapter Two examined developments in Enlightenment and post-Enlightenment thought. As such, it investigated the philosophical background against which post-Renaissance architecture evolved. It looked in some detail at the impact of semiotics (linguistic meaning and signs) on architecture and at the question of architecture as language – concluding that while architecture (and, for that matter, all built environment) carries embedded meaning, it can only be regarded as a language in a metaphorical sense. It is argued here that the evolution of architecture has oscillated between faithful, sometimes nostalgic, adherence to established norms, and rational assimilation of new technologies. As a consequence, architectural theory and praxis have inevitably generated recurrent discourse, and some diatribe, about the origins of architecture and about the role of models and of types in the development and practice of the discipline.

The contributions to that discourse of the primarily French commentators Abbé Marc-Antoine Laugier (1713-69) and Antoine-Chrysostôme Quatremère de Quincy (1755-1849) are examined in Section 3.3. Parallel and subsequent to their contributions were the work of Jacques-François Blondel (1705-74) and of his students Étienne-Louis Boullée (1728-99) and Claude-Nicolas Ledoux (1736-1806). This was followed by the work of Jean-Nicolas-Louis Durand (1760-1834); the Greek revival architecture of Gottfried Semper (1803-79); Gothic revivalism and the lingering impact of Laugier, Quatremère and Durand manifest in Beaux-Arts architecture, particularly in France and the United States.

Anthony Vidler's much-quoted essay *The Third Typology*, posited this as the first of three eras of typological approaches to architecture – the post-Enlightenment era, an age of the “ideal type”; followed by the era of mass production in the late nineteenth / early twentieth centuries, which Vidler equated with Le Corbusier and

his parallel of architecture and machines, the age of the prototype with the infamous description of the house as “a machine for living in” (Le Corbusier 1923: 107); and the “third typology”, that of the post World War II “New Rationalists”, Saverio Muratori (1910-73), Ernesto Rogers (1909-69), Giulio Carlo Argan (1909-92) and Aldo Rossi (1931-97), and the brothers Krier (Vidler 1977a). Vidler’s second era, which he related directly to the Modern Movement, is clearly parallel to Adrian Forty’s citing of Hermann Muthesius (1861-1927) and his *Typisierung* as the second emergence of typology in architectural theory.

Latterly, as discussed in Section 3.3, the study of types in architecture became rolled into debate about post-modernism and has fallen from favour in current discourse. By contrast, as discussed earlier and in Section 3.6, typological studies have continued to be valued in urbanism where they have remained relevant to the comprehension and design of urban space.

3.2 VOCABULARY AND PURPOSES OF TYPOLOGY

3.2.1 *Vocabulary of Typology in Architecture*

Quatremère’s distinctions between *type* and *model* and Paul-Alan Johnson’s distinctions between *type* and *typology*, and between *archetype*, *prototype* and *stereotype* (Johnson 1994: 289), were addressed in the Introduction. Johnson also noted that “‘typology’ is frequently misapplied to situations in which ‘type’ is meant, and that Aldo Rossi, in *The Architecture of the City* (1966 – first published in English in 1982), paralleled architectural historian Alan Colquhoun in “[e]quating architectural theory with typology” and saw type “as a structuralist translation that has enabled modern functionalist and historically determinist” ... “notions to be circumvented” such that “[t]ypology, for him [Rossi], is reinvesting architecture with associations and meaning” (Ibid: 291). Rossi’s writings on typology are addressed in Sub-sections 3.4.2 and 3.4.3.

Writing about archetypes and place-making, Brill made a clear distinction between *types* in architecture, which are “usually about *form* (a domed drum) or about *use* (a

stadium), and sometimes both (a domed stadium)", and *archetypes*, in which "meaning is emphasized more than form" and which seem "more spirit driven" (Brill 1994: 76). In trying to identify archetypes, Brill "examined certain recurrent and common place forms, ones that seem frequently charged" ... these included the cave, the spire, the labyrinth, the pyramid, the stone circle, the orchard and the mound (Ibid: 70).

These archetypes parallel the forms that Johnson described (noted in Sub-section 2.5.5) as "brimful of meaning arising particularly from their use in religious buildings across cultures" (Johnson 1994: 16) and the landscape archetypes ("the invisible but crucial basis for types") developed by Patrick Condon (Condon 1988: 79-96) and examined in Chapter Four.

In his book *Archetypes for Architecture* (1987), Thomas Thiis-Evensen argued that "a theory of archetypes must have three goals", first, "to classify the archetypes in a concentrated overview"; second, "to attempt to *describe* them in order to point out the potential expression which exists within them" ... and the third goal involved the question ... "[w]ill the expression be at all perceived by the user, and does not the experience of architecture vary from person to person?" (Thiis-Evensen 1987: 17). But, in his conclusion, Thiis-Evensen noted that what he had, in fact, done was to seek "to develop a theory of archetypes on the basis of those fundamental forms which exist within the elements floor, wall, and roof" (Ibid: 23, 383).

It is not surprising, therefore, that Johnson held the view that "Thiis-Evensen is dealing with prototype and stereotype, not with archetype at all, and the book would be better called *Fundamental Forms in Architecture* or some such" (Johnson 1994: 290). By contrast, Norberg-Schulz's reference to "universal elementary structures" as archetypes is closer to Jung's use of the term (addressed in Sub-section 2.6.2).

Francescato noted, as did Johnson, that "*typology*, though strictly speaking the study of types, is often found in the literature as a synonym of *type*" and that, in common

usage, type “is synonymous with *class* and *category*” (Francescato 1994: 254). Robinson, writing in the same volume, made a clear distinction between class and category. She took categorization to mean “the general placing of items into groups” whereas “classification refers to the placing of items into groups (or classes) on the basis of consciously structured criteria developed to make clear distinctions between groups” (Robinson 1994: 180). Robinson’s terminology therefore differs slightly from Bailey’s (addressed in Sub-section 2.6.1). But what can be noted is that Bailey’s “generic classifications” equate to Robinson’s “categorization” and that typologies can be less empirically based than taxonomies – the latter being strict hierarchical systems.

3.2.2 *Purposes of Typology in Architecture*

Forty’s “short enquiry into the various *purposes* for which the concept has been used in architecture” noted first that use and morphology are the commonest bases for typological classification in architecture. And, in terms of architects whose work is examined in this chapter, he noted that Blondel looked more at character than type; and that Durand, applying the term *genre*, was a principal agent of morphological classification. The purposes that Forty identified for the concept of type in architecture were protection of the idea of architecture; as a means of resistance to mass culture; to achieve “*continuità*”; and in the pursuit of meaning (Forty 2000: 304-11).

Taking these in turn, Forty credited Quatremère with developing “his remarkably ingenious theory of imitation” as a means of projecting and protecting the idea of architecture as a “liberal” rather than a “mechanical” art (Forty 2000: 304). In much the same way that he went on to make a distinction between type as “the originating reason for a thing” and model as “the complete thing” (Younés 1999: 255), Quatremère argued that “one imitates nature” ... “by appropriating” ... “her [sic] spirit, her intentions and her laws” (Ibid: 176) and that an architect imitates nature when “he [sic] follows and renders sensible to our eyes and our minds, the system of harmony, of the whole, of reason and truth, which nature reveals as our model in all

her [sic] works” (Op. cit: 176). His purpose in making this argument was to validate the wooden hut – “the type for Greek architecture”, rather than the cave, or the tent – which he likened to “the lightness of Chinese architecture in wood” (Op. cit: 37).

Lavin noted that Quatremère, knowing that “inclusion of architecture among the imitative arts was still contested” when the first edition of Diderot’s *Encyclopédie* was published (between 1751 and 1772), wrote in Panckoucke’s *Encyclopédie méthodique* (published in 1825) that architecture, “apparently more enslaved by matter than the other two arts [sculpture and painting], is in fact more ideal, more intellectual, and more metaphysical than they are” (Lavin 1992: 107).

Equally, continuing to promote the liberation of architecture from being seen as a mechanical art, Quatremère wrote in his own Dictionary (1832-3) that the word type is derived from the Greek word *typos*, and “expresses what is understood by *model, matrix, impression, mould, figure in relief* or in *bas-relief*”, and that it “is also used as a synonym of the word model” but that “there is between them a difference that is easy to understand” (Younés 1999: 254) – with type being “more or less vague” whereas “[a]ll is precise and given in the model” (Ibid: 148).

Quatremère, then, has been credited by Forty with defending architecture from the forces of rationalism (Forty 2000: 304), and by Lavin with introducing type into architectural theory with the aim of transforming “theoretical speculations about systems inherent in architecture into operative means for making architecture in the modern world” (Lavin 1992: 86). And, as will be seen, Quatremère viewed architecture, particularly classical Greek architecture, as a language in its own right.

Vidler described Quatremère as “a firm neo-classicist in the face of rampant, pre-romantic symbolism” who, first writing in 1788, had “brought to task those who, like Boullée, Ledoux and Viel de Saint Maus, had abused their art” ... “accepting neither types nor models” ... “reducing design to ‘a play, where each individual is the master and rule[r]’ ...” (Vidler 1977b: 103-4). He noted that Quatremère also “attacked

those who would mechanistically imitate the type, thereby turning it into a literal ‘model’”, and that between these extremes, Quatremère “posited the notion of the *ideal* type, never realized, never tangibly visible, and never to be slavishly copied” (Ibid: 104-5). Although Vidler did not mention it, this is comparable to Max Weber’s “ideal type” (addressed in Sub-section 2.6.1). Equally, Vidler did not refer to the “ideal type” from Quatremère’s *Dictionnaire d’architecture* (for Panckoucke’s *Encyclopédie Méthodique*) of 1825.

Vidler suggested that publication of Quatremère’s *Dictionnaire Historique d’Architecture* in 1832 gave a “superficial illusion of continuity and homogeneity from the late eighteenth century to the developed academicism of the 1830s” and that Durand’s *Recueil et parallèle des édifices de tout genre anciens et modernes* of 1802 (addressed in Sub-section 3.2.3) treated architecture “like the skeletons undergoing examination in Cuvier’s anatomy classes” and led to Durand replacing the “Vitruvian trinity of commodity, firmness and delight” with “an entirely modern criterion – means and ends judged by their economic coming together” with character being “made a logical attribute of function” (Vidler 1977b: 106-8).

Francescato suggested that Quatremère’s interpretations of type are “frequently misinterpreted” and argued that it was “intended as a manifesto extolling the virtues of the neoclassical tradition and opposing the perceived excesses of baroque and rococo and the pre-Romantic symbolism of such architects as Boullée and Ledoux” (Francescato 1994: 256). Francescato went on to suggest that Quatremère’s discussion of type involved three themes, first, “careful distinction between *type* and *model*”; second, “recognition of the inescapable relationship between objects and their *historical precedents*”; third, “emphasis on the connection between *form* and *use*” (Ibid: 257). He also suggested that the third theme, already articulated in Durand’s *Précis des leçons d’architecture* (1802-05), eventually materialized in the programmatic determinism of the Modern Movement.

With respect to “resistance to mass culture”, Forty cited the case (addressed in Sub-section 3.3.6) of Hermann Muthesius and his promotion of *Typisierung* – typification or standardization – and his disagreement in 1914 with the *Deutscher Werkbund*, and suggested that “‘type’, in this context, was a means of protecting civilization against the disintegration of cultural values brought about by capitalism, and its agent, fashion” (Forty 2000: 307). With respect to “*continuità*”, Forty cited the work of Argan, Rogers, Muratori and Rossi in Italy in the 1960s; and with respect to “pursuit of meaning”, he cited, in particular, Anthony Vidler’s “Third Typology” and his promotion of type as a source of meaning in architecture and urbanism (Ibid: 307-11). The practices and prognostications of these participants will be addressed in due course.

Frances Downing noted that science students tend to adopt a “problem-focused process” whereas design students tend to adopt a “solution-focused process”; that the latter approach is “based upon some match in the designer’s mind between the problem statement and an exemplar stored in his or her experience”; and that “prototypes and precedents, analogies and metaphors form a continuum of similar to dissimilar referents” which, if employed in design proposals “can be seen as generally maintaining a status quo, innovation being relegated to smaller moves of adjustment and fit” (Downing 1994: 243-9).

Franck and Schneekloth made numerous suggestions about the purpose of typological classifications in the field of architecture, including “to produce and reproduce the material world and to give meaning to our place in it”. They continued that “[c]onceptual place types, including classification systems, typologies and typological analysis, are the intellectual constructs used for description, explanation and prescription” ... “there is no human habitation without interpretation” ... and that the “ongoing discourse of typing is of cosmic importance because it is about finding a way to understand the place of humans in the world, and” ... “finding ways to live wisely in the world of streets, gas stations, forests, fields and homes” (Franck and Schneekloth 1994: 9-36).

“Types”, Robinson argued, “are categories that we use to define the world around us” and “[b]y understanding that type is a question and not an answer, the designer can be more effective in understanding, responding to, and changing normative cultural patterns” (Robinson 1994: 180, 192). And La Marche noted that “[t]ype reveals a predisposition or desire for order, clarity, simplicity” (La Marche 1994: 219).

3.3 EMERGENCE AND RE-EMERGENCE OF TYPOLOGY IN ARCHITECTURE

3.3.1 *Laugier and Quatremère*

Vidler suggested that the word type was “gradually adopted into architecture” once it had been “given a degree of scientific credibility in astronomy” (Vidler 1977b: 95). Debate about type and the origins of architecture began in earnest with Laugier’s *Essai sur l’architecture*, first published in 1753. This was intended to provoke a retreat from post-Renaissance excesses. And, as Vidler commented, from the model of the hut, Laugier “derived the essential elements of architecture and their rules of combination, in the same way that Rousseau two years before had set up a model of ‘natural’ man [sic] by means of which to criticize contemporary civilization” (Vidler 1977b: 95)

Laugier proclaimed that the *cabane rustique* or primitive hut – comprising a roof supported by simple columns – was the archetypal building, and that the Greek temple, without subsequent Roman or Renaissance embellishments, should therefore be the fundamental model for all building. He was reflecting here the first of what have been termed “two conceptions of architecture itself” – the physical construction of enclosed space and form with specific normative functions, as opposed to the creation of architecture as a sensory phenomenon



Figure 3.1: Maison Carré, Nîmes, France

with symbolic content” (Careri 2001: 35). And it has been suggested, despite its Roman progeny, that Laugier “admired the Maison Carrée at Nîmes [Figure 3.1] as the most perfect building of antiquity” (Ching et al 2007: 593).

Broadbent recounted Laugier’s “Rationalist” principles as having been based on “man [sic] in his first origin” needing a place to rest, reclining on “newly sprouting grass” ... “beside a tranquil stream” but having to find shade, and so moving “beneath the trees” until “a frightful rain pours down like a torrent on this delightful forest” and so the man finds shelter in a cave but finds that “it is dark, the air is foul” and so decides to make a shelter using “four of the strongest” ... “branches fallen in the forest” raised upright with “four others across the tops of them” and “leaves ... so packed that neither sun, nor rain, can penetrate” ... on the basis of which ... “Laugier deduces that the essence of architecture consists of columns, beams and pedimented roofs” (Broadbent 1990: 87-8).

It has been suggested that Laugier’s proclamation of the primitive hut as a normative model “was widely influential and affected Quatremère’s theories in particular” but that, “while in Laugier’s opinion the great virtue of the hut was its reproducibility, Quatremère felt its virtue was its irreproducibility” (Lavin 1992: 110). And, as Forty pointed out, “Laugier was by no means the last architectural thinker to derive his theory of architecture from a hypothetical original building” – both Quatremère and Semper subsequently did the same thing (Forty 2000: 223).

Forty went on to suggest that Quatremère’s argument for the hypothetical “original building” was based on a need “to prove that architecture was an art in which nature was represented” for it to be accepted in intellectual circles in France on the same basis as poetry and painting (Forty 2000: 223). Architecture did this, according to Quatremère, first, by imitating its own “natural model”, the hypothetical primitive building, and second, by representing “the principles inherent in nature” (Ibid: 224).

3.3.2 *Other Proclamations in French Architecture*

Jacques-François Blondel (1705-74) opened his own school of architecture, the *École des Arts*, in Paris in 1743 where his students included Étienne-Louis Boullée (1728-99) and Claude-Nicolas Ledoux (1736-1806). He was made Professor at the *Académie Royale de l'Architecture* in 1762 and his public lectures and teaching were recorded in his *Cours d'architecture ou Traité de la Décoration, Distribution & Construction de Bâtiments*, published in six volumes of text and three volumes of drawings between 1771 and 1777. Forty described it as “the largest and most important work of architectural criticism in the eighteenth century” (Forty 2000: 68).

Blondel like Laugier and Quatremère, adopted a rationalist, neo-classical approach to architecture that espoused simplicity. Middleton suggested that, to Blondel, architecture was “based on inherited traditions, precepts and systems of rules” and that “he set up no standard of beauty” ... which he believed ... “was based on the acknowledged excellence of certain ideas and traditions” ... and that the ... “purpose of each building was to be clearly evoked by the scale and amplitude of the major elements ...” (Middleton 1959: 143, 141).

Of particular significance for this thesis was Blondel’s identification of specific *Caractère qu’il Convierdroit de Donner a Chaque Genre d’Édifices* – “character suitable to be given to each *genre* of building”. Vidler noted that students learned this section of the *Cours* by rote, quoting from Blondel that “all the different kinds of work that belong to architecture should bear the imprint of the intended purpose of each building, all must possess a character that determines their general form and that announces the building for what it is” (Vidler 2006: 18). Making comparisons with the systems of classification in natural history drawn up by Buffon and Linnaeus (addressed in Sub-section 2.6.1), Vidler went on to note that “[i]n architecture, the sense of characterisation was, as in science, divided between a study of suitable expression – the signs of character – and an analysis of organisation, or distribution – the constitution of character ...” (Ibid: 18).

There is a possible confusion, however, between the interpretations that Vidler gave to Blondel's two words *caractère* and *genre* and the word "type". Forty suggested that Blondel himself used the word *genre* rather than the word "type" and that his intention "in listing all these *varieties* [my italics] of building was to identify for each the appropriate 'character'" rather than to develop a function-based typological classification of buildings (Forty 2000: 304). Apparently, then, there is a residual element of confusion in the interpretation of the words *genre*, *caractère*, type and "means of expression".

But more important – and less contentious – is the emergence, particularly in France, of, first, prescriptive design texts, such as Blondel's for architecture students and, second, the systematic analysis of building types and characteristics, particularly by figures like Quatremère. Blondel's architectural theories materialized in the work of his students Boullée and Ledoux. Patterson noted that from Blondel, as from Laugier's *Essai*, "they had acquired a new meaning for the term 'natural', which, when applied to architecture" ... "involved greater concern for fitness for purpose and the proper use of materials" (Patterson 1996: 150). Their work reflected the role of theorists in the demise of the Baroque in France, and the emergence of a pre-revolutionary determination for the function of buildings to be expressed in their individual character.

Nuttgens described Boullée and Ledoux as producing work that had "an almost fantastic grandeur", noting that while little of Boullée's work "went further than the drawing-board", many examples of the prolific Ledoux's work have survived (Nuttgens 1997: 227). Equally, Rowe noted not only that "very little of this sort was ever built" but also that "most French production" ... "still inspired by a conservatism" was a mediation between Blondel and Gabriel (Rowe 1984: 239). Scruton described Boullée and Ledoux (as no less than) "the architects of the French Enlightenment" (Scruton 1979: 26).

Ledoux, in contrast to Boullée, “built more than any other architect of his generation” (Patterson 1996: 154) and has been revered as “arguably the greatest single architect of the eighteenth century” (Rykwert 2000: 65). Ledoux’s career can be divided into three principal parts – the 1760s, during which he designed principally town and country houses; the 1770s and 1780s, when, as an *Académicien* and *Architecte du Roi* (from 1773), his pure neo-classical designs were constructed, and the post-revolutionary period during which he designed little, but wrote much. His *L’Architecture considérée sous le rapport de l’art, des mœurs de la législation*, published in 1804, was a manifesto for architecture as an agency for structuring society. It was, in many respects, prescient of Le Corbusier’s “Architecture or Revolution” (Le Corbusier 1923: 267-89).

Pevsner and others recognized three defining projects from Ledoux’s period as *Architecte du Roi* – the semi-circular theatre at Besançon with its internal colonnade of Greek Doric columns (1778-84); the series of forty-five (Nuttgens) to sixty (Kostof) customs or toll houses – of which only four remain, including the *Barrière de la Villette* with its huge drum sitting on a square pavilion (Figure 3.2) – built around Paris from 1784-89; and his early essay in planning for industrial settlements – the circular industrial town of Chaux (Figure 3.3), conceived in 1775 and built in part between then and 1779 as the semi-circular development supporting the *Saline*

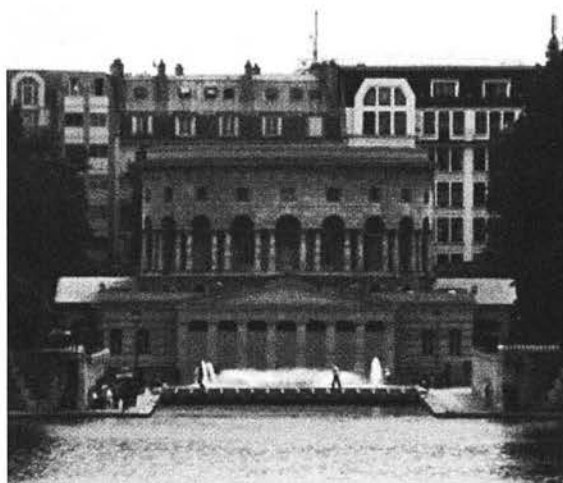


Figure 3.2: *Barrière de la Villette, Paris*

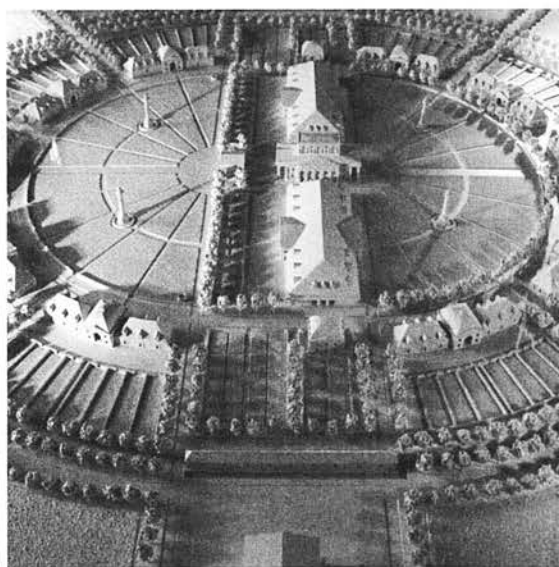


Figure 3.3: *Ledoux's Plan for Chaux*

Royale d'Arc-et-Senans, and described by Kostof – in much the same vein as Scruton on Kant – as “the most obvious opening act of the Enlightenment” (Kostof 1991: 196).

The sublime aura of Ledoux’s work was certainly made explicit in projects like the entrance building at Arc-et-Senans – designed to evoke the entrance to a salt mine (Figure 3.4), and the director’s house (Figure 3.5), whose Tuscan Doric columns are interspersed with evenly spaced square slabs. Such highly expressive architecture undertaken in the name of the King at a time of revolutionary ferment, led to Ledoux losing his position – but not his head ... or his voice. Like Boullée, Ledoux believed in architecture as an expressive language that “might achieve a direct appeal to the spirit without mental reflection” (Forty 2000: 124), and taking Chaux as his ideal town, Ledoux produced proposals for increasingly dramatic, large-scale buildings designed as fundamental geometric forms and comparable to those proposed by Boullée in the 1780s.

Pevsner described *L'Architecture* as a “confused text replete with social reform” and noted that, although Ledoux was not a supporter of the revolution, he was “the most vociferous representative” ... of a group ... “yet rightly called the architects of the revolution; for they were in revolt against accepted authority and convention and



Figure 3.4: Entrance, Arc-et-Senans



Figure 3.5: Director's House, Arc-et-Senans

fought for originality” (Pevsner 1943: 371). *L'Architecture* has also been described as presenting a “world-embracing architectural vision” which, in attempting “to structure the new utopian society along strict architectural lines” ... was ... “one of the most demanding examples of a tradition that” ... “was to become so established in the twentieth century” (Freigang 2003a: 318). What Rowe called a “manifesto culture” (Rowe 1987: 332). And Ledoux can be compared to two of the most prominent Romantic philosophers of the period – Rousseau, with his nature-inspired anti-urbanism, and Hegel, who “defined a public building as the independent, self justified symbol of a universally valid thought; that is, something conceived for no other purpose than to manifest the highest through itself” (Kostof 1985: 566).

Theorist and teacher Jean-Nicolas-Louis Durand (1760-1834), a former employee of Boullée, became in 1795 Professor of Architecture at the recently established *École Polytechnique* and remained in that position until 1833. Durand’s first major publication – *Recueil et parallèle des edifices de tout genre anciens et modernes* (Depiction and Comparison of all Kinds of Old and New Buildings) – published in 1802, was “the first book organized by building type to deal with historical architecture” (Curl 2006: 250). Vesely has suggested, however, that the *Receuil* “is not a history of architecture but a collection of systematically selected examples organized into a comparative survey similar to the comparative studies and taxonomies of contemporary science” (Vesely 2004: 244).

Durand’s second and better-known publication, *Précis des leçons d’architecture* – a summary of his lectures at the *École Polytechnique* – was published between 1802 and 1805. It proposed “an astonishing standardization and systemization of the concepts of architecture” that was distinctly different from Blondel’s “verbose, unmethodical *Cours d’architecture*” from 1771-77 (Freigang 2003b: 328). Durand’s system was based on an underlying square grid for planning buildings and organizing their component parts. Rykwert characterized Durand’s approach as a “diagrammatic four-step procedure” comprising analysis of the client’s demands; drawing the main

cross axes of the plan; setting out the elements of the analysis on a grid derived from the cross axes; setting columns and then walls on the grid lines (Rykwert 2000: 51).

Durand's system was pragmatic and practical. It was based on a view that "the aim of architecture is not aesthetic" ... it is ... "the welfare of users, and fitness and economy are means of reaching it" (Kostof 1985: 577). Although this may appeal more to an engineering ethos than to an architectural one, it is a clear reflection of synchronous aspirations in France towards well-ordered post-revolutionary egalitarianism. Vesely suggested that "Durand's attempt to create a universal method of design had a surprisingly broad influence" even though "his approach was limited and naïve" (Vesely 2004: 247). This approach was, of course, prescient of – and yet in complete contrast to – the tenets of Modernism, one hundred or so years later. Durand and Modernist architects did, however, have the common strand of recognizing the value of industrialized building components.

Forty noted that Durand's *Précis* "suggested that the process of learning architecture could be like that of learning a language" (Forty 2000: 80). And what Durand's work at the *École Polytechnique* and, to a certain extent, the approach to teaching adopted by the *École des Beaux-Arts*, did do, was to treat architecture as if it were a science that could be advanced through the application of precedent formulae.

3.3.3 *The École des Beaux-Arts and Greek Revival Architecture*

Founded in 1795 as a post-revolutionary successor to the *Académie Royale d'Architecture*, the *École des Beaux-Arts* was amalgamated in 1819 with the schools of the royal academies of painting and sculpture, and of architecture (Kruft 1994: 277). The approach to architectural education at the *École des Beaux-Arts* is reflected in the person of Quatremère de Quincy, permanent secretary from 1816 to 1839. Kruft characterized Quatremère as taking "a simple, normative view of history according to which the origin, laws, principles, theory and practice of architecture went back to the Greeks, were then spread by the Romans and became the property of the civilised world as a whole" (Ibid: 277-8).

The influence of pre and post-revolutionary thinking on architecture in France spread in a number of directions – not least, to the United States and Germany. This was almost invariably manifested in neo-classical form. The outstanding example in the United States is the work of Thomas Jefferson (1743-1826), third President (1801-09), designer of his own home, Monticello, commenced in 1768, and initiator of the University of Virginia, built between 1817 and 1826. Jefferson's original design for Monticello was primarily Palladian in plan with modifications inspired by publications such as James Gibbs's *Book of Architecture* (1728).

Many of the buildings with which Jefferson became involved reflected his encounters with architecture during his period as Minister to the Court of France (1784-89), including the remodelling of Monticello (1796-1809); design of the State Capitol for Virginia in Richmond (1785-99), inspired (like Laugier) by the Roman Maison Carrée in Nîmes; and the University of Virginia for which the central library was a replica at two-thirds scale of the Pantheon in Rome. Indeed, much of the architectural style that Jefferson proposed for the newly-established nation reflected Roman precedents for public buildings and Palladian precedents for private buildings – a pattern that still persists in the United States.

Jefferson worked with William Thornton (1759-1828) and Benjamin Latrobe (1764-1820) on the design for the University of Virginia. Latrobe, by contrast with Jefferson, favoured Greek classicism. His other projects, including the Bank of Pennsylvania in Philadelphia (1798) – “the first great monument of the Greek revival in the USA” – reflected the fact that, together with his designs for the Catholic Cathedral in Baltimore (1804-18) and, with Thornton and Thomas Usick Walter (1804-87), for the Capitol in Washington DC (1793-1867), Jefferson-inspired neo-classicism had quickly established itself as the norm for educational, commercial, religious and government buildings in the United States (Curl 2006: 434).

Pevsner identified the period from 1820 to 1840 as being “characterized by the most correct” Greek revival in Western architecture, with its principal exponents being Sir

Robert Smirke (1780-1867) in Britain, Karl Friedrich Schinkel (1781-1841) in Germany and William Strickland (1788-1854), a pupil of Latrobe, in the United States (Pevsner 1943: 380-1). The influence of French neo-classical architecture was particularly evident in Prussia where it was manifest in Schinkel's earlier projects such as the *Schauspielhaus* (1819-21) and the *Altes Museum* (1823-30) in Berlin. Curl suggested that "the ethos of the *Bauakademie*" ... where Schinkel studied ... "included much derived from the teachings of Blondel and the *École Polytechnique*", and that the Museum was "[i]nfluenced by French theorists such as Durand" (Curl 2006: 685-7). Equally, Nuttgens suggested that Schinkel learned "from Ledoux and Boullée, when, in 1803, he took himself to Paris" (Nuttgens 1997: 228). One way or another, the French influence on Schinkel's education and on his early work is well documented.

Smirke, Sir John Soane, (1753-1837) and John Nash (1752-1832) were appointed in 1815 as the three architects to the British government's Office of Works – effectively the government architects. The period from 1820-1840 saw Smirke consolidate his position as the foremost architect of the Greek Revival in London. The outstanding – but regrettably visually obscured – example is the British Museum in Bloomsbury, built between 1823 and 1846 (Figure 3.6). It forms something of a British counterpart to Schinkel's 1823 design for the *Altes Museum*. Soane took an

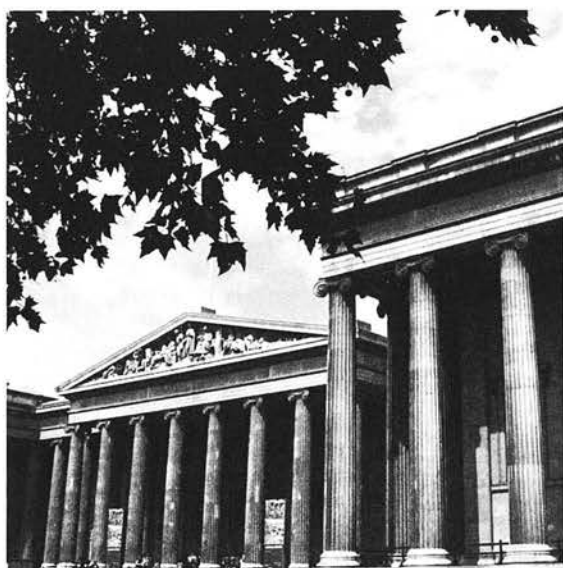


Figure 3.6: British Museum, London



Figure 3.7: Sir John Soane's House, London

altogether more earnest approach to his architecture. As Rykwert put it, he and Schinkel were “the most single-minded architects of the time” and Soane “arrived, in his later designs” ... “such as the Dulwich Art Gallery and his own house in Lincoln’s Inn Fields [Figure 3.7], at a stripped and simplified classicism, which many of his contemporaries did not find acceptable at all” (Rykwert 2000: 108).

Pevsner ascribed Soane’s “simplified classicism” to his knowledge of the Graeco-Roman temples at Paestum, suggesting that use of Greek Doric columns is “always a telling sign of a longing for severity” and that, in the design of his house, he “approached a new style unhampered by the past” (Pevsner 1943: 372-3). Pevsner also noted in this respect, the closeness of the Classical Revival and the Romantic Movement. Curl noted that Soane’s work was, in fact, mocked by A. W. N. Pugin (1812-52), arch exponent of the Gothic Revival and “does not seem to have exercised any lasting influence on English architecture” (Curl 2006: 725). Rykwert has suggested, however, that there is a lingering appeal in his stripped-down classicism and that his work has been admired by architects Norman Foster and James Stirling, and by followers of Ludwig Mies van der Rohe (Rykwert 2000: 108).

Meanwhile, Scotland produced its own trio of outstanding architects – Thomas Hamilton (1784-1858), William Henry Playfair (1790-1857) and Alexander “Greek” Thomson (1817-75) – all of whom worked primarily in Greek Revival style. Hamilton and Playfair both practised in Edinburgh and their work made a major contribution to the city being called the “Athens of the North”. Hamilton’s work included his most acclaimed project – the Royal High School (1825-9) on the southern side of Calton Hill (Figure 3.8); the Burns monument (1830) opposite the High School; the Orphan Hospital (1831-3) – now the Dean Gallery, and the Royal College of Physicians on Queen Street (1844-6).

Playfair is thought to have worked for Smirke in London before returning to Edinburgh in 1818 to take over the completion of Edinburgh University from William Adam (1738-1822), brother of Robert Adam – who had died in 1792.

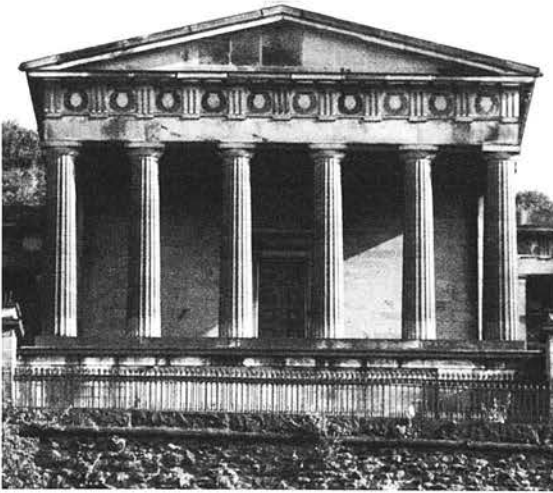


Figure 3.8: Royal High School, Edinburgh



Figure 3.9: Royal Circus, Edinburgh

Playfair's early work in Edinburgh also included (from 1821) the Calton Hill Estate and (from 1821-3) Royal Circus (Figure 3.9), Circus Place, and Circus Gardens. His best-known designs, almost certainly, are the Royal Institution (1822-35) now the Royal Scottish Academy (Figure 3.10), the National Monument on Calton Hill (1824-9), modelled on the Parthenon, and the National Gallery of Scotland (1850-7 - Figure 3.11).

Thomson was so inured in Greek Revival architecture that "Greek" became an effective part of his name, and, like Smirke, he can be seen as a British counterpart to



Figure 3.10: Royal Institution / Royal Scottish Academy, Edinburgh

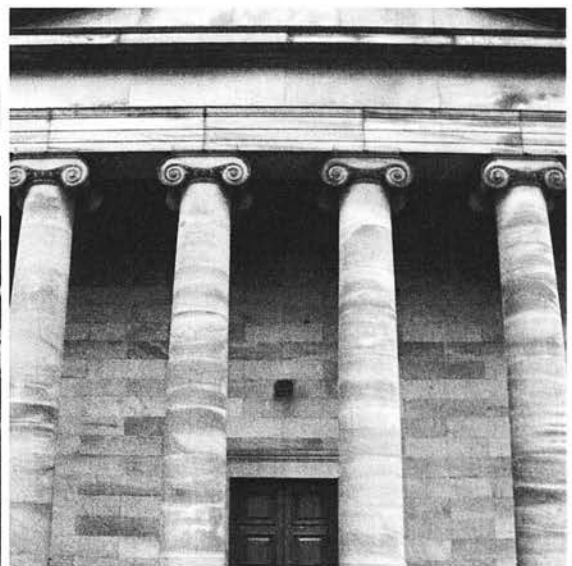


Figure 3.11: National Gallery, Edinburgh

Schinkel by whom his work was strongly influenced (Fleming et al 1999: 573). He designed a wide range of building types – including villas, terraces, tenement blocks, churches, and commercial buildings – largely located in Glasgow. His later work incorporated a certain amount of Egyptian influence but, overall, he remained faithful to Greek precedents – “a very remarkable thing for a man belonging to the generation of Pugin, Scott and Ruskin” (Ibid: 573). Thomson argued that “architects should follow the *example* of the Greeks rather than *imitate* their work” and, unlike John Ruskin (1819-1900), that architecture does not resemble “anything in nature” (Curl 2006: 776).

Vesely noted that Gottfried Semper (1803-79), like Durand a generation earlier, sought “to create a universal method of design” but “was better equipped and more sophisticated” than his more formulaic French predecessor (Vesely 2004: 248). Semper had been appointed Professor on the strength of publications on polychromatic decoration in Greek architecture and sculpture but his political views led to him having to leave Dresden after the political unrest of 1848. Despite his knowledge of antiquity, Semper’s approach to a universal understanding of architecture was not based, as Laugier’s had been, on the Greek system of post and lintel construction. Semper was more drawn to science, “particularly biology, a science that could deal with change and purpose” ... and ... “was influenced by the contemporary belief that art is an expression of mysterious and still unknown powers in nature” and that architecture and other artefacts acquire meaning from the way that they are made (Vesely 2004: 248-9). Unlike Viollet-le-Duc, Semper “considered Renaissance architecture a model for contemporary architecture” ... “since it freed itself from its bonds with regard to the treatment of the three Classical orders of columns and discovered its own individual, characteristic form of expression” (Evers 2003b: 628).

3.3.4 Gothic Revival Architecture

By the 1840s Neo or Victorian Gothic was already a major force in English public architecture. This was due in no small part to the endeavours of Augustus Welby

Northmore Pugin (1812-52), one of the leading figures of the Gothic Revival in England. Pugin's views on medieval settlements and society, religion and architecture were expressed in two principal publications – *Contrasts: Or, A Parallel between the Noble Edifices of the Middle Ages, and Similar Buildings of the Present Day: Shewing the Present Decay of Taste* (1836) and *The True Principles of Pointed or Christian Architecture* (1841). *Contrasts*, as its title suggests, compared and contrasted through adjacent drawings, scenes such as a “Catholic Town in 1440” and “The Same Town in 1840”, and buildings by leading architects of the day – All Soul's Church, Langham Place, London by Nash; King's College, London by Smirke; and Soane's own house – with gothic equivalents. This was prescient of the writings of Léon Krier (addressed in Chapter Four).

In *Contrasts* Pugin was also, somewhat ironically, prescient of Modernism in defining “[a]rchitectural beauty” as “the fitness of the design to the purpose for which it was intended” (Pugin 1836: 1). Pugin also argued in *Contrasts* that “all revived classic buildings, whether erected in Catholic or Protestant countries, are evidences of a lamentable departure from true Catholic principles” (Ibid: 7). This was, as Forty put it, “a moral argument, which linked the decay of society with its adoption of false architecture” (Forty 2000: 298). The *True Principles* opened with Pugin's unequivocal view that the “two great rules for design are these: *1st, that there should be no features about a building which are not necessary for convenience, construction, or propriety; 2nd, that all ornament should consist of enrichment of the essential construction of the building*” (Pugin 1841: 1).

Pugin's writings had significant impact. George Gilbert Scott, for instance, inspired by Pugin, went on to design numerous buildings including St Pancras Station and Midland Hotel in London (1865 – Figure 3.12). Pugin's best-known work is the design with Charles Barry (1795-1860) of the elevations, interiors and details of the Houses of Parliament at Westminster (from 1840) – according to the newly-identified “national style” – Gothic or Elizabethan, and the project that perhaps demonstrates



Figure 3.12: St Pancras / Midland Hotel, London

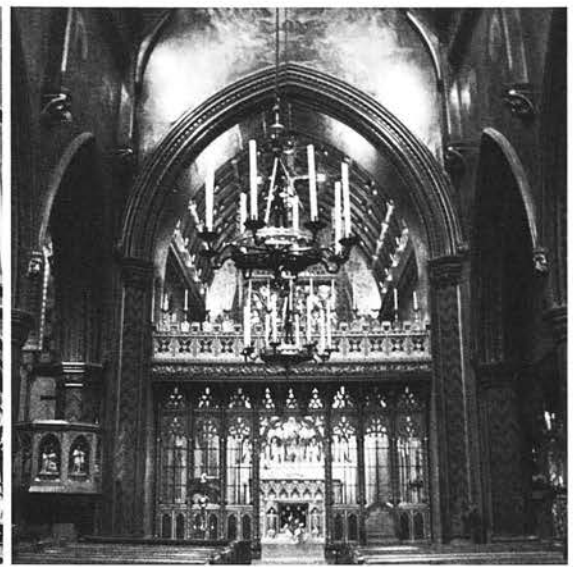


Figure 3.13: St Giles Church, Cheadle

most clearly Pugin's views about Gothic architecture, St Giles Church in Cheadle, Cheshire (1840-6 - Figure 3.13) (Rykwert 2000: 107).

Apart from their religious views, Pugin had much more in common with the secular architect Eugène Emmanuel Viollet-le-Duc (1814-79) who “forcefully advanced the notion that French thirteenth-century architecture was the most lucid of all the historic styles” (Rykwert 2000: 45, 106-7). Viollet-le-Duc in France, Gottfried Semper in Germany, and John Ruskin in England, all wrote at more or less the same time and each sought to rationalize the principles of architecture and, in particular, to relate these principles to emerging technology.

Viollet-le-Duc had a strong background in building restoration. He was appointed spokesman for the French state building inspection board in 1838; awarded contracts by the *Commission des Monuments Historiques* for the restoration of significant medieval buildings including numerous cathedrals and churches, and, in 1853, was appointed *Inspecteur Général des Edifices Diocésains*. This experience gave him the knowledge base to prepare his *Dictionnaire raisonné de l'architecture française du XIe au XVI siècle*, published between 1854 and 1868 (Freigang 2003c: 344). Forty described Viollet-le-Duc's writings as promoting “by far the most compelling theory of structural truth” (Forty 2000: 298). And his view of structure as the basis for

architecture has led to him also being regarded as a proto-Modernist (Curl 2006: 824). His *Entretiens sur l'architecture* of 1863-72 are suggested by Giedion to have been highly influential in the development of skyscrapers or “skeleton construction” in the United States (Giedion 1941: 204-5).

Viollet-le-Duc's *Entretiens* were written after he left the position of professor at the *École des Beaux-Arts* only a year after his appointment in 1863. Viollet-le-Duc sought, unsuccessfully, to reform the training of architects. The *Conclusion* to the *Entretiens* clearly spelled out his distaste for the academy – which “assumes infallibility like the Church of Rome, and excommunicates those who refuse to admit it” – and for an approach to architecture which ignored “the close connection of science with art” (Viollet-le-Duc 1872: 433, 438). Such rationalist views explain why Viollet-le-Duc is widely regarded as a proto-Modernist. They also reflect the grip of the academy and its adherence to classical building types as the source of architectural form.

John Ruskin's *Seven Lamps of Architecture*, published in 1849, “was an immediate success, encapsulating the mood of the period [in Britain] rather than creating new ideas” (Curl 2006: 668). Not an architect himself, Ruskin (1819-1900) is beloved of architects, perhaps because of his view that “architecture must be the beginning of the arts, and that others must follow her in their time and order” (Ruskin 1849: 285). Ruskin did not call for a new style or for any particular style of architecture – “[w]e want no new style of architecture. Who wants a new style of painting or sculpture? But we want *some* style” (Ibid: 281-2).

This was certainly a move away from Pugin's call for a religiously motivated Gothic style. Indeed, much of what Ruskin wrote about Truth was also prescient of the tenets of Modernism. His list of “Architectural Deceits” for instance, included “suggestion of a mode of structure or support, other than the true one” ... “painting of surfaces to represent some other material than that of which they actually consist” ... “use of cast or machine ornaments of any kind” (Ruskin 1849: 70-1).

The latter comment, however, was also echoed in the values of Ruskin's disciple, William Morris (1834-96), founder of the Society for the Protection of Ancient Buildings (SPAB) and promoter of the Arts and Crafts Movement. Morris believed that "machine manufacture" ... "killed art" (Kostof 1985: 639). Ruskin's *Lamp of Memory*, in which he wrote about the value of public monuments and the destructiveness of "restoration" ... "a destruction accompanied with false description of the thing destroyed", was also reflected in the values of the SPAB (Ruskin 1849: 269). By contrast, "Nietzsche's insistence upon the erasure of history, and of memory, was to be one of the most recurrent themes of modernist architecture" (Forty 2000: 212).

The Oxford University Museum (1854-60), designed by Deane and Woodward (Figure 3.14), is widely recognized as the single building that most represents Ruskin's views on architecture. A distinctly English "example of Venetian or *Ruskinian Gothic*" (Curl 2006: 66), it employed structural polychromy and "exposed Gothic-styled iron, demonstrating its expressive qualities down to the rivets

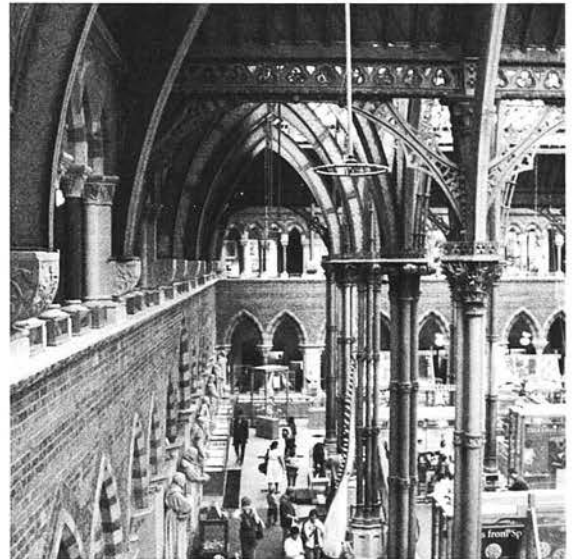


Figure 3.14: Oxford University Museum

holding the elements together" (Ching et al 2 Type to enter text 007: 624). But this was a period when "the association of particular styles with particular building types was losing ground" in England (Kostof 1985: 638).

3.3.5 *From Beaux-Arts to Modernism*

Meanwhile in France the impact of the *École des Beaux-Arts* became so visible by the late nineteenth century that its name was synonymous with a distinctive, florid style of classical architecture. The *École des Beaux-Arts* adopted a similarly systematic approach to the teaching of architecture to the system that Durand had

established at the *École Polytechnique*. The founding in 1840 of the professional society – *Société Centrale des Architectes* – “elevated architecture into an autonomous discipline” and liberated practitioners from a system of aristocratic patronage (Ching et al 2007: 638). But, along with this new status, came a controversy between the classicism promoted by figures like Quatremère and the rationalism promoted by figures like Viollet-le-Duc and Labrouste.

Pierre-François-Henri Labrouste (1801-75) studied at the French Academy in Rome and, in 1829, made a detailed survey of the Graeco-Roman temples at Paestum from which he reasoned that they were built in a different sequence than previously believed. He also suggested that they represented an adaptation of the Hellenic temple type to their colonial location. Viollet-le-Duc, by all accounts, was highly impressed by this study (Curl 2006: 425). Labrouste’s most renowned work is the *Bibliothèque Sainte-Geneviève* in Paris (1838-50 – Figure 3.15), cited as the first French project “to admit iron frankly into a high-style public monument” ... giving ... “literary expression to the building program, a library of the industrial age” (Kostof 1985: 642). Rowe noted that it was admired in the nineteenth century for its façade and “later by the protagonists of Modern architecture”. It remains, he suggested, “the incomparable French nineteenth century monument, more or less the terminal monument of Neo-Classicism” (Rowe 1984: 252, 253).

The structural clarity of the library is in stark contrast to the neo-Baroque opulence of subsequent major building projects under the patronage of Napoleon III (Second Empire 1852-70). These included the *Opéra* (1862-75) designed by Jean-Louis-Charles Garnier (1825-98). Suggesting that Labrouste had “a preponderance of ideation” whereas Garnier had “a preponderance



Figure 3.15: *Bibliothèque Ste-Geneviève, Paris*

of talent”, Rowe described the library as cerebral and the *Opéra* as sensuous (Rowe 1984: 287). The *Opéra* was the major manifestation in a single building of the radical restructuring of Paris engineered by Baron Georges-Eugène Haussmann (1809-91) for Napoleon III (Figures 3.16 / 17).

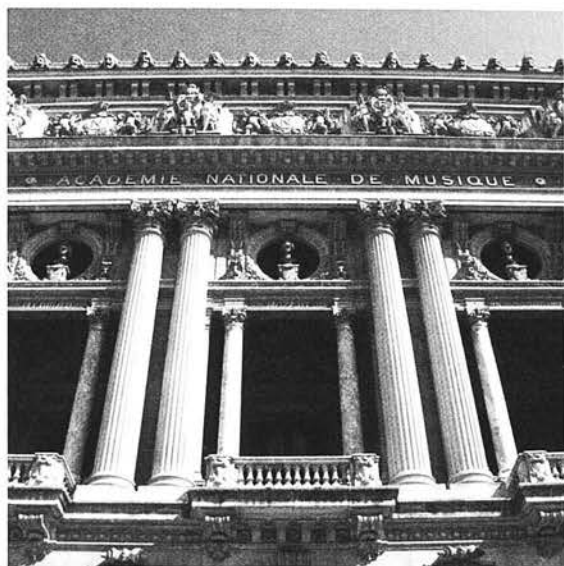


Figure 3.16: L'Opéra, Paris - Façade



Figure 3.17: L'Opéra, Paris - Gallery

Haussmann's work applied Beaux-Arts principles to the creation of new avenues with enormous junctions, new parks and street planting, new potable water supply and drainage systems, and new buildings as focal points within the restructured city. Designed as much for public display and interaction in its concourses and on its stairways as for the performances themselves, the Opéra epitomized Beaux-Arts architecture, with its function clearly expressed in its façade and its structural hierarchy highly visible (Ambrose et al 2008: 62). The Beaux-Arts style was “scholarly, self-confident, grand and lush” – to the point of Baroque, if not Rococo, indulgence – and remained pre-eminent in France until 1914 (Curl 2006: 75).

Meanwhile, Kostof identified three principal strands in American architecture in the decade before the Civil War (1861-65) – continuation of the Greek revival style in the South and for federal buildings; the Italianate manner for suburban “Italian villas”; and “the basic Renaissance revival used in flat-roofed residential row house like New York's brownstones” ... and ... “for commercial buildings, including the cast iron fronts of warehouse districts” (Kostof 1985: 647-9).

The American Institute of Architects (AIA) was founded in New York in 1857, following the example of the Institute of British Architects in London in 1834 (which received its Royal Charter in 1837 and dropped London from its name in 1892) and the *Société Centrale des Architectes* in 1840. Richard Morris Hunt (1827-95), the first American to study architecture at the *École des Beaux-Arts* in Paris, was a principal proponent of the AIA.

Hunt and Americans who followed him at the *École des Beaux-Arts* – including Henry Hobson Richardson (1838-86); Charles Follen McKim (1847-1909) of McKim, Mead, & White in New York; Louis Henry Sullivan (1856-1924), and the British born Edward H. Bennett (1874-1954) – ensured the influence of the Beaux-Arts style in the United States. The parallel style, the High Victorian Gothic – was still being employed in Britain but eventually also gave way to the Beaux-Arts, particularly once the City Beautiful Movement took hold before and after the World's Columbian Exposition of 1893 in Chicago.

Daniel Hudson Burnham (1846-1912), who went on to work with the Beaux-Arts educated Bennett on the World's Columbian Exposition (1893) and the Plan of Chicago (1909), worked with John Wellborn Root (1850-91) on a number of major, Richardson-influenced, buildings in downtown Chicago. These included the Montauk Building (1881-82 – demolished) and the still-standing, sixteen-storey Monadnock Building (1889-91 – Figure 3.18) with bay-windows projecting from its massive load-bearing walls. But it was Sullivan, working with German-born Dankmar Adler (1844-1900) between 1881 and 1895, who really picked up on Richardson's application of the *Rundbogenstil* (round-arched style). This is clearly reflected in the Auditorium Building (1886-90), a complex comprising a theatre, hotel and high-rise office block, with emphatic arches on the exterior and elements of Arts and Crafts and Art Nouveau décor on the interior (Figure 3.19). Adler and Sullivan employed Frank Lloyd Wright (1867-1959) between 1888 and 1893 – until he was dismissed for moonlighting.



Figure 3.18: Monadnock Building, Chicago

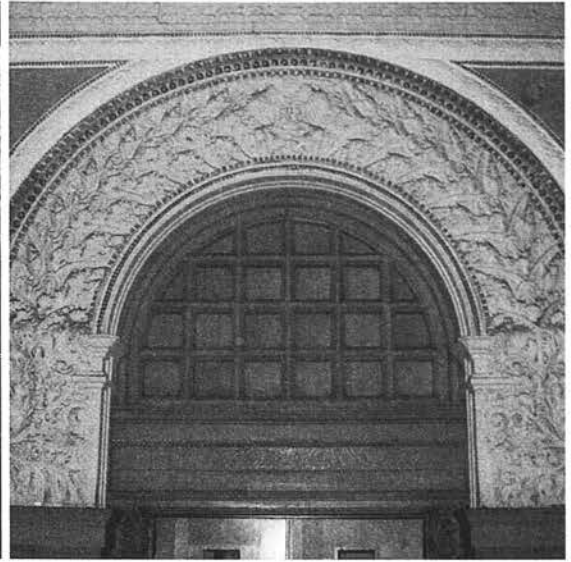


Figure 3.19: Auditorium Building, Chicago

Louis Henry Sullivan (1856-1924), working on his own from 1895, did not confine himself simply to designing taller buildings. His design for the Carson, Pirie, Scott and Co. department store (Figure 3.20) in Chicago (1898-1904) “did not emphasize the vertical, but created a series of horizontal openings framed by the skeleton structure of floors and vertical supports” (Curl 2006: 753). That project became a prototype for many twentieth century office buildings and department stores. But in each project Sullivan sought to find specific solutions to the specific issues that he was addressing. Despite the fact that Sullivan was author of the statement “form ever follows function” (Sullivan 1918: 208) – which became a mantra of the Modern



Figure 3.20: Carson Pirie Scott, Chicago



Figure 3.21: Robie House, Chicago

Movement – he was far too attentive to local detail to be considered a Modernist. So, it might be argued, he established types – but did not necessarily follow them himself.

3.3.6 *Hermann Muthesius and the Deutscher Werkbund*

German architect Hermann Muthesius, a cultural attaché in the German embassy in London from 1896 to 1903, produced a study of English domestic architecture, published in 1904 as *Das Englische Haus*. Although he praised the Arts-and-Crafts Movement, Muthesius's dislike of *laissez-faire* capitalism and his "concept of *Typisierung* (typification) – a word he coined to denote the establishment of standard or typical forms" – led to serious disagreements in 1914 with other members of the *Deutscher Werkbund* – the association for the promotion of German handiwork and industrial products formed by Behrens and others in 1907 (Colquhoun 2002: 59).

Although Muthesius "was not among the founder members" of the *Werkbund*, he was "the first to formulate the society's programme" (Conrads 1964: 26). His suggested aims were expressed in terms of "form" and "culture" such that, for Muthesius, "[w]ithout a total respect for form, culture is unthinkable, and formlessness is synonymous with lack of culture" (Muthesius 1911: 27). By the time of the first major exhibition of the *Werkbund*, in Cologne in June 1914, Muthesius had differences with a group that included the initially Art Nouveau, but latterly modernist, Henry Van de Velde (1863-1957); the expressionist but latterly Modernist, Bruno Taut (1880-1938), and über-modernist Walter Gropius (1883-1969). For all of them, at that time at least, "culture could not be the created by the impression of typical forms" (Colquhoun 2002: 60).

At the conference in July 1914 as part of the exhibition, van de Velde and Muthesius "clashed with full vigour" (Conrads 1964: 28). Muthesius argued that "only through standardization" ... "can architecture" ... "recover that universal significance that was characteristic of it in times of harmonious culture", and that "[a]ny relapse and deterioration into imitation would today mean the squandering of a valuable

possession” (Muthesius 1914: 28). Van de Velde responded that “[s]o long as there are still artists in the *Werkbund*” ... “they will protest against every suggestion for the establishment of a canon and for standardization” ... the artist ... “will never subordinate himself [sic] to a discipline that imposes upon him a type” (van de Velde 1914: 29). He went on to compare the “desire to see a standard type come into being before the establishment of a style” ... as being ... “exactly like wanting to see the effect before the cause” (Ibid: 30).

Despite these early differences, Muthesius’s manifesto – which was more in tune with the emergence of “machine-age” architecture – “became an article of faith in the 1920s among those who were to become protagonists of the Modern Movement” (Curl 2006: 514). And the slogans and manifestoes of other, more prominent figures in that movement also promoted standardization – not least Le Corbusier.

3.3.7 *The Emergence of Modernism*

Adolf Loos (1870-1933) argued in *Ornament und Verbrechen* (Ornament and Crime) that “[t]he evolution of culture is synonymous with the removal of ornament from utilitarian objects” (Loos 1908: 20). This became a Modernist slogan comparable to Sullivan’s “form ever follows function”. Loos’s reputation as an arch-Modernist derives mainly from his designs for a number of houses in Vienna after 1928, “with stark geometries and white rendered walls” ... which ... “were very much *de rigueur* as International Modernism acquired its essential language” (Curl 2006: 452).

Frank Lloyd Wright (1867-1959), who regarded Sullivan as his mentor long after he stopped working with him, had a long, versatile and varied career stretching from the latter part of the Chicago School to proposals for a mile-high skyscraper in 1956 – a career that “spanned more than seven decades: he was born two years after the Civil War and died at the dawn of the space age” (Goldberger, May 2009). This journey combined a constant awareness of emerging technologies with an abiding concern for democratic individuality and for organic architecture, giving rise to primarily

residential work that included the Prairie House type (Figure 3.21), the Imperial Hotel in Tokyo (1915-22) and subsequent, more fortress-like, houses culminating in “Fallingwater” (1935-39), and his winter home and atelier, Taliesin West in Arizona (from 1937).

Although Wright has been credited with influencing the work of Hendrik Petrus Berlage (1856-1934), Walter Gropius (1883-1969) and even Ludwig Mies van der Rohe (1886-1969) (Lampugnani 1963: 365), his work was quite separate from mainstream Modernism. Summerson argued, however, that the work of two pioneers of Modernism, German architect Peter Behrens (1868-1940) and French architect Auguste Perret (1874-1954), was influenced in its own way by classicism.

Behrens began work as a painter and became an architect through the influence of William Morris and the Arts and Crafts movement, and by way of Art Nouveau-inspired graphic work. He was a founder member in 1907 of the *Deutscher Werkbund*, but moved increasingly towards the development of industrial products. Behrens was appointed by the German electrical company AEG, also in 1907, to design a range of their products, their graphics and their retail outlets and then, in 1908, to design a turbine factory for them in Berlin. This was based on a form of stripped-down classical architecture. It was “really a neo-classical building designed on the lines of a temple but with all the stylistic signs and symbols left out or changed” (Summerson 1963: 110).

Nevertheless, Behrens “Berlin office gained a reputation for progressive design” and, in or around 1910, he employed a number of Modernist luminaries including Le Corbusier (1887-1965) “probably the most influential figure” in twentieth century architecture; Walter Gropius; and Mies, “one of the most influential” ... architects of ... “International Modernism” (Curl 2006: 78, 198, 488).

Perret, yet another graduate of the *École des Beaux-Arts*, worked in reinforced concrete rather than structural steel and his work also “marked both the endpoint of

that earlier tradition and the beginning of a new one” (Lampugnani 1963: 261). Summerson, writing about his Naval Construction Depot (1929), argued that “[b]uildings such as these claimed in their day a new freedom, unrelated to specific orders and yet still closely related to the rhythms and general disposition of classical architecture” and went on to suggest that this type of “diagrammatic classicism” might have lasted indefinitely were it not for the “creative genius” of Le Corbusier (Summerson 1963: 111). Perret’s Notre-Dame-du-Raincy (1922-23), in suburban Paris, (Figure 3.22) also employed cast in-situ reinforced concrete on a traditional plan that created “a spatial concept equal to the vision of the great Gothic designers” (Nuttgens 1997: 255).

This, then, is still, well into the 1920s, a form of stripped-down classicism. And, as Summerson noted, Walter Gropius moved “a good deal further [than Behrens] from the neo-classical model but without losing aesthetic integrity or, indeed, the sense of classical order and symmetry” (Summerson 1963: 110). Gropius’s position as an educator and practitioner in worsening political circumstances is reflected in him being Director of the Bauhaus from 1919 to 1928 and designing its building in Dessau, Germany (1925-26 – Figure 3.23) and subsequently becoming first Professor, in 1937, and then Chair of Architecture at Harvard from 1938. Gropius designed a number of buildings with former Bauhaus colleague Marcel Breuer

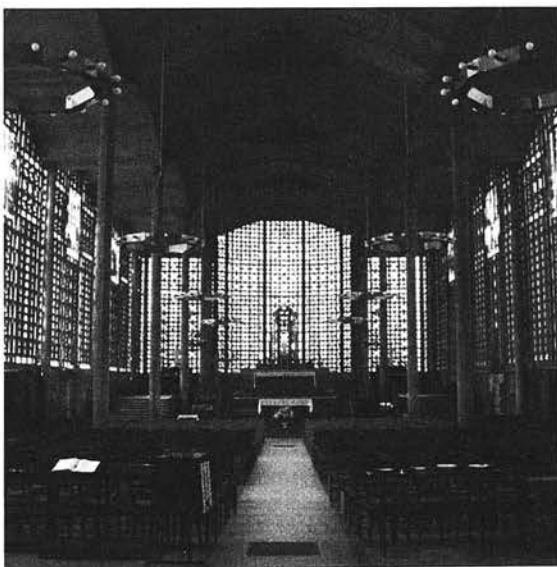


Figure 3.22: Notre-Dame-du-Raincy, Paris



Figure 3.23: Bauhaus Building, Dessau, Germany

(1902-81) and, after World War II, with “The Architects Collaborative” (TAC), including the Harvard Graduate Center (1949-50).

The Bauhaus, which espoused the positivism (empiricism) of the Vienna Circle, was closed in 1933 by the National Socialist government in Dessau, and Mies, Director of the Bauhaus since 1930, also left for the United States to escape the National Socialists. Rather like the Arts and Crafts Movement in Britain, the Bauhaus was based on a belief in the underlying unity of all the design disciplines and “emphasized the necessity for a rational systematic analysis as the start of any programme for serious building” (Nuttgens 1997: 272). The (now re-furbished) Bauhaus buildings themselves are a clear demonstration of these principles – even if the ideas behind it were “ruthlessly appropriated from Constructivism and De Stijl” (Rowe 1987: 308). And the applicability to Modern architecture of Sullivan’s dictum about form following function is self-evident in Bauhaus-inspired architecture. While Chair of Architecture at Harvard, Gropius “expung[ed] all Beaux-Arts traditions, an event followed at architectural schools throughout the USA” (Curl 2006: 335).

Mies, for his part, has been credited with pioneering terraces of flat-roofed housing at the *Weissenhofsiedlung* exhibition at Stuttgart in 1927, followed by the free plan layout, also under a flat roof, of the German pavilion for the Barcelona International Exhibition of 1929. And, along with Gropius, he was a leading figure in the development in the United States of highly rational, Bauhaus-inspired glass and steel buildings (Figures 3.24 and 25).

It has been suggested that “[s]eizing his opportunity to exercise his power as a man and as an architect / artist, Mies psychologically and formally obliterated both client and program at one stroke, retreating to the fantasy world of heroic architecture, a Laugier-inspired primitive hut of pure form devoid of content and client” (Friedman 1994: 341). Another role model, perhaps, for Howard Roark. It is also worth noting here a couple of comments from Mies about the role of form in architecture – from

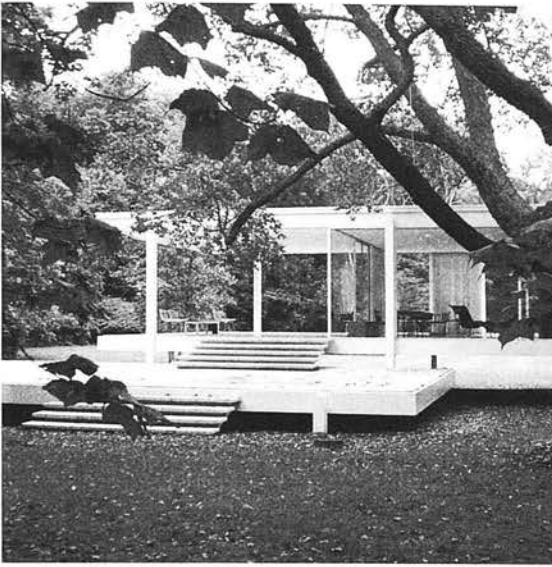


Figure 3.24: Farnsworth House, Wisconsin

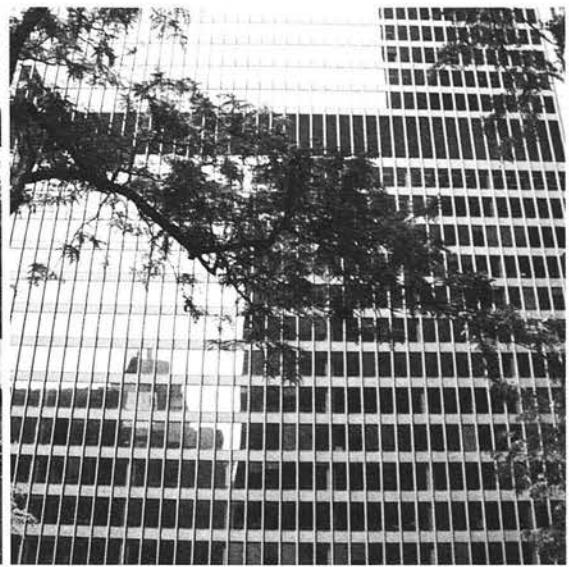


Figure 3.25: TD Centre, Toronto, Canada

1927: “I do not oppose form, but only form as a goal” ... “[f]orm as a goal always ends in formalism”, and from 1950: “architecture has nothing to do with the inventions [sic] of form” (Mies 1927: 102 and 1950: 154).

The third of Behrens’s influential apprentices, Le Corbusier, was described by Summerson as “the most inventive mind in the architecture of our time and also, in a curious way, one of the most classical minds” (Summerson 1963: 111). Le Corbusier also worked in Perret’s office from 1908-09 and developed from that time his interest in the use of reinforced concrete. But, Summerson suggested, Le Corbusier “threw away” the “token orders” of “a classically designed framework” into which Behrens and Perret had disciplined “the chaos of empirical engineering and industrial building” by applying what he called *traces régulateurs* – lines of control, through which he “was reassuming a kind of control which had never been entirely forgotten but which belongs essentially to the Renaissance and was fundamental to the work both of Alberti and Palladio” (Ibid: 112).

Le Corbusier’s first pronouncement on architecture was the publication in 1914 of the Dom-ino House, a simple concrete structure with floors supported by columns rather than traditional load-bearing walls. And whereas Wright based his Prairie House type on the principle of the interior flowing together as one space, Le

Corbusier “saw the internal space or volume as a big cube and then divided it up both horizontally and vertically, so that one part of the cube might contain taller rooms and other parts smaller and lower ones” (Nuttgens 1997: 268).

The publication that really thrust Le Corbusier into the limelight was his *Vers une architecture* published in 1923 and in English in 1927 as *Towards a New Architecture*. Culminating in a chapter titled “Architecture or Revolution”, it has been described as polemic intermingled “with apodictic [beyond contradiction] proclamations while subjective architectural aesthetics are interpreted as the sum of anthropological constants” (Evers 2003a: 466).

Many commentators less invested in classical architecture than Summerson also noted the recurrent influence of classicism in Le Corbusier’s work. Rykwert noted that both he and Perret “provided historical justification for their designs” and that “some of his critics from within the modern movement have described” ... his projects ... “as neoclassical” (Rykwert 2000: 126, 137). Equally, Colin Rowe in “The Mathematics of the Ideal Villa” (1947) compared two pairs of villas by Palladio and Le Corbusier.

Nuttgens noted that Le Corbusier’s *Modulor*, an amalgamation of the words *module* and *section d’or* (golden section) – “a scale of architectural proportions based on the human body and the golden section” – was comparable to the ideas of “Renaissance architects, such as Alberti” ... who ... “worked out a system of proportion that gave their buildings authority” (Nuttgens 1997: 268-9). Equally, Le Corbusier’s “Five points towards a new architecture” – *pilotis*, roof terraces, the free plan, continuous windows and freely composed façades (Le Corbusier 1926) – became standards that others followed. It was only in his later years that Le Corbusier designed more site-specific buildings like the “highly specific sculptural creation” of the pilgrimage chapel of Notre-Dame-du-Haut at Ronchamp (1950-4 – Figure 3.26) (Lampugnani 1963: 199).



Figure 3.26: Notre-Dame-du-Haut, Ronchamp



Figure 3.27: Unité d'habitation, Marseilles

Le Corbusier's urbanism was as uncompromising as were his pronouncements about architecture. His non-place-specific *Ville contemporaine pour trois millions d'habitants*, first proposed in 1922, comprised 24 skyscrapers at the centre, laid out in a grid of six by four buildings around a traffic hub. He eventually proposed the application of the principles of the *Ville contemporaine* to Paris in his *Plan Voisin* of 1929. This was not adopted. But Le Corbusier's ideas are clearly reflected in the planning and design of Brasilia, the new capital of Brazil proposed in 1957 on the basis of the Athens Charter by his French-born disciple Lúcio Costa (1902-98).

In this respect his ideas were prescient of post-war planning with the priority that it afforded to traffic and its dogmatic approach to single use zoning. But the idea "that the problems of the city – particularly its housing – could be resolved by the grouping of slab blocks in parkland to provide high-rise but relatively low density dwellings" (Figure 3.27) ... "has turned out to be disappointing, an enemy of urbanity and of social cohesion, provoking the most destructive criticism of modern architecture" (Rykwert 2000: 128). In short, therefore, Le Corbusier's architecture was infinitely more convincing than his urbanism.

Kostof suggested that Wright's "Guggenheim Museum in New York (1956-59) is a gift of pure architecture or, rather, sculpture" in which "[f]unction and context have

clearly been subordinated to form” and he compared Le Corbusier’s chapel at Ronchamp to a “powerfully molded sculpture” of a type that recalls “caves and creatures and violent contrasts” (Kostof 1985: 732, 733). Kostof went on to conclude that the “irresistible example of Le Corbusier and Wright opened up a season of unabashed form-giving that carried into the 1960s” (Ibid: 734). Indeed, it can be argued that the emergence of computer-generated forms since the 1990s has prompted even more pursuit of their “irresistible example”.

Vesely, in his chapter “The Foundations of Modern Architecture”, noted that the “Romantic distinction between usefulness and beauty” has diverted attention from the fact “that modern architecture, like most modern art, is moving in the same direction as modern technology” and that “Nietzsche was among the few who understood that this movement is in fact the most significant aspect of modern art” (Vesely 2004: 270-1). Others, like Mitchell, have argued that architecture can “no longer” ... “be understood as an autonomous medium of mass, space and light, but now serves as the constructed ground for encountering and extracting meaning from cross-connected flows of” ... “digital information through global networks” (Mitchell 2005: 19). This begins to sound like Melvyn Webber and to reflect Henry Ford’s assertion in 1919 that “history is bunk”.

This examination of the evolution of architecture in the western world has noted the persistence of classical architecture, particularly Greek revival architecture for government buildings and of Palladian architecture for domestic buildings (the affection of Viollet-le-Duc and Pugin for Gothic architecture notwithstanding); the regular reversion of architecture to precedent patterns; and, despite vigorous assertions to the contrary, the tendency for Modernist architects to establish exemplary norms, codes or principles, and to announce rules and slogans that purported to overturn history ... which can be interpreted in Quatremère's terms, at best, as types and, at worst, as more rigid models.

3.4 ARCHITECTURE AND TYPE IN ITALY

3.4.1 *The Casabella-Continuità Circle*

Forty identified “the circle of architects associated with the Milan journal *Casabella-Continuità* in the 1950s and early 1960s” as leading figures in a search for “a rationale other than ‘functionalism’ for modern architecture” (Forty 2000: 217). Rossi started working for the journal in 1955 under the direction of Ernesto Rogers (1909-69) – the Rogers of Belgiojoso, Peresutti and Rogers (BPR) who designed buildings such as the Velasca Tower (1956-58), “a deliberate protest against the blandness and smoothness of International Modern” architecture (Nuttgens 1997: 287) and an office building on Piazza Meda, also in Milan, (1958-69) in which “explicitly modern technology is combined with classical references, so that the building accommodates itself in scale to its urban context – a deliberate critique of the Modernist *tabula rasa*” (Colquhoun 2002: 188).

Anne Vernez Moudon suggested that typomorphological studies in Italy began in the 1940s at the instigation of the architect Saverio Muratori (1910-73). He “was profoundly disturbed by the devastating effects of modern architecture on existing habitats and cities” (Moudon 1994: 290) in post-World War II Italy, and these studies were continued by Muratori and Gianfranco Caniggia (1933-87). Indeed, Moudon described Muratoro as “the early pioneer of the typomorphological trend in Italian architecture and the spiritual father” of Aldo Rossi (1931-97) and Carlo Aymonino (b. 1926), editor of *Casabella-Continuità* from 1959-64 (Ibid: 290). Muratori’s *Studi per una Operante Storia Urbana di Venezia* (Study for an Operational Urban History of Venice) was published in 1959.

Moudon described Muratori and Caniggia as promoters of *tipologia processuale* (procedural typologies) as “the basis for understanding the making and hence the design of the city and its architecture” (Moudon 1994: 295). In this respect, Cannigia saw the built environment as comprising “built objects” at four different scales – the building; the group of buildings; the city; and the region. She suggested, however, that Rossi wanted to break away from Muratori and therefore did not even mention

him in *L'architettura della città* – first published in 1966 but not in English until 1982. Whereas Muratori and Caniggia saw typology as an analytical tool, Rossi “saw it as providing a general theory of architecture” (Forty 2000: 308).

Forty noted that much of Rossi’s direction in his book derived from the influence of French urban sociologist Maurice Halbwachs (1877-1945) and urbanist Marcel Poëte (1866-1950) (Forty 2000: 217). Halbwachs was particularly interested in the idea of collective memory – comparable to Jung’s collective unconscious (addressed in Sub-section 2.6.2) – and brought that strand to Rossi’s thinking; and Poëte introduced him to the idea of the permanencies or continuities that are found in cities – the urban fixity examined in Chapter One. Halbwachs himself commented that his interpretation of collective memory “leads us away from the psychological domain” to the sociological domain and that “the framework of collective memory confines and binds our most intimate remembrances to each other” (Halbwachs 1941: 53).

Before looking at *L'architettura della città* in more detail it is worth noting the views of Giulio Carlo Argan (1909-92), an art historian and contributor to *Casabella-Continuità*. Argan argued that the “ideal ‘type’ is only an abstraction” and that it is “inconceivable that an architectural ‘type’ could be proposed as a standard by which the individual work of art could be valued” (Argan 1962: 564). This is completely congruous with Weber’s “ideal type” (addressed in Sub-section 2.6.1) and which (see Section 2.7) is not regarded as particularly instructive for the comprehension or design of built environment.

Argan suggested that “formal architectural typologies will always fall into three main categories; the first concerned with a complete figuration of buildings, the second with major structural elements and the third with decorative elements” and concluded that “the typological and the inventive aspect of the creative process are continuous and interlaced” (Argan 1962: 565). Moudon found Argan’s position in this respect “ambiguous” in that, when he identified these two “moments” – the typological and the inventive – he was not making a clear distinction between types that represent

historical continuity and yet are overlooked at the “moment of invention” (Moudon 1994: 291).

3.4.2 *Rossi and The Architecture of the City (1967)*

Although Rossi’s version of type was primarily a reaction against the function-based approach to design promoted by mainstream advocates of the Modern Movement, it was presented as a complete theory of architecture. And he claimed that, for him, architecture meant “not only the visible image of the city and the sum of its different architectures, but” ... “the construction of the city over time” (Rossi 1982: 21). His *L’architettura della città* drew together various strands of urban study and ways of thinking to present an holistic “typological” overview of “the city”. Key elements in this overview included monuments, collective memory, the *Study Area* and what he called *locus*.

What has to be remembered from this book are Rossi’s views that “the architecture of the city summarizes the city’s form”; “type is the very idea of architecture”, and the concept of type is “something that is permanent and complex, a logical principle that is prior to form and that constitutes it” (Rossi 1982: 29, 32, 40). In his view type was synonymous with the constant, but evolving, nature of the city. Influenced by the thinking of Poëte, Rossi developed his ideas about “persistences” – that are “revealed through monuments, the physical signs of the past – and “permanences” – of which the “most meaningful” ... “are those provided by the street and the plan” (Ibid: 59).

Rossi reflected here on Poëte’s work on the long term role of communication arteries in shaping cities. Rossi also regarded the form of buildings as being of longer-term importance than their function. This might be interpreted as a somewhat postmodern dogma of function following form in the interest of maintaining the continuity of urban morphology. Rossi cited monuments – “signs of the collective will as expressed through the principles of architecture” ... “as primary elements, fixed points in the urban dynamic” (Rossi 1982: 22). He went on to compare them with fixed structures in linguistics – similar to Saussure’s synchronic (systematized)

langue perceived by the collective mind as opposed to diachronic (fluid) *parole*, which Saussure did not see as being perceived by the collective mind (Saussure 1915: 100).

Rossi's writing in this connection reflected the emergence in the early 1960s of structuralist architects like John Habraken (b. 1928) and Aldo Van Eyck (1918-99), a co-founder of Team Ten – the anti-functional faction that contributed to the demise of the CIAM. Equally, Rossi's citing of Halbwachs and the idea that “imagination and collective memory are the typical characteristics of urban artifacts” (Rossi 1982: 33) is redolent of Jung's views on the collective unconscious – but at odds with Jackson's view about events rather than monuments being the primary source of a sense of place.

In his observations about “the city as a man-made object – as a total architecture”, Rossi noted “three distinct propositions” – that “urban development has a temporal dimension”; that cities have “spatial continuity” created by “artifacts of a homogeneous nature”, and that “within the urban structure there are some primary elements” ... “which have the power to retard or accelerate the urban process” (Rossi 1982: 63). These “propositions” led Rossi to the “concept of the *study area*” – as a reflection of the “binary relationship” ... between ... “building typology and urban morphology” (Ibid: 63-4). For Rossi the study area comprised an “operable” part of a city, comparable in many respects to the concept of the “environmental area” developed by Colin Buchanan as part of his report *Traffic in Towns* for the United Kingdom government (HMSO 1963: 124) and to M. R. G. Conzen's work on town-plan analysis (examined in Section 6.2).

3.4.3 Rossi's *Locus* and Analogical Architecture

Rossi wrote about *locus* in much the way that Norberg-Schulz and Leatherbarrow wrote about context in their respective books *Genius Loci* (1980) and *Topographical Stories* (2004). Referring to Palladio and the cities of the Veneto region in Italy, Rossi stated that “the concept of *locus*” ... “acquires its full meaning; it becomes the *urban*

context, and is identifiable as a single artifact” (Rossi 1982: 113). He illustrated this point by referring to the plan for Rome of Pope Sixtus V (Pope 1585-90), which was, “although fairly rigid, still attentive to the topographical structure of the city” (Ibid: 125).

In the Introduction to the Portuguese Edition of *L'architettura della città* (1971) Rossi stated that, following the original publication of the book, he had “given typology the preeminent place, viewing it as the essential basis of design” and that “the presence of *form*, of architecture, *predominates over questions of functional organization*” (Rossi 1982: 171, 174). This would seem to suggest that Rossi did not make clear distinctions between the terms form and type. Rossi now appears to have been less a committed student of building types and more an advocate of interdisciplinary urban studies and of the neo-rationalist *La Tendenza* as proponents of something other than non-contextual, function-driven Modernist architecture.

In a subsequent essay, *Analogical Architecture*, Rossi stated that “the problem of new building in historic town centers and the relationship between old and new architecture in general” ... “is most satisfactorily expressed through the careful use of contrasting materials and forms, and not through adaptation or imitation” (Rossi 1976: 76). This suggests a move towards a broader approach to the comprehension of urban morphology and the application in his architecture of his version of typology.

It has been noted that throughout the 1980s, Rossi’s buildings became increasingly colourful and lively – to the extent that “[o]ccasionally this led to the misunderstanding that he was one of the most important representatives of Post-modern architecture” (Lupfer 2003: 782). Lupfer argued, however, that Rossi’s “work was a far cry from any ironical games with historical citation. The search for a fundamental prototype” ... “remained his goal” (Ibid: 782). Nevertheless, Rossi’s architecture incorporated numerous forms – like the pitched roof – that were antithetical to Modernist norms, and he has been widely cited as a progenitor of post-

modernism in architecture and as “an important stimulus for New Urbanism” (Curl 2006: 662).

Numerous writers, including Lupfer, have noted that *L'architettura della città* was originally published in 1966, the same year as Robert Venturi's *Complexity and Contradiction in Architecture*, and that while both of them “wanted to eliminate the vulgar and commercial form of functionalism” ... “the tradition-conscious European Rossi differentiates himself from the American” ... “who without prejudice devotes his attention to everyday symbols and forms” (Lupfer 2003: 783-4). Both Rossi and Venturi eschewed the idea of their work being termed postmodern but, as their avowed distaste for function-driven Modernism attests, they each adopted their own, primarily form-driven, positions critical of orthodox Modernism. And whereas Rossi maintained an affinity for (what he termed) a typological approach in his European neo-rationalism, Venturi, in his American neo-realism, espoused what has been called “ironic classicism” – comparable, perhaps, to Ledoux's later, more exaggerated, neo-classicism.

3.5 TYPE AND DIAGRAM IN ARCHITECTURAL DISCOURSE

3.5.1 *Eight Essays on Type in Architecture*

Colquhoun: Typology and Design Method (1967)

Alan Colquhoun's essay was, according to Kenneth Frampton, the first “on the subject of type [in the latter part of the twentieth century] to appear in the English language” (Frampton 1981: 1). Frampton noted that the “return to classical typology as manifest in the Neo-Rationalist movement” ... had ... “the virtue of reconstituting a normative aesthetic code” – albeit with the risk, recognized by Colquhoun, of atrophy arising “from a polemical insistence on preindustrial architecture” (Ibid: 5).

Frampton suggested that Colquhoun saw Rossi as being “inspired by Marxist ‘negative’ thought” and as looking for a way to bring architecture “to refer analogically to its Doricist origins” and that he saw Venturi and the American neo-realists as “exploiting the liberal-empirical cultural tradition as a means for positing

architectural signs as though they were fragments of a general semiotic system” (Frampton 1981: 6). Colquhoun himself suggested that “without sharper tools of analysis and classification the designer tends to fall back on previous examples for the solution of new problems – on type solutions” (Colquhoun 1967: 43).

And, arguing that the Modern Movement in architecture was underlain by “an implied belief in biotechnical determinism”, Colquhoun suggested that its adherence to functionalism was not based on the belief “that beauty or order or form was unnecessary, but that it could no longer be found in the deliberate search for final forms” (Colquhoun 1967: 45). He went on to suggest that this underlying biotechnical determinism was teleological [defined by purpose rather than cause] and reflected a belief in the emergence of form without the conscious intervention of the designer, but that this position appeared to be contradicted by the concurrent tenet of free expression – “in the act of giving a new validity to the demands of function” ... “a vacuum has been left where previously there was a body of traditional practice” (Ibid: 46).

Indeed, citing Tomás Maldonado, Colquhoun suggested that that “creation is a process of adapting forms derived either from past needs or from past aesthetic ideologies to the needs of the present” and that “this is true” ... “in all fields of design and not only that of architecture” (Colquhoun 1967: 47). In short, therefore, all forms of design need precedents. Put even more simply and emphatically, he argued that in architecture “[r]ecourse to some kind of typological model is even more necessary” than in the case of airplane or bridge design – for which the “general laws of physics and empirical facts” have a significant bearing on final configurations (Colquhoun 1967: 47).

Colquhoun maintained that, by “insisting on the use of analytical and inductive methods of design, functionalism leaves a vacuum in the form-making process” ... which ... “it fills with its own reductionist aesthetic”, and he argued that

“modifications of type-solutions” can play an important role in the solution of design problems for which there are no direct precedents (Ibid: 49). But that was in 1967, before the concept of “type” fell so far from favour in architectural theory.

Moneo: On Typology (1978)

Practising architect Rafael Moneo (b. 1937), defined type as “a concept which describes a group of objects characterized by the same formal structure”, and noted that while views against typology see it as a “frozen mechanism”, he saw it as implying “the idea of change, or of transformation”, of being “the *frame within which change operates*” (Moneo 1978: 23-7). This might be seen as support for Rossi’s views about “persistences” and “permanences” – but read on!

Moneo distinguished, much as Quatremère had done, between the type and the model – “the mechanical reproduction of an object” – and noted that, throughout the nineteenth century, manuals and handbooks had “offered *models or examples*” (Moneo 1978: 28). And he noted that Durand had developed two instruments to rule the design of buildings – “the continuous, undifferentiated *grid*” ... “and the *axis*” – both of which conflicted with Quatremère’s idea of type, and that Durand himself used the term *genre* rather than type (Ibid: 29).

Moneo noted in terms of Vidler’s second typology, that “when Gropius dispensed with history” ... “he was standing against an architecture structured on typology”, and that by the early twentieth century, industry had spawned the prototype as “the exact reproduction of a model” (Moneo 1978: 32-3). He also noted the role of functionalism – with function or program as the primary determinant of form – in appearing to remove the need for precedents or for concepts of type (Ibid: 35). Whereas Moudon subsequently suggested that Argan had been “ambiguous” in his distinction between the (*a posteriori*) “typological moment” and the (*a priori*) “moment of invention” (Moudon 1994: 291), Moneo stated that Argan “did not see typology, although inevitable, as the primary characteristic of architecture” (Moneo 1978: 35).

While acknowledging that “it is through the concept of type that communication is made possible” and accepting Colquhoun’s validation of “type as a support for intelligibility” ... “as an explanation of architecture from an ideological point of view”, Moneo went on the rampage against the application of types in the practice of architecture (Moneo 1978: 37). This included deeming Rossi’s types as communicating “only with themselves” ... “mute reminders of a more or less perfect past”; terming the work of the Krier brothers as having a formal consistency derived from nostalgia for traditional typologies, and suggesting that, for Venturi, “type is reduced to image, or better, the image *is* type” (Ibid: 37-9).

Referring to “the extreme difficulty of applying the concept of type to current architecture, in spite of our awareness of its value in explaining a historical tradition”, Moneo argued that the “traditional typological approach, which has tried to recover the old idea of architecture, has largely failed” (Moneo 1978: 40, 41). Moneo did note, however, that “Louis Kahn’s search for origins as a primary condition of architecture allowed us to think in terms of a possible rebirth of Quatremère’s ideas” and that the concept of type in architecture continues to be valuable if “architectural objects allow us to speak about their singleness and their shared features” (Ibid: 38, 41). This is comparable to Argan’s conclusion about the “two moments” being “continuous and interlaced”, and positions precedents as (only one) part of the platform on which site specific solutions can be built.

Ellis: Type and Context in Urbanism – Colin Rowe’s Contextualism (1979)

The continuing attraction of type in architectural discourse in the late 1970s is demonstrated by William Ellis's essay addressing work from Rowe’s urban design studios at Cornell and the ideas illustrated in *Collage City* (1978), Rowe and Koetter’s book exploring the juxtaposition in established European cities of urban elements from different eras. This work provided an interesting excursion through figure ground fantasies that probably had more educational value than direct practical feasibility. However, the book does not appear to have contained the word “type” or

the word “context” – which suggests that by that time, the idea of type was beginning to move into the background in architectural discourse.

What Rowe and Koetter did refer to was “circumstance” in the sense of “rendering the occasional virtues of the modern city” ... “responsive to circumstance” (Rowe and Koetter 1978: 8). And what much of *Collage City* did was to present “the uninhibited aesthetic preference of the present” ... for ... “structural discontinuities and” ... “multiplicity of syncopated excitements” (Ibid: 93). This, Rowe and Koetter described as a “constructive dis-illusion” ... “an appeal for order and disorder, for the simple and the complex, for the joint existence of permanent reference and random happening” (Rowe and Koetter 1978: 93).

Although their book contained “pre-existing images” ... “assembled into a single pastiche which nonetheless read as a unified work”, its subtext was a distinctly post-modern strategy of fragmentation (Rowe and Koetter: 8). Jencks and Kropf suggested that Rowe, in *Collage City*, having “already thrown Modernism into historical perspective” with his geometrical comparison in 1947 of villas by Palladio and Le Corbusier, was “taking Rome as a paradigm for a new urbanism” thereby seeking to “fill the theoretical vacuum left by the all too obvious failures of Modernist planning” (Jenks and Kropf 2006: 61).

Rowe’s work was based on the format of the 1748 map of Rome by Giambattista Nolli (1701-56) – the Nolli Map, originally commissioned as an accurate record of Vatican real estate and of the fourteen districts of the city. The map showed the “open spaces of the city, including streets, squares and parks” ... “as spatial figures ‘carved’ out of the poche of building mass” (Love 2009: 241). This format suggested “the historical ground for a formal distinction between public and private space” whereas “public space, as a concept and legal fact, was then virtually nonexistent” in the 1740s, and use of the map in this way “was intellectually bogus” (Sommer 2009: 144).

Sommer suggested that *Collage City* “offered little theoretical alternative to the status quo”; that “the combination of *collage* and *city* was, at bottom, a tautology” and that Rowe’s approach was more “city-as-epicurean-museum than ‘collage’”. But he did concede that “Rowe in particular, but also Ungers, Rossi, Venturi and Scott Brown, must be credited with not only offering a way to read the architecture of the city, but also taking from that reading a means to generate new forms with nuance, ambiguity, and formal invention” (Sommer 2009: 145).

The idea of context, promoted in the 1960s by *La Tendenza* in Italy and used by Alexander amongst others, had become firmly established alongside ideas of type and typology in architectural discourse. But, in many respects *Collage City* was prescient of Tschumi’s deconstructivism, manifest in his deliberately anti-contextual Parc de la Villette, designed from 1982. And Tschumi’s position was prescient, in turn, of Koolhaas’s question in his journal, with respect to OMA’s entry to another French state-sponsored design competition, in 1989, for the *Bibliothèque nationale*: “Or is ‘fuck context’ becoming the theme?” (O.M.A. et al 1995: 640).

And Vidler, who helped in the 1970s to promote the idea of type as a generative force in architectural design, suggested in an essay originally published in 2004 that the “word ‘diagram’ has become quite a magic wand of a word in the United States; something like the word ‘type’ in the 1970s, ‘postmodern’ in the 1980s, and ‘blob’ in the 1990s” (Vidler 2008: 152). Vidler went on to suggest that the importance of being seen to be a “diagram architect” led to Peter Eisenman (b. 1932), an undergraduate student of Colin Rowe, publishing the book *Diagram Diaries* (1999), proving “conclusively that not only has he been doing diagrams longer than anyone else but he has been doing diagrams his whole career; indeed he, not anyone else, invented the diagram” (Ibid: 152). But before looking at Eisenman’s work and views on type and diagrams, it is worth examining five further essays and three studies from the 1980s and 1990s on type in architecture.

Rowe: Program versus Paradigm (1982)

Colin Rowe contrasted contemporaneous approaches to urban design as the “flat and empirical” and the “too exalted, too idealist and too *a priori*” (Rowe 1982: 10). Using the example of the plan for Austin, Texas drawn up in 1839, which he described as “a retarded descendant of the ideal cities of the Renaissance” ... “a *plan without a program*”, Rowe talked about “the architect’s unwillingness to think except in terms of built solid and the planner’s disdain to be pre-occupied with anything so crude as physical statement” and about urban design as the venue for the contestants to “conceal their largely inarticulate differences by a joint use of smarmy graphics” (Ibid: 22, 23).

Arguing that “program will always” ... “be biased” and that it will “never be the simple statement of a problem so much as the implication of a solution”, Rowe was also “left unpersuaded by neo-Rationalism’s formal repertory and particularly unpersuaded by its attendant polemic” leaving us with “superficial alternatives of a false empiricism and false idealism” (Rowe 1982: 24, 28). He interpreted the “false idealism” of the “characteristically uptight” Krier Brothers, Rossi and Ungers as politically left-wing – “an abstracted, a generalized, a simplified, a diagrammatic diagnosis and prognosis of the human condition” (Ibid: 28, 29).

Cuthbert made a similar interpretation, terming the Kriers’ work “a somewhat fundamentalist Marxian analysis”, while noting the attractions of the order, structure and clarity of rationalist urbanism to fascist politicians (Cuthbert 2006: 222, 223). Rowe went further, suggesting that the incompatibility of Marxism and classicism could “only be held together with rhetorical glue” (Rowe 1982: 31). He concluded that “reliance on either program or paradigm is impoverishing; that if we are to talk typology, then a more expanded conception of type becomes necessary” (Ibid: 39). For Rowe, then, the neo-Rationalists were overstating the potential of type or paradigm-based design.

Bandini: Typology as a Form of Convention (1984)

Micha Bandini, writing from a European perspective, addressed the role of typology as an enduring convention in architectural discourse, relating it to the typological basis of Pevsner's *History of Building Types*. Bandini suggested that whereas the notion of type seemed to have been accepted as a "functional and instrumental device" it had been more heavily scrutinized as an "enterprise of explanation and understanding" (Bandini 1984: 73). She cited three attitudes informing typological studies – first, in the manner of the Venice School, "as a means of 'reading' the city"; second, "as a way of discussing high 'architecture' in stylistic and cultural terms", as in Rudolf Wittkower's analysis of Palladian villas from 1952; and third, "as a theoretical tool for the production of architecture" – either as a treatise in the manner of Quatremère or as a "meta-project" such as the work of Rossi or the Krier brothers (Ibid 1984: 73-4).

Bandini went on to examine what she described as the "circular and progressive reductionism of typological research" as it ran from Argan's interpretation of Quatremère's type through the urban studies of Rossi and Aymonino that influenced French urbanists, followed by its use by various "rationalist" architects and culminating in its receipt in the English-speaking world – and application by groups like the Congress for the New Urbanism (CNU).

Argan, she noted, "defined typology as an analogous system of classification" and also a creative process applicable at successively smaller scales – from urban to building to detail; Rossi saw typology as a "mediating tool" for form-based analysis of the city and Aymonino saw it as an "instrument, not a category" for understanding "the *relationship* between urban morphology and building typology"; and Vidler, in his *Third Typology*, focused on "rational design processes" reflecting a "pragmatic and empirical cultural climate" ... that favoured ... "studies which regard typology as a collection of easily appropriated icons" (Bandini: 74-81).

In summary, Bandini showed a diminution in the scope of typological study from comprehension of context to application of reductive formulae. This may have been the case in building design but, as will be argued in Chapter Five, typological studies continue to be a valuable aid to understanding and designing urban space.

Anderson: Types and Conventions in Time (1982)

Stamford Anderson characterized the advocates of Modern and post-modern architecture as making “heated demands for the acceptance of either rigid determinism or anarchic play” and argued that typological studies “do break the determinist bond of form and function while also providing an ordering of forms” (Anderson 1982: 109). Anderson noted that whereas “Laugier took it upon himself to restore authority to classicism”, Quatremère’s interpretation of type “opened the way for principled justification of other types of architecture” and “Semper focused on the actual work in its historical and conventional context” (Ibid: 111, 112 and 117).

Anderson’s conclusion was to call for a contemporary architecture involving “not only current conventions and empirical knowledge but also an attempt to recall and re-examine the intellectual and formal conventions internal to architecture throughout history” as an approach that avoided “the formalism and mere taxonomies of much of current interest in typology” (Anderson 1982: 117). This is comparable to Eisenman’s call, nearly twenty years later (in his *Diagram Diaries - addressed in Sub-section 3.5.3*) for built objects to reflect architecture’s “interiority” (its internal discourse) and “anteriority” (its “accumulated knowledge of all previous architectures”).

Goode: Typological Theory in the United States (1992)

Terrance Goode addressed the “assimilation of typological theory into American post-modern historicism between the late seventies and early eighties” and lamented “the unwillingness or inability of most recent ‘avant-garde’ positions within architecture to address substantially the role of architecture and the city as economic

and cultural commodities” (Goode 1992: 2). Goode argued that postmodern architecture in the United States in the late 1970s focused on buildings as single architectural objects while ignoring their “relationship to the city or the city itself” and that, in any case, the vocabulary of urban form that accompanied European typological theory “was ideologically opposed to the essential nature of the post Jeffersonian American city as a non-hierarchically gridded instrument of economic speculation and individual social mobility” (Ibid: 5-6).

Goode contended that this approach, in architectural education as well as in practice, neutralized the city and treated types as images “capable of conferring an instant authenticity” and led, during the first half of the 1980s, to the “imagery of plazas and arcades” ... being ... “appropriated as an instrument of representation by architects in the service of developers and corporations who are the real shapers of the contemporary American city” (Goode 1992: 7-8). And so, he suggested, by the mid 1980s, “type theory was assimilated into post-modernism” and the idea of “typological recuperation as a strategy of resistance was almost completely abandoned by its original advocates in Europe as well as in the United States” (Ibid: 9).

Although Goode seemed to be sounding the death knell for Vidler’s third materialization of typology in architecture, he did not completely abandon all hope for the study and application of types in urban design, but he did conclude that to be effective its use has to transcend nostalgia and avoid instrumental symbolism.

Kelbaugh: Typology – An Architecture of Limits (1996)

New Urbanist Doug Kelbaugh argued that although the “center of gravity of architectural theory” ... “moved on [from typology – the study of architectural types – in the 1970s and 1980s] to Deconstructivism and to social and environmental concerns, the idea of type remains alive as a result of Postmodernism” (Kelbaugh 1996: 41). He represented typology as “an attempt to recover purity and continuance” – privileging convention over innovation – and distinguished between

an “architectural type”, which is morphological, and a building type, “which usually refers more to function than to form”. He was redolent here of Rossi’s *continuità* and of Brill’s observations (addressed in Sub-Section 3.2.1) about typologies being based on *form* or *use* and *archetypes* – in which *meaning* is emphasized more than form.

Kelbaugh also referred to the archetype as an idealized architectural type; the model, which “has inflections and idiosyncrasies that express its particular site and crafting” (different, then, from Quatremère’s “object that should be repeated as it is”); and the prototype, “part of an industrial paradigm” cranking out clones. (Ibid: 42-3). So, in Kelbaugh’s interpretation, the architectural type generates the model. And he argued this point by reference to humans – a single biological species with two sexes and three basic body types but whose offspring are individually identifiable “models”. Typology, he contended, does not make architecture “inherently less interesting” and it can lead to “efficiency and economy for the designer” ... because ... “it is considerably easier to start with a time-tested architectural type and modify it into a suitable model” (Ibid: 42-3).

Moving on to discuss public spaces, Kelbaugh termed them “particularized outdoor rooms that are site specific” and suggested that “typology trades creativity at the scale of the building for creativity at the scale of detail and of the city” (Kelbaugh 1996: 48). This, of course, omits the middle one of Argan’s three scales of typological application – major structural elements. But Kelbaugh reiterated this approach, terming it a reversal of figure-ground relationships “trading figural object buildings for figural public spaces” (Ibid: 49).

Adopting the default-setting for New Urbanism of promoting itself by preaching the evils of Modernism (bleaching out variety) and postmodernism (pumped-up dress code), Kelbaugh went on to suggest that typology was the missing link in Modernism between architecture and urbanism; that “typology is the language of urban design” and that “architectural types are to urban designers what building components are to architects” (Kelbaugh 1996: 50). This would all seem to suggest that for Kelbaugh

(and for other New Urbanists) the design of open space and building details should be eclectic, flexible, context-driven and reflect a wide range of precedents, but that buildings themselves should be more standardized; more type-based.

Before looking in more detail at Eisenman's work on the emergence of diagrams, and the fate of type in architecture, it is worth looking at three distinctly different studies that have addressed the applications of typology. Brenda C. and David R. Scheer's *Typology and Urban Design Guidelines* (1998); Johann Friedrich Geist's *Arcades: The History of a Building Type* (1983); and the doctoral dissertation of Leandro Madrazo on *The Concept of Type in Architecture* (1995).

3.5.2 Three Studies of Types

Scheer and Scheer: Typology and Urban Design Guidelines (1998)

The Scheer's were looking at typologies at the urban scale, where "coherence depends much more on typological consistency" ... "than on uniformity of architectural style, signage, materials or colors" (Scheer and Scheer 1998: 154-5). Working on the regeneration of Main Street, Fairborn, Ohio, they developed an approach that identified character zones reflecting different phases in the town's evolution, comparable to Conzen's Plan Units. This led to proposals based on "typological distinctions" that could be consolidated through "streetscape and design guidelines that limit the controls to reinforcing the type rather than restricting specific building architecture" (Ibid: 157).

In other words, this was a search for vernacular commonalities ("typological consistency") on an area-by-area basis but with limited imposition of prescriptive codes at the scale of the individual building. The Scheers argued that their approach was more flexible than "neo-traditional town planning" in which "important lessons about type, density and the street have been obscured by an emphasis on nostalgic imagery" (Scheer and Scheer 1998: 162).

Geist: Arcades (1983)

Geist's study of arcades, rather than being concerned with typology or broader urbanism, was a detailed study of a specific and very particular building type. He noted that meanings of the word arcade "have one element in common: they express transition, threshold, passing, measured distance, or disappearance", and that they are primarily pedestrian thoroughfares, "spaces with a beginning and an end" (Geist 1983: 3). In broad terms, therefore, arcades are passages bordered and/or covered by buildings that serve their own functions. They are internalized forms of a normally external space type and, in that respect, can be compared to a shopping mall. But in more specific terms based on actual practices, an arcade can be defined "as a glass-covered passageway which connects two busy streets and is lined on both sides with shops" (Ibid: 4). This, then, is a generic building type with specific formal parameters; specific functional purposes and specific locational requirements.

Madrazo on Type and Form (1995)

Geist's focus on a specific building type is comparable to the focus of Madrazo's dissertation on the form of individual buildings. In his abstract Madrazo argued that "Type embraces transcendental issues of aesthetic, epistemological and metaphysical character; issues that have to do with the most generic problem of Form" ... and that the purpose of his research had been to ... "explore the relation between the idea of Type and the historical evolution of architectural form" (Madrazo 1995: 4). In subsequent correspondence, Madrazo confirmed that his "dissertation was focused on the idea of type [as a source of building forms], in contradistinction to typology (the systematic study of types and type forms)" (Email Madrazo / Tate, 25 August 2009).

Madrazo held that the concept of Type in architecture did not – and in all probability could not – emerge until after the Enlightenment because it was "a principle amenable to scientific investigation". From this he inferred that in the Renaissance the Idea "was still an *a priori* principle" and thus that works like Palladio's *Quattro Libri* should not be interpreted "as a precedent of typology". Equally, Madrazo

questioned the “alleged continuity” between Quatremère’s definition of Type and the work of Rossi et al on “typology” (Madrazo 1995: 376). He does not appear to have addressed Vidler and Forty’s other typology – Muthesius and the *Deutscher Werkbund* – but, like Vidler, he did address Eisenman’s role in the evolution of architectural form-making.

Madrazo noted Eisenman’s view that “design as a process of transformation would make the preconceived image unnecessary” but argued that there are some preconceived forms, like the cube, which do have meaning in “the context of the formal aesthetic of the Modern Movement, which constitutes the ultimate source of Eisenman’s work”. And, even in 1995, Madrazo noted the capacity of computers to facilitate design as a process of transformation (Madrazo 1995: 381). He also noted that the seemingly timeless tendency for architects to geometrize their work in the interest of achieving “identity between *form as conceived* and *form as perceived*” was beginning to reduce this inclination and that for some architects “forms do not have to be intelligible, but puzzling” (Ibid: 382, 383).

In correspondence in 2009, Madrazo suggested that “the intensive work [on the issue of type] developed during the 1960s and 1970s has been somehow interrupted. Instead, during the last ten / fifteen years we have witnessed” ... “an emphasis on morphology and morphogenesis, which has been accompanied by a rejection of the idea of type” ... “as being something static, old-fashioned. For advocates of morphogenesis, the focus is on the form generation process” ... and ... “in the field of urbanism, the idea that the city is a sort of natural phenomenon, an on-going process more than a fixed form has gained some ground” ... and ... “the morphological / typological schema, proposed by the Italian theorists of the sixties as a mechanism to relate city and architecture has been abandoned” (Email Madrazo / Tate, 25 August 2009). There would seem to be a self-evident connection between Madrazo’s recognition in 1995 of the emerging role of computers in the design process and his recognition in 2009 of architects’ attraction to morphogenesis.

3.5.3 *Diagram-driven Morphogenesis*

Having pronounced “the word ‘type’” ... as ... “almost extinct” in 2000 (Vidler 2000b: 208), Vidler subsequently hailed the diagram “as deployed by landscapists, bio-blobists, programmatic ironists, and autonomistic formalists” ... “as a ready way to access and to motivate the iteration of architecture through digital means” (Vidler 2008b: 152). Madraza and Vidler may, however, have been writing premature obituaries for the idea of type. That question will be examined in due course. But first, Peter Eisenman’s *Diagram Diaries* and the emergence of diagram-driven morphogenesis.

Eisenman: Diagram Diaries (1999)

In his Introduction to *Diagram Diaries* Somol argued that “in the last thirty years or so” ... “the diagram has become almost completely the *matter* of architecture” ... “the diagram has seemingly emerged as the final tool” ... “for architectural production and discourse” (Somol 1999: 7). He continued “the diagram” ... “suggests an alternative mode of repetition”, and he contrasted repetition “associated with postmodern historicism” ... which ... “relies on an ideal of the origin or model” with the repetition of “constructive swerves, or misreadings” ... which ... “exists as a continual process of differentiating” (Ibid: 8, 9).

In effect, Somol was seeking to contrast “the disciplinary autonomy that relies on *typology*” with what he termed the neo-avant-garde understanding of “autonomy as a *process* of self-generation or self-organization, a model that allows for formal-material emergence or transformation” (Somol 1999: 10). It might be argued, however, that there is an unresolved dichotomy here. Batty’s work on urban complexity (addressed in Sub-section 3.6.3) argues that processes of self-organization – in city systems, at least – tend to be manifest in patterns that reflect growth from the bottom-up. Somol, by contrast, was writing about Eisenman operating in top-down mode subjecting “‘form’ itself to perpetual revision through an exhaustive sequence of operations: transformation, decomposition, grafting, scaling, rotation, inversion, superposition, shifting, folding, etc” (Ibid: 15) – all of which are

redolent of Madrazo's recognition in 1995 of the increasing role of computers in the generation of architectural form.

Somol went on to suggest that Eisenman's attention to form was "a means to advance this transformational method as both an analytic and synthetic design tool" and that diagrammatic work, as opposed to "simply working with diagrams" ... "cannot be accounted for by reapplying the conventional categories of formal or functional, critical or complicit" (Somol 1999: 16, 23). Eisenman himself was less adamant than Somol. Describing the diagram as being understood historically in two ways – as an analytical device or as a generative device – he regarded Wittkower's nine-square grid analyses of Palladian villas as diagrams attempting "to uncover latent structures of organization" while the diagram can also act "as an intermediary in the process of generation of real space and time" (Eisenman 1999: 27, 28).

One of Eisenman's most telling comments about form generation was that as "type moves towards abstraction" ... it ... "reduces the model, the copy or the original. The diagram, on the other hand, contains more than the model. The type and the diagram are two different conditions of abstraction" (Eisenman 1999: 42-3). And, needless to say, he saw types as "the abstraction of a reduction to normalization", and diagrams as "the abstraction that may generate into something more than the thing itself, and thus potentially overcome normalization" (Ibid: 43).

A few years later Eisenman repudiated Vidler's suggestion that "my idea of the diagram might well be that prior state of architectural thought that is not simply conventionalized or expressed by a building", construing the diagram as a writing or text that "stands against drawing, which in essence defines a representation of presence and thus its metaphysics" ... and is ... "a complex notation that mediates between the traditions of the past and the possible future" (Eisenman 2005: 377). In between times, William Braham published in 2000, a brief but insightful essay on the evolving roles of typology and diagrams in the generation of architectural form.

Braham: After Typology: The Suffering of Diagrams (2000)

Braham noted the persistence since the late eighteenth century of building typologies – “even though architects have rarely been able to maintain any kind of useful distinction between typologies of function” ... “and typologies of form” (Braham 2000: 9-10). He suggested that the “last serious discussion of architectural typology occurred in the mid 1980s” when post-modern theorists and practitioners adopted it as “a method for restoring historical continuity in the city” ... but ... “entirely missed the subtle relationship between building type and urban morphology [*continuità*] that figured largely in the Italian debate” ... and that post-modern architecture ... “could not have missed the generative potential of typology more completely” (Ibid: 10).

Braham also suggested that while the shift to dynamic diagrams of the type addressed by Somol had “yielded projects that directly connect the rapidly changing conditions of the city to the generation of architectural form”, the work of this “neo-avant-garde has barely touched normative practice” (Braham 2000: 10). This position seems only to have changed to a limited extent over the intervening decade. It remains relatively straightforward to identify the designers whose buildings are termed by Jencks the new paradigms of complexity and of fractals (Jencks 2002). That, in its own way, begs the question of whether signature styles of individual architects are becoming types in their own way – producing what have been termed “iconic buildings” by Jencks and others (Jencks 2005).

But, Braham asked, “[w]hy have the new dynamic processes had so little influence outside academic circles?” and “do dynamic systems models really guarantee the end of instrumental thinking?” (Braham 2000: 11). Braham recognized that commercial computer software is generally directed towards performing standard tasks more quickly and/or more cheaply, and that diagrammatic methods would have limited impact unless “every element of the equation is understood to be interrelated and changeable, from buildings and their contexts to the designers and their practices” (Ibid: 11). So, sadly, Braham saw typology as an historicist post-modern project that floundered because it became too doctrinaire, and diagramming as one

that would flounder unless it treated the architect as “just another variable in the diagramming” (Op. cit: 11). And the outcome, perhaps, has been an era of self-referential iconic buildings.

Foster: Image Building (2008)

Art and Archaeology Professor Hal Foster certainly took this view and has been particularly outspoken about the work of, amongst others, Frank Gehry (b. 1929) and Rem Koolhaas (b. 1944). Noting that Gehry’s *Fish Sculpture* in 1992 for the Olympic Village in Barcelona was his “first use of a computer program called CATIA (computer-aided three-dimensional interactive application)”, Foster suggested that the Guggenheim Museum in Bilbao is an example of architecture becoming “a sign that overwhelms context” (Foster 2008: 173, 175).

Equally, Foster suggested that Koolhaas has turned “typological exacerbation” ... “into his own way of working” such that his office “has often produced its designs through an excessive manipulation of one architectural element or type” (Foster 2008: 171). He suggested that the Seattle Library (2004) represented the retooling of the skyscraper – “the hero of *Delirious New York*” – as if it were a glass and steel Miesian grid “sliced into five large levels” ... “stepped into cantilevered overhangs, and faceted like a prism” ... “a bent skyscraper”. And the looped-over China Central Television buildings in Beijing were described by Koolhaas himself as an “instant icon”. (Ibid: 172, 173). Vidler, quoting from other essays by Foster in the Introduction to *Architecture: Between Spectacle and Use*, noted the suggestion that Koolhaas’s “rhetorical irony risks lapsing into glibness” and that terms like “‘baroque,’ ‘sublime,’ ‘contextual’ are” ... “inadequate to capture the degree of ‘self-indulgence’ that postures as freedom of expression” (Vidler 2008: vii).

3.5.4 Durability of Type in Building Design

In the final chapter of *Space is the Machine*, Bill Hillier addressed the (intrinsically conflictive) relationship between architecture as a social art and the architect as an individual designer. This addressed Alexander’s *Notes on the Synthesis of Form*; the

nature of vernacular architecture and solution typologies, and what Hillier termed “style as non-discursive idiolect”. Hillier credited (and condemned) Alexander with being the first person to propose a design process that could move from written brief to physical form as a rational process without any need for intuition. But, Hillier argued, this kind of progression could only be made “by using pre-existing knowledge or assumptions about how functional ideas translate into spatial ones” (Hillier 1996: 417).

So, Hillier concluded, Alexander’s analysis-synthesis model concealed the role of pre-existing knowledge in the design process. And, in contrast to Alexander’s bottom-up approach (addressed in Sub-section 3.6.3), Hillier argued that design is an activity that deals with configurations in an holistic manner, “the designer must on the whole tend to design top-down” (Hillier 1996: 421). And in terms of this pre-existing knowledge, Hillier went on to describe “solution typologies” as “immediately available” ... “ideas-to-think-with” ... in the ... “same way that the vernacular builder uses the phenotypical means at his [sic] disposal” (Ibid: 429).

Describing these precedents as “acknowledging the historical continuity not only of architectural solutions but of architectural problems”, Hillier argued that “the history of architecture is” ... “informed by the cultural stability induced by the use of existing solution typologies – or rather their genotypes” (Hillier 1996: 430-1). But he then expressed concern that solution typologies tend to “vernacularise” or normalise architecture, drawing it away from autonomy and into social service.

Other commentators have noted the inclination of architects, when their autonomy might seem threatened, to withdraw and redefine their sphere of activities. Reyner Banham referred to the risk that architecture “could close ranks and continue as a conspiracy of secrecy, immune from scrutiny but perpetually open to suspicion, among the general public, that there may be nothing at all inside the black box” (Banham 1990: 299). Equally, Jeremy Till has remarked on the propensity to

“internalized redefinition of architecture” in the face of any historical crisis or changed social circumstance (Till 2009: 20).

Hillier, however, described the “parallel influence of socially constructed intentions” ... and ... “available solution typologies” ... as a ... “potential prison of ideas through which architecture” ... “becomes in effect the inchoate and unwilling servant of social forces” (Hillier 1996: 434). For Hillier, such “vernacularisation” suggested a risk of imposing rather than expressing culture. And the more strident proclamations from Léon Krier, Andrés Duany and their CNU colleagues (addressed in Sub-section 3.6.4) certainly lend credibility to this view.

On the other hand, Hillier's laudation of style as a “non-discursive idiolect” and “a genotype of means” ... “creating a density, richness and potential originality of solutions far exceeding that of any typology” suggests the promotion of the iconic buildings discussed earlier (Hillier 1996: 442). In a somewhat elitist conclusion, Hillier described vernacular design as “typological guidance” ... that ... “continually threatens architecture with bureaucratic extinction” (Ibid: 445). By contrast, Bryan Lawson wrote about what Nigel Cross called “designerly ways of knowing” and described precedent as “such a vital, central and crucial feature of the design process that it plays a central role in all design education” (Lawson 2004: 96).

3.6 TYPOLOGICAL STUDIES IN URBAN DESIGN

3.6.1 *Studies in Urban Morphology*

Professor of Urban Design, Anne Vernez Moudon, like Rossi, was more interested in urban typomorphology than in individual building types. She noted that “the intricacies and subtleties of the Italian discourse [*La Tendenza*] never reached North America” and that Vidler and Moneo “focused on the use of building typology in architecture” but “did not dwell on the relationship between building types and urban form” (Moudon 1994: 295). She also noted that Vidler’s first typology addressed archetypes or ideal types (although he made no reference to Carl Jung or Max Weber) and that his second typology addressed prototypes – a series of distinctions

that was subsequently explored further by Doug Kelbaugh, and will be examined in this section of the thesis. First though, in the context of *La Tendenza* and attempts “to build a theory of design based on traditional processes of city building” (Ibid: 296), it is worth also looking at Moudon’s review of work on urban typomorphology in Britain and in France.

Moudon focused first on the empirical research of M.R.G. Conzen and the Urban Morphology Group at the University of Birmingham. This work, called “Town-plan analysis”, examines “three fundamental elements of the town plan: the streets, the plots and the buildings, which all fit one into another as a precise puzzle” (Moudon 1994: 297). The principal aim of this work is to explain how urban form is created. Moudon suggested that these town plans facilitate “townscape management” of “the existing city according to its historic evolution” (Ibid: 301).

Conzen emphasized the importance in this work of the “distinct plan units” of which the town plan is composed. These plan units comprise “streets and their mutual association in a street-system” ... plots ... “the individual land parcels and their aggregation in street-blocks with distinct plot patterns” ... “and buildings or more precisely their block-plans” (Conzen 1966: 117) integrated in space and time to form individualized combinations of a dynamic rather than a static nature. Conzen also noted that “earlier forms” ... such as ... “street spaces, tend to act as morphological frames conditioning the genesis and growth of subsequent forms and tend to be modified by them in turn” (Ibid: 117).

Conzen’s Town-plan analyses were largely applied to medieval towns and cities and were therefore confined to European settlements. Nevertheless they carried the wider value of demonstrating the influence of different levels of technology, particularly “in transport and in the use of power sources” (Conzen 1966: 119). And this, again as noted in Chapter One, remains a major influence on the overall form and the internal structure of cities. Conzen also noted that, at a more detailed level, his analyses

demonstrated the functional and genetic inter-relatedness of street systems and plot patterns.

Slater credited Conzen's publications in the early 1960s with providing the "conceptual framework" for subsequent process-based studies of urban morphology (Slater 1990: 12). Bill Hillier, for instance, noted in 1989 from his examination of open space structure in the towns of Apt and Gassin in southern France, that "the more urban type order in these towns arises, to a considerable extent, from the transformation of the urban block rather than the individual building" (Hillier 1989: 9-10). He also noted in this connection the "genotypical *socio-spatial*" pattern of building entrances being systematically related to convex spaces as part of the "*deep structure*" of the space systems in these towns. Although Hillier does not appear to have referred to Conzen's work, his own findings certainly help to validate Conzen's Town-plan analyses.

Moudon suggested that the work of the French *Laboratoire de recherche: Histoire architecturale et urbaine-Sociétés* (LADRHAUS) "is broader than the Muratorian [Italian] and the Conzenean [British] schools in terms of both the subjects studied and the tools used" in that it served the "dual purpose of descriptive research and identification of design models" (Moudon 1994: 302, 303). She suggested that, by comparison, Muratori and Cannigia were involved in a "more direct search [than Conzen] for a prescriptive design theory to set future design activity in the proper direction" (Ibid: 303).

Moudon gave the definition of a type from Philippe Panerai et al of LADRHAUS (in *Éléments d'analyse urbain* – 1980) as "an 'abstract object built through analysis' that reproduces the properties that are deemed essential by the analyst of a family of *real* objects" (Moudon 1994: 304). This is remarkably similar to the definition in the French Ministry of Culture's *Éspace urbain: vocabulaire et morphologie*: "[a]bstraction, choix de caractères organisés en un tout, schéma ou modèle, constituant un instrument de connaissance permettant de distinguer les propriétés

essentielles communes à un groupe d'objets construits, constituant une catégorie parmi les objets d'un ensemble donné" (Gauthiez 2003: 130). Both this "vocabulary and morphology" and Merlin and Choay's 963-page *Dictionnaire de l'urbanisme et de l'aménagement* (2009) demonstrate the level of ongoing commitment in France to urban morphological analysis.

Continuing her comparison of the French and Italian approaches, Moudon suggested that the "Italians only distinguished between *a posteriori* and *a priori* types, the former representing the traditional way of making the city and the latter being primarily the concoction of elite designers". She suggested that, by contrast, the "French argue that there exist types which today are *a posteriori* but originated as *a priori* types" (Moudon 1994: 308). Moudon concluded that the French approach outlined "a new discipline that combines the study of the built landscape with a critical assessment of design theory" and that typomorphological studies, executed with an understanding of the parameters of time, form and scale, could offer guidance for future interventions – and was already being applied, as will be seen, by New Urbanists (Ibid: 308).

3.6.2 Form-based and Use-based Studies

Alexander Cuthbert was more critical of primarily form-driven approaches to urban typomorphology. He suggested that these approaches "look at the city not as a time-series but as a form-series" and, citing the first chapter of Rob Krier's *Urban Space*, that they suggest "the vocabulary of potential urban forms is for all practical purposes complete" (Cuthbert 2006: 29). Cuthbert also cited in this category Sibyl Moholy-Nagy's *Matrix of Man* in which she identified five "archetypes" of city form – geomorphic; concentric; orthogonal-connective; orthogonal-modular, and clustered (Moholy-Nagy 1968: 18). He argued that "it would seem a fruitless task to search for any generalisable conclusions purely on the basis of similarity in urban form, particularly over diachronic time" (Cuthbert 2006: 31). Colin Rowe, on the other hand, found this approach "stimulating" and that it allowed "a great deal of

interesting material to be brought into the picture which a simple history of styles would have been obliged to disregard” (Rowe 1968: 46).

Cuthbert’s dismissal notwithstanding, it is worth noting that Moholy-Nagy was writing when the effects of “top-down” high-rise, urban housing redevelopment were at their most visible and, in that respect, her work can be equated with that of Rossi and *La Tendenza* in its plea to recognize the synchronic value of historic urban forms. She also illustrated quite clearly two recurrent issues in urban morphology – the impact of transport systems on the form of cities and the enduring nature of urban street patterns.

Cuthbert was equally damning of Spiro Kostof’s typomorphological analyses in *The City Shaped* (1991) and *The City Assembled* (1992) – which will be examined, along with other typological studies of urban space, in Chapter Four. Cuthbert concluded his section on (the limitations of) typologies by quoting Christine Boyer writing about “The City of Collective Memory” in *Dreaming the Rational City* (1983). He quoted Boyer’s reference to Carlos Aymonino reminding “us that to begin to unravel the process where building typology and spatial morphology confront one another, we must return to the economic and political, cultural and social context that are important to both spatial morphology and building typology of the city” (Boyer 1983: 288). But, in order to put Cuthbert’s conclusion into context, it is instructive to return to Boyer’s original text.

Boyer’s Introduction noted that she had traced “the eclipse of physical planning as it abandons once and for all its traditional focus on the physical order of the American city” (Boyer 1983: ix). She also noted that “[a]s planning dissociated itself from a physical base, it descended toward a particular disorder. First the overriding concept of a public interest disintegrated and then the ideal of comprehensive planning ...” (Ibid: 280). She suggested that American cities “often have historic preservation that looks like a near equivalent to stage designing or an emotional remembering of a nostalgic past” and that analyses of urban composition like Kevin Lynch’s in *Good*

City Form (1981) broke up “the history of place” such that “only in fragments as palatable remnants of the past is it allowed to fit into the functional reordering of the city” (Op. cit: 287). Similar observations might be made about European cities.

Boyer went on to note the importance of “the texture of memories already embedded in the city and how the architect-planner uses these elements to structure and re-order the city with a classical tendency” – which she interpreted as doing “the best with the material at hand” (Boyer 1983: 288). It would seem, then, that while Cuthbert was looking to devalue form-based approaches to urban analysis and urban design in favour of approaches based on spatial political economy, Boyer had, in fact, recognized the shortcomings of approaches to urban planning that are detached from a physical base.

And it is a contention of this thesis that, while the physical form of cities reflects underlying socio-economic forces, this does not reduce the importance of comprehension and interpretation of the physical form itself and of its constituent spaces. Put simply, it would be rash to engage in the physical design of buildings or urban spaces themselves without understanding their genesis. It is also contended that typological study of urban morphology, including comprehension of the influence over time of underlying physical and cultural forces on patterns of development, is an essential endeavour for urban designers and should inform the design of individual buildings.

It is readily apparent that studies of urban morphology tend to adopt a broader perspective than do studies of building types. This is reflected, for instance, in the urban studies background that Rossi brought to *L'architettura della città*, including his recognition of *locus* in the design of “urban artifacts”; his considering, like Conzen, “the plan to be a primary element”, and his review of studies such as those by Robert E. Park and Ernest W. Burgess of social ecology in Chicago in the 1920s (Rossi 1982: 103, 99, 65). At their most reductive, studies of building types are based on their form, or on their function, or on a combination of the two. Others, like

Pevsner's *A History of Building Types*, may also include classification according to structural materials or building styles (Pevsner 1976: 289-90). But, by and large, form and function have been the principal criteria for constructing building typologies.

Franck suggested that places whose names, images or classifications “highlight form attributes may usefully be called *form types*. Thus perimeter block, concrete block buildings, tower, gate, field, and courtyard are form types” whereas places with names such as “church, museum, park, and bedroom are use types because aspects of use more than form” are used to designate them. She went on to note that certain types “seem to imply both form and use equally, such as high-rise housing and basilica plan church, but for simplicity I call them use types” (Franck 1994: 349).

Franck identified six purposes for use types – *removal and control* (including schools, prisons, hospitals and asylums – comparable to Foucault's heterotopias); *retreat or escape* from daily life (under which she mentioned New Urbanists advocating “versions of the American town where the feeling of retreat created by houses, trees, lawns, and parks does not require the exclusion of commercial and service uses or public transit”); *protecting and honouring* (including places of worship, battlefields, museums, national parks, capital buildings, courthouses and possibly libraries); *producing and controlling capital* (including markets, factories, mills, warehouses, banks, offices); *public service* – whether publicly or privately owned (including retail stores, streets, sidewalks, highways, parking lots, airports, banks, schools); *enabling and empowering* (including libraries, schools, universities, state and national capitals) (Franck 1994: 353-9).

Franck's listing is comparable in length to Jacques-François Blondel's listing of building types in his *Cours d'architecture* (1771-7 – addressed in Sub-section 3.3.2). But what is immediately noticeable from these excerpts alone is the number of duplications in her categorization – for instance schools, banks and libraries. This demonstrates the difficulty of making definitive categorizations of buildings by use

type, and, to her credit, Franck went on to note that while “use types are like webs” ... which ... “can be added to and repaired” ... “they are most often envisioned, planned, created, and regulated as discrete, independent objects – as *containers*” (Franck 1994: 360-1). In short, much as Rossi suggested, the forms of buildings tends to endure whereas their uses can be more flexible. The same is true of the space between buildings.

3.6.3 *Alexander's Ideas*

There are similarities between the relatively simple “containers” and the more complex “webs” discussed by Franck, and the ideas proposed by Christopher Alexander in his essay *A City is not a Tree*. Alexander made a distinction between “*natural cities*” ... “which have arisen more or less spontaneously over many, many years” and “*artificial cities*” ... “which have been deliberately created by designers and planners” and called for designers to search “for the abstract ordering principle which the towns of the past happened to have” (Alexander 1965a: 58).

Alexander suggested that the distinction between natural and artificial cities could be compared to the difference between a semi-lattice – a collection of sets in which (at least) two overlapping sets belong to the collection, “potentially a much more complex and subtle structure than a tree” in which any two sets that belong to the collection have either one wholly contained within the other, or the sets are completely disjointed (Alexander 1965a: 60). Arguing that “overlap, ambiguity, multiplicity of aspect, and the semi-lattice, are not less orderly than the tree”, but that designers “cannot achieve the complexity of the semi-lattice in a single mental act”, Alexander concluded that since “the city is a receptacle for life” ... it ... “cannot and must not be a tree” (Alexander 1965b: 58, 60, 61).

Modernist architect Leslie Martin, playing the latter-day Descartes perhaps, challenged Alexander on the basis that the grid plan facilitated the “orderly” development of “planted towns” in medieval Europe and of new settlements in North America. He also noted that the “overlapping patterns of human activity which

caused Alexander to describe New York as an organic city” occur over the Manhattan grid established by the Commissioners’ Plan of 1811 (Martin 1972: 8). Martin suggested, as did Rossi and Conzen, that the framework of streets and plots “remains the controlling factor of the way we build whether it is artificial, regular and preconceived, or organic and distorted by historical accident or accretion”. Equally, he described the pattern of roads in a town as “a kind of playboard that sets out the rules of the game” while opening up opportunities for future development (Ibid: 10).

Julienne Hanson suggested that Alexander’s distinction between natural and artificial cities might be “predicated upon a fundamental confusion of order concepts [based on some generally accepted notion of sameness] with structure concepts [in the sense of intelligibility]” and that cities like the City of London “which grew up by accretion may look different because they have few readily identifiable ordering principles but they may [nevertheless] be well structured” (Hanson 1989: 39, 40). A corollary argument can be made with respect to the New Town in Edinburgh. The fact that its order is self-evident does not preclude it, like Manhattan, from also having a well developed, intelligible structure that has evolved since it was first laid out in the late eighteenth century.

In any event, Franck’s idea of trying to create webs rather than containers and Alexander’s concept of “natural” and “artificial” cities are reflected in Stephen Marshall’s thesis (addressed in Sub-section 1.2.3) that cities are organic (but not organisms) and that while, in Alexander’s sense, they are not trees, they can be likened to “a forest of trees – a collective entity” or to an ecosystem containing “the sum of all the organisms in it” (Marshall 2009: 138). Marshall also referred to the work of his colleague Michael Batty, in applying theories of complexity, from investigations in science, to the understanding of urban structure. Batty himself noted that “well-adapted cities evolve organically, and that good design must understand and adapt to such processes” (Batty 2008: 258).

Batty pointed to the contribution of Jane Jacobs and Christopher Alexander to the recognition “that cities evolve from the bottom up, as the product of millions of local decisions” and to Alexander’s thesis “that good problem solving” ... is ... “established at every level from the ground up” (Batty 2008: 258, 259). He also noted that city systems and neighbourhoods reveal their self-organization through their morphology “which is the characteristic signature of a complexity formed by growth from the bottom up”, but that “[p]rinciples for urban design that are consistent with treating cities as complex systems built from the bottom up are only just beginning to be developed” (Ibid: 260, 261). “Variety”, he argued, “comes from the interposition and interweaving of multiple hierarchies reflecting social, economic and cognitive networks, and good design should first seek to identify these” (Op. cit: 261).

Alexander’s *A Pattern Language* and *The Timeless Way of Building* were prescient of New Urbanism. He prefaced the paperback edition of his *Notes on the Synthesis of Form* by describing his diagrams or patterns as “the key to the process of creating form”. And, describing form as “the ultimate objective of design”, he argued “the designer must first trace his [sic] design problem to its earliest functional origins” since “every design problem begins with an effort to find fitness between” ... “the form in question and its context” (Alexander 1964: 15).

Alexander went on to describe what a form *is* as its “formal description” and what it *does* as its “functional description” (Ibid: 89). In an Epilogue to the *Notes* Alexander addressed, albeit obliquely, the typological value of patterns. Referring to the “underlying structural correspondence between the pattern of a problem and the process of designing a physical form which answers that problem”, he stated that “it is only the sense of this [patterned] similarity of structure that ever led [the great architect] to the design of great forms” (Op. cit: 132).

But, in terms of the development of type-based design solutions, Alexander also criticized the neo-classicism that followed the Renaissance for sticking “as closely as

it could to the precise detail of Greece and Rome. By leaning on correctness, it was possible to alleviate the burden of decision” (Alexander 1964: 10). Hillier, however, saw a “pervasive flaw” in Alexander’s arguments in the *Notes*. Arguing that Alexander was opposed to intuition-based design (because it “leads the designer away from a proper understanding of functional needs and the subsequent synthesis of a solution on the basis of that understanding”), Hillier suggested that, in order to make the crucial step of going “from information to object and from function to form, Alexander has recourse to exactly what he said he was avoiding: the use of intuitively held assumptions about what the relation is or should be” (Hillier 1994: 416, 417). Alexander’s promotion of pre-rationalized, typical design solutions is evident in his much later work on “Generative Codes” (Alexander 2008: 14-29).

In a paper from 1969 that started with a rumbustious swipe both at architects (“imaginative, daring, but completely mad”) and planners (“utterly and boringly sane”), Alexander proposed twenty (“sketchy, shorthand”) patterns – each a “new cultural institution” ... “intended for the present culture of the metropolitan United States” (Alexander 1969: 78, 80). These included Cells (many small residential areas, each one a different subculture); Roads (cellular network of high-speed arteries); Small group work (scattered semi-autonomous employment); Windows (every workplace has windows overlooking areas of life); Old age islands ... Cruising strip ... Public discussion places ... Schools open to the city ... University ... Group houses ... See through living room ... Thick walls ... The teenage room / cottage / studio ... Child care ... Density of residences at different distances from local community facilities and centers ... City hall ... Religious center ... Trees ... Peckham Health Center ... Death.

Similar patterns were proposed in *The Timeless Way of Building* (1979) and *A Pattern Language* (1977). These were, in that order, the first two in a series of five books that promoted two main principles – design for traditional methods of building and self-build projects. This was very much a tactical, community-based, bottom-up approach to design and procurement that challenged the patterns of large scale,

commercial developments – particularly of mass housing – that emerged in the West after World War II. The approach was somewhat prescriptive in content and cultish in tone. *The Timeless Way* begins, for instance, by stating “[t]here is one timeless way of building. It is thousands of years old, and the same today as it has always been” (Alexander 1979: 7).

More recently, in a relatively hard-hitting (and arguably hypocritical) review of the form-based codes promoted by New Urbanists, Alexander et al criticized the prescription of “geometrical or configurational features”, describing the built result as often being “more like a carefully plotted piece of fiction than real life” and making “only very small improvements to the human condition” (Alexander 2008: 17, 18). They went on to suggest that user satisfaction comes from the way that a place has been generated rather than the way that it has been designed. They argued that the three requirements for this “nourishing quality” are respect for the land – “the deep structure of what is there already”; respect for the people who live and work there, and respect for their communal spirit. New Urbanism, by contrast, they see as a “*mechanical process* ... trying to solve the problem at the level of physical design” (Ibid: 18).

3.6.4 *New Urbanism*

Commentators like Professor of Urban Design Alex Krieger lump together “the polemicists of the City Beautiful movement”, Alexander’s *Pattern Language* and the New Urbanists as advocates of “a return to what they consider time-tested principles of urbanism” but which have limited appeal to “a disillusioned suburban culture”. But Krieger offered little more by way of an alternative than “urban design as a frame of mind” (Krieger 2009: 119, 129). Equally, Cuthbert condemned Alexander’s theories of urban growth and change as being “replete with examples of typologies” and representative of a “basic utopianism and disregard for social reality” (Cuthbert 2006: 223, 224). But both Krieger and Cuthbert may seem harsh on Alexander given his prescience (Alexander 1965a) with respect to current, distinctly non-Cartesian, views on urban complexity.

Despite its limitations, the New Urbanist critique of Modernist urbanism does, at least, propose a visible and, it would seem, viable alternative approach. Nevertheless exchanges between the Congress for the New Urbanism (CNU) and others have provoked powerful rhetoric and drawn commentators such as lexicographer James Stevens Curl into partisan outbursts, arguing that “[t]raditional urban blocks, mixed uses, and a coherent, literate, architectural language were promoted by the New Urbanists as an antidote to the unpleasant, inhumane and incoherent environments that were the direct result of devotees of the Athens Charter, CIAM. Le Corbusier, etc.” (Curl 2006: 526).

The CNU was founded in 1991. Founder members included Andrés Duany and Elizabeth Plater-Zyberk, Peter Calthorpe and Dan Solomon. Duany and Plater-Zyberk (DPZ) have promoted a return to urban development in North America on the model of the pre-World War II neighborhood. They have argued that its physical attributes comprise being a comprehensive planning increment; being limited in size; having streets laid out in a network and spatially defined by the walls of buildings with diverse functions; having civic buildings often placed on squares, and open space provided in the form of specialized squares (Duany and Plater-Zyberk 2008: 64). They suggest that benefits of the neighborhood model include bringing daily activities within walking distance; reducing the number and length of automobile trips; providing streets and squares of comfortable scale; providing appropriate building concentrations, a range of housing types and suitable civic buildings – all of which seems very sound in principle (Ibid: 65).

Nevertheless the form-based Traditional Neighborhood Development Ordinance that DPZ established for projects like the 32-hectare Seaside housing development near Miami, Florida (1978-87) has generated a somewhat standardized, neo-traditional appearance that has led to it being termed “sprawl with a happy face” (McDonough 2008: 58). Latterly DPZ have been promoting “SmartCode” as a form of unified planning and design ordinance encompassing zoning, subdivision regulations, urban design, public works standards and basic architectural controls. They have also been

promoting their “SmartCode’s rural-to-urban Transect”, a system of six “T-Zones” – natural; rural; sub-urban; general urban; urban centre; urban core – plus Special Districts (SD) (smartcodecentral.com).

Lecturing about his version of the urban transect at Edinburgh College of Art in November 2007, Duany stated that “the basic principles for this ‘new’ system are derived from” ... Patrick Geddes. It is tempting to suggest, however, that Duany was being somewhat ambitious in making this claim. The apparently static physical simplicity of his six zones and special district is a somewhat reductive interpretation of Geddes’s theory of the city with its tripartite relationship of place (geography), work (history) and folk (spirituality), and its relationship to the Greek polis (Welter 2002: 26-53). Indeed, Geddes’s examination of the Valley Section and his recognition of “the intricate complexity of urbanism and the parallels with nature” (Marshall 2009: 129) was more prescient of Batty’s ongoing work on urban complexity than of New Urbanism.

Calthorpe has been more active in the area of circulation systems and, in particular, Transit-Oriented Development (TOD) such as the proposed “Urban Network” for Metropolitan Chicago (2004) as part of its plan for Chicago Metropolis 2020. The CNU as a whole has also committed support to measures to convert “Highways to Boulevards” in its unambiguously named measures for “Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities” (cnu.org). And although such principles seem very sound and read well, there is, in North America at least, a residual partisanship lying just below the surface of their rhetoric.

Daniel Solomon commented that “[p]hysical well-being is not high on the list of concerns for the critical theory crowd that now dominates the modern architectural academy” (Solomon 2008: 75). This was matched by Richard Sommer, commenting on “Andrés Duany flogging his big-bad-Modernism hobbyhorse ad nauseam” and addressing an endnote to him to the effect that “holding Harvard’s Graduate School of Design (GSD) up as the evil empire of avant-garde urbanism is laughable. With

regard to the challenges we face in designing the city, Harvard's GSD is no more the problem than your movement is the solution ..." (Sommer 2009: 146, 152).

Similarly, academic and practitioner Michael Sorkin suggested that, for the CNU, "pattern is not understood in the manner of Lévi-Strauss's [structuralist] *Tristes Tropiques* but rather that of *The American Builder's Companion*" and that these patterns emerge "from the idea of the utter singularity of 'truth'" (Sorkin 2009: 168). Sorkin went on to suggest that there has been an "inexorable drift to the right" among the CNU and its "fellow travelers". This drift is certainly apparent in the writing and lecturing of Léon Krier, the principal proponent of New Urbanism or Rational Architecture in Britain.

Both Léon Krier (b. 1946) and his brother Rob (b. 1938) have been proponents of type as a basis for architecture and urban design. Rob Krier's work on urban space typologies will be examined in Chapter Four. Léon Krier, whose written work is redolent of Pugin's attack on major architects in nineteenth century Britain, has been described as stating his case "with almost rabid vehemence" (Jencks 2006: 182). Or, as Robert A. M. Stern put it in the foreword to *The Architecture of Community* (2009), "Krier is a polemicist: a passionate and convinced advocate of a point of view" ... "[h]e does not prevaricate. Understatement is not his preferred locution" (Stern 2009: xix).

Léon Krier has been a prolific and outspoken publicist for his principal theme of traditional architecture as an integral component of traditional urbanism. This has resulted in him taking a leading role from the 1970s in the Movement for the Reconstruction of the European City; being active with New Urbanists in the United States; and being incessantly vitriolic about, in particular, suburbs ("a corrupt form of development"), strip malls, mono-functional zoning, modern architecture and Le Corbusier (with whom he seems to have an obsessive love-hate relationship) – including the production of childish, mocking cartoons about most of them, which is unfortunate given his skillful sketching of his design proposals.

Although Krier's writing has included references to complexity and cities as ecological organisms, his vision for cities is driven more by, to use Hanson's terms, a search for order than by a search for structure. Indeed in the same column that he mentioned the value of complexity and ecology, he also asked about "the unrenouncable architectural and urban ingredients which make a beautiful city" and went on to suggest that he would "introduce the terms Classical and vernacular into urbanism" as the qualities needed to "make a great city" (Krier, L. 2008: 25, 26). In short, his ideas are emphatically form-driven.

Krier's work is strongly driven by typological and morphological studies of urban spaces. He described public space as "a void, a structured and structuring void, with specific dimensions, forms, and characteristics" and seemed rigidly prescriptive in stating that they "can be built only in the form of streets (linear spaces) and squares (nodal spaces)" and that they "should occupy not more than 35 per cent or less than 25 per cent of the total area of a quarter" (Krier, L. 2009: 163). He did, however, go on to recognize that urban spaces are "organized into regular or irregular patterns and grids of avenues, boulevards, streets, squares, alleyways, courtyards and mews, parks and gardens" (Ibid: 163). But at Poundbury he used a different set of spatial types comprising square, street, lane, courtyard, mews and pedestrian street – which tends to suggest that he has not yet reached a definitive conclusion on his typology.

3.6.5 Other Urbanisms

Doug Kelbaugh, in his essay *Three Urbanisms: New, Everyday, and Post* was as uncharitable towards Koolhaas as was Vidler (see Sub-section 3.5.3), describing him as the "quintessential Post-urbanist", Kelbaugh characterized post-urbanist projects as "large, denatured, deracinated, esoteric, and confrontational with their contexts" (Kelbaugh 2008: 46). New Urbanism – espousing "compact, transit-friendly, walkable" ... development, promoting ... "face-to-face social interaction" and with its precedent-based approach, trying "to learn and extrapolate from enduring architectural types" – received, unsurprisingly, a better press. (Ibid: 42, 44). But, despite the antipathy of these two urbanisms, Kelbaugh noted a point of

significance for the performance dimensions discussed in Chapter One – that “walkability and chance encounters” ... are ... “*the one tendency that everyone from Léon Krier to Rem Koolhaas embraces*” (Op. cit: 45).

Kelbaugh’s third urbanism – Everyday Urbanism – he described as “urban design by default” (Kelbaugh 2008: 42). Everyday urbanism is primarily a response to conditions in the United States. It is addressed more fully in the book of that name by Chase et al (2008). Planning Professor Margaret Crawford described “the most potent sites for everyday urbanism” as those “where multiple experiences accumulate in a single location” ... places of ... “intersections between an individual or defined group and the rest of the city” (Crawford 2008: 8).

Crawford did not advocate design by default as much as call for “radical repositioning of the designer, a shifting of power from the professional expert to the ordinary person” (Crawford 2008: 9). This is a call for a more socially minded urbanism along the lines suggested by Lefebvre or de Certeau (addressed in Sub-section 2.4.5) rather than an abstract or normative professional approach; for an attitude or sensibility. It identifies with the world of garage sales, street vendors, dumpsters and recycling bins, and it can be seen as falling within the ambit of Batty’s bottom-up approach to urban planning and design.

But the topic appears to have an inherent difficulty common to any attitude or sensibility, that it is as strongly defined by what it is not and by what it opposes, as by what it proposes. Architect, educator and city designer John Kaliski argued that most endeavours in urban design have failed because they have produced abstractions that could not reproduce the vitality of urban life. Le Corbusier, Team X and Victor Gruen failed to create vitality; Jane Jacobs theories derived from Greenwich Village now seem “alarmingly singular”, and only the work of Edmund Bacon in Philadelphia and Jonathan Barnett in New York City have had any traction – but only by operating through strategic public policy rather than through urban design proposals (Kaliski 2008: 90-7).

Equally, for Kaliski, Lynch (1960) “sought to forge a normative language for urban design” and Alexander’s design typologies (1987) were “so specific that they invariably generate Italian townscapes” (Kaliski 2008: 97). But of more immediate relevance is Kaliski’s review of what he called two poles of design and construction-oriented practice – New Urbanism and Rem Koolhaas. While the former are promoting, within the United States, “the myth of a nationally coherent urbanism”, Koolhaas, whose *Generic City* (1994) stressed the “continued relevance of the giant forms and patterns of the global city”, is at heart “a nineteenth-century flaneur who” ... “wilfully arranges the programs of his own designs to incorporate the social component of the urban street” (Ibid: 100, 101).

Kaliski, then, had little support for the “mythohistoric narratives” of the one or the “hypermodern dystopia of city as shopping mall” of the other. In his view “unilateral design theories of any sort are doomed to failure” in urban environments defined by “ephemerality, cacophony, multiplicity, and simultaneity” (Kaliski 2008: 102). In his perspective, unless urban design actually makes architecture and landscape in the context of cities as Kaliski understands them, it will devolve into “an intellectual curiosity distanced from its subject” (Ibid: 104). And in order to make architecture and landscape, it must “engage the daily without abandoning interest in structure, form, typology, light, material, and the histories of the art” (Op. cit: 108). Kaliski’s call for a diverse urban design vocabulary at least, is compatible with the tenets of this thesis.

3.6.6 *Postmetropolis*

Having addressed “Post-urbanism” it is appropriate to examine the phenomenon that Edward Soja termed Postmetropolis – which he saw as “the actual new urbanism” (Soja 2009: 257). Soja, a geographer who taught planning at UCLA, encountered urban design as “an almost exclusively microspatial envisioning of the city” that revolved around “what were called ‘typologies’, idealized essences used to describe different urban forms” (Ibid: 258). As such it appeared to him “to be

conceptually and analytically trapped in a static and stranded space” detached from “the larger-scale spatiotemporal dynamics of urban development” (Op. cit: 260).

Whereas he saw New Urbanism as offering “a comforting retreat to an idealized past”, Soja has identified three primary processes producing the new “postmetropolitan” urbanism – intensified globalization (of capital, labour and culture); a flexible, “postfordist”, global economy; new information and communications technologies (Soja 2009: 262). These processes have given rise to a pattern of regional urbanization that has seen the density of urbanized Los Angeles exceed the density of Greater New York. Soja noted that these are increasingly culturally heterogeneous settlements displaying both decentralization from the older city and recentralization in new “suburban cities” (Ibid: 263). Soja called this phenomenon the “global city-region” and noted that a majority of the world population now lives in “just four hundred global city-regions of more than one million inhabitants” (Op. cit: 264).

These regions defy previous definitions of cities and their suburbs. Two principal issues that Soja identified in them are, first, the dysfunctional distribution of workplaces, affordable housing and public transport, resulting in as many as 15-20% of residents having to travel more than two hours each way to work; and second, along with decentralization-recentralization, deindustrialization-reindustrialization following the decline of Fordist economies (Soja 2009: 265).

Noting that more mansions were being built in American cities; that larger areas “are being gentrified and boutique”; and that city marketing in search of the “Bilbao effect” (to which Gehry’s Guggenheim was a major stimulus) is a growth area (Soja 2009: 268), Soja called for urban design to address “the actual new urbanism rather than some simulacrum of it” (Ibid: 269). In this context, the relationship between transport systems and city form, examined in Chapter One, becomes critical.

3.7 CONCLUSIONS

It was noted in Chapter Two that all forms of categorization and classification help humans to understand, to adapt to, and to adapt the world. They facilitate collective understanding of common phenomena. They are, as Franck and Schneekloth noted, “intellectual constructs used for description, explanation and prescription” (Franck and Schneekloth 1994: 17). This chapter has addressed the vocabulary, purposes and history of type and typology in architecture; it has looked at recurrent attempts to impose normative rules for the generation of architectural form; at writings over the last 40 years about type in architecture; at the role of typological studies in urbanism, and the emergence of “New” and other urbanisms as vehicles for the interpretation and invention of urban form and space.

Particular attention was drawn to the distinctions between Quatremère de Quincy’s “model” and his “type”, and between the words “type” and “typology”. The examination of the purposes and history of typology in architecture suggests that it has been employed as a device to establish and/or protect the autonomy of the discipline as much (or more than) as a vehicle for developing new built form. Nevertheless, this chapter has noted recurrent attempts in architectural circles, particularly in France, to impose reductive and normative standards for the generation of architecture – including the neo-classical dicta of Blondel, Durand, the *École des Beaux-Arts* (particularly under the direction of Quatremère); the Gothic Revivalism of Viollet-le-Duc, Pugin and Ruskin; and the Modernist pronouncements of Le Corbusier and the CIAM, Gropius, Mies van der Rohe and others.

What Vidler recognized as the third emergence of typological thinking in architecture – a reaction to Modernism from figures connected with the Milan-based magazine *Casabella-Continuità* in the 1950s and 1960s – eventually led, particularly through the writings and design work of Aldo Rossi, to the conflation of typology and post-modernism (Vidler 1977a). But, once the tenets of post-modernism began to appear both doctrinaire and prone to historicism, architects and architectural commentators began to reel away from typology as a key to architectural form. This is reflected in

the essays from the last 40 years examined in this chapter. Urban designers and commentators, by contrast (and as will be seen in more detail in Chapter Four), have taken a less immediate and less instrumental attitude towards typology. This has included recognition of the permanence of urban space relative to the buildings that front onto it, and of the value of typological study in revealing inherent patterns in the urban fabric.

Brill noted (see Sub-section 3.2.1) that types in architecture generally relate to distinctions in either form or use (or both) whereas archetypes – like the cave, the spire or the pyramid – “seem frequently charged” (Brill 1994: 70). Perhaps inevitably, the more reductive and normative approach to typology in architecture has been equated with the codes, rules and slogans that have been a recurrent aspect of its evolution, particularly since Laugier’s identification of the *cabane rustique* as the archetypal building and the Greek temple as the model for all architecture.

Argan, a leading member of the *Casabella-Continuità* circle, argued that typology in architecture is an important source of comprehension but should not be and cannot be seen as a source of model (in the sense of Quatremère) or ideal (in the sense of Weber) design solutions (see Sub-section 3.4.1). Argan, in a manner completely congruent with the tenets of this thesis, viewed design as a two-part exercise with a typological moment (comprehension) and an inventive moment (design). Essays by Colquhoun (1967), Moneo (1978), Ellis (1979), Rowe (1982), Anderson (1982), Bandini (1984), Goode (1992), Moudon (1994) and Kelbaugh (1996) all tended to adopt a similar position (Sub-section 3.5.1) – valuing typology as a vehicle for comprehension but being sceptical about its contribution to the generation of architectural form. Hillier (1996) was more emphatic, describing typologies as “ideas-to-think-with” ... and then disparaging them as normalizing architecture into a “social service”!

Even Eisenman (1999), who promoted (his) diagrams as a “condition of abstraction” superior to the type, called for architecture to reflect its anteriority – its “knowledge

of all previous architectures”. And it is reassuring to note that Vidler, having declared the word type almost extinct, subsequently acknowledged that “typological concerns” might yet represent “hope for the continuation of the utopian and counter corporate ambitions of avant-garde modernism” (Vidler 2008b: 209). Equally, Vanderburgh suggested that the notion of type can provide “a middle ground between the poles of pure invention and blind determinism”. He argued that, as conceived by Quatremère, the idea of type suggested the same flexibility for architecture as for the fine arts; that the idea has the virtue of not having become the property of a single group, and that it has been “practically indispensable to architecture as an intellectual enterprise” (Vanderburgh 2004: 1355-6). This parallels Forty’s recognition that function-based classifications of building types have been “in constant use since the late eighteenth century” (Forty 2000: 304).

It is also interesting to reflect here on Lang’s argument that any typology has the propensity to focus on “classifying the similarities between examples and not their differences” (Lang 2005: 43). This contrasts with La Marche’s suggestion that the typological study of built works, like linguistic and anthropological structuralism, is an exercise in comprehension and categorization on the basis of recognizable differences between entities. Arguably, as will be seen in Chapter Five, typological studies can employ both strategies.

Meanwhile, it was noted in this chapter that Kelbaugh (1996) pronounced typology to be “the language of urban design”, reflecting the views of many commentators on the importance of typological thinking to the comprehension of urban space. This is reinforced (in Sub-section 3.6.1) by Moudon; by the work of Conzen on European urban plans, and by Martin’s recognition of the durability of the framework of streets and its control over buildings – whether in medieval Europe or gridded North American cities. It is also reflected in Alexander’s call for urban designers to identify the “abstract ordering principles” of cities and for this to inform the design of buildings – which, again, have less permanency than the spaces between them.

Notes of caution about typological thinking in urban design include:

- the risk of it becoming instrumental in the imposition of restrictive design codes – an accusation that has been made about New Urbanist codes;
- the view from the perspective of “Everyday Urbanism” of what Kaliski (2008) called, the unilateral design theories of, on the one hand, “mythohistoric narratives”, (i.e. New Urbanism) and, on the other, “hypermodern dystopia of city as shopping mall” (i.e. Koolhaas’s *Generic City*);
- failure to recognize the wider urban patterns developing in what Soja (2009) called the “global-city-region” in the era of “postmetropolis”.

Nevertheless, the view taken in this thesis is that typological thinking remains an important vehicle for comprehension of the built environment, and that it can be particularly beneficial if it is employed – in the consideration of urban space or, indeed, any other phenomenon – as a reflection of diversity and not as an exercise in reduction and standardization. In other words, typological thinking can be valuable if it is used in the sense of Quatremère’s type rather than in the sense of his model. It is also argued that urban space can be considered in terms of Jungian archetypes – having commonly recognized characteristics and particular value in particular ways at particular times – and, of course, in terms of Johnson’s *repertoire* of architectural elements or Lawson’s precedents – that armoury of prior knowledge which experienced designers carry around with them.

CHAPTER FOUR: TYPOLOGICAL STUDIES OF URBAN SPACE

4.1 INTRODUCTION

This chapter provides a critical review of open space typologies beginning with the publication in 1889 of Camillo Sitte's *City Planning According to Artistic Principles*. These typologies fall into two main groups. The first group, like Sitte's book, addressed the two principal form-based categories, the street and the square. Classifications in this group have largely, but not exclusively, been produced by commentators from an architectural background. The second group comprises a wide range of classifications produced by commentators from diverse backgrounds, including architects and urban designers. Between these two groups, and not easily definable as fully belonging to either, are the ideas of Colin Rowe and Fred Koetter, articulated in *Collage City* (1978), and of Rowe's former student, David Grahame Shane, in *Recombinant Urbanism* (2005).

This review will close by looking at Matthew Carmona's recent two-part study, *Contemporary Public Space* (2010). In the first part, *Critique*, he examined arguments that public space is over-managed and, contrastingly, that it is under-managed. The second part, *Classification*, included a review of other typologies – categorizing them as design perspectives; socio-cultural perspectives, or political-economy perspectives. Carmona then proposed his own typology, based on a continuum of ownership (and hence management), ranging from clearly publicly owned and managed spaces to spaces which are clearly privately owned and managed. That section will also look at the ideas of sociologist Jack Burgers and political scientist Maarten Hajer (both Dutch) on emerging types of public space.

The chapter starts with Sitte's work and then revisits the proposals of the CIAM and their Charter of Athens from 1933 (outlined in Chapter One) because, as Curl put it, Sitte's "work was rediscovered in the 1960s when the reaction against the destruction of towns as a result of the dogmas of Le Corbusier, CIAM and International

Modernism gained momentum” (Curl 2006: 717). This will be followed by a review of subsequent typological work, much of which falls into Carmona’s category of “design perspectives”, before looking at other positions and perspectives.

4.2 EUROPEAN ROMANTICISM

4.2.1 *Camillo Sitte (1843-1903)*

Vienna-born Camillo Sitte, an architect who never designed a building, was more engaged with arts and crafts than with architecture or city planning (Collins and Collins 1996: 15). His book, actually a “small volume of essays” ... “that appeared in Vienna in May of 1889”, was produced in reaction to the development of the city’s Ringstrasse (Ibid: 14). Sitte saw this as demonstrating that “only in our mathematical century” ... has ... “the process of enlarging and laying out cities” ... “become an almost purely technical concern” (Sitte 1889: 142). So, in a manner that pre-figured Alexander’s search in the 1970s for discernible and reproducible patterns in the built environment, Sitte analyzed the spatial configuration of a wide range of established European cities and set them down as a series of design principles.

The sub-title of Sitte’s *City Planning According to Artistic Principles* was *A Contribution to the Solution of Modern Problems of Architecture and Monumental Sculpture Especially with Regard to the City of Vienna*. As this suggests, one of his principal concerns was “the proper placement of statues and monuments” (Collins and Collins 1986: 133). As a consequence, the focus of his attention was on what, in German, is called a *Platz*. The translators pointed out that the nearest English-language equivalent is “square” but that this “tends to suggest just that precise geometrical character which Sitte was trying to avoid” and that “he used the English word *Square* to designate a particular type of a British verdured space” (Ibid: 135). This formal distinction is illustrated in the next chapter by the examples of St Andrew’s Square in Edinburgh and Old Market Square in Winnipeg. In the circumstances, the translators preferred the word “plaza”.

The titles of the first eight (of 13) chapters demonstrate the thrust of Sitte's concerns and the components of his typology of urban space: *The Relations between Buildings, Monuments and their Plazas; That the Center of Plazas Be Kept Free; That Public Squares Should Be Enclosed Entities; The Size and Shape of Plazas; The Irregularities of Old Plazas; Plaza Groupings; Streets; The Layout of Public Squares in the North of Europe*. The remaining five chapters addressed approaches to "Modern City Planning". And with respect to plazas, he noted that "the main requirement" ... "as for a room, is the enclosed character of its space" and that "by leading the streets off in the fashion of turbine blades" ... "from any point within the plaza no more than one single view out of it is possible at a time" (Sitte 1889: 170, 172).

Sitte subdivided plazas into "the deep type and the wide type" (Sitte 1889: 177), determined by the location of the principal building and the recommendation that "church plazas should preferably be treated as deep plazas, squares in front of town halls as wide ones" (Ibid: 178). He also proposed formulae for proportioning of the plan dimensions of plazas, and for principal building heights. And he deemed the then current emphasis on "straight thoroughfares" ... and ... "absolute regularity of public squares" to be "quite unimportant" (Op. cit: 185).

This last comment and his views on streets are clearly part of what set Sitte apart from Modernists like Le Corbusier and the CIAM. For Sitte, "[t]he ideal street must form a completely enclosed unit!" with a "winding character" ... "sealing off perspective views" (Sitte 1889: 199). And "streets, even more than squares, have suffered from a fad for alignment" although he did note that straight roads can be necessary "and are often of very imposing effect" but he condemned them if they did not respond to "terrain or other local circumstances" (Ibid: 202, 205).

City Planning According to Artistic Principles was both an instant and a lasting success. A second printing was needed in June 1889; further German editions were produced in 1900, 1908 and 1921. A bastardized French translation (referring to Paris

rather than Vienna and promoting medieval models) was published in 1902 and a second edition published in 1918, followed by translation into Russian (1925), Spanish (1926) and, surprisingly late, English (1945) and Italian (1953). A new French translation was not produced until 1980.

A disagreement, posthumous for Sitte, arose in the 1920s with Le Corbusier, who probably read the original French translation (Collins and Collins: 116). In his *Urbanisme*, Le Corbusier described Sitte's book as a "most wilful piece of work; a glorification of the curved line" ... based on ... "the example of all the beautiful towns of the Middle Ages" (Le Corbusier 1925: 8). Le Corbusier continued the one-sided argument in his 1941 record of paragraphs 71-95 of the CIAM's Charter of Athens. He was backed up in Giedion's *Space, Time and Architecture*, also originally published in 1941, by the description of Sitte as "a kind of troubadour, ineffectually pitting his medieval songs against the din of modern industry" (Giedion 1941: 683-4).

Nevertheless, both the Collinses and Curl (see quote above) saw Sitte as a progenitor of "townscape", particularly as promoted by Gordon Cullen in his 1961 book of that name, and of the revived interest in urban design that emerged in the 1960s (Collins and Collins: 126-7 / Curl 2006: 717). Collins also described Rob Krier's *Urban Space* (1975) as being "out-and-out neo-Sitte" and German architect and journalist Philipp Meuser described Krier's book as having "pointed the way to a renaissance of urban design as an artistic discipline" (Meuser 2006: 259).

4.2.2 *The Brothers Krier*

Urban planner Cliff Moughtin, however, saw Rob Krier in *Urban Space* (1975) as making "some play with the wealth of treatment open for choice in the design of the walls for urban space" but thought that many of Krier's examples would "destroy enclosure" (Moughtin 2003: 101). Moughtin, as will be seen in Section 4.31, had more respect for the ideas on squares of architectural historian Paul Zucker. And Moughtin had even less respect for the ideas of brother Léon Krier, whose type-

based interest in “unitarian, rational space” he described as the idea of someone “worshipping at the feet of the false gods of the architectural profession” rather than following “people like Sitte” (Ibid: 6).

In *Urban Space* Rob Krier identified two types of space – the street and the square, which he compared to the now familiar corridor and room (Krier, R. 1979: 16). He saw the street as primarily “a framework for the distribution of land” ... providing ... “access to individual plots” and the square as “produced by the grouping of houses around an open space” (Ibid: 17). He went on to suggest that “in formulating a typology of urban space”, spaces could be categorized by their morphological origin from “the square, the circle or the triangle” and could be modulated through “angling; segmentation; addition; merging, overlapping or amalgamation of elements; and distortion” (Op. cit: 22, 28-9).

This abstract, context-free generation of two-dimensional shapes produced a morphologically based “typology” reflecting the earlier work of Peter Rowe (who wrote the Foreword to *Urban Space*) and Fred Koetter in *Collage City*. And it led to Krier expressing his “silent hope that a dedicated expert will at some time apply himself [sic] to the task of compiling a perfect ‘Encyclopedia of Urban Spaces’” (Krier, R. 1979: 43). And in *Town Spaces* (2003) he added “the variety of possible façade designs in public spaces” to “all the conceivable urban space typologies” as “necessary prerequisites” for the design of “entire towns and their neighbourhoods” (Krier, R. 2003: 12). This smacks more of pattern book than pattern language.

4.3 CATEGORIZATIONS OF STREETS AND SQUARES

4.3.1 Precedent Studies

Zucker: Town and Square (1959)

Paul Zucker’s emphasis is evident in the title of *Town and Square* and he gave a certain amount of credibility to Rob Krier’s suggestions in arguing that the squares which he called “archetypes” are structural in that “they are spatially and not

functionally defined” (Zucker 1959: 8). But Zucker’s is a far more specific and insightful typology. It comprises five types – closed, dominated, nuclear, grouped and amorphous.

The closed square is literally square in plan form, as in St Andrew’s Square, Edinburgh, and relatively rare. Zucker cited the Place des Vosges in Paris, noting that the closed square occurred “in its most perfect form in the Hellenistic and Roman eras and then again in the seventeenth and eighteenth centuries” (Zucker 1959: 9). The dominated square is “characterized by one individual structure or group of buildings towards which the open space is directed” (Ibid: 11). Moughtin noted that Sitte’s “deep” and “wide” plazas are variant forms of Zucker’s dominated square (Moughtin 2003: 99).

Zucker’s nuclear square is focussed on a “strong vertical accent – a monument, a fountain, an obelisk” (Zucker 1959: 14) which serves to unify what might otherwise be a relatively diverse enclosed space. His grouped squares comprise spaces that “may be fused organically and aesthetically into one comprehensive whole” (Ibid: 15). Zucker divided grouped squares into four sub-types but the principles behind them are comparable to Sitte’s ideas about plazas and, in particular, Sitte’s “Example of an Urban Arrangement According to Artistic Principles” (Collins and Collins: 279-97) for the Ringstrasse area in Vienna, in which “[e]ach of the plazas thus created would offer a different urban vista” (Ibid: 296). Finally, Zucker’s amorphous square is “formless, unorganized, having no specific shape” (Zucker 1959: 16). Old Market Square in Winnipeg is a good example (see Chapter Five).

Ellis: The Spatial Structure of Streets (1969)

William Ellis’s essay in the book *On Streets* reflects equivalent interest, in the early years of the “townscape era”, in streets as the partner to squares in urban space typologies. His essay, drawn from a thesis prepared in 1969, addressed two particular issues – first, the relationship of streets and buildings in the formation of urban space, and second, form-based street types.

Ellis described the relationship between buildings and spaces as one of “‘solids’ and ‘voids’” ... which led him into the trope of regarding “the solids as positive and the spaces as negative” (Ellis 1986: 115, 117). In line with this characterization, he noted that in traditional urban development, the elements of the street, “roadway, pedestrian way, and flanking buildings – exist interdependently” such that the “space between buildings is neither object nor residue, but” ... “part of a continuum” (Ibid: 117). Ellis contrasted this pattern with Le Corbusier’s urbanism, which was based on “separation between building systems and street systems” thereby creating “confrontation between the point tower or linear megastructure and the idea of the street” (Op. cit: 118).

And, in terms of streets themselves, Ellis identified two “fundamental configurations of the traditional street” – the continuous development and the elongated courtyard (Ellis 1986: 120). Ellis’s distinction between them, calling the first primarily a link and the second primarily a place, is similar to the broad categorization of street and square. But he went on to term the “inward looking” elongated courtyard as “special in relation to a grid of generalized streets” and to argue that they are special relative to their context because of their size, their configuration or their position (Ibid: 123). This, then, is the beginning of a classification of streets on a functional rather than a formal basis.

Ellis went on to propose, as a third basis for classification, the nature of the “street wall”. He termed these either a “unified wall” – which “produces a positive spatial configuration”, and the “pavilion street” – which “produces a negative one” with the “importance” shifting “from the street space to the flanking buildings” (Ellis 1986: 126). To his credit, Ellis reversed his earlier trope by closing with a wish for a conception of “the street, or street like space” as a “positive element” within cities (Ibid: 130).

In an essay in the same collection, architecture and urban design instructor, Victor Caliendo identified three principal street types in the United States, examining their

form in relation to their function on a continuum comprising residential; mixed residential and commercial, and commercial streets (Caliandro 1986: 152). These were then classified within each group according to the density of the buildings that they support. This is further evidence of typological classification of “streets” (as opposed to “squares”) and of function-based as well as form-based analysis of urban space types. Kostof, whose classificatory work is examined next, also linked form and function in his examination of types of urban space.

Kostof: The City Assembled (1992)

Spiro Kostof looked, in succeeding chapters in *The City Assembled* at “Public Places” and then “The Street”. And he recognized, at the outset, that any classification of “squares will have to rely on form, or on use, but not on both” (Kostof 1992: 144). Kostof also noted that the few attempts that had been made to “look at squares in a comprehensive way” had been made by architects or architectural historians and had therefore “favoured form over content” (Ibid: 146). He proceeded to summarize form-based typologies of squares, including those by Zucker and Rob Krier addressed earlier.

Kostof then conducted his own shape-based examination, identifying the triangle (generally an inflated crossroads); the trapezoid; the rectangle; the L-shaped square (like the Piazza and Piazzetta San Marco in Venice); the circle and the ellipse (including the French *rond-point* as at the Place de l’Étoile in Paris, and the English-language circus, as with Royal Circus in Edinburgh); and the hemicycle, in either open or closed form, the latter being enclosed by buildings (as in Nancy, France) (Kostof 1992: 149-52). Kostof included the residential crescent, as in Eyre Crescent in Edinburgh, as a form of hemicycle. Then he acknowledged, despite his own background, that form-based categorization is more limited than function-based categorization and proceeded to identify spaces by function, listing civic centres (including the *place d’armes*); games; traffic; and the residential square (Ibid: 152-64).

Kostof identified “the street” as both an “urban form”, comprising “roadway ... pedestrian way ... and flanking buildings” (following Ellis) and an “institution” with “an economic function and social significance” (Kostof 1992: 189). In terms of “some street types”, beyond “physical distinctions having to do with width and relation to urban topography”, he identified an interesting pair of special cases: waterways – river, canal and waterfronts, as streets; now largely historical, bridge-streets; boulevards (including avenues, parkways and Spanish *paseos*); and covered streets, including arcades and *suqs* – prefiguring the origin of the twentieth century shopping “mall” (Ibid: 218-31).

Interestingly, Moughtin’s *Street and Square* also contained a chapter, “Seafront, River and Canal”, that addressed waterfronts as a specific category of space. Equally, Greenbie noted that “water edges have also been activity nodes as well as pathways and thus combine three of Lynch’s [five] elements [path, edge, node, district, landmark] into one” (Greenbie 1981: 119).

4.3.2 *Other Commentary on Streets and Squares*

The temptation to reduce the urban public realm to these two simple categories has persisted into the twenty-first century. Architect Peter Smith, in *Dynamics of Delight*, describing “the street” as “dynamic space” and “the piazza” as “covergent space”, developed an “Aesthetic Performance Checklist” of “urban phenomena” inter-mixing aspects of human perception and fixed physical features. For “the street” these included complexity, spatial definition, surprise, creative ambiguity, security; for “the piazza” they included the civic space; bi-modal squares; secondary squares; passive space; special buildings (Smith 2003: 217-9).

It seems inconsistent to be so reductive in identifying the space types and yet so expansive in describing human reactions to them. But Baird went even further. Identifying “the street” as “the primary locus of publicness in architecture and urbanism today”, he effectively relegated “the square – especially in its historic, residential format” to secondary status (Baird 2004: 120, 121). This attitude surely

either expands the definition of “the street” or effectively reduces even further the idea of diversity in the urban public realm.

4.3.3 *Collage and Recombination*

Before looking at some broader and more recent approaches to typological classification of urban space it is appropriate to review David Graham Shane’s *Recombinant Urbanism* (2005) for its contribution to the type-based comprehension of urban space. Shane was a Masters and PhD student of Colin Rowe (1920-99). Rowe taught at Cornell University from 1962 until retirement in 1990 and clearly left a lasting impression on his students. James Stirling, who studied under him at Liverpool, has been described as “Rowe’s draftsman”. Rowe’s attitudes to urbanism were reflected in *Collage City* (1978), written with another former Cornell student, Fred Koetter.

Rowe and Koetter: Collage City (1978)

Rowe and Koetter’s book was both a reaction against Modernist urbanism and a prescription for postmodern urbanism. Based on the application of techniques of bricolage, producing collision and collage, they explored the juxtapositioning of urban forms and elements from different cities and different eras as examples of an eclectic approach to urban design. This was essentially a city of fragments. Many of the examples were based on imperial Rome or Le Corbusier’s *Plan Voisin* of 1925 for Paris and extensive use was made of Nolli-type figure-ground plans.

They claimed that it was “almost certain that the uninhibited aesthetic preference of the present” ... “is for the structural discontinuities and the multiplicity of syncopated excitements” of Hadrian’s Tivoli (Rowe and Koetter 1978: 93). They were, after all, writing around the same time that *Never Mind the Bollocks, Here’s the Sex Pistols* was released. Rowe and Koetter did not make specific reference to streets or squares or to a typology of urban space. But they did conclude with an “*Excursus*” – “an abridged list of stimulants, a-temporal and necessarily transcultural, as possible *objets trouvés* in the urbanistic collage” (Ibid: 151).

The list comprised “Memorable streets” – including the “one sided” Princes Street, Edinburgh; “Stabilizers” – which are “centric”, like the Place des Vosges in Paris, as opposed to the “linear progression” of streets; “Potentially interminable set pieces”, for instance the (restored) Stoa of Attalos in Athens; “Splendid public terraces” like the Adelphi Terrace from “vanished London”; “Ambiguous and composite buildings” – large and largely historic urban set pieces like Isfahan in Iran; “Nostalgia-producing instruments” – which may be romantic, like the garden temple at Bomarzo or scientific, like Cape Canaveral; “The garden” – as a “matrix or fabric” in which the preceding elements might be “quasi-absorbed” (Rowe and Koetter 1978: 151-77).

Although they concluded by calling for “enlightened pluralism” with “Utopia as metaphor *and* Collage City as prescription” (Rowe and Koetter: 181), it is difficult not to regard most of the moves in their book as metaphorical. Collisions and collages would certainly have had immense educational value in encouraging students to relate ideas and forms from different eras and different places. But like Schinkel’s early imaginings (see Chapter Two) they cannot be taken too literally.

Shane: Recombinant Urbanism (2005)

If one of the strengths of *Collage City* is its excellent images, one of the many curses of *Recombinant Urbanism* is its illegibly tiny images. The book provides a valuable trawl through the history of theory in city design / urban design / urbanism, and particularly the work of Kevin Lynch. But, despite the Rowe-induced overtones, it has a somewhat reductive subtext that limits urban elements to three categories – enclaves, armatures and heterotopias. These represent a typology of sorts.

Shane argued that “*all* great cities are necessarily built around” ... “specialized districts, [Conzanean] plan units, or enclaves as centring devices for flow systems” (Shane 2005: 176). He listed a number of other characteristics but Shane’s enclaves seem, superficially at least, to have a lot in common with Lynch’s Districts – “relatively large city areas which the observer can mentally go inside of” (Lynch

1960: 66). Shane, however, proposed an extraordinarily convoluted system for classifying his enclaves.

This divided them first according to which they resembled of derivations from Lynch's three types of city (cosmic / machine / organism) by way of Cedric Price's metaphor of three types of cooked egg depicting urban form – hard boiled ... ancient; fried ... seventeenth-nineteenth centuries; scrambled ... modern (Shane 2005: 71). Then he used various combinations of keyboard symbols –][and { } – to express compression and extension within each of the three types of “enclave”. Of coincidental interest to this thesis, particularly the typological analysis in Chapter Five, is that Shane described enclaves as being, amongst other things, “places of rest and stasis” (Ibid: 177).

Shane's armature comprised “every village main street, downtown shopping street, suburban ‘miracle mile,’ or mall” ... “linear systems for sorting sub-elements in the city and arranging them in sequence” (Shane 2005: 198, 199). Needless to say, he proposed three models for the armature – a 200-metre “normative pedestrian armature”; a second type that is “compressed or stretched, and the third type were hybrids “distinguished by their visual imagery” (Ibid: 199). Effectively, then, they are types of street.

Shane borrowed the term heterotopia, literally other place, from Michel Foucault, who used it to describe places of otherness. Foucault himself had borrowed the term from medicine, where it means displacement of an organ. Shane described heterotopias as “complex enclaves” in contradistinction to “non-heterotropic enclaves” ... which ... “tend to house a singular predominant function” like a housing estate or an office park (Shane 2005: 239). Shane's heterotopias also have “further interior enclaves and armatures managing multiple flows” (Ibid: 239).

And so Shane produced an image of the city that comprised “a tangle of actors and systems in a spaghetti system of flows and private motives, interacting with each

other through complex feedback mechanisms ...” (Shane 2005: 305). In a hard-hitting review for *Harvard Design Magazine*, Professor of Humanities Thomas Bender noted that Shane’s basic point is that cities “are made up of fragments” and that the “Modernist dream of comprehensive planning” ... “is no longer possible” (Bender 2008: 2). Bender also noted that Shane had taken the idea of heterotopias “so far that it bears no relation to Foucault’s meaning” (Ibid: 2).

Bender concluded that, overall, Shane’s “ideas seem detached, related more to each other than to the urban world that is presumably the object of inquiry” (Bender 2008: 3). So Shane, like his mentor, Rowe, diagnosed “the city” as an uncontrollable collection of physical forms and metaphysical flows for which his prescription was “a flexible morphogenetic matrix of possibilities” (Shane 2005: 312). Shane’s analysis was, at least, less reductive than the typological studies examined so far. But it was also, regrettably, too opaque to be particularly useful.

4.4 OTHER TYPOLOGICAL STUDIES OF URBAN SPACE

4.4.1 Overview

The rest of this chapter will be devoted to examining a range of typological studies of, primarily urban, open space. These will be addressed in chronological order beginning with Joseph Rykwert’s essay “Learning from the Street” drafted in 1974 and first published in 1976. This will be followed by four classifications from landscape architecture academics – Barrie Greenbie (1981), Patrick Condon (1988), Mark Francis (1992 and 2003) and Tom Turner (1996) – all of which extend the scope of typological studies away from the variations on street and square that have been examined so far in this chapter. Then Mark Childs’ *Squares* (2004), in which he addressed “commons”, marking growing interest in the comprehension of public space on the basis of who owns and manages it, will be examined. Aspects of this were examined in Chapter One with Joel Garreau’s identification of the (particularly American) phenomenon of the privately-owned but publicly accessible “Edge City”. This is taken further by Matthew Carmona in his classification in 2010 of public

space on the basis of its management. Between these two is Stephen Marshall's review of road hierarchies in *Streets and Patterns* (2005).

4.4.2 *Eight Typological Studies*

Rykwert: Learning from the Street (1982)

This title would seem to be a thinly veiled reference to Venturi's *Learning from Las Vegas*, published in 1972, which looked primarily at "the strip". Rykwert succinctly defined the street as "human movement institutionalized" and noted that, like the German *Strasse* and the Italian *strada* (but he did not mention the *strip*), it derives from the Latin, *sternere*, to pave (Rykwert 1982: 105). So, unlike the word road, which "suggests movement to a destination", a street is primarily a differently surfaced space allocated for public use (Ibid: 105).

Rykwert went on to note that *alley* "always implies a narrow passage; *avenue*, a wide street with one or more lines of trees; *boulevard*" ... "a tree-lined street" on adapted defensive earthworks (Rykwert 1982: 105). He then proposed "three groups of words to suggest three different ways of considering the street". The first group – "*terrace, row, arcade, embankment* or *gallery*" – comprise spaces "constituted by [their] context"; the second group – "*path, track, parade, promenade* and *mall*" – all derive from "ways of proceeding on foot" and range from least to most firmly established "streets"; the third group – "*street, highway, artery, thoroughfare*" – "relates entirely to vehicular traffic" (Ibid: 105).

Rykwert's thesis, having developed this relatively broad categorization of street types, was that "use of the street as a *locus* of personal exchange and communication" should be promoted by public authorities in order to counteract a perceived "alienation of the city dweller from his [sic] physical environment" (Rykwert 1982: 111). And, he concluded, careful examination of "the historical genesis of present street forms" ... and ... "the conceptual origin of the street" will inform appropriate levels of intervention to maintain appropriate levels of exchange and communication (Ibid: 113). So, although Rykwert identified a number

of different street types within his categorization, his conclusion was comparable to Baird's (some thirty years later) about the primacy of the street as the "locus of publicness".

Greenbie: Spaces: Dimensions of the Human Landscape (1981)

Barry Greenbie was more inclined to address the human behavioural aspects (the software) of urban space design and management than the physical (hardware) aspects. This meant that he saw urban spaces as points on a "hierarchy of transitions" between extremes such as home space and public places (Greenbie 1981: 6). Other criteria that Greenbie used to define the continuums that he examined were "distemic space" and "proxemic space" – based on the work of anthropologist Edward T. Hall (1914-2009), and *Gemeinschaft* and *Gesellschaft* – the two different kinds of civil society identified by sociologist Ferdinand Tönnies (1855-1936).

Effectively, for Greenbie, proxemic places are close, familiar and personal, whereas distemic places "accommodate people who are not only strangers to each other, but who may be travelers and thus strangers to the place itself" (Greenbie 1981: 115). Distemic places tend to be "of greatest interest to the middle classes" ... "often overdesigned and monotonously predictable in appearance" and most interesting when they "express the proxemic cultures of the societies that brought them into being" (Ibid: 119, 117, 115) – like the Grassmarket in Edinburgh. Greenbie suggested that "of all distemic public places" ... "the market place" ... is ... "probably the oldest and most effective" (Ibid: 113).

The concept of *Gemeinschaft* and *Gesellschaft* carries the same kind of contrast between the personal / close / familial and the communal / distant / corporate. As types in sociology they are more normative than Weber's "ideal type" (examined in Chapter Two). In terms of their manifestation in the built environment, Greenbie saw *Gemeinschaft* and *Gesellschaft* as less complementary than proxemic and distemic space. But both ways of interpreting space are helpful, particularly in the context of Edinburgh – with its many distemic spaces derived from proxemic origins, and

Winnipeg – with a large, centrally-located underclass that occupies significant areas of indoor and outdoor public space, effectively defining them as proxemic.

Condon: A Designed Landscape Space Typology (1989)

Patrick Condon's study was intended, amongst other things, "to provide a useful design tool capable of easily incorporating typology based theory into the procedure of design" (Condon 1988: 6). He recognized that concurrent interest in typology was predicated on the idea that "precedent *types* of solutions of lasting meaning for humans might be re-used in modern contexts" (Ibid: 7). The study identified 14 designed landscape space types – Orchard, Clearing, Bosque, Allée, Back Yard, Front Yard, Square, Street, Theater, Stair, Terrace, Promontory, Cloister, Single Tree (Op. cit: 37-45).

This typology was intended to be a practical design tool based on the presumed "existence of a shared language of space and form", but Condon also described these types as "morphological essences" that "absolutely defy geometric definition" (Condon 1988: 7, 8). The sources of his types were diverse. They included the work of American landscape painter George Inness (1825-94) as the inspiration for Orchard, Clearing, Bosque and Allée, and the work of Sitte, Rossi and Krier for Square, Street and Cloister.

Condon argued that his typology was based on dialectical thinking in that "human interaction with the landscape" ... is ... "more important than either the landscape itself or human response to landscape" (Condon 1988: 25). As he explained, the types represented the dialectic between the human need for order so as to survive and "nature's indifference to formal order of any kind" (Ibid: 28). This is another example of the distinction between order (visual) and structure (operational) referred to by Hanson (see Section 1.2). And in closing, Condon reiterated that the list was not intended to be definitive "as the very notion of a typology that is phenomenologically based is contrary to the notion of empirical definition"; that these "essences are 'morphological' rather than exact"; and that the typology "is not

a prescriptive tool, it is a facilitative tool” but that it could “provide designers with a useful common form vocabulary based in common experience” (Op. cit: 35, 47, 50).

The list provided an eclectic selection of space types from rural, suburban and urban settings. There are grounds for suggesting that they might become more “exact” as they become more urban, particularly in the light of the typological studies of streets and squares examined earlier. It might also have been instructive if Condon had provided more examples of the “precedent types” – in Quatremère’s sense of the model rather than the prototype – as a way of more clearly illustrating these ideas.

Francis: Urban Open Space: Designing for User Needs (2003)

Writing from the perspective that “addressing user needs is a prerequisite to making good parks, plazas, and urban open spaces” Francis refined a typology of urban open spaces that expanded on one published by Carr and others, including Francis (Carr et al 1993: 79-84 / Francis 2003: xi). This was presented as part of a case study for the Landscape Architecture Foundation in the United States and therefore has an understandable bias towards functions and user types rather than physical forms; towards connections and continuity; towards locations, and towards land areas.

The typology was set out in table form. It is provided here as a list with the principal types in italics and subtypes in parantheses: *Public Parks* (public / central park, downtown parks, commons, neighborhood park, mini / vestpocket park); *Squares and Plazas* (central square); *Memorials*; *Markets* (farmers markets); *Streets* (pedestrian sidewalks, pedestrian mall, transit mall, traffic restricted streets, town trails); *Playgrounds* (playground, schoolyard); *Community Open Spaces* (community garden / park); *Greenways and Linear Parkways*; *Urban Wilderness*; *Atrium / Indoor Market Places* (Atrium); *Found / Neighborhood Spaces* (everyday spaces, neighborhood spaces); *Waterfronts* (waterfronts, harbors, beaches, riverfronts, piers, lakefronts) (Francis 2003: 6-7).

The landscape architectural perspective notwithstanding, it is noticeable that the same old suspects – squares or plazas and streets – show up yet again. It is also noticeable that there is a similarity between Francis’s subtypes of street and Rykwert’s second grouping of streets – *path, track, parade, promenade* and *mall* – and that waterfronts appear yet again. This suggests that even those highly reductive typologies of open space, like Rob Krier’s, that identify only streets and squares might be expanded to include waterfronts. The inclusion in Francis’s typology of linear or connected spaces is germane to one of the arguments of this thesis, that the planning, design and management of public urban space, at all scales, should facilitate movement by foot. This issue was addressed by Tom Turner in his *City as Landscape* (1996).

Turner: City as Landscape (1996)

Turner lamented the inclination of landscape architects and municipal managers to espouse the extension and connection of only “green space” in cities. He argued that while green space “is soft, relaxing and favoured by those who are charged with keeping municipal order” ... it ... “is not the only colour”, and that “we need harlequin plans for harlequin space to suit our harlequin lives” (Turner 1996: 189). In his chapter “Greenways and Other ways”, Turner argued that “Greenways do not have to be green in mood” and “should be given the suffix ‘way’ only if it provides a safe pedestrian route from one place to another place” (Ibid: 199).

Turner went on to look at the history of green open space planning in London and concluded that “‘Greenways’ come in many colours and varieties, which must be fitted into the environment as carefully as the parts of a mechanical clock” (Turner 1996: 203). The “Greenway” system in Vancouver, Canada, for instance, dates back to a plan from 1928 that sought to create a continuous waterfront parkway from Stanley Park around False Creek (Tate 2001: 167). A more extensive Greenways Plan adopted in 1995 treats Greenways as “public corridors for pedestrians and cyclists that connect parks, nature reserves, cultural features, historic sites, neighbourhoods and retail areas” (<http://vancouver.ca>).

Equally, while the Draft Edinburgh Open Space Strategy, published for public consultation between March and May 2010, still referred to a “Green Network” and “an increasing interest in connecting green spaces as part of a network for people to walk or cycle through” it did also address cycleways and new streets that will provide “harlequin” (to use Turner’s term) connections (www.edinburgh.gov.uk). Similarly, the City of Winnipeg commenced in December 2009 a program for the development of 375 kilometres of “Active Transportation Routes”.

And while the health aspects of the Edinburgh and Winnipeg proposals are surely important, there seems to be an inclination in both cities still to think of these networks and routes as somehow separate from the streets and squares that make up the rest of the matrix of urban public space. It is suggested that this should not be the case and that divisions of departmental responsibilities that underlie this situation undermine opportunities for more fully integrated public space systems in both cities. Regrettably, however, documents like the UK Landscape Institute’s Position Statement on “Green Infrastructure”, launched in May 2009, still promote the linkage of “green” spaces rather than the connection of “harlequin” spaces – the first of the performance dimensions set out in Chapter One of this thesis.

Childs: Squares: A Public Place Design Guide for Urbanists (2004)

The title of Childs’ book might suggest the reduction of urban space to a single type. And although he opened the book by talking about squares as “vital civic places” that provide one “advantage of life in town”, his principal focus was on the social context and physical configuration of “urban commons” (Childs 2004: 3). Childs organized the essays, some by other contributors, under the headings *schools of thought*, *civitas*, *genius loci*, and *urbanitas*. And, despite noting a need for designers to “build a common language to speak clearly about ecological concerns, human rights, architectural traditions, or other issues” (Ibid: 6), his apparently interchangeable use of terms like type and category, urban and civic, are somewhat confusing.

Childs defined “commons” as “physical places to which a group shares a set of rights” and he divided “urban commons” into three types – civic, community or neighbourhood, and private or membership (Childs 2004: 21-2). Then, he identified four types or architectural categories of “civic places” – rooms or chambers, civic lands, urban paths, and indoor commons – each of which has a number of subtypes. “Civic commons”, a term that is more or less synonymous with “*public space or public place*”, are “open to all people to exercise their rights”, and the “term *civic* emphasizes the relationship to the settlement as a whole” whereas “[n]eighbors and acquaintances dominate a community commons” (Ibid: 22). There would appear, therefore, to be a parallel here between civic and community commons and Greenbie’s version of distemic and proxemic space. Private or membership commons are “physical spaces shared by a limited group” (Op. cit: 22) suggesting, again in Greenbie’s terms, an element of *Gemeinschaft*.

Childs’ civic rooms or chambers comprise squares (plazas, places, etc) – “outdoor places enclosed by the fabric of a town”; civic coves – which are smaller; forecourts – “outdoor rooms that adjoin a street”; courtyards – “generally intended for a membership commons; and civic lots, such as school parking lots (Childs 2004: 22-3). His “civic lands” comprise “civic grounds”, e.g. Tiananmen Square, which are “larger than civic rooms”; closes and yards – like Harvard Yard; “campuses” – which are well-defined, like closes, but unenclosed; and “urban frameworks” which are “landscape or systems of infrastructure that shape edges or districts of a city” – e.g. freeways and waterways (Ibid: 22-4).

Childs’ “urban paths” comprise “public streets” – public urban paths “dedicated in part to vehicular use”; “public walks and promenades” for pedestrian use and “malls” – controlled by private owners (Childs 2004: 24). These are, again, similar to Rykwert’s second group of street types – *path, track, parade, promenade* and *mall*. “Indoor Commons” include “third places” – bars and coffee shops – and public institutions, e.g. public libraries (Ibid: 24). Childs then ventures off into an analysis

of the parts of a civic room followed by an informative review of pre-Columbian and early colonial spaces in American cities.

But overall, despite the contextualization of the varying degrees of publicness of “commons”, Childs proposed a relatively conventional typology that effectively added civic lands (larger scale, more open spaces such as parks, campuses and spaces occupied by infrastructure) and two types of indoor space to the public realm. It seems somewhat limiting to add only those two but not, for instance, transport terminals or sports arenas. Effectively, then, the core of Childs’ typology was a repeat of the street and square (or room and corridor) with the addition of two scalar extremes.

Marshall: Streets and Patterns (2005)

Marshall has qualifications in urban design and highway engineering. He directed this book at street types, and at street and road patterns to the exclusion of squares / plazas. This meant, given the way that roads tend to be categorized in transport planning and highway engineering, that he was looking, primarily, at hierarchies. And Marshall saw the question of street type as “important because it leads from description of type to prescription of type” but he noted that while street alignments and dimensions are tightly specified in most countries, there is little or no “detailed guidance on specification of pattern” – which was his focus (Marshall 2005: 23, 28).

Approaches to highway and traffic engineering tend “to deal with component parts rather than wholes”, Marshall suggested, and lead to a “tendency to use ‘hierarchical’ systems to generate only ‘tree-like’ or ‘loop and cul-de-sac’ road patterns” (Marshall 2005: 28, 29). And these hierarchies of “allowable street types” are generally “based on traffic flow or road capacity” ... and ... “there is no place in conventional road hierarchy for the traditional street” (Ibid: 34, 40). Marshall therefore argued, as was noted in Chapter One, for “a better specification of street type, pattern and hierarchy” in order to give a better basis on which to develop options (Op. cit: 41).

Marshall provided over 60 examples of highway engineers' road typologies – all hierarchical and all based on traffic function. These ranged from the Roman *cardo*, *decumanus* and colonnaded street, through Craig's Plan for Edinburgh New Town – comprising squares, major streets, transverse streets, minor streets, mews; Le Corbusier's 7V – cross-country, branch to city, sector dividers, sector connectors, local spines, to buildings, pedestrians; Buchanan's *Traffic in Towns* – primary distributor, district distributor, local distributor, access road – and the United States Institute of Transportation Engineers – freeway, expressway, major arterial, collector street, local street, cul-de-sac (Marshall 2005: 47, 264-9).

Marshall noted that the system of urban roads in Britain derives from the system of distributor and access roads proposed by Buchanan in the 1960s. Although this was intended to create and protect “environmental areas” – based on the well-worn analogy of corridors and rooms – it has, nevertheless, resulted in a top-down hierarchy dominated by roads. And, as Marshall noted, “it only recognizes two possible types of space” (Marshall 2005: 49). He therefore sought to establish a broader typology based on the idea of “urban roads with frontages” (Ibid: 52).

Marshall approached this by proposing a series of “themes” for the classification of streets. He typified these themes as being based on the form, use, relation or designation of the spaces (Marshall 2005: 54). This is comparable, at least in part, to the two continuums (form-function and movement-destination) that will be used in Chapter Five to categorize urban space types. Marshall's form and use theme types are reasonably self-explanatory but his relation and designation theme types are effectively hierarchical. Relation, for instance, covers “strategic role” which, in turn, includes “strategic route, link road, local route etc” and designation includes considerations such as ownership or respective design speeds. Designation also includes “nominal classification” and, in an appendix, he noted – happily for this thesis – “street name” as another “actual or potential theme” for street typology (Ibid: 270).

Marshall went on to look at “designation by relation” – for instance the system of “A” roads in Britain, and arteriability – the underlying structural property “whereby all ‘top tier’ elements join up contiguously” (Marshall 2005: 62). He identified the system of arteriability for major urban roads, on which proposals like *Traffic in Towns* were based, as the root cause of discontinuity in urban places, and suggested a system of code rules for urban transport networks, land use and urban design that would use “the street as the basic building block of urban structure” (Ibid: 248). This would be a “reformulated ‘hierarchy’ based on the street” which, Marshall suggested, “could be crystallised into a single ‘manual for streets’ covering all engineering and infrastructure aspects of street design” (Marshall 2005: 252). In the event, as noted in Chapter One, the UK government’s Department of Transport published its *Manual for Streets* in 2007.

Although the *Manual* stated that streets “should no longer be designed by assuming ‘place’ to be automatically subservient to ‘movement’”, it also made a “clear distinction” ... “between streets and roads. Roads are essentially highways whose main function is accommodating the movement of motor traffic” (Department of Transport 2007: 18, 15). While these proposals might alter the hierarchy of streets within residential cells defined by “highways”, they seem unlikely to make a structural change (in England and Wales) to the hierarchical approach that Marshall identified as having been applied since the publication of *Traffic in Towns*.

Carmona: Contemporary Public Space: Critique and Classification (2010)

The first part of Carmona’s *Critique* reviewed a series of arguments that public space is under-managed. These have suggested that it has been “neglected” – including being “lost”, “liminal” or “slack”; “invaded” – particularly by motor vehicles; “exclusionary” – including “disabling” and “parochial” space; “segregated” – particularly by crime, or more likely, by “fear of crime”; and “domestic, third or virtual” (Carmona 2010a: 124-34).

The second part of his *Critique* reviewed arguments that it is undermanaged. These have suggested that public space has been “privatized” – including corporate privatization, particularly as a commodity provided and managed by large corporations, and state privatization, in cases where management of streets has been handed over to private corporations and more generally, through ceding above and below ground infrastructure rights to utility services providers; turned into “spaces of consumption”, particularly through financial exclusion; “invented” – including the application of techniques derived from theme parks to manipulate visitor experience (and spending); and deemed “scary” – again, mainly through fear of crime, resulting in “exclusionary policing” and other controls, particularly CCTV (Carmona 2010a: 134-44).

Carmona concluded his *Critique* and opened his *Classification* by suggesting that “the under-management and over-management critiques may simply be two sides of the same coin” (Carmona 2010a: 145) and made “an overarching critique, that” ... “public space is being homogenized” (Carmona 2010b: 158). In this respect public urban space “neither fosters civility nor community” and “design formulae are repeated from place to place with little thought to context” (Ibid: 158, 159). One of the precepts of this thesis, however, is that a diverse vocabulary of space types can contribute to less formulaic and more contextual planning, design and management of urban space.

And in terms of classifications of public space, Carmona argued that “much of the literature [pointing to homogenization] comes from a narrow academic perspective” and does not necessarily recognize “the sheer diversity of space types that constitute contemporary cities” (Carmona 2010b: 165). As noted earlier, Carmona reviewed previous public space typologies under three headings - design perspectives; socio-cultural perspectives or political-economy perspectives – before going on to propose his own typology.

Under “design perspectives”, which are of central concern to this thesis, Carmona referred to the work by Sitte, Zucker, the Kriers, and Carr et al (subsequently adapted by Francis) already discussed in this chapter. He also mentioned a number of more limited design-oriented typologies, including Gehl and Gemzøe’s five types – main city square; recreational square; promenade; traffic square; monumental square, in their *New City Spaces* (Gehl and Gemzøe 2000) but did not include Gaventa’s remarkably similar five types – squares and plazas; streetscapes and promenades; gardens and parks; new uses for old spaces; new types of space, in her *New Public Spaces* (Gaventa 2006).

Carmona also examined a number of typologies drawn up from socio-cultural and political-economy perspectives (which will be summarized in the next two sections) and then went on to outline his own proposed typology. This comprised 20 types arranged under three columns – space type, distinguishing characteristics, and examples – all arranged into four categories in a continuum ranging from “positive” spaces through “negative” spaces and ambiguous spaces to private spaces (Carmona 2010b: 169-70). Probably its greatest weakness is that half (ten) of the types fall under the ambiguous category. But it does have the great virtue of bringing a fresh perspective to the comprehension, and hence to the planning, design and management of urban space.

4.5 SOCIO-POLITICAL PERSPECTIVES ON URBAN SPACE

4.5.1 Two Socio-Political Studies

Burgers : A Socio-cultural Urban Space Typology (2000)

The “proxemic” and “distemic” spaces examined by Greenbie originated from socio-cultural perspectives. Hajer and Reijndorp, whose views on the public domain were mentioned in Chapter One (and whose work will be examined next), referred to the work of fellow Dutchman, sociologist Jack Burgers, who suggested a collection of six “‘landscapes’ that form the domain of various social sectors” - spaces which, in combination, “form the postmodern city” (Hajer and Reijndorp 2001: 80).

Burgers described his “landscapes” as “expressions of economic, demographic and technological developments” (Burgers 2000: 145). He argued that public space and “most of the events that take place there cannot be classified under one specific institutional category” and, indeed, that “the very concept of public space is hard to define” (Ibid: 145). Burgers went on, nevertheless, to identify six types: *erected space* – landscapes of economic and administrative potency; *displayed space* – landscapes of enticement and temptation; *exalted space* – landscapes of excitement and ecstasy; *exhibited space* – landscapes of reflection and elevation; *coloured space* – landscape of immigrants and minorities; *marginalized space* – landscapes of deviance and deprivation.

These are, of course, zones or metaphysical space types and, as Burgers’ preface stated, these types reflect changes in societal composition and activities. Accordingly, *erected space* reflects the “mushrooming service sector” which has contributed to the “Manhattanization” of cities (Burgers 2000: 146, 147); *displayed space* reflects “a change in the structure of the working population” now that “[a] growing segment of the labour force [in western Europe, at least] processes data instead of material objects” (Ibid: 148). In short, this stimulates, in turn, consumerism and “the socially accepted form of exhibitionism called dandyism” (Op. cit: 150) – which sounds remarkably similar to *flaneurism*.

Exalted space – bars, clubs, red light districts and sports stadia ... places of “tribal ritual” – correspond to displayed space and are designed “to generate excitement in the heart of the consumer” (Burgers 2000: 151). *Exhibited space* reflects the “museumization of culture” (Ibid: 154). Burgers mentioned the rapidly growing numbers of visitors to museums in Amsterdam and Paris but did not refer to the huge number of museum developments across the western world, seeking to reproduce the “Bilbao effect” following the opening in 1997 of the Guggenheim Museum Bilbao. The self-explanatory *coloured space* reflects “internationalization of the economy and increasing immigration” to western cities together with higher birth rates and movement “of a segment of the local population out of the cities” (Op. cit: 156).

This leads to a cycle that starts with the “production or sale of items that are of special importance to the ethnic community itself” – initially certain foods, and subsequently goods and services (Burgers 2000: 157). All of which reflects a process of ethnic minority space that “breeds ethnically segregated neighbourhoods” where businesses are begun, particularly restaurants, that “can be attractive to the new middle class” (Ibid: 157). Finally, *marginalized space* is occupied by “people who live in urban deprivation” - the homeless and people excluded from the job market (Op. cit: 159).

Burgers concluded that “the very same space can mean different things to different observers and users” and that these different users sometimes clash, particularly in historic city centres (Burgers 2000: 161). This reflects the political-economy perspective of Hajer and Reijndorp that it is these potential clashes and conflicts, and the maintenance of free accessibility, that ensure the diversity of (what they call) the public domain.

Hajer and Reijndorp: A Political-economy Urban Space Typology (2001)

It was noted in Chapter One that political scientist and urbanist respectively, Hajer and Reijndorp, regard the public domain as “not so much a place as an experience” (Hajer and Reijndorp 2001: 116). For them, “locations are public domain when different groups have an interest in them” and they do not believe that privatization and commercialization are “irreconcilable with the concept of public domain” (Ibid: 40, 41).

Hajer and Reijndorp did argue, however, that the form and use and socio-cultural meaning of public space “was for a long time typological in nature” and that “[s]quares not only had a form and layout that differed from streets and avenues, but there were associated differences in meaning and use that were understood by everyone” and that “[t]he same held for boulevards and parks, alleys and public gardens” all of which “made the city readable” (Hajer and Reijndorp 2001: 109). They attributed this reduction in the typological composition of cities to, amongst

other things, “modern urban planning”, particularly the incursion of motor vehicles into cities, and argued that “[t]he use of space *à la carte*” ... “varied according to lifestyle, has fundamentally altered the meaning and nature of the public space” (Ibid: 112). This thesis takes the view that they are overstating both these cases.

In terms of “modern urban planning”, later in their book Hajer and Reijndorp cite Tompkins Square Park and the adjacent Stuyvesant Town housing project in New York, calling the former “a stage on which everyone is simultaneously actor and spectator” and the latter an “urban planning typology” ... that is ... “the built reality of Le Corbusier’s *Plan Voisin*” (Hajer and Reijndorp 2001: 121). Putting aside their possible conflation of typology and Modernism, their manifesto called into question “the notion that frictionless public space is good public space” and argued that reduction in friction has contributed to the “functionalization” of space (Ibid: 134).

They called for “framing, compressing, coupling and connecting” as antidotes to a “zero-friction” approach to planning and design of public space (Hajer and Reijndorp 2001: 135). This call is immediately redolent of Krier’s “angling; segmentation; addition; merging, overlapping or amalgamation of elements” etc. (Krier 2003), and of Rowe and Koetter’s uninhibited aesthetic preference “for the structural discontinuities and the multiplicity of syncopated excitements” (Rowe and Koetter 1978). In more practical terms, the development of “shared streets”, pioneered in The Netherlands, has brought friction (and some heat) to the centre of a number of British cities (Coulthard 2009: 2).

Hajer and Reijndorp’s argument is also redolent of Sitte’s early urging for the connection and continuity of plazas in the Ringstrasse area in Vienna. Regrettably, however, they argued that “when we talk about public space we still discuss the streets and squares of the historic city centres” a discussion which, like “attention for the cultural meaning of places”, they would have regarded as “nostalgic in tone and

static by nature” and directed towards little more than “the promotional brochure” (Hajer and Reijndorp 2001: 29, 36, 37).

But most designers study history because they can learn from it, not so they can pretend to reproduce it. In that vein, and with respect to Hajer and Reijndorp’s observation of the emergent “*à la carte* city”, they are not the first and will surely not be the last to recognize the influence of transport and communication technology on urban spatial form and use. And, as demonstrated in Chapter One, the spatial configurations of cities are remarkably durable – buildings tend to change faster than their adjacent public spaces. And the spatial configurations of cities generally outlive the generations who occupy and adopt them. All of which suggests that the best and worst that urban designers can do is to try and ensure opportunities for physical diversity and functional flexibility, including connectivity – first by foot and then by other means.

4.6 CONCLUSIONS

This chapter has examined a wide range of typological studies of public urban space drawn from a range of perspectives. Those from within the discipline of architecture have tended to be, as Kostof noted, the most form-driven. They have adopted, in most cases, the square and the street as the two basic categories of open space, and often using the equally reductive analogy of the room and corridor. One commentator saw a future only for the single category of the street and a number of others recognized waterfronts as a possible third category.

Designers from outside (or on the edges of) the discipline have taken broader views, including socio-cultural views, of urban open space types. It appears that growth in vehicular traffic has drawn more attention to “streets” than “squares” – particularly from political-economy perspectives – over the last few years. Indeed, critiques from political-economy perspectives are inclined to suggest that typologies of open space no longer have any currency. These views tend to gel with the *Sturm und Drang* / postmodern promotions of collision, collage and recombination. It is noticeable, and

instructive for Chapter Five, that typologies that have been drawn up over the last decade have been based on continuums between extremes of one or more characteristics.

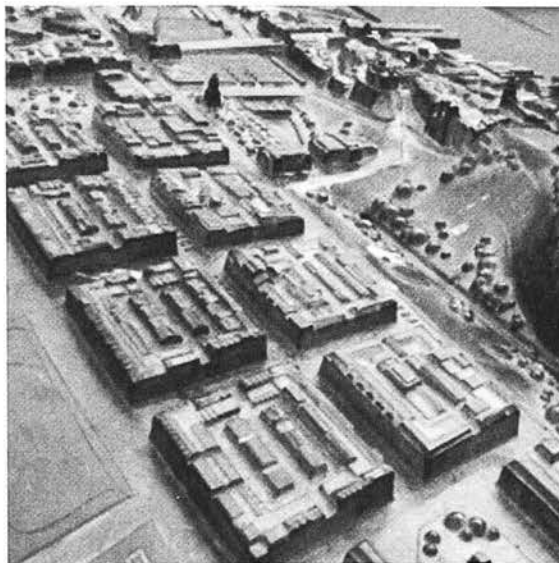


Figure 4.1: Model of Edinburgh New Town

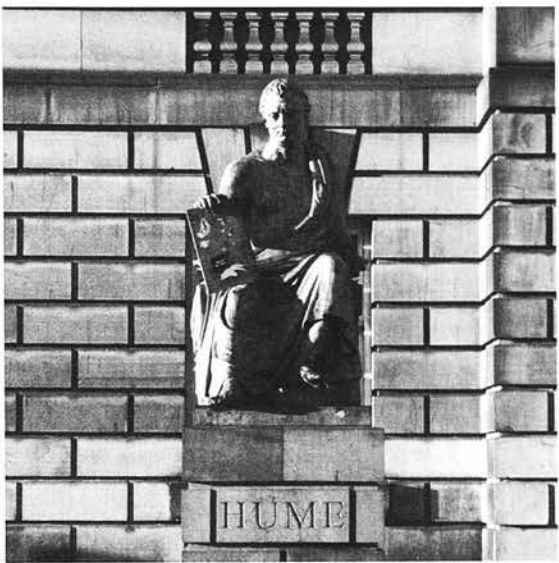


Figure 4.2: Statue of David Hume, Edinburgh Old

CHAPTER FIVE: URBAN SPACE TYPOLOGY – RATIONALE AND APPLICATION

5.1 INTRODUCTION

The preceding chapters have critiqued from historical, philosophical and linguistic perspectives the underlying principles and practical applications of typological analysis of the built environment. This chapter presents a typological analysis of urban spaces based on their generic or suffix names (odonyms). The main purpose of conducting this analysis is to support the contentions that:

- categorization is a fundamental human activity for interpretation of the world;
- more detailed classification can bring deeper understanding of the phenomena that humans encounter;
- typological analysis makes a valuable contribution to comprehension and design of the built environment;
- generic or suffix names (odonyms) provide a viable basis for a typological analysis of urban spaces;
- there may be commonly identifiable archetypal space / name types that form part of the common vocabulary of urban designers.

5.2 RATIONALE

5.2.1 *Basis for Analysis of Space / Name Types*

The analysis presented here seeks to illustrate those principles rather than providing a definitive typology. It does, however, present the findings from two quasi-experimental studies – one seeking to develop a name-based typology of urban spaces and the other seeking to establish which of these names might be considered archetypal. The first analysis is based on the placing by a group of students of the suffix names of urban spaces on two continuums – between poles (extremes) of being routes or destinations, and between poles expressing their form or their function. The poles of these two continuums have been adopted because they are believed to reflect the generative forces underlying different types of urban space.

On the one hand, as noted in the critique in Chapter Four of categorizations into “streets” and “squares”, there is a clear distinction between “streets” – developed for the movement of people and goods, and “squares” – developed for human gathering and interaction. On the other hand, the form-function continuum recognizes that spaces may be designed for primarily form-based compositional purposes (albeit for climatic or other contextual reasons) – such as the squares, circuses and crescents in Bath or Edinburgh New Town – or, as in the case of purpose-built highways, for primarily functional purposes. Highway design generally responds to strict hierarchical criteria derived from transportation priorities, as documented by Marshall (2005). The second part of the analysis comprises listings by a different group of students on the basis of a straightforward polls.

Before presenting this analysis it is important to note the rationale for it. This is largely derived from the preceding chapters. It includes the role of naming practices in human communication, and semiotics and signification; classification as a human activity and the role of typology in the design of the built environment; differences between entities as a basis for their comprehension; the contribution of archetypes and collective memory to common understanding; the relative permanence of urban space (particularly relative to buildings) and the diversity of space types that this generates. These issues will be examined in turn before presentation of the name-based analysis.

5.2.2 *Naming Practices*

A number of fundamental aspects of the human practice of naming were addressed in Chapter Two. It was noted from Tuan that children who are learning to speak, instinctively want to know first the names of familiar objects, and that naming and classifying make things “real” for them (Tuan 1977: 29). Tuan’s argument that naming makes “aspects of reality” visible led to his assertion that “[w]ords have consequence” (Tuan 1991: 692-3). They are, in short, building blocks in comprehension and communication – and they enable designers, as Childs put it, to “build a common language” (Childs 2004: 6).

Equally, Hillier noted that “[n]ames *create* understanding” (Hillier 1994: 70) echoing Wittgenstein’s assertion that “naming is a preparation for describing” (Wittgenstein 1953: 28). And Wittgenstein, like Saussure, recognized “the analogy between a language and a rule-governed game” (Harris 1988: x) in which the meaning of words is given by their use. This led Gadamer to proclaim the power of spoken language to dissolve “the antimetaphysical passion of logical positivism” (Gadamer 1960b: 75). Naming is seen in these circumstances as a relational rather than an absolute activity.

It was also noted in Chapter Two that semiotics is concerned with devices that generate signification. Roland Barthes (on cities) and Umberto Eco (on buildings) both applied semiotic analysis to elements of the built environment, reflecting an interest in denotation (the literal or utilitarian) and connotation (the suggested or signified). It was initially thought that these two terms parallel the generic / suffix / literal (denotative / toponymic) and specific / prefix / signifying (connotative / toponymic) labels applied to urban spaces. As such they would neatly match, respectively, Rapoport’s low-level / everyday / instrumental meanings, and middle-level / communicating identity or status (Rapoport 1988: 325). But, as the quasi-experimental exercises presented towards the end of this chapter demonstrate, the generic names of urban spaces also carry symbolic (or middle-level) meaning.

And although Tuan suggested that specific names are more “powerful evocators of place” than generic names (Tuan 1991: 688), the widespread use of the same (or similar) suffix names enables them to contribute to the “common language” called for by Childs (2004). Rapoport argued that “physical elements of the environment *do* encode information that people decode” (Rapoport 1982: 19) and Tuan argued that, because human behaviour follows identifiable routines and “depends on the habit of responding to environmental signs in an appropriate manner”, it is feasible to design for other people (Tuan 1978: 370). Again, this lends validity to typological analysis based on commonly used terms such as the the generic names of urban spaces.

5.2.3 *Classification and the Role of Typology in Design*

The human propensity to categorize – to assign entities to general groups in the way that Aristotle identified categories and primary substances (see Section 2.1) such as animals and plants as living things – and to classify; to assign them to more specific classes, as in Linnaeus’s hierarchical system of biological nomenclature – was noted in the Introduction to the thesis. And in Chapter Two it was noted that Tuan described the appearance of such entities in “classificatory schemes” as making them “part of the human socioeconomic order” (Tuan 1991: 686). It was also noted in Chapter Three that classifications such as Jung’s analysis of psychological types, can facilitate the collective understanding of common phenomena. Jung’s psychological typology, however, does not “explain the individual psyche” (Stevens 1994: 99) but his theory of archetypes still “alludes to the possibility of a universal index for typical human situations” (Jones 2007: 84).

Similarly, Robinson and La Marche, both writing in the context of the built environment but with equal applicability to typology in other fields, argued that “type is a question and not an answer” (Robinson 1994: 192) and that it “reveals a predisposition or desire for order, clarity, simplicity” (La Marche 1994: 219). And noting that “[t]here are few disciplines that have not benefitted from the concept of ‘type’, and architecture is no exception”, Forty recognized that function-based classifications of building types have been “in constant use since the late eighteenth century” (Forty 2000: 304). La Marche envisaged (the structuralist) study of built works as an exercise in comprehension and categorization on the basis of recognizable differences between entities (La Marche 1994: 222). This was echoed in Johnson’s validation of students developing “a *repertoire* of architectural elements” ... “offering endless opportunities for development” (Johnson 1994: 424), which is comparable to Cross’s “designerly ways of knowing” (Cross 2007).

Similarly, Argan identified two moments – the typological, *a posteriori* (based on experience) and the inventive, *a priori* (independent of experience), in the process of architectural design. Franck and Schneekloth, however, suggested that typologies are

“used for description, explanation and prescription” (Franck and Schneekloth 1994: 17). The prescription part of this is perhaps an overstatement, cutting across, as it does, Quatremère’s distinction between the type – “the originating reason of a thing”, and the model – “an object which should be repeated as it is” (Younés 1999: 255). This distinction was reinforced by Condon’s assertion that typology “is not a prescriptive tool, it is a facilitative tool” (Condon 1988: 47).

5.2.4 *Difference and Commonality as Bases for Typology*

Difference, it has been noted, is the fundamental determinant of meaning in structuralist thought, which holds that “the world is made up of relationships rather than things” (Hawkes 177: 18). And it is the essence of Saussure’s thesis that the operation of language is based on oppositions and “the conceptual differences that they imply” (Saussure 1915: 121). Or as Belsey put it, for Saussure, “meaning is differential, not referential” (Belsey 2002: 10). Similarly, Lévi-Strauss regarded structuralism as a quest “for the invariant elements among superficial differences” and he described differences as “extremely fecund” and the only vehicle for “progress” (Lévi-Strauss 1979: 8, 20). Jung’s search for common psychological patterns was also a structuralist search for “invariant elements” and Norberg-Schulz saw his scale-based categorization of lived space types (addressed in Sub-section 2.4.2) as a “structured totality” corresponding to “the structure of existence” (Norberg-Schulz 1971: 32).

Jung saw archetypes as “identical psychic structures common to all” which comprised “the archaic heritage of humanity” (in Stevens 1994: 22). Urban sociologist Maurice Halbwachs, to whom Aldo Rossi referred extensively, also wrote about collective memory binding “our most intimate remembrances to each other” (Halbwachs 1941: 53). Rossi himself addressed the permanence of street patterns and cited monuments as “signs of the collective will”, comparing them with the collectively understood *langue* in Saussure’s linguistics (Rossi 1982: 22). Equally, Condon described his “landscape archetypes” as the “invisible but crucial basis for types” (Condon 1988).

This issue of the relative permanence of street patterns (or “urban fixity”) has recurred throughout this thesis following its examination in Chapter One through the figure-ground plans of Edinburgh and Winnipeg at 100-year intervals. Its recurrence suggests a number of points. It may, for instance, explain why typology has had more traction in urban design / for urban space than it has had in architecture / for buildings. And it may account, in turn, for the fact that typological studies of urban space tend to be inclusive rather than reductive.

In this respect, Carmona asserted that “much of the literature” arguing that “public space is being homogenized” ... “comes from a narrow academic perspective” and fails to recognize “the sheer diversity of space types that constitute contemporary cities” (Carmona 2010b: 158, 165). Carmona’s assertion gives rise to two significant issues for this thesis:

- typologies or classifications of phenomena in the built environment may order types by category but, overall, they should seek to be inclusive and not to be reductive, which might imply or encourage standardization;
- the arrangement of categories (and therefore types) can be more inclusive if it is based on a continuum or continuums.

Carmona’s argument contrasts with the view of his colleague at University College London (UCL), Julianne Hanson. Marshall, also based at UCL, noted Hanson’s observation from her unpublished PhD thesis about descriptive typologies being “either too simple to be useful” ... “or so detailed as to be idiosyncratic”, and her conclusion, therefore was that the “search for typology is perhaps doomed to failure because, faced with reality, one is faced with a morphological continuum” (Hanson in Marshall 2005: 74). The typological analysis presented here seeks to overcome this objection (as did Carmona), by employing continuums, and subsequently (in Section 5.5) identifying distinctive or archetypal examples.. The analysis comprises categorization on two “simple” ranges – from Movement to Destination and from Form to Function as the poles for two intersecting continuums.

5.2.5 *Odonymic Practices*

As noted, the analysis set out in this chapter is based on the suffix or generic names of urban spaces. Street or space names are referred to as odonyms – from the Greek *hodós*, way and *ónyma*, name. They generally comprise two parts – the prefix or specific name, e.g. Charlotte, and the suffix or generic name, e.g. Square. Vuolteenaho and Berg noted in this context that common names “classify entities to a culturally known category (e.g. continent, badland, alley, boulevard, slum, favela, bidonville)” whereas “proper toponyms pinpoint unique places” (Vuolteenaho and Berg 2009: 8). This thesis addresses, therefore, what they would regard as “culturally known” categories and seeks to gain a clearer comprehension of those categories.

Nicolaisen pointed out that naming is “a continuum which has never been interrupted since it first began”; that “man [sic] always has been and still is a naming animal” and that “denotative names” give identity and individuality to places as they do to people (Nicolaisen 1976: 47). Indeed, virtually every urban space has a name. But Nicolaisen did note, in terms of specific names, that “the fashion of naming streets after royalty” began in (pre-revolutionary) Paris (Ibid: 49). And it is difficult to deny that “when used for commemorative purposes they inscribe an official version of history onto the cityscape” (Azaryahu 2009: 54).

Any kind of name-based approach to the comprehension of public space would probably have been anathema to Lefebvre. His *Production of Space*, as noted in Chapter Three, was antithetical to semiotics and to most forms of architecture, interpreting them as practices that appropriate space as a means of exercising power over people’s everyday lives. Lefebvre would probably have agreed with Vuolteenaho and Berg in their description of place-naming (particularly with respect to their specific, prefix names) as a “hegemonic practice” that contributes to the “heavy work of naturalizing and reinforcing the dominance of existing social orders” (Vuolteenaho and Berg 2009: 14).

De Certeau gave an account of a friend who enacted a form of protest against specific names by only using “paths that have no name or signature” even though “her walking is thus still controlled negatively by proper names” (de Certeau 1984: 104). He lamented “the magical powers proper names enjoy” terming them “‘local authorities’ or ‘superstitions’” (Ibid: 104, 106). Azaryahu noted, however, that “official names provide a fixed point of reference in the geography of the city” and that “everybody uses them but hardly anyone pays attention to their specific historical meaning and to their belonging to the structures of power” (Azaryahu 2009: 62, 67).

In that vein, de Certeau lamented the conversion of name prefixes to telephone numbers in Paris, such as *Opéra*, into numerical prefixes, such as 073 (de Certeau 1984: 106). The same criticism has been levelled at North American “cell phones” which are allocated the same area code as the city in which they are registered but can function over a far wider geographic area (Goldberger 2003). And although de Certeau does not seem to have had the same disdain for the numbering system of Paris *arrondissements*, the creation of “comprehensive street address systems as the basis of geo-coding the world” has been interpreted as “a major turning point in the spatial history of the concrete production of abstract urban space” (Rose-Redwood 2009: 202, 212).

By contrast, most cities also have places with unofficial and unrecorded names that are in common usage. Nicolaisen cited in this respect *Holy Corner* at the junction of Morningside Road and Colinton Road in Edinburgh “near which at least three churches are situated” (Nicolaisen 1976: 51). Equally, the name *Confusion Corner* for the acute-angle junction of Pembina Highway and Osborne Street in Winnipeg does not appear on maps. Although such places form an interesting aspect of place naming, they are not central to this thesis.

5.3 APPLICATION

5.3.1 *Urban Spaces in Edinburgh and Winnipeg*

Chapter One presented block and figure-ground plans over approximately the last hundred years for the central five kilometres square of the cities of Edinburgh and Winnipeg. As noted, those plans are in a similar format to the ones presented by Allan Jacobs in *Great Streets*, particularly in that “it is important to compare areas of the same size and at the same scale” ... in order to ... “try to understand both the nature of a particular city or area and the differences between cities” (Jacobs 1995: 203). Mapping at this more detailed level, differentiating between land that is covered by buildings and land that is not, demonstrates the relative permanence of the networks of public space (the “streets”) in the centres of Edinburgh and Winnipeg, even though both cities have expanded outwards and the individual buildings fronting onto those streets have changed significantly over the last 100 years.

Similarities between the cities of Edinburgh and Winnipeg and the reasons for studying them were also noted in Chapter One. And it was noted from the comparison of the plans, that once patterns of movement are established and lines of division are created between public routes and private property, those property lines are less likely to change than are the properties themselves. The examination of public space types in this chapter is therefore underscored by recognition that urban space is a relatively permanent component of urban infrastructure. It has been surmised that the generic names allocated to spaces in each of the two cities have a high level of consistency.

The cities of Edinburgh and Winnipeg are examined here in terms of the range of toponyms – generic space names (or types) of space – that occur in each city. These demonstrate differences that result from the length of time over which the respective cities have been settled, and the predominant modes of transport when each section of these cities was developed. In total 115 generic space names were identified – 77 that are used only in Edinburgh; 11 that are used only in Winnipeg and a further 27

that occur in both cities. The fact that the earliest English-speaking settlers in Winnipeg were from Scotland is not regarded as having a significant impact on these names.

The 104 space names that are used (or were listed as usable) in Edinburgh were provided in May 2006 by Diane Broughton, Street Naming Officer for Edinburgh City Council. The procedure for naming spaces in Edinburgh includes a Street Naming Charter from June 2004 that explains principles and procedures for allocating the generic and specific names. This is set out on the City's website (edinburgh.gov.uk).

It is suggested that there are four principal reasons why the list of space names in Edinburgh is much longer than the list in Winnipeg. First, being far older, Edinburgh has acquired new space names over time, but, as a reflection of the relative permanence of urban space, lost few. Second, the Edinburgh list is a record of what are considered possible names, whereas the Winnipeg list contains only currently occurring names. Third, the Edinburgh list contains a number of multiple spellings – for instance Brig and Bridge, and Meus and Mews, and a number of Scots names – for instance Burn, Neuk and Pend. Fourth, given its more exaggerated landform, many more space names in Edinburgh than in Winnipeg derive from local geomorphology.

Stuart Harris, an architect with Edinburgh City Council until his retirement in 1984, was involved in the naming of streets between 1975 and 1984. His book on Edinburgh place names, published in 1996, was primarily concerned with origins of the specific names of urban spaces. He also made some observations in his Introduction about their generic names – in particular, that only 11 different “street-type labels” were used for 150 years before 1919, whereas by 1974 that number had risen to 32, and by 1990 it was 39 (Harris 1996: 40).

As noted, the current number is 104. This suggests either that Harris was seriously undercounting or that there has been a continued increase in the number of generic names used in Edinburgh. Harris lamented that the result of the increased number of generic names “was almost to drain them of their distinctive meanings” (Harris 1996: 40). He argued that this was emphasized when “blanket” specific names were applied to new developments such that distinction between the names of spaces relied on their generic names – e.g. Northfield Road, Square, Terrace etc., from 1921. This also suggests that Harris was keen to control the number of generic names (and thus increase the range of specific space names) in the city whereas the current listing suggests the opposite.

It was established from a conversation in September 2009 with Angie Savage, Land Development Administrator with the City of Winnipeg, that for Winnipeg:

- there is a “reserved street names” list of “2000 or so” approved specific / prefix names, but no equivalent list for generic / suffix names;
- inclusion on that list is made by recommendation to the City Council and the principal criteria are that they should not be mistakable for existing names or difficult to comprehend in the case of emergency telephone calls;
- selections are made from the reserved street names list by individual developers and/or local Community Committees;
- generic names are also selected by Community Committees;
- there is a stipulation that the complete name should contain no more than twenty characters;
- by convention “streets” run north-south and “avenues” run east-west.

This pattern of “streets” and “avenues” is the opposite of, for instance, Manhattan, whose layout was determined by the Commissioners’ Plan of 1811. And, it transpires, as with the numbering of streets and avenues in Manhattan, there was a brief period, from 1891-93, when the streets and avenue names in Winnipeg were converted to numbers before being converted back to having specific names (www.mhs.mb.ca). The pattern of streets and avenues in Winnipeg is, however, made far more

convoluted by the matrix of grids generated by the river lot system (see Figures 1.3 and 1.4).

Space names in Winnipeg are not available from public records. They were therefore obtained by scouring the index of the *Street Atlas of Winnipeg*. Other Canadian cities are more proactive in this respect. The City of Toronto, for example, has formal street-naming policies and procedures comparable to those adopted in Edinburgh. These include 21 “street type designations depending on roadway function, length and configuration” (toronto.ca). It is interesting to note this use in Toronto of the term “roadway”, implying that all newly named public spaces are designed specifically for vehicular movement. It is also worth noting here that it is relatively common in North America for spaces to be referred to by their prefix or specific name only – e.g. in Winnipeg, the nominal hub of the downtown is the junction of Portage (Avenue) and Main (Street). This privileging of the specific name is also reflected in the respective sizes of the lettering on street signs for the two parts of their names (see Figure 5.1). This leads, in turn, to the practice of using specific names only once, compared with the “blanket” naming that Harris referred to in Edinburgh.



Figure 5.1: Typical Winnipeg Street Signs

5.3.2 *Placing Names*

Five exercises were undertaken to analyze the space names currently used in Edinburgh and Winnipeg. These comprised:

- a graphic plotting exercise to evince the general characteristics of the 115 identified space names used in the two cities;
- preparation of two continuums on the basis of the graphic plotting, covering 98 of these 115 names ordered, respectively from “routes” to “destinations” and

“form” to “function”. The 17 names omitted from this classification (16 from Edinburgh and one from Winnipeg) were all related to local geomorphology;

- examination of the 27 space names common to Edinburgh and Winnipeg to identify what their names denote;
- exercise to evince which of the 115 space / name types might be regarded as “distinctive or archetypal” where an archetype can be seen as “the abstracted image of a grouping” (Johnson 1994: 289) or an “idealized type” (Kelbaugh 1996: 42-3);
- similar exercise to evince which of the 27 space / name types common to both cities might be regarded as “distinctive” or “archetypal”.

The first two exercises are presented in this section; the examination of space names common to the two cities is presented in Section 5.4, including suggestions of what these names denote (Table 5.6), and the examination of distinctive or archetypal space / name types is presented in Section 5.5, including suggestions of what these names connote (Table 5.9).

5.3.3 *Graphic Plotting of Space Names*

For this part of the investigation, each of 24 final year undergraduate and 12 graduate students in the Faculty of Architecture at the University of Manitoba were asked to distribute on three graphs the 115 space names defined in, respectively, Appendix A (names used in Edinburgh and Winnipeg – 27), Appendix B (names used in Edinburgh only – 77) and Appendix C (names used in Winnipeg only – 11). As noted in these Appendices, the definitions came from a range of sources including City of Edinburgh Council and a range of dictionaries. This was, therefore, an exercise in locating the respective names as defined by others in what were deemed to be appropriate locations in the light of those definitions.

The graphs had *Movement* and *Stasis* (or *Destination*) at each end of the X-axis and *Form* and *Function* at each end of the Y-axis. *Movement* and *Stasis* were selected because they are two extreme conditions that could be clearly comprehended by the

respondents. This distinction is comparable to the analogy used in *Traffic in Towns* (1963), categorizing urban spaces into “rooms” (Buchanan’s Environmental Areas) and “corridors” (Distributor Roads) and by Krier and others, dividing spaces into “streets” and “squares”, as discussed in Chapter Four. These two ends of the X-axis are also comparable, but not identical, to Kevin Lynch’s categories in *The Image of the City* for cognitive mapping of “path” and “node”. While the movement end of the continuum is relatively similar to Lynch’s “path” (spaces with “directional quality”), his “node” was less specifically an individual space, and could cover “entire central districts when the city is being considered at a large enough level” (Lynch 1960: 55, 72).

Placing *Form* and *Function* as the extremes of the Y-axis reflects two of the other principal criteria used in the categorization of architectural types – also discussed in Chapter Three. Again, these two criteria are clearly understandable and easily applicable. It might be argued, however, that Form and Function are subsidiary or shadow effects of spaces being designed and/or operating as either routes or destinations. Also, as noted in the introduction to this chapter, there are likely to be site-specific reasons for the creation of particular form-type spaces. This argument will be revisited in the light of the results of the first part of the students’ analysis.

The three graphs issued to each of the 36 students were blank apart from being divided into four quadrants with 16 smaller squares in each quadrant, and the words *Form* and *Function*, and *Movement* and *Stasis* along opposite sides. After each of the 36 students had each marked-up their three graphs, locating each of the names in Appendices A, B and C, the 12 graduate students were asked to plot the 36 responses for each of the 115 space types onto 115 separate graphs identical to the original blank graph. The visual centre of gravity – a single point location that gave the “best fit” for each space type – was determined by the graduate students. They were thus providing a form of “member check” (Groat and Wang 2002: 38) of the responses.

These 115 single point locations were then plotted onto six composite graphic plots showing, respectively:

- Figure 5.2: Names occurring in both Edinburgh and Winnipeg (27 total)
- Figure 5.3: Names occurring in Edinburgh only (77 total)
- Figure 5.4: Names occurring in Winnipeg only (11 total)
- Figure 5.5: All Names occurring in Edinburgh (104 total)
- Figure 5.6: All Names occurring in Winnipeg (36 total)
- Figure 5.7: All Names occurring in either Edinburgh or Winnipeg (115 total).

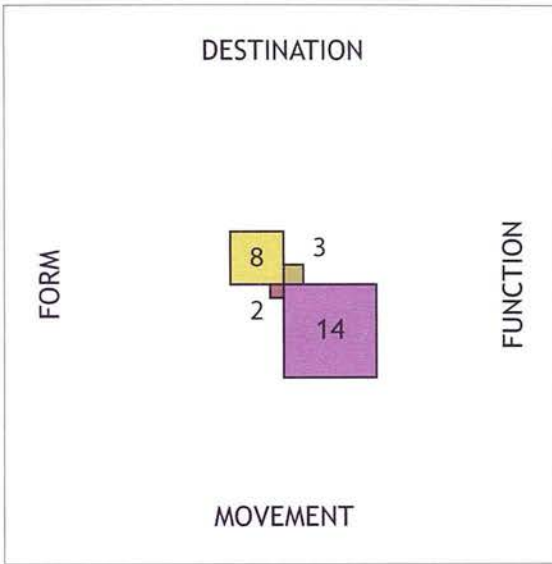


Figure 5.2: Names occurring in both Edinburgh and Winnipeg (27)

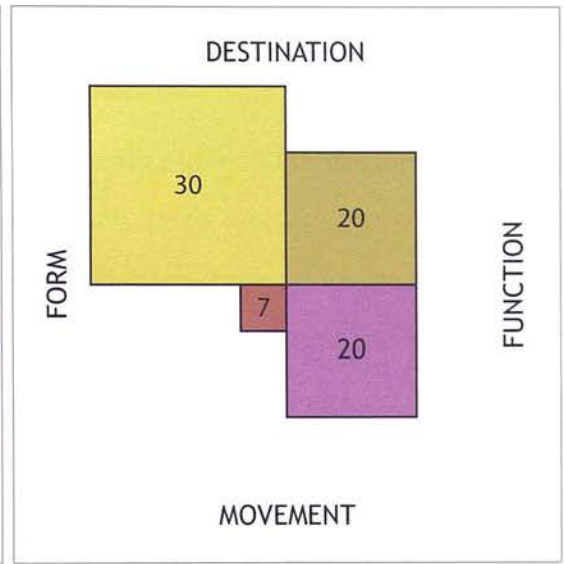


Figure 5.3: Names occurring in Edinburgh Only (77)

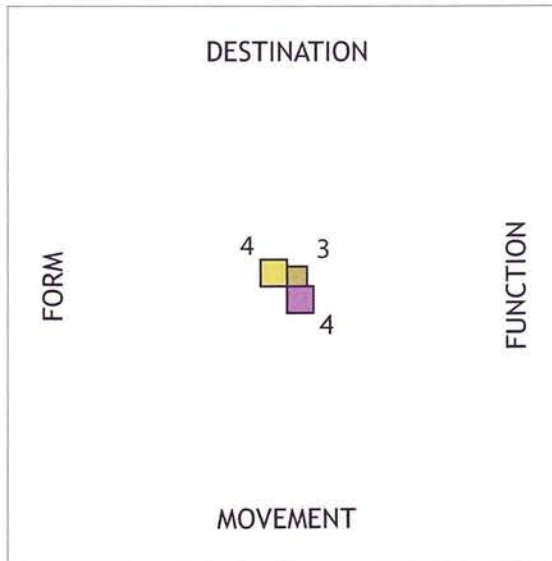


Figure 5.4: All Names occurring in Winnipeg Only (11)

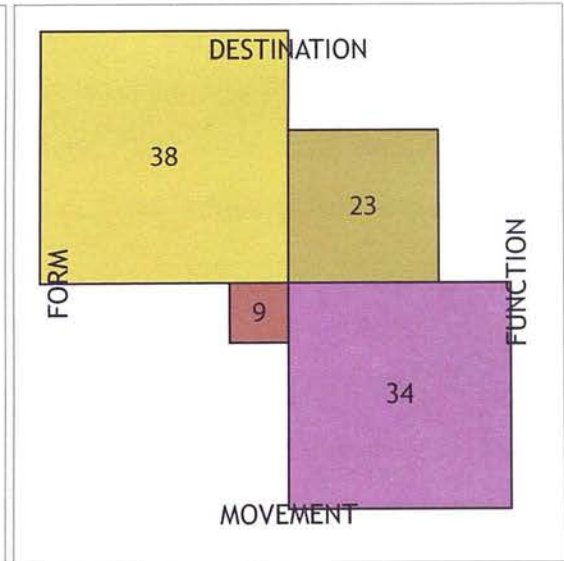


Figure 5.5: All Names occurring in Edinburgh (104)

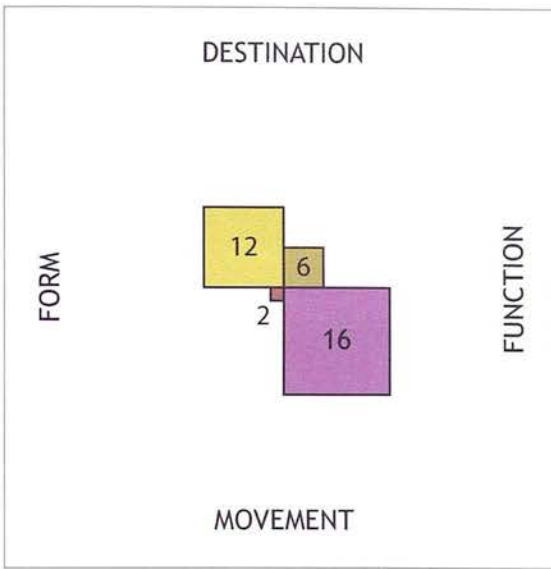


Figure 5.6: All Names occurring in Winnipeg (36)



Figure 5.7: All Names occurring in Edinburgh or Winnipeg (115)

The area of each coloured / toned square within each plot and the numbers shown in each square represent the actual numbers of each name type in that category. No differentiation was made on the basis of the frequency with which any individual name occurred in either city or to the relative size or ground area covered by any individual name type. The colours / tones are used simply to distinguish between the respective quadrants.

5.3.4 Observations on Graphic Plots

The following observations can be made from these graphic plots:

- overall, there is a huge number of different names compared with, for instance, Georges Perec’s suggestion that, in English there are “at least twenty names” for the spaces that separate buildings (Perec 1974: 192). Even the 27 that occur in both Edinburgh and Winnipeg exceeds Perec’s figure. This demonstrates a far greater diversity of names (and, by extension, types) than suggested by any of the typological studies examined in Chapter Four;
- there are universally low proportions of the space types in the Form-Movement quadrant in each plot. There are also relatively low proportions in the Destination-Function quadrant in each plot. This indicates a propensity for names to reflect their Form as Destinations or to reflect their Function as Movement corridors;

- Figure 5.2 (names common to Edinburgh and Winnipeg) shows more than half of the space types in the Function-Movement quadrant whereas Figure 5.3 (names exclusive to Edinburgh) shows a clear majority in the Form-Destination quadrant. This might be a result of Edinburgh being an older settlement and, in its early development, having a less vehicle oriented street system. Similarly, the varied terrain of Edinburgh is reflected in the range of names that express local geomorphology. As noted earlier, this is addressed in the name-based classification by omitting 16 such names (and one from Winnipeg);
- Figure 5.2 also shows a high proportion of the names common to both cities being on the Movement side of the graph. It might also be suggested that, being common to both cities, the majority of these names will occur relatively frequently. This also suggests (as do Figures 5.3 and 5.4) that names which are exclusive to the particular city tend to be less Movement-oriented;
- Figure 5.2 (names occurring in both Edinburgh and Winnipeg) contains 27 of the 36 space types shown in Figure 5.6 (all names occurring in Winnipeg) and therefore has a significant impact on the latter distribution, whereas the relatively small number (11) of names exclusive to Winnipeg (Figure 5.4), are also mainly on the Destination and Function sides of that plot;
- Figure 5.3 (names exclusive to Edinburgh) shows more than 60 per cent of space types on the Destination side of the plot and Figure 5.5 (all names occurring in Edinburgh) shows nearly 60 per cent on that side. By comparison, Figure 5.6 (all names occurring in Winnipeg) shows exactly 50 per cent on each of the Destination and Movement sides.

These observations indicate that Winnipeg, the younger of the two cities, has a higher proportion of Function and Movement oriented spaces and far less variety of space names and, by implication, far less variety of space types. This suggests, in turn, that older, less vehicle-oriented cities have more diverse space types of which the majority are destinations in themselves rather than being simply movement routes. It also begs the question – although the names listed in Appendix B do not clearly support this – of whether the relatively large number (i.e. the diversity) of space

types in Edinburgh reflects greater connectivity between them. This might well be the case given, as noted in Chapter One, that early development of the city was based on movement within it being largely by foot.

5.3.5 *Tabulation of Space Names*

As noted in Sub-section 5.3.2, two tabulated continuums have been drawn-up on the basis of the distributions of name types generated by the 36 students. The first continuum shows the spread along the X-axis of names primarily reflecting Stasis (or Destinations) to those primarily reflecting Movement (Routes). The second continuum shows the spread along the Y-axis of names primarily reflecting physical Form to those primarily reflecting Function. These are shown (overleaf) in Table 5.1 (Destination-Route) and Table 5.2 (Form-Function) for the 98 non-geomorphological space names occurring in either city. Again, names based on geomorphological forms (16 used in Edinburgh and one used in Winnipeg) have been omitted from these tables. These can be likened to the recurrent third category, “waterfronts”, in the examination in Chapter Four of the categories “streets” and “squares”.

Tables 5.1 and 5.2 provide a record of the relatively even spread along each axis. There is, however, an understandable tendency with the relatively large number of student responses, for them to gravitate towards the centre and for relatively few to be located at the extremes. This is an inevitable consequence of the use of the average location – the “best fit” – to locate each space name on the summary graph. No attempt was made to intervene in this process but observations on the location on the summary graph of the 27 individual space / name types are recorded in Section 5.4. Tables 5.3 and 5.4 show the same information as Tables 5.1 and 5.2 but only for the 27 space types occurring in both cities. Again, the numbers are the same as those each space type in Appendices A, B and C.

allocated to showed names at (more or less) the same point on the continuum, they are given in alphabetical order. Numbers are the same as those allocated to each space listed in Appendices A, B and C.

DESTINATION	Both Cities	Edinburgh Only	Winnipeg Only
Buildings (14)		•	
End (37)		•	
Gardens (44)	•		
Grove (48)	•		
Houses (55)		•	
Neuk (76)		•	
Rest (91)		•	
Bush (16)		•	
Cottage(s) (24)		•	
Embankment (36)		•	
Row (96)	•		
Terrace (106)		•	
Wood (113)		•	
Glade (45)		•	
Glebe (46)		•	
Shaw (97)		•	
View (110)		•	
Yard(s) (115)		•	
Court (25)	•		
Bow (9)		•	
Dykes (34)		•	
Lea (63)		•	
March (66)		•	
Toll (107)		•	
Circus (20)		•	
Cross (30)		•	
Field (40)		•	
Green (47)	•		
Haven (50)			•
Kaimes (57)		•	
Land (61)		•	
Prospect (88)		•	
Key (58)			•
Quadrangle (89)		•	
Place (83)	•		
Square (100)	•		
Shore (98)		•	
Bay (7)			•
Cove (26)			•
Harbour (49)			•
Market (67)		•	
Mills (73)		•	
Piazza (82)		•	
Plaza (84)		•	
Quadrant (90)		•	
Crescent (27)	•		
Crook (29)		•	
Esplanade (39)		•	
Park (78)	•		
Corner (23)			•
Point (85)	•		
Close (22)	•		
Entry (38)		•	
Gait / Gate (43)	•		

	Both Cities	Edinburgh Only	Winnipeg Only
Meus (69)		•	
Syke (105)		•	
Strand (102)		•	
Arcade (4)		•	
Lane (62)	•		
Mall (65)		•	
Midway (72)		•	
Pend (81)		•	
Approach (3)		•	
Bridge (11)	•		
Causeway (17)		•	
Causey (18)		•	
Port (86)		•	
Circle (19)	•		
Medway (68)		•	
Mews (71)	•		
Parkway (79)	•		
Wynd (114)		•	
Access (1)		•	
Alley (2)		•	
Loan (64)		•	
Promenade (87)	•		
Steps (101)		•	
Stroll (104)			•
Vennel (109)		•	
Avenue (5)	•		
Brig (12)		•	
Burn (15)		•	
Drive (33)	•		
Eastway (35)		•	
Meuse (70)		•	
Path / Pathway (80)	•		
Southway (99)		•	
Trail(s) (108)			•
Walk (111)	•		
Boulevard (8)	•		
Northway (77)		•	
Road (95)	•		
Street (103)	•		
Crossway (31)		•	
Way (112)	•		
Broadway (13)	•		
Freeway (42)			•
Highway (53)			•

ROUTE

TABLE 5.1: DISTRIBUTION OF ALL SPACE NAMES (EXCEPT GEOMORPHOLOGICAL SUFFIXES) OCCURRING IN EDINBURGH OR WINNIPEG ON CONTINUUM FROM BEING PRIMARILY DESTINATION TO BEING PRIMARILY ROUTE

Note: Spaces between the names represent the eight-part division of the continuum. Where responses showed names at (more or less) the same point on the continuum, they are given in alphabetical order. Numbers are the same as those allocated to each space listed in Appendices A, B and C

FORM	Both Cities	Edinburgh Only	Winnipeg Only
Crescent (27)	•		
Crook (29)		•	
Gardens (44)	•		
Kaimes (57)		•	
Court (25)	•		
Shaw (97)		•	
Glade (45)		•	
Grove (48)	•		
Quadrant (90)		•	
Row (96)	•		
Bow (9)		•	
Circus (20)		•	
Quadrangle (89)		•	
Shore (98)		•	
Syke (105)		•	
Wood (113)		•	
Bay (7)			•
Cove (26)			•
Esplanade (39)		•	
Neuk (76)		•	
Piazza (82)		•	
Promenade (87)	•		
Square (100)	•		
Alley (2)		•	
Arcade (4)		•	
Burn (15)		•	
Park (78)	•		
Plaza (84)		•	
Terrace (106)		•	
Corner (23)			•
Pend (81)		•	
Strand (102)		•	
Circle (19)	•		
Close (22)	•		
Glebe (46)		•	
Avenue (5)	•		
Buildings (14)		•	
Causey (18)		•	
Cottage(s) (24)		•	
Gait / Gate (43)	•		
Green (47)	•		
Houses (55)		•	
Lea (63)		•	
Mall (65)		•	
Parkway (79)	•		
Place (83)	•		
Steps (101)		•	
Walk (111)	•		
Yard(s) (115)		•	
Stroll (104)			•
Trail(s) (108)			•
Causeway (17)		•	
Key (58)			•
Medway (68)		•	

	Both Cities	Edinburgh Only	Winnipeg Only
Midway (72)		•	
Point (85)	•		
Boulevard (8)	•		
Cross (30)		•	
Eastway (35)		•	
Meus (69)		•	
Prospect (88)		•	
Bridge (11)	•		
Entry (38)		•	
Lane (62)	•		
Market (67)		•	
Harbour (49)			•
Mews (71)	•		
Path / Pathway (80)	•		
Wynd (114)		•	
Access (1)		•	
Brig (12)		•	
Field (40)		•	
Land (61)		•	
March (66)		•	
Mills (73)		•	
Northway (77)		•	
Vennel (109)		•	
View (110)		•	
Approach (3)		•	
Bush (16)		•	
Crossway (31)		•	
Drive (33)	•		
Dykes (34)		•	
Embankment (36)		•	
Haven (50)			•
Loan (64)		•	
Port (86)		•	
Rest (91)		•	
Southway (99)		•	
Street (103)	•		
Way (112)	•		
Toll (107)		•	
Meuse (70)		•	
Road (5)	•		
Broadway (13)	•		
End (37)		•	
Freeway (42)			•
Highway (53)			•

FUNCTION

TABLE 5.2: DISTRIBUTION OF ALL SPACE NAMES (EXCEPT GEOMORPHOLOGICAL SUFFIXES) OCCURRING IN EDINBURGH OR WINNIPEG ON CONTINUUM FROM REFLECTING FORM TO REFLECTING FUNCTION

Note: Spaces between the names represent the eight-part division of the continuum. Where responses showed names at (more or less) the same point on the continuum, they are given in alphabetical order. Numbers are the same as those allocated to each space listed in Appendices A, B and C

DESTINATION

Gardens (44)

Grove (48)

Row (96)

Court (25)

Green (47)

Place (83)

Square (100)

Crescent (27)

Park (78)

Point (85)

Close (22)

Gait / Gate (43)

Lane (62)

Bridge (11)

Circus / Circle (19)

Mews (71)

Parkway (79)

Promenade (87)

Avenue (5)

Drive (33)

Path / Pathway (80)

Walk (111)

Boulevard (8)

Road (95)

Street (103)

Way (112)

Broadway (13)

ROUTE

TABLE 5.3: LOCATION OF 27 SPACE NAMES COMMON TO EDINBURGH AND WINNIPEG ON A CONTINUUM FROM BEING A DESTINATION TO BEING A ROUTE

FORM

Crescent (27)

Gardens (44)

Court (25)

Grove (48)

Row (96)

Promenade (87)

Square (100)

Park (78)

Circus / Circle (19)

Close (22)

Avenue (5)

Gait / Gate (43)

Green (47)

Parkway (79)

Place (83)

Walk (111)

Point (85)

Boulevard (8)

Bridge (11)

Lane (62)

Mews (71)

Path / Pathway (80)

Drive (33)

Street (103)

Way (112)

Road (95)

Broadway (13)

FUNCTION

TABLE 5.4: LOCATION OF 27 SPACE NAMES COMMON TO EDINBURGH AND WINNIPEG ON A CONTINUUM FROM REFLECTING FORM TO REFLECTING FUNCTION

5.4 ANALYSIS OF SPACE NAMES COMMON TO EDINBURGH AND WINNIPEG

5.4.1 Overview

The 27 space / name types common to Edinburgh and Winnipeg are grouped in Table 5.5 under the headings “Destination” and “Route” (or “nodes” and “paths” in Lynch’s terms). The Destination-Movement continuum is adopted primarily because it is consistent with one of the precepts of the thesis, that movement systems are the principal generators of urban space. This is also considered appropriate because:

- Figure 5.2 (Names occurring in both Edinburgh and Winnipeg – 27 total) and Figure 5.7 (All Names occurring in either Edinburgh or Winnipeg – 115 total) both show a strong diagonal distribution of responses from the Form-Destination to the Function-Movement corners;
- Figure 5.7 also shows a more even balance of numbers on either side of the Destination-Movement continuum than on either side of the Form-Function continuum – a pattern that would be more emphatic if the 17 geomorphological suffix names were omitted from this Figure.

This division is comparable to the “concepts of ‘path’ (*Weg*) and ‘goal’ (*Mal*)” developed by Frey, referred to in Chapter Two (Norberg-Schulz 1971: 14). Equally, Spivack, whose work was also examined in Chapter Two, made a similar division of animal (including human) habitat, into “separate functional places or archetypes” and “connections or routes” (Spivack 1973: 46).

The 27 space / name types common to both cities are subsequently analyzed in Table 5.6 in the same order that they appear in Table 5.5, together with a small version of the original grid, indicating to which of its 16 squares the students allocated each type. These tables contain some apparent anomalies – a circus, for instance, might be expected to be a destination rather than a route. This kind of response may reflect the relative ease of comprehending spaces that are “routes” and the relative difficulty of defining spaces that are “destinations”, or cultural differences in the use of language. This seems to be the case in Winnipeg in particular, and probably results from there

being relatively little regulation of ononymy and, as an apparent consequence, relatively little consistency in the way that names are used. For example, the names Bay, Cove and Harbour, which are exclusive to Winnipeg and are all applied to residential loops with a bend in them (as is Crescent), and all make an oblique reference to shelter from stormy seas – despite (or perhaps because of) Winnipeg’s inland location.

DESTINATIONS	ROUTES
Gardens (44)	Gait / Gate (43)
Grove (48)	Lane (62)
Row (96)	Bridge (11)
Court (25)	Circle (19)
	Mews (71)
Green (47)	Parkway (79)
Place (83)	Promenade (87)
Square (100)	
	Avenue (5)
Crescent (27)	Drive (33)
Park (78)	Path / Pathway (80)
Point (85)	Walk (111)
Close (22)	Boulevard (8)
	Road (95)
	Street (103)
	Way (112)
	Broadway (13)

TABLE 5.5: SPACE / NAME TYPES COMMON TO EDINBURGH AND WINNIPEG TABULATED AS DESTINATIONS OR ROUTES ON BASIS OF THEIR GENERIC NAMES

5.4.2 *Denotations of Common Space / Name Types*

The analysis presented in Table 5.6 suggests that qualitative typological exercises of the kind undertaken by the students:

- are relational rather than absolute and can provide order, clarity and simplicity but not precise co-ordinates;
- can demonstrate collective comprehension but do not necessarily produce a definitive index of common phenomena;

- demonstrate that meaning is differential and not referential, and that the meaning of words arises from (as Saussure argued) from their use in practice rather than from any inherent qualities in the words themselves);
- are an exercise in building a common language and making phenomena “real” by defining them relative to comparable phenomena.

The analysis presented in Table 5.6 is, in Eco’s terms, denotational rather than connotational. And as such, in Rapoport’s terms (addressed in Sub-section 2.5.3), it only examines their low-level meanings. Also in Rapoport’s terms, it demonstrates that while environments (including their names) encode information that people decode, their decoding will probably not be predictable or identical – particularly as the entities under consideration move from signifying low-level to signifying medium-level meanings. While the responses appear to suggest what could be regarded, in Saussure’s terms, as examples of “collective understanding”, particularly with respect to the space / name types located towards the edges of the graph – *gardens, grove, crescent, way* and *broadway* – the subsequent exercise, undertaken by a different group of students, identified only one of these as a potential archetypal space / name type.

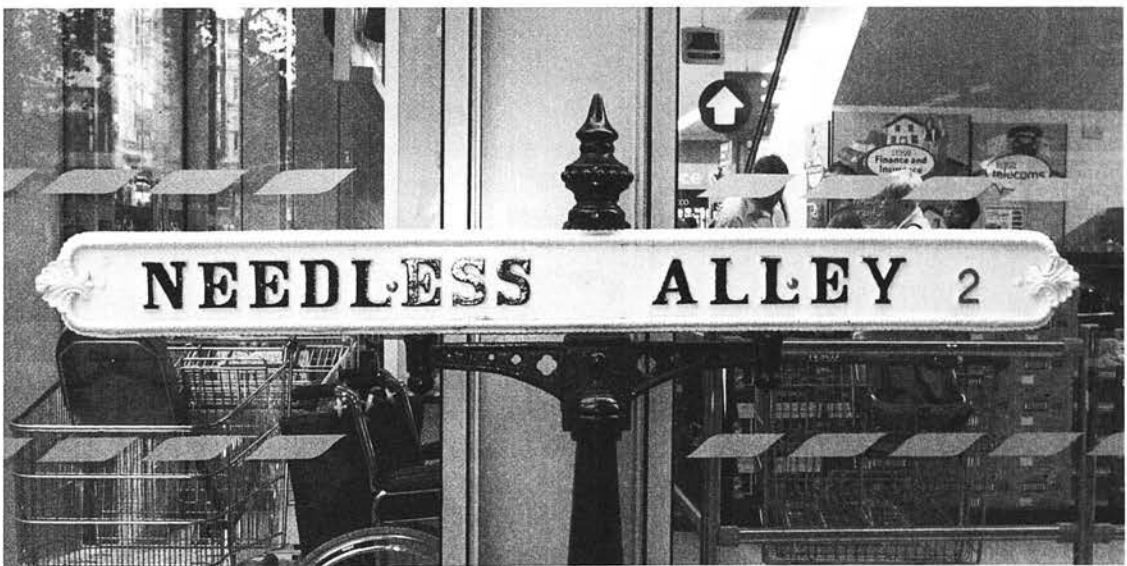
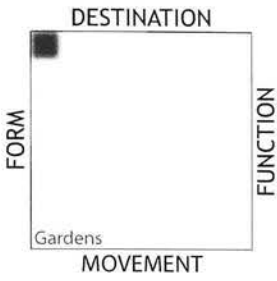
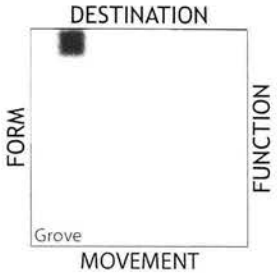


Figure 5.9: Street Sign in Birmingham, England



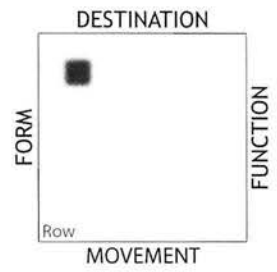
Gardens

Normally implies a private enclosed space, but sometimes used as a name for residential streets (e.g. in the Willowbrae area in Edinburgh); also applied to (often) private open spaces (e.g. Queen Street Gardens in Edinburgh) or to public open spaces with a significant herbaceous planting content (in contrast to parks, which can be expected to have more woody plants). Surprisingly, perhaps, that the students regarded it as reflecting a particular form rather than a particular function; not surprising that they saw it as a destination.



Grove

Generally used in both cities (and used widely in Winnipeg) for short access ways and residential culs-de-sacs; definitions in Appendix A (as a wood or avenue of trees) may have led to students emphasizing a “collective understanding” of formal qualities.



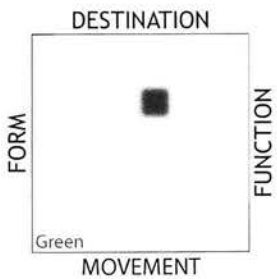
Row

Denotes, particularly in Edinburgh, a continuous and consistent line of (most usually) buildings, often on one side of the space only; comparable to a “terrace” but less likely to be situated on a geomorphological terrace. Multiple, true-to-type examples in Edinburgh including Heriot Row, Henderson Row and Inverleith Row; typical cases in Winnipeg include Ruskin Row, an arc-shaped street at the edge of an otherwise orthogonally gridded area, and Headmaster Row, both with houses largely fronting onto only one side of it, and Kingston Row, with houses on one side fronting onto the Red River.



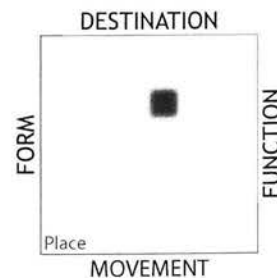
Court

Courts such as Darroch (off Cowgate) and Inglis (off West Port) in Edinburgh reflect use as access ways / culs-de-sac there; similar usage in Winnipeg.



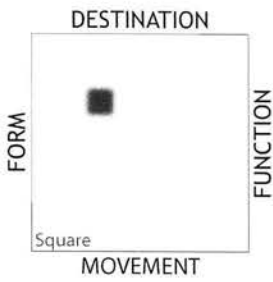
Green

Uncommon – more likely in smaller settlements (as in a village green) – Boat Green and Slateford Green, both housing developments in Edinburgh, are the only apparent examples.



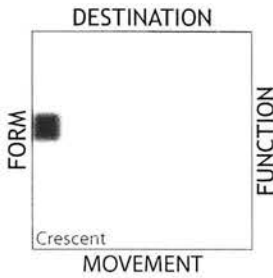
Place

Place is widely used for a range of non-directional spaces, generally defined by buildings (comparable to Sitte’s *Platz*); there is a large number in Edinburgh and with a wide range of forms – from the circular Moray Place to the “comb” of Places that comprise the “Stockbridge Colonies” along Glenogle Road; the majority of Places in Winnipeg, apart from the Portage Place shopping mall, are relatively short vehicular culs-de-sac in post World War II residential developments.



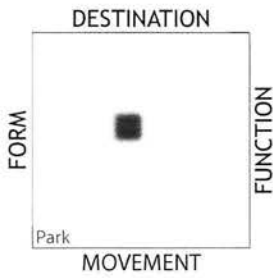
Square

Can be subject to relatively broad interpretation although it ought, perhaps, to be as definitive of physical form as Circle / Circus. There is only one ground level square defined by buildings in Winnipeg (Old Market Square – which is not even rectangular in plan) other than the, also not square, below-ground shopping mall, Winnipeg Square and a series of suburban strip malls (e.g. Madison, Stafford) and seniors’ residences (e.g. Riverwood) that have appropriated the name, probably for commercial reasons. This could be seen as trespassing on collective understanding. Edinburgh, by contrast has remaining examples that preceded the New Town (e.g. George Square from 1750s) and the outstanding examples of Charlotte and St Andrew’s Squares, anchoring the earliest section of the New Town (Youngson 1966: 68-9).



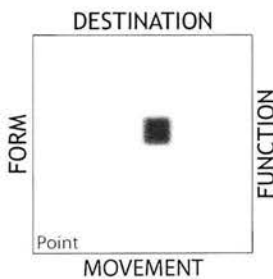
Crescent

Strictly geometric (and frequent) in Edinburgh (e.g. the very tightly arced Eyre Crescent); more loosely applied in Winnipeg, where it is used to describe the form of streets running parallel to river bends (e.g. Wellington Crescent) or, apparently, a street with any kind of bend in it. A strong example of clarity and simplicity of form.



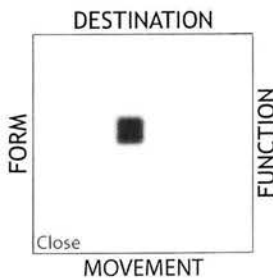
Park

Occasionally used as a street name (e.g. Montpelier Park and Merchiston Park in Edinburgh) but generally applied to predominantly planted public open spaces designated for active and passive recreational use, and generally larger and with more woody vegetation than in public gardens.



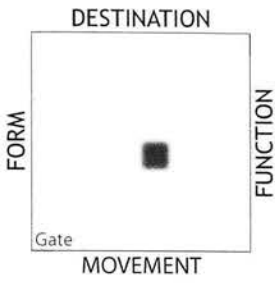
Point

Rare but very specific form of acute-angled junction (e.g. Main Point at junctions of Bread Street, West Port and East Fountainbridge in Edinburgh, and Point Road, Winnipeg which cuts across orthogonal grid); also used for a short residential cul-de-sac (Lehigh Point – perhaps as a deliberate joke, comparable to Mutchmor Close) and as a prefix name for land projecting into river course (thus geomorphological) in Winnipeg (e.g. Point Douglas). Reflects Hillier’s assertion that “names create understanding” (Hillier 1994: 70)



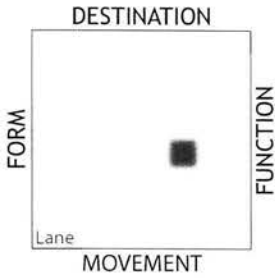
Close

Multiple definitions but implying closeness of buildings aligned along it or being a closed-off space; used for narrow passages and enclosed spaces in Edinburgh, particularly those running perpendicular to High Street; used in Winnipeg for residential loops (where it is comparable to Bay, Cove, Haven and Crescent) and culs-de-sac.



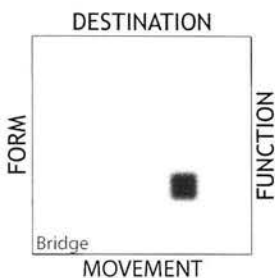
Gate

Traditionally routes with gates into a city or a particular part of it (e.g. Cowgate in Edinburgh); used latterly in Winnipeg for vehicular entrances to sub-divisions (e.g. Whidden Gate – which has no adjacent pedestrian path) and for gated, or apparently gated, developments (e.g. East, Middle and West Gate). Can be used metaphorically for any entry (Vroom 2006: 24) – which probably accounts for its (undifferentiated) central location in the graph.



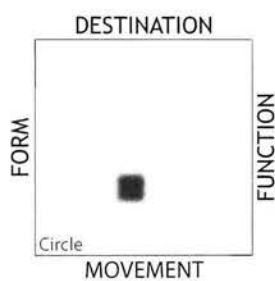
Lane

Narrow rear access route in older parts of cities (e.g. Street Lanes in Edinburgh and back lanes in older residential areas in Winnipeg – where they work with grid layout of streets / avenues); used latterly in residential suburbs in Winnipeg for short connecting roads and for culs-de-sac.



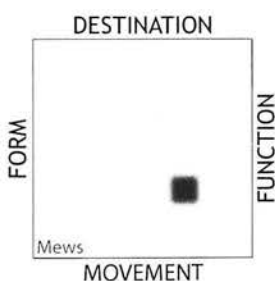
Bridge

Although there are numerous named bridges in Winnipeg, particularly over the many rivers in the city, none has properties directly fronting onto them in the same way as North Bridge and South Bridge in Edinburgh.



Circle / Circus

Both names are clearly derived from their physical form although Circus (e.g. Royal Circus in Edinburgh) denotes the circular form of building facades, something which does not occur in Winnipeg, where Circle denotes a circular roadway. Perhaps because of this, students deemed Circle to be one of the few space types in the Form-Movement quadrant, whereas Edinburgh examples are certainly much closer to the Form end of the spectrum.



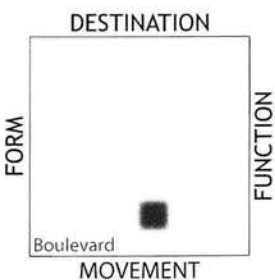
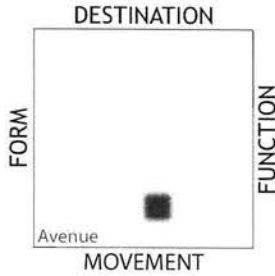
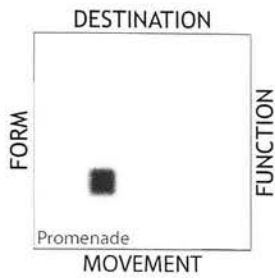
Mews

Similar to Lane in terms of being a narrow rear access (and shown as such by students) but sometimes converted to residential use; much more frequent in Edinburgh (e.g. in Stockbridge and Dean Village) than in Winnipeg (where it has been used for suburban culs-de-sac, e.g. Monarch Mews).



Parkway

City of Edinburgh definition and students' response reflect principles underlying Olmsted and Vaux's nineteenth-century tree-lined carriage routes linking urban parks with separate, parallel service roads for access to adjacent houses (and with rear service lanes) – also termed a multiway or esplanade (Jacobs et al 2002: 5). Term was subsequently applied to scenic rural highways, particularly in eastern United States (Curl 2006: 560). Examples in Edinburgh (Silverknowes / Muirhead Parkway) and in Winnipeg (Sterling Lyon and Charleswood Parkways) have separated carriageways with a vegetated strip between them and adjacent provision for cyclists and/or pedestrians but, unlike in US, they are primarily thoroughfares with few properties fronting onto them.



Promenade

Similar to treed malls, but “laid out for their own sake” (Kostof 1991: 251). Along with Circle, one of only two name types occurring in both cities to be located in the Form-Movement quadrant; and, as with Broadway, there is only one strong example in each city (Portobello Promenade in Edinburgh and The Promenade outside Portage Place in Winnipeg); each distinctly designed for (generally leisurely) pedestrian use in terms of, respectively, location and surfacing.

Avenue

From the Old French *avenir* – to arrive; origin “largely rural” although many of “boulevards” without medians in Paris are “avenues” (Kostof 1991: 249); nearly always tree-lined; traditionally any east-west route in Winnipeg, the more residential of which are heavily treed; comparatively rare in Edinburgh – mainly in outer areas (apart from Arboretum Avenue).

Drive

Tends to be used for scenic / recreational routes when used as street name (rather than for an approach to a particular building); originally for horse-drawn carriages and latterly for motor vehicles, e.g. Queen’s Drive around Holyrood in Edinburgh and the (riverfront) Waterfront, Churchill and Lyndale Drives in Winnipeg; might be regarded as the vehicular equivalent of a Promenade.

Path / Pathway

Although implying a foot route (see Appendix A) path is only occasionally used in Edinburgh, e.g. Dean Path and along Water of Leith and former rail beds, e.g. Warriston Path; when used in Winnipeg it generally refers to short vehicular routes in more recent residential areas (e.g. Cranlea, Graduate and Springlea Paths in East Kildonan) rather than foot routes.

Walk

Similar in definition to Path / Pathway (see Appendix A); few examples in either city – in Winnipeg, Spruce Thicket Walk is an outer residential street and the best example of a designed walk, the Riverwalk beside the Assiniboine and Red Rivers, is treated as one word; probably the prime examples in Edinburgh are “The Walk” off St Andrew’s Square, and Leith Walk, which is effectively a Boulevard.

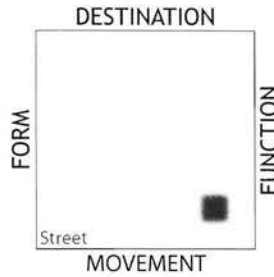
Boulevard

From Middle Dutch *bolwere* – bulwark; French meant “passageway along a rampart”; “started as boundary between city and country” (Kostof 1991: 249). Jacobs et al identified three types – centre median; multiway or esplanade (as Olmsted / Vaux parkways); “boulevard street” without median as in Haussmann’s Boulevards through Paris (Jacobs et al 2002: 5); used widely (and sometimes gratuitously) in Winnipeg (and not always well treed); name listed by City of Edinburgh Council but not apparent in street maps – although Leith Walk, being built over a rampart, has many characteristics of a boulevard.



Road

Derived from Old English word for a ride, it suggests, particularly in British usage, “an open way for travelling between two places” (CDE) with the name of its destination often used as its specific name (e.g. Gorgie Road, London Road, Lanark Road, etc in Edinburgh); named less for destinations in Winnipeg but used for more substantial routes, particularly in south east of city (e.g. St Anne’s Road and St Mary’s Road).



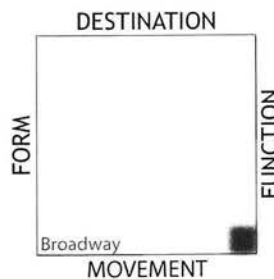
Street

The other widely used category of urban space types (with square), defined as “public way leading from the house to the world outside, serving a multitude of activities” ... and in ... “American cities ... the palatinate of the automobile” (Abrams 1971: 298); they can be extraordinarily long – like Watling Street and Ermine Street in Britain, and Yonge Street, starting in Toronto and cited, at nearly 1900 kilometres, as “the longest street in the world”. Street is the ubiquitous generic name of most of the north-south spaces in Winnipeg, particularly in the north and west of the city – although many of them, particularly in the older residential areas, are identical to the avenues that they cross; and in Edinburgh, the roughly parallel High Street and George Street are the backbones of the Old Town and the New Town respectively, while the “one-sided” Princes Street, also parallel to them, actually fulfils the criteria of a Row – all of which indicates that street is a blanket term for most forms of urban space, particularly linear urban spaces. The positioning of Street by respondents deep into the Form-Function quadrant is possibly a result of the definition given in Appendix A (as a paved road); or of North American interpretation of the word (as suggested by Abrams – above), and its abundant use in Winnipeg.



Way

This is one of the more loosely defined generic space names – “passage, road, street, track, direction” (Appendix A). It is used as something of a catch-all, particularly in Winnipeg, where it is applied to short approaches to specific features (e.g. Navy Way leading to a naval base) or as a conveniently short suffix to a longer specific name (e.g. Summerfield Way) or both (e.g. Queen Elizabeth Way).



Broadway

Edinburgh and Winnipeg each appear to have only one; the Winnipeg Broadway, on which the downtown grid is based, demonstrates characteristic breadth, large trees, greensward and street furniture. It may have been the use of the word “thoroughfare” in the definition of Broadway (see Appendix A) that prompted students to be so emphatic about the functional nature of a Broadway.

TABLE 5.6: SUGGESTED DENOTATIONS OF COMMON SPACE / NAME TYPES

5.5 DISTINCTIVE OR ARCHETYPAL SPACE / NAME TYPES

5.5.1 *Overview*

A different group of 35 final year undergraduate students in the Faculty of Architecture at the University of Manitoba was asked, first, for each of them to select and place in order the ten space names from the full list of 115 names occurring in Edinburgh or Winnipeg that they felt to be “the most emphatically ‘archetypal’ where the idea of the archetype is derived from Carl Jung's concept of psychological archetypes as ‘identical psychic structures common to all’ or recurrent common space types or idealized space types”. The same group of students was subsequently asked to conduct the same exercise but with each of them selecting only five from the list of 27 space names occurring in Edinburgh and Winnipeg. The students were deliberately not given the definitions for this exercise since the intention was to obtain their instinctive responses.

5.5.2 *Survey Responses*

Table 5.7 shows the result of the first exercise, with the names of the 15 most frequently selected name / space types ordered according to the number of times that

NAME	NUMBER OF VOTES	% OF RESPONDENTS
Street	20	57.1%
Market	16	45.7%
Buildings	16	45.7%
Bridge	15	42.9%
Park	15	42.9%
Gardens	12	42.9%
Path	12	34.3%
Boulevard	12	34.3%
Avenue	11	31.4%
Hill	10	28.6%
Square	10	28.6%
Access	9	25.7%
Alley	9	25.7%
Plaza	8	22.9%
Field	8	22.9%
Houses	7	20.0%
Mall	7	20.0%
Terrace	7	20.0%

TABLE 5.7: SURVEY RESPONSES ON ARCHETYPAL SPACE / NAME TYPES FROM 115 NAMES OCCURRING IN EDINBURGH OR WINNIPEG

they were selected. Being derived from the full list of toponyms occurring in either city, Table 5.7 includes some self-evident anomalies, particularly from the list of names used in Edinburgh only (Appendix B). Names that had traction as archetypes in this exercise included *buildings* – which are, of course, structures rather than types of space per se, and *field* – which is probably listed in the context of a playing field, but which has strong rural / non-urban connotations. Equally, *hill* tends to denote a geomorphological feature rather than an urban space, and bridge, like buildings and houses (but which occurs in both cities), denotes a structure rather than a space.

Table 5.7 lists the 17 space / name types nominated by at least 20% of the student group. This list was then compared with the 15 distinctive space / name types that had been previously identified by the author. The space / name types in that list were *row*, *square*, *crescent*, *point*, *gate*, *lane / mews*, *circus / circle*, *parkway*, *promenade*, *avenue*, *drive*, *path / pathway / walk*, *boulevard*, *street* and *broadway* – of which only five (*square*, *avenue*, *path*, *boulevard* and *street*) also occurred in the students' list. And, since there was clearly limited concurrence between these two lists, it was considered appropriate to ask that same group of students to do another exercise nominating five space / name types each from the list of 27 common to Edinburgh and Winnipeg, thereby eliminating a number of the anomalous names from the previous exercise – including *field*, *hill*, *buildings* and *houses*. The results of this exercise are shown in Table 5.8.

NAME	NUMBER OF VOTES	% OF RESPONDENTS
Street	19	54.3%
Gardens	17	48.6%
Park	17	48.6%
Square	17	48.6%
Bridge	15	42.9%
Boulevard	13	37.1%
Avenue	12	34.3%
Path / Pathway	12	34.3%
Grove	7	20.0%
Promenade	7	20.0%
Road	7	20.0%

TABLE 5.8: SURVEY RESPONSES ON ARCHETYPAL SPACE / NAME TYPES FROM 27 NAMES OCCURRING IN EDINBURGH AND WINNIPEG

5.5.3 *Observations on Survey Responses*

Initial inspection of Tables 5.7 and 5.8 suggests inconsistencies between the students' responses in these two exercises. Why, for instance, does the number of nominations for *street* fall when there were less names to choose from, while the numbers of nominations for *gardens*, *park*, *square*, *boulevard*, *avenue*, *grove*, *promenade* and *road* all rise, despite the smaller number of nominations requested from each student? These apparent inconsistencies suggest that:

- a) the number of nominations for *street* was already around its peak at 20 (57.1%), and its decrease to 19 (54.3%) indicates that (a net number of at least) one student did not have it in their top five nominations in the first exercise;
- b) support in the first exercise for names that were excluded from the second exercise (particularly *market*, *field*, *hill*, *access*, *alley*, *plaza*, *houses* and *mall*) was transferred to names that were less strongly supported in the first exercise (particularly *gardens*, *square*, *promenade* and *road*).

Overall, the second exercise retained in the top eight nominations the previously discussed five types (*street*, *boulevard*, *avenue*, *path* and *square*) that were included in the author's own selection of distinctive space / name types. The only other name receiving increased nomination from the second exercise and appearing in the author's selection is *promenade*. And to these six names can be added the others that were most frequently cited in both student exercises – *gardens*, *park* and *bridge*. These nine are listed in Table 5.9 in the same order that they appear in Table 5.6.

On the one hand, these types might be regarded as distinctive or archetypal – or, at least, as being clearly identifiable types. On the other hand, it is readily apparent that the exercises undertaken by the author and by the students – produced limited agreement. This suggests, in turn, that toponyms might carry more than Rapoport's clearly and commonly understood “low-level” meanings (addressed in Sub-section 2.5.3). It suggests, using his terms, that toponyms are multivalent symbols, and that they carry something closer to “middle-level” meanings because they are apparently not “mundane and common, known to all users” (Rapoport 1988: 329).

SPACE / NAME TYPE	CONNOTATION
GARDENS	Identified, along with Park, in Tables 5.6 and 5.7 despite the fact that both are distinctive destinations and often isolated from principal movement routes. Gardens connote refuge (as they have done since the emergence of Egyptian and Persian gardens) and/or, in the Bible, an eternal and idyllic place. If gardens are to be considered an archetypal urban space, then Princes Street Gardens is a leading example.
SQUARE	Jellicoe suggested that Jung saw the square as "the earthly manifestation of the mystery of the circle" (Jellicoe 1970: 9). Square suggests strong, human-made urban geometry connoting a place of safety, meeting, trade, communication - although capable, in Krier's generic usage, of adopting multiple shapes. Increased popularity in the second exercise possibly reflects the absence of "market" from the list of names common to both cities.
PARK	Many similarities in function and connotation with Gardens but generally more recent in origin. Widely referred to as "lungs of the city" - by parties as diverse as Frederick Law Olmsted and the CIAM, suggesting places of exercise and leisure, refuge and escape.
BRIDGE	Perhaps inevitable that students in a city of rivers would show such strong support for Bridge as an archetype - despite its being more distinctive as a structural than as a spatial form. A strong symbol of human defiance of the forces of "nature" producing linkages that invariably provide unique sensations and present unique views (like London's Millennium Bridge).
PROMENADE	Certainly suggests walking - probably on a seafront path overlooked by rows of buildings (as at Portobello in Edinburgh). Comparable, perhaps, to boardwalk in North America, with its connotations of seaside shenanigans.
AVENUE	Connotes lines of trees (which imply health and wealth - particularly in Haussmann's Paris) and commerce in North America (e.g. Saks Fifth Avenue; the Golden Mile on Chicago's Michigan Avenue). Counterpart to Street in Winnipeg (where respondents were based) but deemed less archetypal than its partner. Also a counterpart to (the wider) Boulevard.
PATH / PATHWAY / WALK	Vehicle free, exclusively for movement by foot; narrow and direct but also suggesting casual face-to-face human contact with strangers. May carry connotations of routes followed by first bipedal human ancestors.
BOULEVARD	Grandiose, planted with large trees; travelled by vehicles and frequented by flaneurs; possessing a sense of elevation from everyday life - a place to see people and be seen by them; a strong, defining element in the structure of the city - comparable to (the smaller) Avenue and to Olmsted and Vaux's (equally substantial) Parkways in US cities and to Broadway in Winnipeg.
STREET	Effectively the generic term for all public urban space - even more than Square, with which it is often paired. Open to many interpretations (as Rykwert in Sub-section 4.4.2); generally either residential or commercial but rarely mixed; often a major urban space, as in High Street or Main Street; significance reflected in expressions "streetwise", "word on the street"; "man on the street" - all connoting focality. Equally, frequency of prefix High (in UK) and Main (in North America) reflects its primacy.

TABLE 5.9: SUGGESTED CONNOTATIONS OF DISTINCTIVE / ARCHETYPAL SPACE / NAME TYPES



Figure 5.9a: Princes Street Gardens, Edinburgh

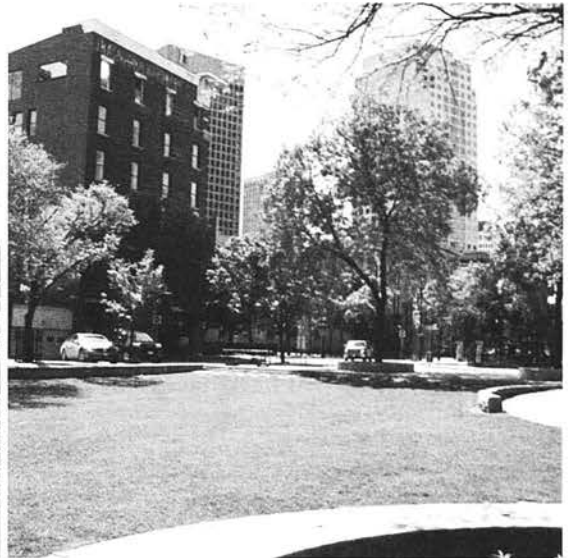


Figure 5.9d: Old Market Square, Winnipeg



Figure 5.9b: Warriston Path, Edinburgh



Figure 5.9e: Warsaw Avenue, Winnipeg



Figure 5.9c: High Street, Edinburgh Old Town



Figure 5.9f: Broadway, Winnipeg

FIGURE 5.9: EXAMPLES IN EDINBURGH AND WINNIPEG OF DISTINCTIVE SPACE / NAME TYPES

Odonyms appear to be open to interpretation by different viewers, and this leads to the question of whether, in addition to the denotational values suggested in Table 5.6, they carry particular connotations. The nine names produced by the student exercises are examined on this basis in Table 5.9.

5.6 CONCLUSIONS

This chapter has set out rationale for typological study of the built environment and then presented typological analyses of urban spaces based on their generic names. It began by noting that naming practices, particularly the allocation of specific names, are rarely politically neutral but that generic names of urban spaces (having more of what Rapoport called low-level meaning) are less politically charged. Latterly, however, it became apparent that toponyms carry more medium-level meaning in that they are terms that can be understood in relative rather than absolute terms.

The exercises analyzing and ordering comprehensive lists of the generic names used for spaces in Edinburgh and Winnipeg and the identification of the distinctive or archetypal space / name types were carried out with assistance from students in the Faculty of Architecture at the University of Manitoba. These exercises were done in this way in order to bring a degree of objectivity to the categorization of the space / name types encountered in these cities, and to facilitate the processing of a vast amount of data.

Salient points from this analysis are that:

- there is an overwhelmingly large number of space / name types in these two cities – 115 overall, of which 27 occur in both cities;
- the analyses of space / name types located them on a continuum, based on the student responses, ranging from being primarily Routes to being primarily Destinations;
- the 27 space types occurring in both cities were then examined in terms of the denotations of their suffix names;

- a separate group of students was polled twice – first with the full list of 115 space names, then with the list of 27 names common to both cities – in order to evince which names they regarded as distinctive or archetypal;
- these polls produced a list of nine highly ranked space / name types – *gardens, square, park, bridge, promenade, avenue, path / pathway / walk, boulevard, street* – which were then examined in terms of their connotations.

The nine distinctive space / name types identified in Section 5.5 are not seen as ideal or model forms in the sense, respectively, of Max Weber or Quatremère de Quincy. And although they can be regarded as archetypes, they should not be seen in any sense as models, prototypes or stereotypes. It is suggested that a refined list of this kind mediates between Hanson’s criticism of descriptive typologies being either too short and therefore “too simple” or too detailed and therefore “idiosyncratic”. The distinctive space / name types identified in Section 5.5 cannot be seen, in Jung’s terms, as providing a “universal index”, but they are seen as being, in Condon’s terms, a “facilitative tool” (Condon 1988: 50) or in Childs’ terms, “elements in a common language” (Childs 2004: 6) which might provide, in Johnson’s terms, a “*repertoire*” capable of “offering endless opportunities for development” (Johnson: 424).

The findings set out in this chapter support the contention that typological analysis is a fundamental vehicle for comprehending the built environment; that it can help students and practitioners to think more critically about the space types that they encounter; and that it can make a major contribution to the development of site-specific proposals for the design of urban space. And the importance of good design is underscored by the recognition throughout this thesis of the longevity of urban space.

CONCLUSIONS

1: OVERVIEW

The principal aim of this thesis has been to examine and validate typology – the study and/or listing of types – as a vehicle for comprehension and as an aid to the design of the built environment, particularly public urban space. It has demonstrated that typologies (categorizations and classifications of types) are a vehicle for human comprehension of the phenomenological world. Identifying and naming phenomena, which are seen in the context of the built environment as relational rather than absolute activities, create common understanding, provide a common language, and can lead to collective comprehension. This relational approach does not seek the degree of precision that is sought in empirical hierarchical classifications in the natural sciences.

The exercises presented in Chapter Five in the typological analysis of urban spaces on the basis of their suffix names (odonyms), demonstrates categorization on the basis of what Rapoport termed “low-level” – and therefore (more or less) commonly understood – denotative meanings, and then, in Section 5.5, on the basis of what those space / name types might connote – at which stage the names begin to move towards “mid-level” meanings. The first part of that analysis demonstrates an inclusive approach to categorization, whereas many studies of urban space, particularly form-based studies, have begun from a reductive position – often simply applying the two categories of “streets” and “squares”.

The inclusive nature of the approach advocated in this thesis and demonstrated in Chapter Five can be attributed to categorization on the basis of a continuum of types *before* assigning them, as in this case, to dyadic categories (route or destination) and then examining them further to evince the distinctive space / name types. It is argued that an inclusive approach of this nature recognizes diversity and, in terms of the design of the built environment, can contribute to the development of more context-driven and site-specific proposals.

2: REVIEW OF FINDINGS

Taking the findings in the order presented, it was noted in Chapter One that developments in transport continue to have a major influence on the location and form of cities, and that once public space networks are established, they tend to have a high degree of “fixity” or longevity. This is demonstrated by Conzen’s “morphological frames” (Conzen 1996: 117), by Martin’s recognition that the framework of streets and plots “remains the controlling factor of the way we build” (Martin 1972: 10) and by Rossi’s assertion that the “most meaningful” permanences are “provided by the street and the plan” (Rossi 1982: 59). This was also illustrated by the examples of the spatial structures of the central five kilometres square of Edinburgh and Winnipeg at roughly 100-year intervals (Figures 1.1 – 1.4).

Cities of course are rarely, if ever, “finished”. It was noted in Chapter One that few new cities are currently being built in the western world (Garreau 1991: 25) but that existing ones are constantly being re-made and expanded as a result of multiple overlapping decisions made over time by a multitude of different actors (Bacon 1967: 13). But, as the United Kingdom government’s *Manual for Streets* noted, “experience suggests that many of the street patterns built today will last for hundreds of years” (DoT 2007: 6). It is therefore important to design urban space with the expectation that it will generally outlast the buildings that front onto it. This highlights the importance of their connection and integration – for non-vehicular movement as well as for vehicular movement.

Connection was identified in Section 1.6 as one of five “performance dimensions” in support of “meta-criteria” of economic viability, and health and safety for the direction of cities in the twenty-first century. The other dimensions identified there were conduciveness (of urban space), integration (of built forms and urban space), energy efficiency (in transport and building) and identity (context-driven design). These meta-criteria and performance dimensions are intended to provide a cautionary note about the dangers of uncritical nostalgic application of historic models. Similarly, it has been emphasized throughout this thesis that typological analysis is

not seen as a source of ready-made design solutions. It is seen as a source of comprehension and as an illustration of possibilities.

In terms of conduciveness and integration of urban space, the “Greenway” system in Vancouver, Canada was cited (in Sub-section 4.4.2) as an example where connection – the “way” part of that word – is seen as being of equal importance to the “Green” part. That initiative commenced in 1928 as a means of creating continuous waterfront access. It adds validity to Kostof, Moughtin and Greenbie’s identification (addressed in Sub-section 4.3.1) of waterfronts as an equivalent category of urban space to the often-used dyadic categories “streets” and “squares”. By contrast with the Vancouver “Greenways”, more recent initiatives in Edinburgh and Winnipeg (also addressed in Sub-section 4.4.2) continue to promote the linkage of “Green” spaces and/or recreational routes rather than the creation of connected networks of (what Turner 1996: 189) called “harlequin” space. This point will be addressed further in Section 3 of these Conclusions.

Chapter Two addressed human approaches to knowledge, setting them in the epistemological context of Plato’s (somewhat dogmatic) Forms and Aristotle’s Primary Substances. Its main focus was post-Enlightenment thought as it pertained to comprehension of the world generally, ontologically and epistemologically, and, in particular, as it pertained to the naming and categorization of the phenomena that humans encounter. The chapter addressed the rise of scientific and empirical approaches to knowledge, romantic resistance to those approaches, and the emergence of aesthetics and the promotion of imagination as an outcome of that resistance.

Chapter Two then traced the growth of existentialism as a form of resistance to the idea of mass society, and phenomenology in architecture as a form of resistance to Modernism and science-based prescription. Heidegger (1889-1976), who made a significant contribution to most of the philosophical movements of the first half of the twentieth century – including hermeneutics, existentialism and phenomenology –

also contributed, through writings such as *Building, Dwelling, Thinking* (1951), to the emergence of phenomenological thinking in architecture and urban design. This was advanced by figures like Gordon Cullen in his *Townscape* (1961) and Norberg-Shulz in his *Genius Loci* (1980), and latterly by “architectural phenomenologists” including Vesely, Rykwert, Pallasmaa, Holl, Pérez-Gomez and Leatherbarrow.

Chapter Two also examined relationships between language, meaning and the built environment. It addressed developments in structuralism and emergence of the idea that meaning and identity are discernible through differences. That chapter also examined rarely noted similarities between the work of Saussure and Wittgenstein in terms of “language games” and the meaning of words being determined by their use. Wittgenstein observed in this connection that “naming is a preparation for describing”, which suggests that toponymy (the naming of places) and odonymy (the naming of streets) can be seen as word games in their own right. It was argued in this respect that street names carry Rapoport’s low-level, instrumental or denotational meanings. It was noted, however (in Chapter Five), that odonyms do also convey certain symbolic, mid-level or connotational meanings or expectations that make them identifiable and distinctive, if not archetypal.

Chapter Two critiqued the conflation of architecture and language, and the flirtation of architecture with semiotics. Eco’s version of low-level meanings in architecture – through denotation of primary functions and connotation of secondary functions – was seen as having the most traction, and informed the denotational and connotational analyses in Sections 5.4 and 5.5. The contributions of Jencks and Baird to this dalliance with semiotics were seen as a somewhat wishful overstatement while Agrest and Gandelsonas noted, in line with J. B. Jackson and Marc Treib (Sub-section 2.6.2), that meaning is “the result of cultural convention” rather than being inherent to “an architectural object” (Agrest and Gandelsonas 1973: 117). Nevertheless, it was concluded that the idea of architecture as a language remains a valuable metaphor – providing it remains at the level of metaphor. That chapter concluded by examining the application of ideas of type (including ideal types,

archetypes and prototypes), typology (lists of types or the study of types), categorization and classification in other disciplines.

Chapter Two noted three recurrent patterns in architectural thinking. First, western architecture since the Renaissance has been underpinned by (a largely unspoken) adherence to the Vitruvian ideals of “firmness, commodity and delight” while eagerly assimilating new technologies. Second there has been a (perhaps consequent) subtext of classicism as a default setting for architecture – with Palladianism as the basis for domestic architecture and Greek revival architecture as the basis for most civic, and many commercial, buildings. Third, there has been a tendency for architecture regularly to redefine itself in order to protect its autonomy (Banham 1990: 299 / Till 2009: 20). That tendency has gone hand-in-hand with a propensity to produce rules for building design (like Blondel’s *Cours* or Durand’s *Précis des leçons d’architecture*); manifestoes (like the CIAM’s Charter of Athens or Eisenman’s laudation of the diagram as a medium between past and future); dicta (like Loos’s “Ornament and Crime”, Sullivan’s “Form ever follows function”, Mies’s “Less is more”, or Venturi’s “Less is a bore”), and slogans (like Le Corbusier’s “Architecture or Revolution”).

Chapter Three presented a critical examination of type and typology in architecture and urban design. It noted that the Romanticism, inspired by Rousseau (1712-78), Kant (1724-1804) and Hegel (1770-1831), was reflected first in Laugier’s *Essai sur l’Architecture* (1753), proclaiming the *cabane rustique* as the archetypal building, and subsequently in the stylized neo-classicism of, amongst others, Ledoux (1736-1806), Nash (1752-1832) and Schinkel (1781-1841). It was also noted in Chapter Three that, despite the continuous classification of buildings by type, articulation of typological thinking in architecture tends to occur only when it has an obvious instrumental purpose. Such purposes included Quatremère’s aim in the late eighteenth century of proving “that architecture was an art in which nature was represented” (Forty 2000: 223); Muthesius’s use of type in the early twentieth century as a vehicle for promotion of industrialized design; use after World War II by

Rossi and others at the Milan journal *Casabella-Continuità* as a form of resistance to the tenets of Modernism promoted by Le Corbusier and the CIAM in their Charter of Athens (1933).

The issue of type and typological study in architecture became problematic when it began to be directed towards the generation of tectonic form in the 1980s. Subsequently (and perhaps consequently) the words type and typology have been used interchangeably in much architectural discourse. And latterly, as suggested by a number of the essays in Krieger and Saunders's *Urban Design* (2009), typological approaches to architecture have been damned by their association with postmodernism and New Urbanism.

By contrast, the examination in Section 3.6 and in Chapter Four of recent studies of urban space demonstrates that typological analysis has continued to be an effective vehicle for comprehension in the field of urban design. It is also argued there that knowledge of precedents – “what works, what doesn't” as Garvin put it – is an invaluable part of “designerly thinking”. There is a risk that if architecture dismisses tectonic precedents it might also ignore a range of other related issues, thereby limiting its ability to develop context-driven, site-specific design proposals. The challenge remains for architects and urban designers to ensure that typological study does not become a vehicle for uncritical reproduction or for simplistic nostalgia.

Chapter Five presented a number of exercises in the classification of urban spaces according to their generic or suffix names, and what these imply. It was based on typological continuums, as a practical basis for managing a (surprisingly) large data set. It employed two intersecting continuums between poles or extremes of being routes or destinations, and between poles of expressing their form or function. These were used for the classification by students in the Faculty of Architecture at the University of Manitoba of the 115 toponyms occurring in Edinburgh *or* Winnipeg. Then, in the order established by the route-destination continuum, the denotational or

low-level meanings of the 27 toponyms common to Edinburgh *and* Winnipeg were examined.

This was followed by two exercises by a different group of students to identify what they regarded as clearly identifiable or distinctive or archetypal urban space / name types – selecting first from the full list of 115 names and subsequently (without knowing the result of the first poll) only from the 27 common to both cities. These exercises generated nine space / name types that are seen as distinctive (if not archetypal) – *gardens, square, park, bridge, promenade, avenue, path / pathway / walk, boulevard, street*.

The connotational or mid-level meanings of these nine toponyms were then examined individually. That examination is founded on the argument that human intellection of the built environment recognizes (something akin to) transcendent or subconscious patterns amongst space / name types, and that these types are principal components of a common vocabulary for urban designers and others in an increasingly urbanized world.

3: APPLICATION OF FINDINGS

Lessons from this thesis that can be carried into practice are outlined here.

1. Typological analysis is an extraordinarily versatile vehicle for human comprehension of most aspects of the phenomenal world – not simply the built environment. And in terms of the design of urban space, typological analysis brings awareness of the diverse range of space types that are available and can assist in their comprehension as part of integrated systems. This, and the study of precedent projects, helps to build a knowledge base that can be drawn on – both consciously and subconsciously – in the preparation and communication of design proposals.

The examination of space types on the basis of their suffix names demonstrates the vast number of types that exist in the cities of Edinburgh and Winnipeg

alone. The example of the “Greenways” in Vancouver, Canada (cited in Sub-section 4.4.2) or of the “Grand Rounds” in Minneapolis, Minnesota (examined in Tate 2001: 179-92) demonstrate the use of a wide range of space types in order to create systems of urban space for which “conduciveness” and “integration” can be seen as driving forces.

It is important to note that these systems have been patiently and persistently created over many years – since 1928 in Vancouver and since 1883 in Minneapolis. Similar approaches could be adopted in Edinburgh, where former railway routes and industrial waterfronts – like Warriston Path and the Water of Leith – have been converted into walkable routes. Extension of these routes over time through the Leith Docks and Granton waterfront development areas could incorporate a range of different space types in order to achieve “conduciveness” and “integration”.

2. In much the same way that Quatremère de Quincy promoted the idea of the type (as opposed to the model) as an aid to design, it has been argued that typological study and/or the study of built precedents are important sources for the “knowledge bank” that designers draw on in the design and construction of the built environment. This contributes to what Argan termed the *a posteriori* moment of the design process (consideration of existing solutions to similar problems) as opposed to the *a priori* moment (which is independent of experience).

This is similar to what Johnson referred to as a “*repertoire* of architectural elements” ... “offering endless opportunities for development” (Johnson 1994: 424), and what Nigel Cross, called “designerly ways of knowing” (Cross 2007). In short, typological analysis contributes to the body of knowledge that is drawn upon in the design process.

3. The typological analysis presented in Chapter Five (like Carmona's analysis addressed in Sub-section 4.4.2) is based on a continuum between extreme conditions. This is seen as an effective way of being inclusive in the classification of phenomena. It is suggested that this kind of approach should be applied, whenever appropriate, in typological analysis of the built environment.

Similarly, in support of the "performance dimensions" of "conduciveness" and "integration" of urban space, it is important to adopt an approach that works towards all types of space (whether publicly or privately owned and/or managed, and whether vegetated or exclusively hard-surfaced) being treated as part of a continuous, connected matrix. This promotes the application of Smith and Low's argument that "the dilemma of public space is surely trivialized by collapsing our contemporary diagnosis into a lament about private versus public" (Smith and Low 2006: 12).

4. Transport systems are major determinants of urban location and urban form. The essays by Clark (1958) and Doxiadis (1969), examined in Chapter One, demonstrate that this has been the case since human settlement began. And, as Garreau (1991) and Soja (2000 / 2009) have pointed out, although few (if any) traditional, concentric cities are currently being created in the western world, transport (particularly by motor vehicle) continues to have a significant impact on urban form and public space.

Indeed it was noted in Chapter Four that the origin of discourse about the design of public space in industrial cities began with Camillo Sitte's *City Planning According to Artistic Principles* (1889). This was a reaction, in part, to construction of the Vienna *Ringstrasse*. Subsequent discourse has included publications like the Buchanan Report *Traffic in Towns* (1963), which sought to address the continuing challenge of balancing vehicular access and environmental quality in urban areas. The critical point here for practical

purposes is that roads – which are generally designed by highway engineers to meet rigidly imposed, normative standards – are an integral part of long-term urban space systems, and their design and management should reflect qualitative as well as operational values.

5. Once established, the spaces created for transport systems, particularly for motor vehicles, have a very high level of “fixity”. This is demonstrated in the figure-ground drawings presented in Chapter One and is reinforced by the suggestion in the *Manual for Streets* that “many of the street patterns built today will last for hundreds of years” (DoT 2007: 6). In other words, the buildings that front onto public spaces change and are replaced more quickly than the spaces themselves change. This is a sobering thought. And it is a thought of which designers of all forms of vehicular route should be mindful. This fact is essentially what Martin (1972) was referring to in describing the framework of urban streets and plots as a “controlling factor” on building, and what Rossi (1982) was referring to as the “meaningful permanence” created by the street and the plan.

4: FURTHER INVESTIGATIONS

The investigation presented in this thesis might be advanced through:

1. further examination of approaches to categorization and classification in other disciplines that might inform the practice of typology in the comprehension and design of the built environment;
2. architecture as a field being cognisant of the strengths (as well as the limitations) of typology as a source of comprehension of the development of the discipline over time and space, and as an aid to the process of architectural design;
3. application of typological analysis of urban space to cities other than (or in addition to) Edinburgh and Winnipeg;
4. application of name-based analysis of urban space to cities in non English-speaking countries in order to test whether the diversity of space / name types

is simply an English-language phenomenon or whether it might be a more widely applicable approach to the comprehension of urban space;

5. full case study examination of widely-known examples of the distinctive space / name types identified in the quasi-experimental studies in order to evince more fully their distinctive characteristics or identifiable attributes. In terms of those studies, it would have been feasible not to have given the students any definitions for the space names for the first exercise as well as for the second set of exercises. This might have achieved more intuitive responses which could have generated a more emphatic categorization from the outset. It would also be valuable to compare responses to those exercises from students based in Edinburgh or from other respondents.

Overall, the thesis has demonstrated that categorization of phenomena by type is fundamental to human comprehension of the world. And as such, that it is wholly applicable to the comprehension of the built environment and particularly valuable for the examination of urban space, which, as has been emphasized throughout the thesis, has greater longevity than the properties to which it provides access. It should be understood, however, particularly in the design disciplines, that while typological analysis is an invaluable mode of inquiry, it should not be treated as an easy source of design solutions. As Robinson put it, “type is a question not an answer” (Robinson 1994: 192). But it is a question that can lead to richer answers.

BIBLIOGRAPHY

BOOKS AND JOURNALS

- Abrams, C.** (1971). *The Language of Cities: A Glossary of Terms*. New York: Viking Press.
- Addison, J.** (1712a). *The Spectator*, No. 411 in Allen, R. J. (1970 – Second Edition).
– (1712b). *The Spectator*, No. 414 in Hunt, J. D. and Willis, P (1988). Op. cit. pp. 141-3.
– (1712c). *The Spectator*, No. 415 downloaded from www.mnstate.edu (27 December 2008).
- Agrest, D. and Gandelonas, M.** (1973). “Semiotics and Architecture: Ideological Consumption or Theoretical Work” in Nesbit, K. Op. cit. pp. 110-9.
- Alexander, C.** (1964 – Paperback Edition 1971). *Notes on the Synthesis of Form*, Cambridge, Massachusetts: Harvard University Press.
– (1965a). “A City is not a Tree” Part 1 in *The Architectural Forum*, Vol. 122, No. 1. New York: Urban America, Inc. pp. 58-62
– (1965b). “A City is not a Tree” Part 2 in *The Architectural Forum*, Vol. 122, No. 2. New York: Urban America, Inc. pp. 58-61.
– (1969). “Major Changes in Environmental Form Required by Social and Psychological Demands” in *Ekistics*, Vol. 28, No. 165, August 1969. pp. 78-85.
– (1977) with **Ishikawa, S.** and **Silverstein, M.** *A Pattern Language: Towns, Buildings, Construction*. New York: Oxford University Press.
– (1979). *The Timeless Way of Building*. New York: Oxford University Press.
– (1987). *A New Theory of Urban Design*. New York: Oxford University Press.
– (2008) with **Schmidt R., Hanson B., Alexander M. M., and Mehaffy M.** “Generative Codes: The Path to Building Welcoming, Beautiful, Sustainable Neighborhoods” in Haas, T. Op. cit. pp. 14-29.
- Allen, R. J.** (1970 – Second Edition). Introduction to *Addison and Steele: Selections from The Tatler and The Spectator*. Fort Worth, Texas: Holt, Rinehart and Winston, Inc. pp. v–xvi.
- Alison, A.** (1790 – 1830 Edition “With Corrections and Improvements by Abraham Mills”). *Essays on the Nature and Principles of Taste*. New York: G. & C. & H. Carvill.
- Ambrose, G., Harris, P. and Stone, S.** (2008). *The Visual Dictionary of Architecture*. Lausanne, Switzerland: AVA Publishing SA.
- Anderson, S.** (1982). “Types and Conventions in Time: Toward a History for the Duration of Change of Artifacts” in *Perspecta*, Vol. 18. Cambridge, Massachusetts / London. MIT Press. pp. 109-117.
– (1986 – Editor: First Paperback Edition). *On Streets*. Cambridge, Massachusetts / London: MIT Press.
- Anscombe, E. and Geach, P. T.** (1954). *Descartes Philosophical Writings*. Sunbury on Thames, Middlesex: Nelsons University Paperbacks / Van Nostrand Reinhold.
- Aravot, I.** (2002). “Back to Phenomenological Placemaking” in *Journal of Urban Design*. Vol. 7 Issue 2, June 2002. pp. 201-12.
- Argan, G. C.** (1962). “On the typology of architecture” in *Architectural Design*, Vol. 33, No. 12 (1963 - translated from Italian by J. Rykwert). pp. 564-5.
- Ayer, A. J.** (1980 – republished 2000). *Hume: A Very Short Introduction*. Oxford: Oxford University Press.
- Azaryahu, M.** (2009). *Naming the Past: The Significance of Commemorative Street Names* in Berg, L. D. and Vuolteenaho, J. Op. cit. pp. 53-70.
- Bachelard, G.** (1964 – 1994 Edition). *The Poetics of Space*. Boston, Massachusetts: Beacon Press.

- Bacon, E. N.** (1967 – 1974 Edition). *Design of Cities*. New York: Viking Penguin.
- Bailey, K. D.** (1994). *Typologies and Taxonomies: An Introduction to Classification Techniques*. SAGE University Paper 102. Thousand Oaks, California: Sage Publications.
- Baird, G.** (1967). “‘La Dimension Amoureuse’ in Architecture” in *Arena Architectural Association Journal*. Vol. 83 No. 913. June 1967. pp. 25-30.
 – (2004). “The New Urbanism and Public Space” in Haas, T. (2008). pp. 120-3.
- Ballantyne, A.** (2002). *Architecture: A Very Short Introduction*. Oxford: Oxford University Press.
 – (2007). *Deleuze and Guatarri for Architects*. Abingdon, Oxon / New York: Routledge.
- Bandini, M.** (1984). “Typology as a Form of Convention” in *AA Files 6*. London: Architectural Association. pp. 73-82.
- Banham, R.** (1990). “A Black Box: The Secret Profession of Architecture” in *A Critic Writes: Essays by Rayner Banham* (1996). Berkeley and Los Angeles, University of California Press. pp. 292-9.
- Barnhart, R. K.** (1988 – Editor). *Chambers Dictionary of Etymology*. Edinburgh: Imprint of Chambers Harrap Publishers Ltd.
- Barthes, R.** (1957 – First American Edition 1972). *Mythologies* (translated from French by A. Lavers). New York: Hill and Wang.
 – (1967). Transcript of “Semiology and the Urban” given 16 May 1967, in Leach, N. (1997). Op. cit. pp. 166-72.
 – (1968). “The Death of the Author” in Barthes, R. (1977). *Image – Music – Text* (translated by S. Heath). New York: Hill and Wang. pp. 142-8.
- Batty, M.** (2008). “Hierarchy, Scale, and Complexity in Urban Design” in Haas, T. Op. cit. pp. 258-261.
- Belsey, C.** (2002). *Poststructuralism: A Very Short Introduction*. Oxford: Oxford University Press.
- Berg, L. D. and Vuolteenaho, J.** (2009). *Critical Typologies: The Contested Politics of Place Naming*. Farnham, Surrey: Ashgate.
- Bernard, J. H.** (1892). Introduction to Kant, I. Op. cit. pp. ix-xxvi.
- Blondel, J-F.** (1771). *Cours d'Architecture ou Traité de la Décoration, Distribution et Construction des Bâtiments: Contenant les Leçons Données en 1750 et les Années Suivantes – Tome Second*. Paris: Chez Desaint, Libraire.
- Borden, I. and Dunster, D.** (1996 – Editors), *Architecture and the Sites of History*. New York: Whitney Library of Design.
- Boyer, C.** (1983). *Dreaming the Rational City*. Cambridge, Massachusetts / London: MIT Press.
- Braham, W.** (2000), “After Typology: The Suffering of Diagrams” in *Architectural Design: Contemporary Processes in Architecture*, Vol. 70, No. 3, June 2000. London: John Wiley & Sons. pp. 9-11.
- Brill, M.** (1994). “Archetypes as a ‘Natural Language’ for Place Making” in Franck, K. A. and Schneekloth, L. H. Op. cit. pp. 61-78.
- Britton K.** (2001). *Auguste Perret*. London and New York: Phaidon Press Ltd.
- Broadbent, G.** (1969). “Meaning into Architecture” in Jencks, C. and Baird, G. Op. cit. pp. 51-75.
 – (1977). “A Plain Man’s Guide to the Theory of Signs in Architecture” in Nesbit, K. Op. cit. pp. 122-40.
 – (1990 – Paperback Edition 1996). *Emerging Concepts in Urban Space Design*. London: E & FN Spon.

- Broadbent, G., Bunt, R. and Jencks, C.** (1980 - Editors). *Signs, Symbols, and Architecture*. Chichester: Wiley.
- Bruun, H. H.** (2007). *Science, Values and Politics in Max Weber's Methodology*. Aldershot, Hampshire: Ashgate Publishing Limited.
- Burger, T.** (1976). *Max Weber's Theory of Concept Formation ... History, Laws and Ideal Types*. Durham, North Carolina: Duke University Press.
- Burgers, J.** (2000). "Urban landscapes: On public space in the post-industrial city" in *Journal of Housing and the Built Environment*, Volume 15. pp. 145-64.
- Burke, E.** (1757 - 1990 Edition). *A Philosophical Enquiry into the Origin of our Ideas of the Sublime and Beautiful*. Oxford: Oxford University Press.
- Busch, T.** (2008). "Existentialism: The 'New Philosophy'" in Diprose, R. and Reynolds, J. Op. cit. pp. 30-43.
- Butler, C.** (2002). *Postmodernism: A Very Short Introduction*. Oxford: Oxford University Press.
- Caliandro, V.** (1972). "Street Form and Use: A Survey of Principal American Street Environments" in Anderson, S. (1986). Op. cit. pp. 150-86.
- Careri, F.** (2001). *Walkscapes: Walking as an Aesthetic Practice*. Barcelona and Mexico: Gustavo Gili.
- Carman, T.** (2008). "Between Empiricism and Intellectualism" in Diprose, R. and Reynolds, J. Op. cit. pp. 44-56.
- Carmona, M.** (2010a): "Contemporary Public Space: Critique and Classification, Part One: Critique" in *Journal of Urban Design*, Vol. 15. No. 1, February 2010. pp. 123-48.
 – (2010b): "Contemporary Public Space: Critique and Classification, Part Two: Classification" in *Journal of Urban Design*, Vol. 15. No. 2, May 2010. pp. 157-73.
- Carr, S., Francis, M., Rivlin, L. G. and Stone A. M.** (1993). *Public Space*. Cambridge: Cambridge University Press.
- Casey, E.** (1997). *The Fate of Place: A Philosophical History*. Berkeley / Los Angeles: University of California Press.
- Chase, J. L., Crawford, M. and Kalsiki, J.** (2008 – Editors: Expanded Edition). *Everyday Urbanism*. New York: The Monacelli Press.
- Childs, M. C.** (2004). *Squares: A Public Place Design Guide for Urbanists*. Albuquerque: University of New Mexico Press.
- Ching, F. D. K., Jarzombek, M. M. and Prakash, V.** (2007). *A Global History of Architecture*. Hoboken, NJ: John Wiley & Sons.
- Choay, F.** (1969). "Urbanism and Semiology" in Jencks, C. and Baird, G. Op. cit. pp. 27-37.
- CIAM** (1933). Excerpts from "Charter of Athens: Tenets" in Conrads, U. Op. cit. pp. 137-145.
- Clark, C.** (1958). "Transport – Maker and Breaker of Cities" in *The Town Planning Review*, Vol. xxviii, No. 4 (January 1958). pp. 237-50.
- Cobley, P. and Jansz, L.** (1997). *Introducing Semiotics*. Cambridge, England: Icon Books in United Kingdom / Totem Books in United States.
- Cogswell, D.** (2008). *Existentialism for Beginners*. Hanover, New Hampshire: For Beginners LLC.

- Cohen, J. M. and Cohen, M. J.** (1960). *The Penguin Dictionary of Quotations*. Middlesex, England: Penguin Books.
- Collins, G. R. and Collins, C. C.** (1986). *Camillo Sitte: The Birth of Modern City Planning*. Mineola, New York: Dover Publications, Inc.
- Colquhoun, A.** (1967). "Typology and Design Method" in Colquhoun, A. (1981). Op. cit. pp. 43-50.
 – (1972a). "Displacement of Concepts in Le Corbusier" in Colquhoun, A. (1981). Op. cit. pp. 51-66.
 – (1972b). "Historicism and the Limits of Semiology" in Colquhoun, A. (1981). Op. cit. pp. 129-38.
 – (1981). *Essays in Architectural Criticism: Modern Architecture and Historical Change*. Oppositions Books published for Graham Foundation, Chicago, Illinois and the Institute of Architecture and Urban Studies: New York.
 – (2002). *Modern Architecture*. Oxford: Oxford University Press.
- Condon, P. M.** (1988 – Principal Investigator). *A Designed Landscape Space Typology: A Theory Based Design Tool*. Report to National Endowment for the Arts. Minneapolis: University of Minnesota.
- Conrads, U.** (1964 – Editor, First English Language Edition 1970). *Programs and manifestoes on 20th-century architecture* (with translations from German by M. Bullock). Cambridge, Massachusetts: MIT Press.
- Conzen, M. R. G.** (1966). "The Use of Town Plans in the Study of Urban History" in Dyos H. J. (1968). Op. cit. pp. 113-30.
- Coulthard, T.** (2009). "Editor's Message" in *Landscape: The Journal of the Landscape Institute*. Autumn 2009.
- Crawford M.** (2008). Introduction to Chase, J. L., Crawford, M. and Kalsiki, J. – Editors. *Everyday Urbanism*. New York: The Monacelli Press. pp. 6-15.
- Critchley, S.** (2001). *Continental Philosophy: A Very Short Introduction*. Oxford: Oxford University Press.
- Cross, N.** (2007). *Designerly Ways of Knowing*. Basel: Birkhäuser
- Cuddon, J. A.** (1998 – Fourth Edition, Revised by C. E. Preston). *Dictionary of Literary Terms & Literary Theory*. London: Penguin Books.
- Culler, J.** (1983 republished 2002). *Barthes: A Very Short Introduction*. Oxford: Oxford University Press.
 – (1997). *Literary Theory: A Very Short Introduction*. Oxford: Oxford University Press.
- Curl, J. S.** (2006 - Second Edition). *A Dictionary of Architecture and Landscape Architecture*. Oxford: Oxford University Press.
- Cuthbert, A. R.** (2006). *The Form of Cities: Political Economy and Urban Design*. Oxford: Blackwell Publishing.
- Daniels P. S. and Hyslop, S. G.** (2006 – First Paperback Edition) *National Geographic Almanac of World History*. Washington DC: National Geographic Society.
- Darwin, C.** (1859 – 1996 Edition). *On the Origin of Species*. Oxford: Oxford University Press.
- Davey, P.** (2010). "Juhani Pallasmaa calls for 'an architecture of resistance' in the face of globalization" in *The Architectural Review* Vol. CCXXVII, No. 1355, January 2010. London: Emap Inform. p. 21.

de Certeau, M. (1984). *The Practice of Everyday Life*. Berkeley / Los Angeles: University of California Press.

Department of Transport – DoT (2007). *Manual for Streets*. London: Thomas Telford Publishing for Department of Transport, UK Government.

Derrida, J. (1986a). “*Point de Folie – maintenant l’architecture*” (translated from French by K. Linker) in Leach, N. (1997). Op. cit. pp. 324-36.

– (1986b). “Architecture where the Desire May Live” – interview with Eva Meyer in Leach, N. Op. cit. pp. 319-23.

– (1988). “Why Peter Eisenmann Writes Such Good Books” (translated from French by S. Whiting) in Leach, N. Op. cit. 336-47.

Descartes, R. (written 1628, first published 1701). *Rules for the Direction of the Mind* in Haldane, E. S. and Ross G.R.T. Op. cit. pp. 1-77.

– (1637 – 1998 Fourth Edition). *Discourse on Method and Meditations on First Philosophy* (translated from French by D. Cress). Indianapolis, Indiana: Hackett Publishing Company, Inc.

Diprose, R. and Reynolds, J. (2008 – Editors). *Merleau-Ponty: Key Concepts*. Stocksfield, Newcastle, England: Acumen.

Doniger, W. (1995). Foreword to Lévi-Strauss, C. Op. cit. pp. vii-xv.

Downing, F. (1994). “Memory and the Making of Places” in Franck, K. A. and Schneekloth, L. H. Op. cit. pp. 233-52.

Doxiadis, C. A. (1969). “Man’s Movement and His City” in *Ekistics* Vol. 27, No. 159, February 1969. pp. 88-94.

Duany, A. and Plater-Zyberk, E. (2008). “The Traditional Neighbourhood and Urban Sprawl” in Haas, T. Op. cit. pp. 64-6.

Dunn, J. (1984 republished 2003). *Locke: A Very Short Introduction*. Oxford: Oxford University Press.

Dunster, D. (1976). “Sign Language” in *Architectural Design*. Vol. XLVI, November 1976. pp. 667-9.

Durkheim, É. and Mauss, M. (1903 - First Publication in English) *Primitive Classification (De Quelques Formes Primitives de Classification* - translated from French by R. Needham). London: Cohen and West.

Dyos H. J. (1968). *The Study of Urban History* – Proceedings of Conference of the Urban History Group, 23-26 September 1966. New York: St Martin’s Press.

Eco, U. (1973). “Function and Sign: The Semiotics of Architecture” in Leach, N. (1997). Op. cit. pp. 182-202.

Eisenman, P. (1999). *Diagram Diaries*. New York: Universe Publishing.

– (2005). *The Diagram as a Space of Difference* in Jencks, C. and Kropf, K. Op. cit. pp. 376-7.

Elam, K. (2001). *Geometry of Design: Studies in Proportion and Composition*. New York: Princeton Architectural Press.

Ellis, W. C. (1979). “Type and Context in Urbanism: Colin Rowe’s Contextualism” in Hays, M. K. Op. cit. pp. 226-251.

– (1986). “The Spatial Structure of Streets” in Anderson, S. Op. cit. pp. 114-31.

Evers, B. (2003a – Editor). *Architectural Theory from the Renaissance to the Present*. Köln: Taschen.

– (2003b). “Gottfried Semper (1803-79)” in Evers, B. (2003a). Ibid. pp. 626-33.

- Finlayson, J. G.** (2005). *Habermas: A Very Short Introduction*. Oxford: Oxford University Press.
- Fish, S.** (1989). *Doing What Comes Naturally: Change, Rhetoric and Practice of Theory in Literary and Legal Studies*. Durham, North Carolina / London: Duke University Press.
- Fleming, J., Honour, H., and Pevsner, N.** (1999 – Fifth Edition). *The Penguin Dictionary of Architecture and Landscape Architecture*. London: Penguin Books.
- Flew, A.** (1984 – Editor). *A Dictionary of Philosophy*. London: Pan Books.
 – (1989 – Revised Edition). *An Introduction to Western Philosophy: Ideas and Argument from Plato to Popper*. London / New York: Thames and Hudson.
- Flynn T. R.** (2006). *Existentialism: A Very Short Introduction*. Oxford: Oxford University Press.
- Forty, A.** (2000). *Words and Buildings: A Vocabulary of Modern Architecture*. London: Thames and Hudson.
- Foster, H.** (2008). “Image Building” in Vidler, A. (Editor). *Architecture: Between Spectacle and Use*. Williamstown, Massachusetts: Sterling and Francine Clark Art Institute. pp. 164-79.
- Foucault, M.** (1966 – 2002 English Edition). *The Order of Things (Les Mots et les choses)*. Abingdon, Oxon / New York: Routledge.
 – (1994 – 2001 Edition). *Power: Essential Works of Foucault 1954-1984 Volume Three* (edited by Faubion J. D. and translated from French by R. Hurley and others). London: Allen Lane and Penguin Press.
- Frampton, K.** (1981) in Preface to Colquhoun, A. (1981). Op. cit. pp. 1-10.
- Francescato, G.** (1994). “Type and the Possibility of an Architectural Scholarship” in Franck, K. A. and Schneekloth, L. H. Op. cit. pp. 253-70.
- Francis, M.** (2001). “A Case Study Method for Landscape Architecture” in *Landscape Journal*, Vol. 20, No. 1. Madison, Wisconsin: University of Wisconsin Press. pp. 15-29.
 – (2003). *Urban Open Space: Designing for User Needs*. Washington DC: Island Press.
- Franck, K. A.** (1994). “Types are Us” in Franck, K. A. and Schneekloth, L. H. Op. cit. pp. 345-72.
- Franck, K. A. and Schneekloth, L. H.** (1994 - Editors). *Ordering Space: Types in Architecture and Design*. New York: Van Nostrand Reinhold.
- Freigang, C.** (2003a). “Claude-Nicholas Ledoux (1736-1806)” in Evers, B. Op. cit. pp. 318-327.
 – (2003b). “Jean-Nicolas-Louis Durand (1760-1835)” in Evers, B. Op. cit. pp. 328-35.
 – (2003c). “Eugène Emmanuel Viollet-le-Duc (1814-1879)” in Evers, B. Op. cit. pp. 344-55.
- Friedman, A. T.** (1994). “Just Not My Type: Gender, Convention and Uses of Uncertainty” in Franck, K. A. and Schneekloth, L. H. Op. cit. pp. 331-44.
- Gadamer, H-G.** (1960a - 1993 Edition). *Truth and Method*. (translated from German by J. Weinsheimer and D. G. Marshall). London: Sheed and Ward.
 – (1960b). *The Nature of Things* in Linge, D. E. Op. cit. pp. 69-81.
 – (1963). *The Phenomenological Movement* in Linge, D. E. Op. cit. pp. 130-81.
 – (1964). *Aesthetics and Hermeneutics* in Linge, D. E. Op. cit. pp. 95-104.
 – (1966a). *The Universality of the Hermeneutical Problem* in Linge, D. E. Op. cit. pp. 3-17.
 – (1966b). *Man and Language* in Linge, D. E. Op. cit. pp. 59-68.
 – (1972). *Semantics and Hermeneutics* (translated from German by P. C. Smith) in Linge, D. E. Op. cit. 82-94.
 – (2003). *A Century of Philosophy: Hans-Georg Gadamer in Conversation with Riccardo Dottori* (translated from German by R. Coltman with S. Koepke). New York / London: Continuum Publishing Group.

- Gandelsonas, M.** (1999). *X-Urbanism: Architecture and the American City*. New York: Princeton Architectural Press.
- Garreau, J.** (1991). *Edge City: Life on the New Frontier*. New York: Anchor Books.
- Garvey, J.** (2006). *The Twenty Greatest Philosophy Books*. London / New York: Continuum International Publishing Group.
- Garvin, A.** (1996). *The American City – What Works, What Doesn't*. New York: McGraw Hill.
- Gauthiez, B.** (2003). *Éspace urbain: vocabulaire et morphologie*. Paris, France: Centre des monuments nationaux / Monum, Éditions du patrimoine.
- Gaventa, S.** (2006). *New Public Spaces*. London: Mitchell Beazley.
- Gehl, J. and Gemzøe, L.** (2000). *New City Spaces*. Copenhagen: Danish Architectural Press.
- Geist, J. F.** (1983). *Arcades: The History of a Building Type*. Cambridge, Massachusetts / London, England: MIT Press.
- Giedion, S.** (1941 - Fourth Edition 1963). *Space, Time and Architecture*. Cambridge, Massachusetts: Harvard University Press.
- Gilbert, K. A. and Kuhn, H.** (1972 reprint of 1954 original). *A History of Esthetics*. Westport, Connecticut: Greenwood Press.
- Goldberger, P.** (2003). “Disconnected Urbanism” in *Metropolis Magazine*, November 2003.
– (2009). *Why Architecture Matters*. New Haven / London: Yale University Press.
- Goode, T.** (1992). “Typological Theory in the United States: The Consumption of Architectural ‘Authenticity’” in *The Journal of Architectural Education*, September 1992, Vol. 46, No. 1, pp. 2-13.
- Gordon, G.** (1990). “The Morphological Development of Scottish Cities from Georgian to Modern Times” in Slater T. R. (1990 - Editor). *Op. cit.* pp. 210-32.
- Greenbie, B. B.** (1981). *Spaces: Dimensions of the Human Landscape*. New Haven / London: Yale University Press.
- Greeves, L.** (2004). *History and Landscape: The Guide to National Trust Properties in England, Wales and Northern Ireland*. London: The National Trust.
- Groat, L. and Wang, D.** (2002). *Architectural Research Methods*. New York: John Wiley & Sons.
- Gutting, G.** (2005). *Foucault: A Very Short Introduction*. Oxford: Oxford University Press.
- Haas, T.** (2008 - Editor). *New Urbanism and Beyond: Designing Cities for the Future*. New York: Rizzoli.
- Hajer, M. and Reijndorp, A.** (2001). *In Search of New Public Domain*. Rotterdam: NAI Publishers.
- Halbwachs, M.** (1941 / 1952 – Edited and translated from French 1992 by L. A. Coser from two books by Halbwachs). *The Collective Memory*. Chicago / London: University of Chicago Press.
- Haldane, E. S. and Ross G.R.T.** (1973 – corrected printing of 1911 Edition). *The Philosophical Works of Descartes: Volume I*. Cambridge: Cambridge University Press.
- Hall, E. T.** (1966). *The Hidden Dimension*. New York: Doubleday.
- Hanson, J.** (1989). “Order and structure in urban design: The plans for the rebuilding of London after the Great Fire of 1666” in *Ekistics* Vol. 56, Nos. 334 / 335, pp. 22-42.

- Harney, M.** (2008). "Strawberry Hill" in *Architectural Review*, Vol. CCXXIV No. 1341, November 2008. London: Emap Inform. pp. 72-7.
- Harvey, D.** (2006). "The Political Economy of Public Space" in Low, S. and Smith, N. Op. cit. pp. 17-34.
- Harris, R.** (1988). *Language, Saussure and Wittgenstein: How to Play Games with Words*. London / New York: Routledge.
- Harris, S.** (1996 – Paperback Edition 2002). *The Place Names of Edinburgh*. London: Steve Savage.
- Hawkes, T.** (1977). *Structuralism and Semiotics*. London: Routledge.
- Hayden, D.** (2006). "Building the American Way: Public Subsidy, Private Space" in Low, S. and Smith, N. Op. cit. pp. 35-48.
- Hays, M. K.** (1998 – Editor). *Oppositions Reader: Selected Readings from a Journal for Ideas and Criticism in Architecture 1973-84*. New York: Princeton Architectural Press.
- Heidegger, M.** (1936). "The Origin of the Work of Art" from *Poetry, Language, Thought* (translated from German by A. Hofstadter 1971). New York: Harper & Row. pp. 41-3 and 58-60 in Leach, N. (1997). Op. cit. pp. 119-121.
- (1951a). "Building, Dwelling, Thinking" from *Poetry, Language, Thought* (translated from German by A. Hofstadter 1971). New York: Harper & Row. pp. 143-61 in Leach, N. (1997). Op. cit. pp. 100-9.
 - (1951b). "... Poetically Man Dwells ..." from *Poetry, Language, Thought* (translated from German by A. Hofstadter 1971). New York: Harper & Row. pp. 211-29 in Leach, N. (1997). Op. cit. pp. 109-19.
 - (1969). "Art and Space" from *Man and World* (translated by C. Siebert 1973). Fall 6, pp. 3-8 in Leach, N. (1997). Op. cit. pp. 121-4.
- Her Majesty's Stationery Office (HMSO).** (1963 – Shortened Paperback Edition 1964). *Traffic in Towns: The Buchanan Report*. Harmondsworth, Middlesex: Penguin Books.
- Hill, L.** (2007). *The Cambridge Introduction to Derrida*. Cambridge: Cambridge University Press.
- Hillier, B.** (1989). "The architecture of the urban object" in *Ekistics*, Vol. 56, Nos. 334 / 335. pp. 5-21.
- (1996). *Space is the Machine*. Cambridge: Cambridge University Press.
- Hiss, T.** (1990 – First Vintage Edition). *The Experience of Place*. New York: Vintage Books.
- Hogarth, W.** (1753 – 1973 Facsimile Copy). *The Analysis of Beauty: Written with a view to fixing the fluctuating Ideas of Taste*: London: J. Reeves and William Hogarth. New York: Garland Publishing, Inc.
- Holl, S., Pallasmaa, J. and Pérez-Gómez, A.** (July 1994). *Questions of Perception: Phenomenology of Architecture*. Architecture and Urbanism Special Issue. Tokyo: a+u Publishing Co.
- Holl, S.** (1994a). "Questions of Perception: Phenomenology of Architecture" in Holl, S., Pallasmaa, J. and Pérez-Gómez, A. Op. cit. pp. 39-42.
- (1994b). "Phenomenal Zones: Archetypal Experiences of Architecture" in Holl, S., Pallasmaa, J. and Pérez-Gómez, A. Op. cit. pp. 44-156.
- Hunt, J. D. and Willis, P.** (1988). *The Genius of the Place: The English Landscape Garden 1620-1820*. London: Elek Books.
- Husserl, E.** (1927). *Phenomenology: Edmund Husserl's Article for the Encyclopaedia Britannica*. Reprint from *Journal of the British Society for Phenomenology* 2 (1971). pp. 77-90 from *Husserl's Shorter Works*. pp 21-35.

- Inwood, M.** (1997 – republished 2000). *Heidegger: A Very Short Introduction*. Oxford: Oxford University Press.
- Jackson, J. B.** (1994). *A Sense of Place, a Sense of Time*. New Haven / London: Yale Univ. Press.
- Jacobs, A. B.** (1995 – First Paperback Edition). *Great Streets*. Cambridge, Massachusetts / London: MIT Press.
- Jacobs, A. B. and Appleyard, D.** (1987). “Toward an Urban Design Manifesto” in LeGates, R. T. and Stout, F. Op. cit. pp. 437-47.
- Jacobs, A. B., Macdonald, E. and Rofé, Y.** (2002). *The Boulevard Book*. Cambridge, Massachusetts / London: MIT Press.
- Jacobs, J.** (1961). *The Death and Life of Great American Cities*. New York: Vintage Books.
- Jellicoe, G. A.** (1966). *Studies in Landscape Design: Volume II*. London: Oxford University Press.
 – (1970). *Studies in Landscape Design: Volume III*. London: Oxford University Press.
 – (1983). *The Guelph Lectures on Landscape Design*. University of Guelph, Canada.
- Jellicoe, G and Jellicoe, S.** (1975). *The Landscape of Man: Shaping the Environment from Prehistory to the Modern Day*. London: Thames and Hudson.
- Jencks, C.** (1969). “Semiology and Architecture” in Jencks, C. and Baird, G. Op. cit. pp. 11-25.
 – (1980). “Introduction to Section 1” in Broadbent, G. et al. Op. cit. pp. 7-10.
 – (2002). *The New Paradigm in Architecture: The Language of Post-Modernism*. New Haven / London: Yale University Press.
 – (2005). *Iconic Building: The Power of Enigma*. London: Frances Lincoln.
- Jencks, C. and Baird, G.** (1969 – Editors). *Meaning in Architecture*. London: Barrie and Jenkins.
- Jencks, C. and Kropf, K.** (2006 – Editors: Second Edition). *Theories and Manifestoes of Contemporary Architecture*. Chichester, West Sussex: Wiley-Academy.
- Jenkins, E. J.** (2008). *To Scale*. Abingdon, Oxon and New York: Routledge.
- Joachim, H. H.** (1957 – reprinted 1979). *Descartes's Rules for the Direction of the Mind*. Westport, Connecticut: Greenwood Press.
- Jobst, C.** (2003). “Andrea Palladio (1508-80)” in Evers, B. (2003a). Op. cit. pp. 110-7.
- Johnson, P-A.** (1994). *The Theory of Architecture: Concepts, Themes & Practices*. New York: John Wiley & Sons.
- Jones, R. A.** (2007). *Jung, Psychology, Postmodernity*. Hove, East Sussex / New York: Routledge.
- Jung, C. G.** (1964). *Man and his Symbols*. Garden City, New York: Doubleday and Company.
- Kaliski, J.** (2008). “The Present City and the Practice of City Design” in Chase, J. L., Crawford, M. and Kaliski, J. Op. cit. pp. 88-109.
- Kant, I.** (1790 – 2005 unabridged republication of the complete text of J. H. Bernard). *Critique of Judgment* (translated from German as published in 1914 in follow-up to Bernard's 1892 version, London: Macmillan and Co.). Mineola, New York: Dover Publications, Inc.
- Kelbaugh, D.** (1996). “Typology – An Architecture of Limits” in *Architectural Theory Review*, November 1996, Vol. 1 Issue 2. pp. 33-52.
 – (2008). “Three Urbanisms: New, Everyday and Post” in Haas, T. Op. cit. pp. 40-7.
- Koolhaas, R.** (1994 Edition). *Delirious New York: A Retrospective Manifesto for Manhattan*. New York: Monacelli Press.

- Kostof, S.** (1985 – 1995 Edition). *A History of Architecture: Settings and Rituals*. New York / Oxford: Oxford University Press.
- (1991 – First North American Paperback Edition 1993). *The City Shaped: Urban Patterns and Meanings Through History*. New York: Bulfinch Press.
 - (1992 – First Paperback Edition 1999). *The City Assembled: The Elements of Urban Form through History*. London: Thames and Hudson.
- Krieger, A.** (2009). “Where and How Does Urban Design Happen?” in Krieger, A. and Saunders, W. S. Op. cit. pp. 113-130.
- Krieger, A. and Saunders, W. S.** (2009 – Editors), *Urban Design*. Minneapolis / London: University of Minnesota Press.
- Krier, L.** (2008). “An Urban Lexicon” – excerpts from *The Architectural Tuning of Settlements* in *The Architects' Journal*, 8 May 2008. Vol. 227, No. 16. Emap: London. pp. 24-9.
- (2009). *The Architecture of Community*. Washington, DC: Island Press.
- Krier, R.** (1975 – First English Language Edition 1979). *Urban Space* translated from German by C. Czechowski and G. Black). New York: Rizzoli.
- (2003 – Second Edition 2006). *Town Spaces: Contemporary Interpretations in Traditional Urbanism* (translated from German by F. G. Fincannon). Basel: Birkhäuser.
- Kruft, H-W.** (1994). *A History of Architectural Theory from Vitruvius to the Present*. London / New York: Zwemmer.
- Kul-Want, C.** (2010). *Philosophers on Art from Kant to the Postmodernists: A Critical Reader*. New York: Columbia University Press.
- La Marche, J.** (1994). “In and Out of Type” in Franck, Karen A. and Schneekloth, Lynda H. Op. cit. pp. 209-32.
- Ladner, G. B.** (1979). “Medieval and Modern Understanding of Symbolism: A Comparison” in *Speculum*, Vol. LIV, No. 2 (April 1979), pp. 223-56. Cambridge, Massachusetts: Medieval Academy of America.
- Lampugnani, V. M.** (1963 – Editor: 1986 Edition). *The Thames and Hudson Dictionary of 20th Century Architecture*. London: Thames and Hudson.
- Lang, J.** (2005). *Urban Design: A Typology of Procedures and Products*. Oxford / Burlington, Massachusetts: Architectural Press / Elsevier.
- Larice, M. and Macdonald, E.** (2007 - Editors). *The Urban Design Reader*. Abingdon, Oxon / New York: Routledge.
- Lavin, S.** (1992), *Quatremère de Quincy and the Invention of a Modern Language of Architecture*. Cambridge, Massachusetts / London: MIT Press.
- Lavine, T.Z.** (1984). *From Socrates to Sartre: The Philosophic Quest*. New York: Bantam Books.
- Lawson, B.** (2004). *What Designers Know*. Oxford / Burlington, Massachusetts: Architectural Press / Elsevier.
- Le Corbusier** (1923). *Vers une architecture* published as *Towards a New Architecture*. 2008 printing by BN Publishing (no address given).
- (1925 – First translated into English in 1929 on basis of 8th Edition). *Urbanisme* published as *The City of Tomorrow and its Planning*. New York: Dover Publications.
 - (1926). “Five points towards a new architecture” in Conrads, U. Op. cit. pp.99-101.
- Leach, N.** (1997). *Rethinking Architecture: A Reader in Cultural Theory*. Abingdon, Oxon and New York: Routledge.

- Leatherbarrow, D.** (2006). *Topographical Stories: Studies in Landscape and Architecture*. Philadelphia: University of Pennsylvania Press.
- Lechte, J.** (2008 – Second Edition). *Fifty Key Contemporary Thinkers: From Structuralism to Post-Humanism*. London and New York: Routledge.
- Lefebvre, H.** (1974 – English-language Edition 1991). *The Production of Space* (translated from French by D. Nicholson-Smith). Oxford: Blackwell Publishing.
- LeGates, R. T. and Stout, F.** (2003 – Third Edition). *The City Reader*. London / New York: Routledge.
- Lévi-Strauss, C.** (1979 – First Paperback Edition 1995). *Myth and Meaning: Cracking the Code of Culture* (from CBC Radio series, *Ideas* broadcast in December). New York: Schocken Books / Random House Inc.
- Linge, D. E.** (1976 – Editor). *Hans Georg-Gadamer: Philosophical Hermeneutics* (translated from German by D. Linge). Berkeley / Los Angeles: University of California Press.
- Locke, J.** (1690 – 2009 Edition). *Of the Abuse of Words* excerpts from *An Essay Concerning Human Understanding*. London: Penguin Books.
- Loos, A.** (1908). “Ornament and Crime” in Conrads, U. Op. cit. pp. 19-24.
- Love, T.** (2009). “Urban Design after Battery Park City” in Krieger, A. and Saunders, W. S. Op. cit. pp. 208-26.
- Low, S and Smith, N.** (2006 – Editors). *The Politics of Public Space*. New York / London: Routledge.
- Lupfer, G.** (2003). “Aldo Rossi (1931-97)” in Evers, B. Op. cit. pp. 782-9.
- Lynch, K.** (1960). *The Image of the City*. Cambridge, Massachusetts / London: MIT Press.
 – (1981 – First Paperback Edition 1984). *Good City Form*. Cambridge, Massachusetts / London: MIT Press.
- McDonough, W.** (2008). “Something Lived, Something Dreamed: Principles and Poetics in Urban Design” in Haas, T. Op. cit. pp. 58-63.
- McGinn, M.** (1997). *Routledge Philosophy Guidebook to Wittgenstein and the Philosophical Investigations*. London: Routledge.
- McLachlan, H. V.** (1981). “Buchanan, Locke and Wittgenstein on Classification” in *Journal of Information Science* 3 (1981). pp. 191-5.
- McWilliam, C.** (1975). *Scottish Townscape*. London: William Collins Sons & Co Ltd.
- Madanipour, A.** (1996). *Design of Urban Space: An Inquiry into a Socio-spatial Process*. Chichester / New York: John Wiley & Sons.
- Madison, G. B.** (1990). *The Hermeneutics of Postmodernity: Figures and Themes*. Bloomington and Indianapolis: Indiana University Press.
- Madraza, L.** (1995). *The Concept of Type in Architecture: An Inquiry into the Nature of Architectural Form*. Dissertation ETH No 1115 submitted to Swiss Federal Institute of Technology, Zurich for degree of Doctor of Technical Sciences. Unpublished. Copy loaned by Libraries of Washington University in St Louis, Missouri.
- Malachowski, A.R.** (1990 – Editor). *Reading Rorty: Critical Responses to “Philosophy and the Mirror of Nature” and Beyond*. Oxford: Blackwell.

- Marshall, S.** (2005). *Streets and Patterns*. Abingdon, Oxon / New York: Spon Press / Taylor + Francis.
- (2009). *Cities, Design and Evolution*. Abingdon, Oxon / New York: Routledge.
- Martin, L.** (1972). “The Grid as Generator” in Martin, L. and March, L. Op. cit. pp. 6-27.
- Martin, L.** and **March, L.** (1972 – Editors). *Urban Space and Structures*. Cambridge: Cambridge University Press.
- Mautner, T.** (2000 – Editor). *The Penguin Dictionary of Philosophy*. London: Penguin Group.
- (2005 – Editor - Second Edition). Ibid.
- Merleau-Ponty, M.** (1945 Éditions Gallimard – 2002 Routledge Classic Edition, translated from French by C. Smith for Routledge & Kegan Paul 1958). *Phenomenology of Perception*. London / New York: Routledge.
- Merlin, P.** and **Choay, F.** (2009). *Dictionnaire de l’urbanisme et de l’aménagement*. Paris: Quadriga / Manuel.
- Meuser, P.** (2006). “Experiments with Convention: European Planning from Camillo Sitte to New Urbanism” in Krier, R. Op cit. pp. 248-65.
- Middleton, R.** (1959). “Jacques François Blondel and the *Cours d’ Architecture*” in *The Journal of the Society of Architectural Historians*, Vol. 18, No. 4 (December 1959). pp. 140-8.
- Mies van der Rohe, L.** (1927). “On form in architecture” in Conrads, U. Op. cit. p. 102.
- (1950). “Technology and architecture”. in Conrads, U. Op. cit. p. 154.
- Mitchell, W. J.** (2005). *Placing Words: Symbols, Space, and the City*. Cambridge, Massachusetts / London: MIT Press.
- Moholy-Nagy, S.** (1968). *Matrix of Man: An Illustrated History of Urban Environment*. New York / London: Frederick A. Praeger.
- Moneo, R.** (1978). “On Typology” in *Oppositions*, No. 13. Cambridge, Massachusetts: MIT Press for The Institute for Architecture and Urban Studies, New York. pp. 23-45.
- Moore, E. C.** (1972 – Editor - 1998 Edition). *Charles S. Peirce: The Essential Writings*. Amherst, New York: Prometheus Books.
- Morris, A. E. J.** (1972 – Third Edition 1994). *History of Urban Form Before the Industrial Revolutions*. Harlow, Essex: Pearson Education Ltd.
- Moudon, A. V.** (1994). “Getting to Know the Built Landscape: Typomorphology” in Franck, Karen A. and Schneekloth, Lynda H. Op. cit. pp. 289-314.
- Moughtin, C.** with **Mertens, M.** (2003 – Third Edition) *Urban Design: Street and Square*. Oxford / Burlington, Massachusetts: Architectural Press / Elsevier.
- Mumford, L.** (1944). *The Condition of Man*. New York: Harcourt, Brace and Company.
- Munro, C. F.** (1987). “Semiotics, Aesthetics and Architecture” in *British Journal of Aesthetics*, Vol. 27, No. 2, Spring 1987. pp. 115-28.
- Muthesius, H.** (1908-11). *The English House (Das Englische Haus*, Second Edition – Translated from German by J. Seligman in 1979; edited and abridged by D. Sharp). New York: Rizzoli International.
- (1911). “Aims of the Werkbund” in Conrads, U. Op. cit. pp. 26-7.
- (1914). “Muthesius/Van de Velde: Werkbund theses and antitheses” in Conrads, U. Op. cit. pp. 28-31.
- Needham, R.** (1963). Introduction to Durkheim, É. and Mauss, M. (1903). Op. cit. pp. vii-xlvi.

- Nesbit, K.** (1996 – Editor). *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965-1995*. New York: Princeton Architectural Press.
- Nicolaisen, W. F. H.** (1976). *Scottish Place-Names: Their Study and Significance*. London: Batsford.
- Nietzsche, F.** (1872 - 1995 Dover Thrift Edition of 1927). *The Birth of Tragedy* (translated from German by C. P. Fadiman). Mineola, NY: Dover Publications, Inc.
- (1885 - 1999 Dover Thrift Edition of 1911). *Thus Spake Zarathustra* (translated from German by T. Common). Mineola, NY: Dover Publications, Inc.
- (1886 - 1997 Dover Thrift Edition of 1909-13). *Beyond Good and Evil* (translated from German by H. Zimmern). Mineola, NY: Dover Publications, Inc.
- Norberg-Schulz, C.** (1969). "Meaning in Architecture" in Jencks, C. and Baird, G. Op. cit. pp. 215-29.
- (1971). *Existence, Space and Architecture*. New York / Washington: Praeger Publishers.
- (1976). "The Phenomenon of Place" from *Architectural Association Quarterly* (1976) in Larice, M. and Macdonald, E. Op. cit. pp. 125-37.
- (1980). *Genius Loci*. New York: Rizzoli.
- Nuttgens, P.** (1972). *The Landscape of Ideas*. London: Faber and Faber Limited.
- (1997 – Second Edition). *The Story of Architecture*. London: Phaidon Press Ltd.
- Nuttgens, P.** with **Weston R.** (2006). *The Complete Architecture Handbook: From the First Civilizations to the Present Day*. London: Octopus Publishing Group.
- O.M.A., Koolhaas, R.** and **Mau, B.** (1995 – Second Edition 1998). *S,M,L,XL*. New York: The Monacelli Press.
- Okasha, S.** (2002). *Philosophy of Science: A Very Short Introduction*. Oxford: Oxford University Press.
- Olcayto, R.** (2010). "RIBA Awards 2010" in *The Architects' Journal*, 10 June 2010. Vol. 231, No. 21. Emap: London. pp. 22-53.
- Ortega y Gasset, J.** (1930 – Paperback Edition 1964). *The Revolt of the Masses* (translated from Spanish by anon. 1932). New York / London: W.W. Norton and Company, Inc.
- Pallasmaa, J.** (1994). "An Architecture of the Seven Senses" in Holl, S., Pallasmaa, J. and Pérez-Gómez, A. Op. cit. pp. 27-37.
- (2005). *The Eyes of the Skin: Architecture and the Senses*. Chichester: John Wiley & Sons.
- Patterson, R.** (1996). "Three Revolutionary Architects: Boullé, Ledoux, Lequeu" in Borden, I. and Dunster, D. Op. cit. pp. 149-62.
- Paulson, R.** (1997 – Editor). *William Hogarth: The Analysis of Beauty*. New Haven / London: Yale University Press.
- Perec, G.** (1974). *Species of Spaces and Other Pieces* (translated from French by J. Sturrock 1997). London: Penguin Group.
- Pérez-Gómez** (1994). "The Space of Architecture: Meaning as Presence and Reputation" in Holl, S., Pallasmaa, J. and Pérez-Gómez, A. Op. cit. pp. 7-25.
- Petrucchioli, A.** (1998 - Editor). *Rethinking the XIXth Century City*. Cambridge, Massachusetts: Aga Khan Program for Islamic Architecture.
- Pevsner, N.** (1943 – Seventh Edition 1963). *An Outline of European Architecture*. Harmondsworth, Middlesex: Penguin Books.
- (1976). *A History of Building Types*. Princeton, New Jersey: Princeton University Press.
- Phillips, A.** (1990). Introduction to Burke, E. Op. cit. pp. ix-xxiii.

- Piaget, J.** (1968 - 1970 Edition). *Structuralism* (translated from French and edited by C. Maschler). New York: Basic Books.
- Poyatos, F.** (1988 – Editor). *Cross-Cultural Perspectives in Nonverbal Communication*. Toronto: C. J. Hogrefe.
- Preziosi, D.** (1979). *Architecture, Language, and Meaning: The Origins of the Built World and its Semiotic Organization*. The Hague: Mouton Publishers.
- Price, H. H.** (1940). *Hume's Theory of the External World*. Oxford: Clarendon Press.
- Pugin, A. W.** (1836 – 1841 Edition, Published 1969). *Contrasts: Or, A Parallel between the Noble Edifices of the Middle Ages, and Similar Buildings of the Present Day: Shewing the Present Decay of Taste*. New York: Humanities Press / Leicester University Press.
- (1841 – 1853 Impression, Reprinted 1969). *The True Principles of Christian Architecture: set forth in Two Lectures Delivered at St Marie's Oscott*. London: Henry G. Bohn.
- Rabinow, P.** (1982). “Space, Knowledge, and Power” interview with Michel Foucault in Foucault. Op. cit. (1994). pp. 349-64.
- Rand, A.** (1943). *The Fountainhead*. New York: Signet / New American Library.
- Rapoport, A.** (1982 – with New Epilogue 1990). *The Meaning of the Built Environment*. Tucson: University of Arizona Press.
- (1988). “Levels of Meaning in the Built Environment” in Poyatos, F. (1988). Op. cit. pp. 317-36.
- Rasmussen, S. E.** (1951 – First English Language Edition, 1969 – Paperback Edition). *Towns and Buildings*. Cambridge, Massachusetts: MIT Press.
- Relph, E.** (1976). *Place and Placelessness*. London: Pion Ltd.
- Reps, J. W.** (1969). *Town Planning in Frontier America*. Princeton: Princeton University Press.
- Robinson, J. W.** (1994). “The Question of Type” in Franck, K. A. and Schneekloth, L. H. Op. cit. pp. 179-94.
- Rogers, E. B.** (2001). *Landscape Design: A Cultural and Architectural History*. New York: Harry N. Abrams.
- Rorty, R.** (1982 – 1991 Edition). *Consequences of Pragmatism (Essays: 1972-1980)*. Hemel Hempstead: Harvester Wheatsheaf.
- (1997). Introduction to Sellars, W. (1997). Op. cit. pp. 1-12.
- (1998). *Truth and Progress: Philosophical Papers Volume 3*. Cambridge: Cambridge University Press.
- Rose-Redwood, R.** (2009). “Indexing the Great Ledger of the Community: Urban House Numbering, City directories, and the Production of Spatial Legibility” in Berg, L. D. and Vuolteenaho, J. Op. cit. pp. 199-225.
- Rossi, A.** (1976). *Analogical Architecture* (translated from Italian by D. Stewart) in “Architecture and Urbanism”, No. 65 (May 1976). Tokyo, Japan: A + U Publishing.
- (1982). *The Architecture of the City* (translated from Italian by D. Ghirardo and J. Ockman). Published for the Graham Foundation for Advanced Studies in the Fine Arts, Chicago, Illinois and the Institute for Architecture and Urban Studies, New York. Cambridge, Massachusetts / London: MIT Press.
- Rowe, C. and Koetter, F.** (1978 – First MIT Press Paperback Edition, 1983). *Collage City*. Cambridge, Massachusetts / London: MIT Press.

- Rowe, C.** (1968). Review of "Matrix of Man" for The New York Times in *As I was Saying*, Vol. 2 (1996). Cambridge, Massachusetts / London, England: MIT Press. pp. 43-6.
- (1982). "Program versus Paradigm: Otherwise Casual Notes on the Pragmatic, the Typical, and the Possible" in *As I was Saying*, Vol. 2 (1996). Cambridge, Massachusetts / London: MIT Press. pp. 7-41.
 - (1984). "Classicism, Neo-Classicism, Neo-Neo-Classicism" in *As I was Saying*, Vol. 2
 - (1996). Cambridge, Massachusetts / London: MIT Press. pp. 205-64.
- Ruhl, C.** (2003a). "James Gibbs (1682-1754)" in Evers, B. Op. cit. pp. 422-9.
- (2003b). "Isaac Ware (um 1707-1766)" in Evers, B. Op. cit. pp. 438-45.
- Ruskin, J.** (1849 – 1909 Edition). *The Seven Lamps of Architecture*. London / New York: Cassell and Company, Ltd.
- Russell, B.** (1922). Introduction to Wittgenstein, L. (1921). Op. cit. pp. ix-xxv.
- (1946 republished 2004). *History of Western Philosophy*. Abingdon, Oxon / New York: Routledge Classics.
- Rykwert, J.** (1982). *The Necessity of Artifice*. New York: Rizzoli.
- (2000 – First Paperback Edition 2004). *The Seduction of Place: The History and Future of the City*. Oxford: Oxford University Press.
- Saussure, F. de** (1915 – First McGraw Hill Paperback Edition 1966). *Course in General Linguistics* (translated from French by W. Baskin, ©The Philosophical Library Inc. 1959). New York / Toronto / London: McGraw Hill Book Company.
- Scheer, B. C. and Scheer, D. R.** (1998). "Typology and Urban Design Guidelines: Preserving the City Without Dictating Design" in Petruccioli, A. Op. cit. pp. 151-64.
- Schinkel, K. F.** (1826). *The English Journey: Journal of a Visit to France and Britain in 1826* (translated from German by F. G. Walls) in Bindman, D. and Riemann, G. (1993 – Editors). New Haven / London: Yale University Press.
- Schneekloth, L. H. and Shibley, R. G.** (1995). *Placemaking: The Art and Practice of Building Communities*. New York: John Wiley & Sons.
- Schön, D. A.** (1988). "Designing: Rules, types and worlds" in *Design Studies*, Vol. 9 No. 3 (July 1998). pp. 181-90.
- Schroeder, W. R.** (2005). *Continental Philosophy: A Critical Approach*. Oxford: Blackwell Publishing.
- Scruton, R.** (1979). *The Aesthetics of Architecture*. Princeton, New Jersey: Princeton University Press.
- (1982 – republished 2001). *Kant: A Very Short Introduction*. Oxford: Oxford University Press.
 - (1994). *Modern Philosophy: An Introduction and Survey*. London: Sinclair-Stevenson.
- Sellars, W.** (1956 – republished 1997). *Empiricism and the Philosophy of Mind*. Cambridge, Massachusetts: Harvard University Press.
- Shane, D. G.** (1976). "Contextualism" in *Architectural Design*. Vol. XLVI, November 1976. pp. 676-9.
- (2005). *Recombinant Urbanism: Conceptual Modeling in Architecture, Urban Design, and City Theory*. Chichester, John Wiley & Sons.
- Sharr, A.** (2007). *Heidegger for Architects*. London / New York: Routledge / Taylor + Francis.
- Sheriff, J. K.** (1989). *The Fate of Meaning: Charles Peirce, Structuralism and Literature* and Short's *Peirce's Theory of Signs*. Princeton, New Jersey: Princeton University Press.

- Shils, E. A. and Finch, H. A.** (1949). *The Methodology of the Social Sciences: Max Weber*. Glencoe, Illinois: The Free Press.
- Short, T. L.** (2007). *Peirce's Theory of Signs*. New York: Cambridge University Press.
- Sigel, P.** (2003). "Le Corbusier (1887-1965)" in Evers, B. pp. 704-13.
- Silverman, H.** (2008). "Art and Aesthetics" in Diprose, R. and Reynolds, J. Op. cit. pp. 95-108.
- Simpson, J.** (1981). "Prospect Park" in *Art of the Olmsted Landscape: His Works in New York City*. New York: New York Landmarks Preservation Commission. pp. 23-32.
- Singer, P.** (1983 – republished 2001). *Hegel: A Very Short Introduction*. Oxford: Oxford University Press.
- Sitte, C.** (1889). *City Planning According to Artistic Principles* (Translated from German by G. R. and C. C. Collins) in Collins, G. R. and Collins, C. C. Op. cit. pp. 129-332.
- Slater T. R.** (1990 - Editor). Introduction to *The Built Form of Western Cities: Essays for M. R. G. Conzen on the occasion of his eightieth birthday*. Leicester: Leicester University Press.
- Smith, N and Low, S.** (2006). "Introduction: The Imperative of Public Space" in Low, S. and Smith, N. Op. cit. pp. 1-16.
- Smith, P. F.** (2003). *The Dynamics of Delight: Architecture and Aesthetics*. London / New York: Routledge.
- Soderstrom, M.** (2008). *The Walkable City: From Haussmann's Boulevards to Jane Jacobs' Streets and Beyond*. Montréal: Véhicule Press.
- Soja, E. W.** (1996). *Thirdspace: Journeys to Los Angeles and Other Real-and-Imagined Places*. Oxford: Blackwell Publishing.
- (2000). *Postmetropolis: Critical Studies of Cities and Regions*. Oxford: Blackwell Publishing.
- (2009). "Designing the Postmetropolis" in Krieger, A. and Saunders, W. S. Op. cit. pp. 255-69.
- Solà-Morales, I. de** (1995 – First English Language Edition 1997). *Differences: Topographies of Contemporary Architecture* (translated from Spanish by G. Thompson). Cambridge, Massachusetts / London: MIT Press.
- Solomon, D.** (2008). "Making Cloth from Threads" in Haas, T. Op. cit. pp. 74-6.
- Sommer, R.** (2009). "Beyond Centers, Fabrics, and Cultures of Congestion: Urban Design as a Metropolitan Enterprise" in Krieger, A. and Saunders, W. S. Op. cit. pp. 135-54.
- Somol, R.E.** (1999). "Dummy Text, or The Diagrammatic Basis of Contemporary Architecture" in Eisenman, P. (1999). *Diagram Diaries*. New York: Universe Publishing. pp. 6-25.
- Sorell, T.** (1987 republished 2000). *Descartes: A Very Short Introduction*. Oxford: Oxford University Press.
- Sorkin, M.** (1992 - Editor). *Variations on a Theme Park: The New American City and the End of Public Space*. New York: Hill and Wang.
- (2009). "The End(s) of Urban Design" in Krieger, A. and Saunders, W. S. Op. cit. pp. 155-82.
- Spivak, M.** (1973). "Archetypal Place" in *The Architectural Forum*, Vol. 140, No. 3, pp. 44-9.
- Stern, R. A. M.** Foreword to Krier, L. (2009). Op. cit.
- Stevens, A.** (1994). *Jung: A Very Short Introduction*. Oxford: Oxford University Press.

- Stroud, D** (1984 – Paperback Edition). *Capability Brown*. London and Boston, Faber and Faber.
- Sturrock, J.** (1997 – 1999 Edition). Introduction to Perec, G. Op. cit. pp. ix-xvii.
- Sullivan, L.H.** (1918 – republished 1979). *Kindergarten Chats and Other Writings*. New York: Dover Publications.
- Summerson, J.** (1963 – 1980 Edition). *The Classical Language of Architecture*. London: Thames and Hudson.
- Tafari, M.** (1979 – Paperback Edition). *Architecture and Utopia: Design and Capitalist Development* (translated from Italian by B. L. La Penta). Cambridge, Massachusetts / London: MIT Press.
- Tarnas, R.** (1991). *The Passion of the Western Mind: Understanding the Ideas That Have Shaped Our World View*. New York: Ballantine Books.
- Tate, A.** (2001). *Great City Parks*. New York / London: Spon Press / Taylor + Francis.
- Taylor, C.** (1990). “Rorty in the Epistemological Tradition” in Malachowski, A.R. (1990). Op. Cit. pp. 257-75.
- Taylor, P.** (2006 – Editor). *The Oxford Companion to Gardens*. Oxford: Oxford University Press.
- Thiis-Evensen, T.** (1987). *Archetypes in Architecture*. Norwegian University Press (distributed by OUP outside Scandinavia).
- Thody, P. and Course, A.** (1997). *Introducing Barthes*. Cambridge, England: Icon Books in United Kingdom / Totem Books in United States.
- Till, J.** (2009). *Architecture Depends*. Cambridge, Massachusetts / London: MIT Press.
- Treib, M.** (1995). “Must Landscapes Mean? Approaches to Significance in Recent Landscape Architecture” in *Landscape Journal*, Vol. 14, No. 1. Madison, Wisconsin: University of Wisconsin Press. pp. 46-62.
- Tuan, Y-F.** (1977). *Space and Place: The Perspective of Experience*. Minneapolis: University of Minnesota Press.
- (1978). “Sign and Metaphor” in *Annals of the Association of American Geographers*, Vol. 68, No. 3. pp. 363-72.
 - (1991). “Language and the Making of Place: A Narrative-Descriptive Approach” in *Annals of the Association of American Geographers*, Vol. 81, No. 4. pp. 684-96.
- Turner, T.** (1996). *City as Landscape: A Post Postmodern View of Design and Planning*. London: E & FN Spon.
- Vanderburgh, D.** (2004). “Typology” in *Encyclopedia of Twentieth Century Architecture*, Vol. 3. New York: Routledge. pp. 1355-6.
- Van de Velde, H.** (1914). “Muthesius/Van de Velde: Werkbund theses and antitheses” in Conrads, U. Op. cit. pp. 28-31.
- Van Eyck, A.** (1961). “The Medicine of Reciprocity Tentatively Illustrated” in *Forum*, Vol. 15, Nos. 6-7. pp. 237-8 and 252.
- Venturi, R. and Scott Brown, D.** (2004). *Architecture as Signs and Systems for a Mannersit Time*. Cambridge, Massachusetts / London: Belknap Press, Harvard.

- Vesely, D.** (1985). "Architecture and the Conflict of Representation" in *AA Files*, No. 8. pp. 21-38.
- (1987). "Architecture and the Poetics of Representation" in *Daidalos*, No. 25, September 1987. pp. 24-36.
 - (2004). *Architecture in the Age of Divided Representation: The Question of Creativity in the Shadow of Production*. Cambridge, Massachusetts / London: MIT Press.
- Vidler, A.** (1977a). "The Third Typology: in *Oppositions* No. 7. Cambridge, Massachusetts: MIT Press for Institute of Architecture and Urban Studies, New York. pp. 1-4.
- (1977b). "The Idea of Type: The Transformation of the Academic Ideal, 1750-1830" in *Oppositions* No. 8. Cambridge, Massachusetts: MIT Press for Institute of Architecture and Urban Studies, New York. pp. 95-115.
 - (1990). *Claude-Nicolas Ledoux: Architecture and Social Reform at the End of the Ancien Régime*. Cambridge, Massachusetts / London: MIT Press.
 - (1992). *The Architectural Uncanny: Essays in the Modern Unhomely*. Cambridge, Massachusetts / London: MIT Press.
 - (2000a). "Framing Infinity: Le Corbusier, Ayn Rand, and the Idea of 'Ineffable Space'" in Vidler (2001). Op. cit. pp. 51-64.
 - (2000b). "Death Cube K: Neoformations of Morphosis" in Vidler (2001). Op. cit. pp. 203-18.
 - (2001 – First Paperback Edition). *Warped Space: Art, Architecture, and Anxiety in Modern Culture*. Cambridge, Massachusetts / London: MIT Press.
 - (2006). *Claude-Nicolas Ledoux: Architecture and Utopia in the Era of the French Revolution*. Basel: Birkhäuser.
 - (2008a - Editor). *Architecture: Between Spectacle and Use*. Williamstown, Massachusetts: Sterling and Francine Clark Art Institute.
 - (2008b). "Architecture's Expanded Field" in Vidler, Anthony (2008a). Op. cit. pp. 143-54.
- Viollet-le-Duc, E-E.** (1872 – 1987 republication of First English publication 1881). *Lectures on Architecture: Volume II*. New York: Dover Publications.
- Vroom, M. J.** (2006). *Lexicon of Garden and Landscape Architecture*. Basel: Birkhäuser.
- Vuolteenaho, J. and Berg, L. D.** (2009). *Towards Critical Toponymies* in Berg, L. D. and Vuolteenaho, J. Op. cit. pp. 1-18.
- Walpole, H.** (1961). *Correspondence*. London: Yale Edition. Vol. 30.
- (1771/80). "History of the Modern Taste in Gardening" in Hunt, J. D. and Willis, P. Op. cit. pp. 311-16.
- Warkentin, J. and Ruggles, R. I.** (1970). *Manitoba Historical Atlas*. Winnipeg: Historical and Scientific Society of Manitoba.
- Webb, M.** (1990). *The City Square*. London: Thames & Hudson.
- Webber, M. M.** (1964). "Urban Place and the Nonplace Urban Realm" in *Explorations into Urban Structure*. Philadelphia: University of Pennsylvania Press.
- (1968). "The Post-City Age" in LeGates and Stout. Op. cit. pp. 471-4.
- Weber, M.** (1904). "'Objectivity' in Social Science" (translated from German by E. A. Shils and H. A. Finch) in Shils, E. A. and Finch, H. A. (1949). Op. cit.
- Weiss, A. S.** (1998). *Unnatural Horizons: Paradox and Contradiction in Landscape Architecture*. New York: Princeton Architectural Press.
- Welter, V. M.** (2002). *Biopolis: Patrick Geddes and the City of Life*. London / Cambridge, Massachusetts: MIT Press.
- Welton, D.** (2003 - Editor). *The New Husserl: A Critical Reader*. Bloomington and Indianapolis: Indiana University Press.
- White, R. J.** (1967). *A Short History of England*. Cambridge: Cambridge University Press.

Wittgenstein, L. (1921 – 2001 Publication of 1974 Edition of translation First Published 1961). *Tractatus Logico-Philosophicus* (translated from German by D. Pears and B. McGuinness). Abingdon, Oxon / New York: Routledge.
– (1953 – 2009 Fourth Edition). *Philosophical Investigations* (translated from German by G. Anscombe, P. Hacker and J. Schulte). Chichester: Wiley-Blackwell.

Younés, S. (1999 from 1832). *The True, The Fictive and The Real: The Historical Dictionary of Quatremère de Quincy* (Translated by S. Younés). London: Andreas Papadakis / New Architecture Group.

Youngson, A. J. (1966). *The Making of Classical Edinburgh 1750-1840*. Edinburgh: University Press.

BOOK REVIEWS

Bender, T. (2008). Book Review of Shane, D. G. (2005). Op. cit. in *Harvard Design Magazine*, Spring / Summer 2008, Number 28. pp. 1-4.

Tilghman, B. R. (1980). Review of Preziosi, D. (1979). Op. cit. in *Journal of Aesthetics and Art Criticism*. December 1980, Vol. 39 Issue 2. pp. 218-9.

NEWSPAPERS

Freedman, A. “Independence, by George” in *International Herald Tribune*, July 4-5, 2009.

Goldberger, P. “Spiralling Upward: Celebrating Fifty Years of Frank Lloyd Wright’s Guggenheim” in *The New Yorker Magazine*, May 25, 2009.

WEB SITES

Congress for New Urbanism: cnu.org/highwaysandstreets (accessed 10 November 2009).

City of Edinburgh: www.edinburgh.gov.uk/internet/Environment/Land_and_premises/Street_naming/CEC_street_naming_and_numbering (accessed 25 September 2009)

City of Edinburgh: www.edinburgh.gov.uk/internet/Environment/Planning_buildings_i_i/Planning_hidden/Planning_policies/Supplementary_planning_guidance/CEC_edinburgh_open_space_audit (accessed 17 May 2010)

City of Toronto: www.toronto.ca/invest-in-toronto/pop_dwell.htm (accessed 26 February 2010)

City of Toronto: www.toronto.ca/mapping/street_naming/index.htm#street (accessed 25 September 2009)

City of Vancouver: <http://vancouver.ca/engsvcs/streets/greenways> (accessed 17 May 2010)

Edinburgh Guide: www.edinburghguide.com/story/edinburghcitycouncil/2090 (accessed 25 September 2009)

Fordham University, New York: www.fordham.edu/halsall/source/petrarch-ventoux (accessed 29 April 2008).

Huafan University, Taipei, Taiwan, ROC: www.hfu.edu.tw/huangm/phenom/husserl-britanica.htm (accessed 29 January 2010).

HyperJeff Network: <http://think.hyperjeff.net/Heidegger> – *Quick Reference Guide to the English Translations of Heidegger* (accessed 8 February 2010).

Manitoba Historical Society: <http://www.mhs.mb.ca/docs/pageant/10/firstavenuenorth.shtml> (accessed 5 April 2010)

Minnesota State University: <http://www.mnstate.edu/gracyk/courses/web%20publishing/addison415.htm> (accessed 27 December 2008).

Office of Public Sector Information, UK Government: http://www.opsi.gov.uk/legislation/Scotland/acts2000/en/aspen_20000005_en_1.htm (accessed 5 April 2010)

SmartCode: <http://www.smartcodecentral.org> (accessed 27 September 2009).

Statistics Canada www.manitoba.ca/asset_library/en/statistics/winnipeg.pdf (accessed 26 February 2010).

Wikipedia: http://en.wikipedia.org/wiki/Galileo_Galilei (accessed 24 March 2008).

PERSONAL CORRESPONDENCE

Letter Broughton (City of Edinburgh Council) / Tate dated 6 May 2006.

Email Madrazo / Tate dated 25 August 2009.

Telephone Tate / Savage (City of Winnipeg) 21 September 2009.

Telephone Tate / Kiernan (City of Winnipeg) 1 March 2010.

DICTIONARIES AND ATLASES

Street Atlas of Winnipeg (2005). Oshawa, Ontario: Peter Heiler Ltd / MapArt Publishing Corp.

Chambers Dictionary of Etymology (1988). Edinburgh: Chambers Harrap.

Concise Scots Dictionary (1985). Edinburgh: Scottish Language Dictionaries (SLD).

Dictionary of Literary Terms & Literary Theory. London: Penguin Books.

Oxford Dictionary of Word Origins (2009). Oxford University: Oxford University Press

The Canadian Oxford Dictionary (1998). Don Mills, Ontario: Oxford University Press.

The Oxford Dictionary of English Etymology (1966). Editor – Onions C. T. Oxford: Oxford University Press.

The Penguin Dictionary of Philosophy (2000). Editor – Mautner T. London: Penguin Group.

APPENDIX A: NUMBERED DEFINITIONS OF URBAN SPACE SUFFIX NAMES USED IN EDINBURGH AND WINNIPEG (27)

- CEC = City of Edinburgh Council**
- CTCD = Chambers Twentieth Century Dictionary**
- COD = Canadian Oxford Dictionary**
- CSD = Concise Scots Dictionary**
- CDE = Chambers Dictionary of Etymology**

5: Avenue

the principal approach to a country house usually bordered by trees; a way between a double row of trees (ad venire – to come to) [CEC]
the principal approach to a country house, usually bordered by trees: a double row of trees with or without a road: a wide and handsome street with or without trees, especially in America: any passage or entrance into a place: means of access or attainment [CTCD]

8: Boulevard

a broad road; a walk; or promenade bordered with trees; originally applied to such streets formed on the demolished fortifications of a town (French version of German word Bollwerk – a rampart or sea wall, a bulark) ... listed as not in use [CEC]
a broad road, walk, or promenade bordered with trees, originally applied to those formed upon the demolished fortifications of a town: a broad main road [CTCD]

11: Bridge

a structure spanning a gap, river, road etc. [CEC]
a structure spanning a river, road, etc. giving communication across it [CTCD]

13: Broadway

a broad street, usually the chief thoroughfare of a town or district [CEC]
a broad road, often the name, often the name of the chief thoroughfare of a town or district [CTCD]

19: Circle

a street of ring-like shape [CEC]
no specific reference in CTCD

22: Close

a narrow street in which the buildings are close together; a street which is closed at night [CEC]
an enclosed place: a small enclosed field: a narrow passage of a street: the precinct of a cathedral [CTCD]
(clos, close) 2.1: an enclosure, courtyard (now chiefly in Edinburgh). 2.2: a farmyard. 2.3: an entry, passageway, alley (originally Edinburgh). 2.4: specifically the entry to a tenement, the passageway giving access to the common stair (chiefly in West central and South West Scotland). Closmou – the entry to a close [CSD]
an enclosed space [COD]

25: Court

a space surrounded by gardens [CEC]
space enclosed: space surrounded by houses: the palace of a sovereign [CTCD]
(coort) 2: enclosure for cattle [CSD]

27: Crescent

having the shape of the waxing moon [CEC]

the waxing moon: a curved range of buildings (sometimes applied at random) [CTCD]

a curving street [COD]

33: Drive

a road for carriages, especially within the grounds of a house and leading to it [CEC]

a road for driving on, especially the approach to a house within its own grounds [CTCD]

a street or road, especially a curving one [COD]

43: Gait / Gate

a way, path or street in a town [CEC]

gate = a passage into a city, enclosure or any large building: a narrow opening or defile: a frame for closing an entrance [CTCD]

44: Gardens

an enclosed place, especially for the cultivation of flowers, trees, fruit, etc [CEC]

(singular) a piece of ground on which flowers etc. are cultivated: a pleasant spot: a fertile region:

(plural) used in street-names [CTCD]

47: Green

a grassy plot, especially common to a village or town, bowling, bleaching, drying clothes, etc. [CEC]

a grassy plot, especially that common to a village or town, or for bowling, or bleaching, drying of clothes [CTCD]

1.n.2: grassy ground; a grassy place. 1.n.3: specifically the grassy ground forming part of the grounds of a house or other building. 1.n.4: a town or village green [CSD]

48: Grove

a small wood designed for ornament or pleasure; an avenue of trees [CEC]

a wood of small size, generally of a pleasant or ornamental character: an avenue of trees: often used (quite fancifully) in street-names [CTCD]

62: Lane

a narrow passage or road, a passage through people or obstructions [CEC]

a narrow passage or road: a narrow street: a passage through a crowd or among obstructions: a division of a road for a single stream of traffic: a channel: a sluggish stream (Scottish) [CTCD]

2: a marshy meadow; a slow-moving, winding stream or its bed [CSD]

71: Mews

(listed but no definition given by CEC)

meuse, muse, mews = a way of escape through a hedge, etc.: (plural of mew) a street or yard of stabling (often converted into dwelling houses or garages) – from the king's mews at Charing Cross when hawks were succeeded by horses (mew = to shed, moult, or cast: to change, as the covering of a dress) [CTCD]

78: Park

an enclosed piece of land for beasts of the chase; the lands or pleasure grounds surrounding a mansion; a public gardens or pleasures [sic] ground [CEC]

an enclosed piece of land for beasts of the chase: a tract of land surrounding a mansion, kept as a pleasure ground: hence often part of the name of an house, street, or district: a piece of ground for public recreation: a piece of country kept in its natural condition as a nature-reserve or the like [CTCD]
(pairk, perk) 1 = park, an enclosed piece of land, 2: an area of enclosed farmground, a field [CSD]

79: Parkway

a broad road adorned with turf and trees, often connecting the parks of a town (see above) [CEC]

a broad road adorned with turf and trees, often connecting the parks of a town [CTCD]

80: Path / Pathway

a way trodden out by the feet [CEC]

a way trodden out by feet: a way for foot-passengers: course, route, line along which anything moves [CTCD]

(= peth, path, paith, peath) 1: a cleft etc running up and down the slope of a steep hill; a steep track or road leading down into a ravine and up the other side in place-names, 2: the peths – name for several ravines crossing the coastal route from Scotland to England near Cockburnspath [CSD]

83: Place

an open space in a town; a market place or square; a short row or group of houses, usually secluded or of a mean aspect [CEC]

an open space in a town, a market-place or square: in street-names, vaguely a row or group of houses, often short, secluded, or mean: a portion of space [CTCD]

(plece) 1: place, 2: an area or building customarily used for a certain (frequently specified) purpose [CSD]

a group of houses in a town etc., especially a square [COD]

85: Point

the junction of two streets, which come together at an acute angle [CEC]

a cape or headland [CTCD]

87: Promenade

a walk, ride or drive for pleasure; originally to drive forward in a threatening manner ... listed as not in use as a suffix [CEC]

a walk, ride, or drive for pleasure, show, or gentle exercise: a place where people walk to and fro: a paved terrace on a sea-front: an esplanade [CTCD]

any paved public walk [COD]

95: Road

a ride; a journey on horseback; a raid; a track suitable for wheeled traffic, especially for through communication [CEC]

a ride, horseback journey: a track suitable for wheeled traffic, especially for through communication (often in street-names): a highway: a roadway: a way of approach: a railway (US) [CTCD]

(rod) 1: road, 2: frequently roadie, an unmetalled road, a track, 3: a hand-cut path round a grain field to clear the way for a reaping machine, 4: a way, direction, course, route [CSD]

96: Row

a single or doubled line of houses [CEC]

a line or rank of persons or things, as seats, houses, turnips: a series in line or ordered succession: often in street-names, of a single or double row of houses [CTCD]

a street with a continuous line of houses along one or each side [COD]

100: Square

an open space in a town usually rectangular in a shape along with its surrounding buildings [CEC]

an open space, commonly but not necessarily of that shape, in a town, along with its surrounding buildings: a rectangular block of buildings (US): a unit of flooring, 100 sq feet [CTCD]

103: Street

a paved road, especially a Roman road; a road lined with houses and broader than a lane [CEC]

a paved road, especially Roman: a road lined with houses, broader than a lane, including or excluding the houses and the footways: a passage or gap through or among anything [CTCD]

111: Walk

a path or place for walking; a tree bordered avenue [CEC]

that in or through which one walks: a possible or suitable route or course for walking: a path or place for walking: a tree-bordered avenue: high pasture-ground (obsolete): a division of a forest: a hunting-ground (obsolete): (in plural) grounds, park (obsolete) [CTCD]

1.n.2: a ceremonial procession, 3: a pasture for cattle, 4: a passageway in a cowshed [CSD]

112: Way

a passage, road, street, or track; a direction [CEC]

passage: road, street, track: direction of motion: length of space, distance: district [CTCD]

APPENDIX B: NUMBERED DEFINITIONS OF URBAN SPACE SUFFIX NAMES USED IN EDINBURGH ONLY (77)

1: Access

an entrance or way of approach (accessum – to go near) [CEC]

approach: admittance: way, or opportunity, of approach or entrance [CTCD]

2: Alley

a garden walk, especially through a shrubbery; a passage or narrow lane (from allee – a passage) ... listed as not in use [CEC]

a walk in a garden or shrubbery: a passage: a narrow lane; a back lane: a long narrow enclosure, or rink, for bowls or skittles [CTCD]

3: Approach

means of access or avenue (ad – to and prope – near) [CEC]

access: an avenue or means of access [CTCD]

4: Arcade

(name on CEC web site but not given in CEC list of meanings)

a row of arches, open or closed, on columns or pilasters: a walk arched over: a covered passageway lined with shops [CTCD]

6: Bank

a mound or ridge; the raised border of a road; the edge of a river or lake (banke, from France banc and Italian, bank = bench) [CEC]

a mound or ridge: an acclivity: the margin of a river, lake, etc.: the raised border of a road, railway cutting, etc. [CTCD]

9: Bow

an archway (bog – bend) [CEC]

anything of a bent or curved shape, as the rainbow [CTCD]

3.2: an arch, especially of a bridge, an arched gateway, frequently in names of town gateways, e.g. Netherbow. 3.3: the curve of a street, furrow etc [CSD]

10: Brae

a hill slope; the slope bounding a riverside plain [CEC]

the slope bounding a riverside plain: a hill-slope [CTCD]

(bra / bray / brea) 1: the (steep or sloping) bank of a river or lake or shore of the sea. 2.1: a bank or stretch of ground rising fairly steeply; a hillside. 2.2: frequently in street names, a road with a steep gradient. 3: the brow of a hill [CSD]

12: Brig

Scottish form of bridge [CEC]

Scots form of bridge [CTCD]

1: bridge (in place-names late C12th). 2: a drawbridge. 3: a gangway for a boat [CSD]

14: Buildings

a group of houses etc. [CEC]

building = substantial structure for giving shelter, e.g. a house, office-block [CTCD]

15: Burn

(name on CEC web site but not given in CEC list of meanings)

a small stream or brook: burnside, the ground beside a burn [CTCD]

a brook, stream (late C12th in place-names) [CSD]

16: Bush

an exchange where merchants meet for business (a corruption of the French 'bourse') [CEC]

no definition in CTCD

4: (also timmerbush) a warehouse or timber-yard, especially in Leith [CSD]

17: Causeway

a raised path through marsh or water; a pathway raised and paved with stone; a paved or cobbled road [CEC]

a raised way through a marsh or river: a pathway raised and paved with stone: a paved or cobblestoned road [CTCD]

18: Causey

(name on CEC web site but not given in CEC list of meanings)

included with causeway in CTCD

(causa[y], causé, calsay, cassie, cassay, casay) 1: a paved area, a roadway, street, pavement, latterly chiefly of cobblestones. 2: the paved or hard-beaten area in front of or around a farmhouse. 3: (only cassie) the cobbled part of a byre or stable [CSD]

20: Circus

a group of houses arranged in a circle; a large space at the junction of several streets [CEC]

a group of houses arranged in the form of a circle: an open place at a street junction: a natural amphitheatre [CTCD]

21: Cliff

a high steep rock [CEC]

a high steep rock: the steep side of a mountain [CTCD]

24: Cottage(s)

a small dwelling house, originally those occupied by labourers [CEC]

a small dwelling house: a country residence [CTCD]

28: Crest

*... listed as only used once – Braid Mount Crest – but no definition given by CEC [CEC]
 the summit of anything, as a roof-ridge, hill, wave [CTCD]
 also given as creest, creste, creist in CSD*

29: Crook

*a turn or a curved [sic]; bend [CEC]
 a bend, anything bent [CTCD]
 also given as cruik, cruke and croke in CSD (meaning crooked or not straight)*

30: Cross

*a monument where proclamations are made; a crossroads [CEC]
 a place in a town or village where a monument (where proclamations are made) stands or stood: a crossing or crossway [CTCD]
 (croce, crose, cross, corse, cors, corce) 1.1: cross. 1.2: a market cross; a market place. 1.3: a cross as a boundary marker [CSD]*

31: Crossway

*a way that crosses others or links them [CEC]
 a way that crosses another or links others [CTCD]*

32: Dale or Dell

*a portion or a piece of land, ie valley or land beside river or a burn ... listed as not in use [CEC]
 dale = the low ground between hills: the valley through which a river flows. dell = a deep hollow or small valley [CTCD]
 (dele, deal) 1.3(1) a share, portion or piece of land. 1.3(2) an ecclesiastical division of land [CSD]*

34: Dykes (eg Ravelston)

*a walled road [CEC]
 same as dike = a trench, or the earth dug out and thrown up: a ditch: a mound raised to prevent inundation: in Scotland, a wall, sometimes even a thorn hedge [CTCD]
 (deik, dick, dike) 1: dyke, a ditch; a wall, mound. 2: a (boundary) wall of turf, stones etc. 3: a hedge (chiefly in SW Scotland) [CSD]*

35: Eastway

*a street which leads in an easterly direction (listed as only used once by CEC – Silverknowes Eastway) [CEC]
 no entry in CTCD*

36: Embankment

*a bank to keep out water; a bank constructed to carry a road or railway over a low place [CEC]
 a bank or mound constructed so as to carry a level road or railway over a low-lying place [CTCD]*

37: End

*the last point or termination [CEC]
 the last point or portion: termination or close: an outer district: a region [CTCD]*

38: Entry

an entrance; a narrow lane between houses [CEC]

entrance: a narrow lane between houses (dialectal) [CTCD]

(entré, entra, entrie, intré, intra, intery, ent(e)ray, enterie) 1: entry. 2: a place of entry (1) an alley or covered passage, usually public or between houses, (2) the front doorway of a house; an entrance-lobby or porch, latterly especially in a block of flats, (3) the entrance to an avenue leading to a house; the avenue itself [CSD]

39: Esplanade

the level place between a citadel and the first houses of the town [CEC]

a level space between a citadel and the first houses of the town: any level space for walking or driving in [CTCD]

40: Field

a piece of ground enclosed for tillage, pasture or sport (... listed by CEC as only used once – Couper Field) [CEC]

a piece of ground enclosed for tillage or pasture or sport: a wide expanse [CTCD]

41: Foot

the bottom of a hill or the lower end of a street ... listed as not in use as a separate entity [CEC]

the base: the lower or less dignified end [CTCD]

45: Glade

an open space in a wood (... listed by CEC as only used once – Castle park Glade) [CEC]

an open space in a wood [CTCD]

46: Glebe

a field; land attached to a parish church [CEC]

the land attached to a parish church [CTCD]

(gleib, glebe, glibe, gleb) 1: now usually glebe, the portion of land assigned to a parish minister in addition to his stipend. 2: a lump, piece, quantity of anything. 3: the soil, land; cultivated land, a plot, a field (gleebrie – a large piece of (waste) ground [CSD]

51: Haugh

a low lying riverside meadow or corner of land [CEC]

a riverside meadow or flat [CTCD]

given as see hoch in CSD but no relevant reference there

52: Head

the top of a hill or the end of a street ... listed as not in use as a separate entity [CEC]

a rounded or enlarged end or top: highest point of anything [CTCD]

54: Hill

a high mass of land; an incline on a road [CEC]

a high mass of land, less than a mountain: a mound: an incline on a road [CTCD]

(hell, hull) 1.1(1): a hill. a (low) mountain, (2) an (artificial) mound. 1.2(1): a common moor where rough grazing rights are shared by the community, (2) any piece of rough grazing on a farm [CSD]

55: Houses

... listed as only used once – Wright's Houses – but no definition given by CEC [CEC]

no specific entry in CTCD

(hous, huse, hoose) 1: house (late C14th in place-names) [CSD]

56: Howe

a hollow, low lying piece of land [CEC]

how, howe = a hollow (Scottish) [CTCD]

(how, holl, hough) 1.2: a depression, a hollow or low-lying piece of ground. 1.3: chiefly in place names – a stretch of country of basin formation, a wide plain bounded by hills, a vale [CSD]

57: Kaimes

a comb; a low irregular ridge resembling a cock's comb ... listed as not in use as a suffix [CEC]

no entry in CTCD

59: Knoll

(listed but no definition given by CEC ... listed as not in use)

a round hillock: the top of a hill (in dialect) [CTCD]

chiefly of food, a large piece or lump [CSD]

60: Knowe

knoll, hillock, hillside [CEC]

given as Scottish form of knoll [CTCD]

(know) knoll [CSD]

61: Land

a group of houses or tenements under one roof and having a common entry [CEC]

real estate: ground: a group of dwellings or tenements under one roof and having a common entry (Scottish) [CTCD]

(lawnd) 2: an open space in a wood, a clearing [CSD]

63: Lea

grassland, unploughed, pasture [CEC]

open country – meadow, pasture or arable: fallow: arable land under grass or pasture [CTCD]

(ley, lay) 1.1(1): lea, ground left untilled; ground once tilled but now in pasture. 1.2: chiefly in verse and frequently in place-names, a tract of open grassland; an open uncultivated area [CSD]

64: Loan

a lane; a passage or road, a passage through people or obstructions [CEC]

(Scottish) a lane: an open space for passage left between fields of corn [CTCD]

(lone, loyne) 1.1: (also loune) a grassy (cattle-) track through arable land, frequently leading to (common) grazing and also used as pasture, a milking place, a common green etc now in place-names, 1.2: specifically the part of farm ground or a roadway which leads to or adjoins the house, 1.3: a street or roadway (chiefly in Ayr) [CSD]

65: Mall

(listed but no definition given by CEC ... listed as not in use)

a pall-mall alley: (from a former alley of the kind in London) a level shaded walk: a public walk [CTCD]

no specific entry in CSD

retail complex containing several stores, restaurants, etc [COD]

66: March

(listed but no definition given by CEC)

a boundary: border: a border district – used chiefly in the plural [CTCD]

(merch, mairch) 1: usually in plural as collective = marches, a boundary or frontier [CSD]

67: Market

a building, square or other public place used for the periodic gathering of people for the purpose of buying and selling [CEC]

a periodic concourse of people for the purposes of buying and selling: a building, square, or other public place used for such meetings [CTCD]

mercat (market) 1: market, 2: the Forum of Rome; market-gate 1: a market-street in a town chiefly in place-names, 2: a high-road leading to a market-place [CSD]

68: Medway (Midway)

a middle way

no entry for medway. midway = a middle course: a central avenue in an American fair or exhibition [CTCD]

69: Meus

a way of escape through a hedge [CEC]

meuse, muse, mews = a way of escape through a hedge, etc. [CTCD]

70: Meuse

listed as only used once – Dublin Meuse [CEC]

meuse, muse, mews = a way of escape through a hedge, etc. [CTCD]

72: Midway

originally a central avenue in an American fair or exhibition (see Medway) ... listed as only used twice – Silverknowes Midway and Western Harbour Midway [CEC]

a middle course: a central avenue in an American fair or exhibition [CTCD]

73: Mills

buildings used for grinding corn usually situated on a riverbank. Sometimes MILLDAMS or DAMS is used, indicating the presence of a millpond [CEC]

a building or factory where corn is ground, or manufacture of some kind is carried on, as spinning and weaving, paper-making, sawing or timber [CTCD]

(miln, milve mull) in place-names [CSD]

74: Mound

a bank of earth or stone raised as a protection; to fortify with an embankment; a hillock; a heap ... listed as not in use as a suffix [CEC]

a bank of earth or stone raised as a protection: a hillock: a heap [CTCD]

75: Mount

a small natural or artificial hill or mound [CEC]

(archaic except as a prefix to a name) a mountain: a small hill or mound, natural or artificial [CTCD]

(= munt) 2.1: mount, a hill, 2.2: hilly land, high land, moorland, 2.3: a low tree-covered hill [CSD]

76: Neuk

the Scottish form of Nook – a corner; a narrow place in an angle; a secluded retreat [CEC]

a Scots form of nook. nook = a corner: a narrow place formed by an angle: a recess: a secluded retreat [CTCD]

(nue, nook, nok) 1: nook, 2: a projecting point of land especially into the sea, 3: an external angle of a building; the corner of a street, 5: an outlying or remote place; neukit – having corners, crooked [CSD]

77: Northway

a street which leads in a northerly direction ... listed as not in use [CEC]

no entry in CTCD

Norway [CSD]

81: Pend

a vaulted passage or vaulted entry of a passage [CEC]

(Scottish) a vaulted passage: a vaulted entrance to a passageway [CTCD]

(pen) 1: an arch, vault, the arch of a bridge, gateway etc, 2: as collective = pend-stones, the stonework of an arch or vault, 3: a vaulted or arched passageway or entry, especially one leading from the street into the back-court of a block of houses, originally running through the building, later between houses whether built over or not [CSD]

82: Piazza

not listed by CEC

a place or square surrounded by buildings: erroneously, a walk under a roof supported by pillars: a veranda (US) [CTCD]

1583 public square [CDE]

84: Plaza

listed as only used once – Westside Plaza [CEC]

a public square or open, usually paved, area in a city or town [CTCD]

86: Port (eg West Port)

a gate or gateway, particularly a town gate [CEC]

a harbour: a town with a harbour: a gate or gateway (obsolete): a town gate or its former position (now chiefly Scottish) [CTCD]

1: a gateway or entrance, especially of a walled town or castle, 3: the road passing through or leading to a port; the area adjacent, 4: a piece of open ground near a town gate used as the site of a hiring market, especially for farm-workers [CSD]

88: Prospect

a lookout or viewpoint; a wide street ... listed as not in use as a suffix [CEC]

outlook: direction of facing: a look-out or view-point: a wide street (Russian prospekt) [CTCD]

89: Quadrangle

a court or open space of rectangular shape and surrounded by a building, often a college or public building ... listed as not in use [CEC]

a plane figure with four angles (and therefore four sides): an object or space of that form: a court or open space, usually rectangular, enclosed by a building (as a college): sometimes the enclosing building [CTCD]

90: Quadrant

the fourth part of a circle; a sector with an angle of 90 degrees; a street of that form [CEC]

the fourth part of a circle or its circumference, a sector or an arc of 90°: an area, object, street, of that form [CTCD]

91: Rest

used first in 2005 for St Triduana's Rest. This street was built on a site believed to be where the saint had a resting place. Approved by Cllr Ewan Aitken ... listed as only used once [CEC]

a place for resting [CTCD]

93: Rigg

a ridge of high ground, a long narrow hill, a hill-crest, an extent of land, long rather than broad, each separate strip of ploughed land, raised in the middle and sloping gradually to a furrow on either side [CEC]

rig = the Northern form of ridge [CTCD]

rig (reeg) 3: a ridge of high ground, a long narrow hill, a hill-crest, now local, in place-names, 4(1): an extent of land, long rather than broad, 4(5): a measure of land usually 15 feet wide and varying in length, 5(2): a strip of ground leased for building in a burgh, 6: that part of a town left free for cultivation [CSD]

94: Rise

to swell or slope up; to extend upwards [CEC]

to move upward [CTCD]

97: Shaw

copse, a wooded dell ... listed as only used once – Buckstone Shaw [CEC]

a small wood [CTCD]

2: a small, especially natural wood, a thicket – now chiefly literary and in place-names [CSD]

98: Shore

land bordering on the sea or a large expanse of water ... listed as not in use as a suffix [CEC]

the land bordering on the sea or a great sheet of water: the foreshore [CTCD]

(schoir) 1.2: with a place-name or the – a quay, landing-place, harbour [CSD]

99: Southway (eg Silverknowes)

a street which leads in a southerly direction ... listed as only used once – Silverknowes Southway [CEC]

no entry in CTCD

101: Steps

(name on CEC web site but not given in CEC list of meanings)

(singular) a footstep: a small space: (plural) a stair [CTCD]

(step) 1: = step, 2: a short portion(of a highway), a patch (of road) [CSD]

102: Strand

a rivulet or gutter (a Scots word of obscure origin) ... listed as only used once – Abbey Strand [CEC]

a sea or lake margin: a rivulet: a gutter [CTCD]

1: a beach or shore of the sea; a sand-bank etc exposed at low water; (straun) 2.1: a little stream, rivulet, 2.2: the sea, 2.3: an artificial water-channel, (street-) gutter [CSD]

105: Syke

small stream or water course, a marshy hollow, a cleft in the ground [CEC]

no entry in CTCD

(sike) 1: a small stream or water-course, especially one in a hollow or on flat, boggy ground, and often dry in summer, 2: a marshy hollow, especially one with a stream, a cleft in the ground [CSD]

106: Terrace

a connected row of houses overlooking a slope; a level stretch along the side or top of a slope [CEC]

a raised level bank or walk: a level stretch along the top or side of a slope: ground or a structure that rises stepwise: a connected row of houses, properly one overlooking a slope [CTCD]

107: Toll

a place where there is, was or might have been a toll bar; a road junction [CEC]

a tax for the liberty of using a bridge or road: a place where there is or was or might have been a toll-bar, a road junction (Scottish) [CTCD]

(tholl, towl-) 3: a checkpoint on a turnpike road where tolls were collected, a toll-bar, now in place-names [CSD]

109: Vennel

a lane ... listed as not in use apart from The Vennel [CEC]

a lane [CTCD]

a narrow alley or lane between houses [CSD]

110: View

a prospect or viewpoint [CEC]

a prospect, widew or distant extent seen: that which is seen: aspect [CTCD]

113: Wood

a wooded area [CEC]

a collection of growing trees (often in plural) [CTCD]

114: Wynd

a lane or narrow alley in a town [CEC]

(Scottish) a lane, narrow alley in a town [same as wind] [CTCD]

1: a narrow, frequently winding street, lane etc leading off a main thoroughfare in a town [CSD]

115: Yard(s)

an enclosed space, especially near a building [CEC]

an enclosed space especially near a building, often in a composition, as 'backyard', 'courtyard', 'farmyard', 'prison-yard', or where any special work is carried on, as 'brickyard', 'wood-yard', 'dockyard', 'railway-yard': a garden [CTCD]

yaird (yard, year) school playground [CSD]

APPENDIX C: NUMBERED DEFINITIONS OF URBAN SPACE SUFFIX NAMES USED IN WINNIPEG ONLY (11)

7: Bay

a body of water where the coastline curves inwards; an indentation or recess in a range of hills etc [COD]

23: Corner(s)

a projecting angle especially where two streets meet; the internal space or recess formed by the meeting of two sides [COD]

26: Cove

a small, especially sheltered, bay or other indentation in the shoreline of an ocean, lake, river etc; a sheltered recess [COD]

42: Freeway

Expressway (highway for fast moving traffic, especially in urban areas, with limited access and a median dividing opposing traffic); toll-free highway [COD]

49: Harbour

a place of shelter for ships; a shelter, a place of refuge or protection [COD]

50: Haven

a harbour or port, a place of refuge [COD]

53: Highway

a main route, especially one between towns and cities; a public road; a much travelled route leading directly to a place [COD]

58: Key

a place that by its position gives control of a sea, territory etc; a low-lying island or reef, especially off the coast of Florida or in the West Indies [COD]

92: Ridge

The line of the junction of two surfaces sloping upwards towards each other; a long narrow hilltop, mountain range or watershed; any narrow elevation across a surface [COD]

104: Stroll

a short leisurely walk; (slang) a usually downtown area in a city where prostitutes loiter for the purposes of solicitation [COD]

108: Trail(s)

a beaten or maintained path or track, especially through a park, wild region, etc., often for a specified traffic; a route into or through wild territory, followed by a wave of migrants, prospectors etc.; a highway route designated for its interest to tourists; a major arterial road through a city [COD].