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Graphic design as urban design:
towards a theory for analysing graphic objects
in urban environments.

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Dissertation submitted to The University of Nottingham
for the degree of Doctor of Philosophy in Architecture (Social Sciences)

September 2011

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Philosophers have for some time devoted their most systematic attention primarily to ... *what to believe* ... *how to behave* ... *what to care about*.
(Frankfurt, 1988: 80)



Figure 0-1 Direction to Care, Leicestershire, United Kingdom

Source: Robert Harland, 2010

Abstract

This thesis presents a model for analysing the graphic object as urban object, by considering atypical fields of discourse that contribute to the formation of the object domain. The question: *what is graphic design as urban design?* directs the research through an epistemological design study comprising: an interrogation of graphic design studio practice and the articulation of graphic design research questions; a review and subsequent development of research strategy, design and method towards the articulation of methodology that reflects the nature of the inquiry; a detailed analysis of five different ways to study and research graphic design as urban design, in geography, language, visual communication, art and design, and urban design. The outcome of the investigation is a model that enables future research in the urban environment to benefit from *micro-meso-macrographic analysis*.

The model endeavours to provide a way to evaluate, design and enhance ‘public places and urban spaces’ (Carmona et al., 2010) by considering different scales of symbolic thought and deed. This has been achieved by acknowledging the relationship between the relatively miniscule detail of graphic symbolism, the point at which this becomes visible through increased scale, and the instances when it dominates the urban realm. Examples are considered that show differences between, for example, the size and spacing of letter shapes on a pedestrian sign, compared to the ‘visual’ impact of an iconic building in the cityscape. In between is a myriad of graphic elements that are experienced and designed by many different professional disciplines and occupations. These are evidenced and explained.

Throughout the study an indiscriminating literature review is interwoven with the text, accompanied by tabular information, and visual data in the form of photographs and diagrams. This is mainly research-driven data utilising photographs from fieldwork in Brazil, Canada, Hong Kong, Italy, Portugal, South Korea, United Kingdom, and United States of America. The methodology integrates a transdisciplinary *adaptive theory* approach derived from sociological research, with *graphic method* (utilising a wider scope of visual data usually associated with *graph theory*). The following images provide sixteen examples of artefacts representing the graphic object as urban object phenomenon.



Figure 0-2 The graphic object in the urban object
Source: Robert Harland, 2006–2010

Acknowledgements

The following individuals have been important in the instigation and development of this research. Robert Kettell suggested that the further development of the Researcher's interest in signage might be suitably explored as a research degree. The architect and academic Neil Stacey wilfully shared many of his references and experiences of urban design work, especially from time spent working for the cycling charity Sustrans in the United Kingdom. Professor Judith Mottram provided early encouragement for research into graphic design, and supported three research symposiums organised by the Researcher at Nottingham Trent University between 2006–2008. Professor Teal Triggs recognised the importance of diagrams in the early stages of the research, and gave encouragement that these might be written about to explain graphic design. She must also be thanked for allowing the opportunity to share and test ideas with postgraduate students of *Information Environments* at the London College of Communication. Jim Northover, Chairman of the design practice Lloyd Northover, also found time to discuss the relevance of using diagrams to explain graphic design. In a different context, Dr Maria Cecilia Loschiavo dos Santos, associate professor of design at the School of Architecture and Urbanism, University of São Paulo, Brazil, has provided excellent feedback on ideas that have not fitted into the main body of the research, but have been developed as a supplement in collaboration with her. She also hosted a visit to São Paulo for the purpose of carrying out visual research that is included here in small parts and will be developed after completion of the thesis. The trip to São Paulo allowed valuable opportunities to share and test core ideas with her research students. The supervisors of this research, Professor Tim Heath and Dr Hitchem Trache provided invaluable feedback about how the concerns of a subject normally outside their own core research areas might contribute to their respective disciplines. Financial support to attend and present at conferences has been generously provided by: University of Nottingham, Nottingham Trent University, and Loughborough University. Finally, the research is indebted to the support of the Researcher's immediate family: Maria, Gina and Leo Harland.

Note on conventions and abbreviations

The presentation of this dissertation benefits from the use of some familiar conventions. It is written in the third person and when the opinion of the writer is central to the discussion, this is referred to as that of the Researcher (with a capital R).

The text is organised into numbered chapters. Each chapter is divided into sections with clear sub-headings. These are prefixed with a decimal number that refers to the chapter number and sequence of the section. For example in chapter three the first section is 3.1. Figures and tables within the chapters also refer to the chapter and sequence of the figure or table. This appears as a hyphenated number, such as Figure 3-1. Each chapter begins with a quotation that captures the essence of the discussion to follow, a short introduction, and ends with a closing summary.

Figures, in the form of diagrams and photographs, feature prominently throughout, as do tables. Many of these have been generated by the Researcher and are acknowledged in the source with the Researcher's name and date. Otherwise, the source of the diagram, photograph or table is cited. If a source is not given, such as the case with a diagram, it has been created by the Researcher as part of this study. Some diagrams and tables have been redrawn or recreated for the purpose of either better clarity, a need for consistency with other visual materials, or because it is a composite. Where this occurs, it is acknowledged in the accompanying source as having been redrawn or tabulated.

Reference to external publications is made using the Harvard system and its convention of name and year, followed by a colon and page number in parenthesis. The exception is if the author's name is deemed appropriate for inclusion in the text. The Bibliography appears at the end of the dissertation and is alphabetic.

Quotations less than 40 words in length appear within the paragraph, framed in single quotation marks with double quotation marks indicating a quotation within a quotation. Quotations of more than 40 words are separated from the main text, indented and single line spaced, but do not use quotation marks unless

these appear in the original. Italic is used to place special emphasis, for the title of a book or journal, or use of foreign words. Bold text, as well as indicating sub-headings, is sometimes used to draw attention to an important idea or concept.

Abbreviations have also been used throughout, as listed below:

et al	and others
ibid	in the same place
op cit	in the work cited
nd	no date
anon	name not known

The headings and main text is set in the typeface Georgia. This is chosen for its legibility, appropriateness for reading on screen and as printed matter, and its incorporation of non-aligning numerals (deemed more suitable for numerals that appear within the body of the text). Diagrams use the typeface Verdana. These are typefaces designed by Matthew Carter with good legibility in mind.

Refereed publications

Harland, R. G. (2011). The Dimensions of Graphic Design and Its Spheres of Influence. *Design Issues*, 27, (1), 21–34.

Harland, R. G. Loschiavo dos Santos, M. C. (2010). *Education as a practice of affiliation: facilitating dialogue between developed and developing nations*. Design and Complexity: Design Research Society International Conference 2010, Montreal 7–9 July 2010.

Harland, R. G. (2009). *The dimensions of graphic design: in theory*. International Association of Societies of Design Research Conference 2009. COEX, Seoul, Korea, 18–22 October 2009.

Harland, R. G. Loschiavo dos Santos, M. C. (2009). *From greed to need: notes on human-centred design*. Interrogations: creative interdisciplinarity in Art and Design research, Conference, Loughborough University, 1–2 July 2009

Harland, R. G. Loschiavo dos Santos, M. C. (2008). *The ephemeral aesthetic of spontaneous design on the streets of São Paulo, Brazil*. Undisciplined: Design Research Society Conference, Sheffield, 16–18 July 2008

Harland, R. G. (2007). *Redefining the plural domains of graphic design and orientating the subject towards a model that links practice, education and research*. International Association of Societies of Design Research Conference. The Hong Kong Polytechnic University School of Design, 12–15 November 2007

Harland, R. G. (2006). *What are the visual communication requirements of the built environment?* Wonderground: Design Research Society Conference, Lisbon, 1–4 November 2006

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It may sometimes happen that a truth, an insight, which you have slowly and laboriously puzzled out by thinking for yourself could easily have been found already written in a book; but it is a hundred times more valuable if you have arrived at it by thinking for yourself. For only then will it enter your thought-system as an integral part and living member, be perfectly and firmly consistent with it and in accord with all its other consequences and conclusions, bear the hue, colour and stamp of your whole manner of thinking, and have arrived at just the moment it was needed; thus it will stay firmly and for ever lodged in your mind.

(Schopenhauer, [1850] 2004: 6/17)

1 Introduction

What unifies any work involving typography is the need for the designer to be able to combine a view of the whole with an eye for detail.

(Baines and Haslam, 2005: 190)

1.1 Locating the research

This dissertation reports on a six-year part-time research investigation that began in 2004. The findings contribute to what became known in the late twentieth century as the discipline of *Design Studies* (Margolin, 1989: 3). Within this, the research specifically contributes to the study of the relatively new disciplines of graphic design and urban design. These are considered by Richard Buchanan to be central to the idea of design as a ‘modern architectonic art’ that includes ‘graphic design, engineering and industrial design, architecture, or the largest integrated systems found in urban planning’ (1989: 108). However, the core of these activities is not new. In the Middle Ages, equivalent activities were known as the ‘quadrivium’ and recognised as key in dealing with progressively ‘larger and larger integrative problems’ (ibid). Urban environments in the twenty first century continue to grow larger and larger, presenting unprecedented design challenges. Therefore, the relationship between graphic design and urban design requires ongoing reflection. Design, as a ‘field of professional design and a research discipline’ (Friedman, 2003: 27), provides the context for this inquiry.

For the purpose of early discussion, and the interdisciplinary nature of the research, the following working definitions will help to orientate the reader. The first is close to the Researcher’s interpretation of graphic design at the beginning of the research:

... the generic title ‘graphic design’ is understood to apply to the broad range of specialism’s contributing to visual design for communication media, whether printed or electronic, static or time-based. The media include print (eg books, magazines and promotional material) and electronic media (eg computer graphics and video). The technical specialisms include illustration, typography and photography. Its applications may be informative, persuasive or recreational, and include information design, advertising design, corporate identity design, packaging design and publishing design. (CNAA, 1990: 13)

The basis of this definition remains relevant in 2010 although the balance between print and screen based activity has shifted with the advent of new technologies.

Regarding a definition for urban design, of the many that are said to exist, the publication *The value of urban design* (CABE, 2001) favours the following:

... urban design should be taken to mean the relationship between different buildings; the relationship between buildings and the streets, squares, parks and waterways and other spaces which make up the public domain; the nature and quality of the public domain itself; the relationship of one part of a village, town or city with other parts; and the patterns of movement and activity which are thereby established: in short, the complex relationships between all the elements of built and unbuilt space. (CABE, 2001: 18, citing Planning Policy Guidance Note 1)

The scope of both of these is very wide, but at the core is a concern for relationship and integrative practices. This research establishes how these relationships and practices act as a focal point for the research. Some indication of how this will be achieved is found in the concerns of urban design:

All the constituent physical parts of the built environment to which the public have access

The way these parts fit together to create networks of space and activity

The functioning of those space networks

Their role as a social venue

(ibid: 18)

The value of the relationship between graphic design and urban design in professional design practice has been recognised by Guy Julier (2000: 126), who states the importance of graphic design in urban regeneration. He reports that when, in the early 1980s, the Barcelona socialist city council embarked on a programme of 'radical urban regeneration' one of the focal points was to create a 'greater feeling of order and structure to the city chaos' by installing new signage for its public transportation system (ibid). This confirms that graphic design has been used as a tool for urban design, and a relationship clearly exists in professional design practice, but it will be argued in this dissertation that this relationship is poorly understood in the urban design literature, and under theorised.

1.2 Structure of thesis

This dissertation is structured into five chapters that in turn introduce the research, explore ontology, epistemology, methodology, data collection and theory development. Following this **introduction** chapter, which locates the

research in design studies, **chapter two** is about the research context and explains the ontological and epistemological position of the Researcher. The main subject matter is outlined as a phenomenon. Research questions are revealed throughout the early part of the chapter, and more emerge from an explanation about the background to the research. In the tradition of social science research, personal bias is also discussed. The need for research, and contribution to knowledge, conclude the chapter.

Chapter three explores ideas about research strategy, research design and research methods. The main focus is the exploration and articulation of a research methodology. This narrows to an explanation of visual methods and the relevance of visual culture and visual ethnography. The chapter concludes with an explanation of the approach in this research that utilises *graphic method* in the context of *adaptive theory*, derived from sociological research.

Chapter four explores how graphic design as urban design can be studied, researched and theorised. This explores ways to study and research graphic design as urban design, before focusing on some disciplinary perspectives that contribute to theorising the relationship between the two. Geography, language studies, visual communication, art and design, and urban design are shown as having a close association with the relationship between graphic design and urban design. The chapter concludes with the proposal of what might be described as a transdisciplinary theory for analysing graphic design as urban design, recognising the graphic object as an integral and pervasive element of the urban object.

The **Conclusion** reviews the main points that emerge in the preceding chapters and proposes two diagrams that depict: (a) six facets for studying the graphic object as urban object (research, education, history, theory, criticism, craft); and (b) six defining domains for the consideration of the graphic object as urban object. These domains represent: (1) the graphic object; (2) the urban object; (3) the internal processes of ideas, thoughts, feelings and concepts; (4) design studies; (5) science; and (6) humanities. Concluding remarks proposes a further model of the continuum between type, typographic, graphic and urban design, in terms of the defining properties and configurational properties that link these together. Finally, recommendations briefly summarises the opportunity to use

macro-meso-micrgraphic analysis as an research tool, bringing the written aspect of the thesis to an end.

Throughout the thesis is an embedded **literature review** that is aligned to the disciplinary concerns that arise across the different subjects, fields and disciplines that have been appropriate to the investigation as new lines of inquiry issues have emerged. This is in part due to a lack of a canon of literature that might suitably link the design disciplines.

In the following chapters, many views will overlap, but these will be contextualised for the benefit of the different communities that may find the research of interest. Ultimately, the research extends the detailed concerns of typographic design to those of urban design, through the perspective of graphic design as an intermediate viewpoint.

Word count excluding appendices and bibliography:
88,883 words (approximation).

2 The research context

*... every metaphysical question
can be asked only in such a way
that the questioner as such is
present together with the question,
that is, is placed in question.*

(Heidegger, 1978: 96)

2.1 Introduction

This chapter establishes the research context. It concerns the nature of the phenomena and the prior experience and personal bias of the Researcher. Consideration is given to the difficulty naming the phenomena. It is shown that subjects, fields and disciplines discuss the topic from various perspectives but the terminology to describe the phenomena often has different associated meaning and is context dependent. Consequently it is necessary to consider the way it is named and depicted. Differentiation is made here between written and pictorial representations.

Important questions emerge in this part of the inquiry such as: How shall the phenomena be named? What exactly is the research study about? Where shall the study be located? Having identified these questions, the text then clarifies what is meant by the terms *Visual Communication* and *Built Environment*, and how these happen in relation to the other. From this discussion the further question emerges: How shall the topic be researched?

Other perspectives about the topic are also introduced. Furthermore subject specific questions are identified that are distinct and emerge from the 'sensitised' perspective of the Researcher's close relationship to the subject under investigation. The Researcher's professional experience and personal bias is shown to be critical in shaping the fine detail of the inquiry. One overarching research question is revealed, before then explaining the need for research.

In sequence, this chapter addresses the:

- problem naming the phenomena;
- establishment of the initial research question;
- background to the research;
- development of an approach to the initial research question;
- need for research;
- contribution to knowledge.

2.2 The problem naming the phenomena

The phenomena at the core of this research has been written about by those who are directly concerned with the state of urban settlement in the late twentieth and early twenty first century, using a variety of terms and phrases. The following represent a few. Kevin Lynch (1960: 4) is specific when he refers to ‘maps, street numbers, route signs, bus placards’ as way-finding devices. The short word ‘signs’ is enough to capture examples of what Denise Scott Brown (Venturi et al., 1977: xvi) wishes to draw attention to within the wider ‘phenomenon of architectural communication’ and ‘commercial vernacular’ (ibid: 6–7). Gordon Cullen (1971) does not stray much beyond ‘outdoor publicity’ and ‘lettering’. Theo Crosby (1973: 220–221) describes a particular form of commercial vernacular known as billboard advertising and fly posters, using the phrase ‘large scale graphic images’. ‘Banners...signs...large screens’ make up some of the ‘urban objects’ pointed out by Jon Lang (2005: 142). Carmona, Heath, Oc and Tiesdell mention ‘traffic’ and ‘direction signs’ as elements of street furniture (2010: 196). Less object orientated is William J Mitchell’s reference to ‘inscription’ as one way ‘twenty first-century cities provide contexts for communication’ (2005: 3–19). More systematic is Stephen Carr describing ‘public signing and lighting’ and ‘other outdoor information media’ as ‘environmental information systems’ (1973: 3). With reference to the ‘later ingredients’ of ‘[t]ownscape’ Rowe and Koetter draw attention to ‘the hitherto unnoticed Victorian manhole’ and ‘nineteenth century graphics’ (1978: 33).

Not so much associated with built environment professionals, Teal Triggs (1995: 7) mentions a less formal collection of ‘music and political posters fly posted on walls, shop front signage, advertising billboards, medical warnings, newspapers and magazines, transport maps and timetables, television screens and even “lost animal” messages tacked precariously on telephone poles’. More recently, she is concerned with ‘the way in which information might be conveyed within physical or virtual environments’ as ‘information environments’ that are ‘multi-dimensional’ (2009: 243–244).

Taking all of this diversity into account, the first question that must be asked is nominal: *How shall the phenomena be named?*

All together this brief idiomatic portrayal introduces most of the phenomenon central to this thesis. But none of these – maps, street numbers, route signs, bus placards, lettering, billboard advertising, fly posters, and more – singularly capture enough scope and diversity to suitably name it. The commonly used word ‘sign’, as noted above, is too much associated with the kind of everyday object (physical and increasingly digital) that displays, in a myriad of combinations, stylised writing, pictures and notation (together, or as separate images) – typically found at the side of a road indicating which way to go. Phil Baines and Catherine Dixon describe these ‘informatory’ or ‘regulatory’ signs as ‘one of the most obvious graphic elements in many towns and cities’ (2003: 12).

Much less specific, Per Mollerup (2005: 11) points out that a sign can be ‘any phenomenon that has a meaning.’ In his book *Wayshowing*, he employs the distinction between small and capital letters for ‘sign’ and ‘SIGN’ to respectively differentiate between the two (Triggs, 2009: 243). See Figure 2-1. The latter is the preferred interpretation in the study of semiological schema in the relationship between signifier, signified and sign (Barthes, 2009: 131–187).

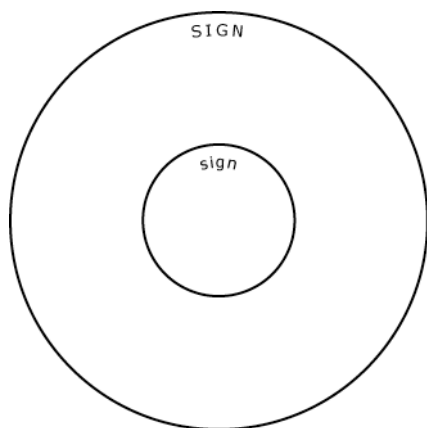


Figure 2-1 The broad and narrow meaning of the word sign

Source: Mollerup, 2005: 11 (redrawn)

This dual meaning of the word sign is useful at times, but imperfect to describe the phenomena (although both are in use by the majority of people likely to read this thesis). The kind of terms used by Lynch, Cullen, Crosby and others are some of the visual ‘messages’ we experience in an urban environment. There are more

and this research seeks to demonstrate this by studying the urban environment as a *partial* system in an attempt to better understand the working order of a city (Needham, 1977: 9–11).

Less exact, but useful for illuminating the principle behind the phenomena, is Christopher Alexander's use, and abstract depiction, of the word '**ornament**' (1977: 1146–1152). Despite the association with adornment and embellishment, Alexander argues that decorations and ornaments 'have a function, which is as clear, and definite as any other function in a building'. He is relating this primarily to the elements and 'simple themes' that are found at 'corners, places, main entrances, ... the garden gate, a fence, ... the edges and boundaries' needing 'emphasis or extra binding energy'. Typical examples of this can be found in some form or other on residential housing, such as the examples shown in Kew, London, in Figure 2-2.



Figure 2-2 Ornamentation as pattern language in Kew, London

Source: Robert Harland 2010

Alexander interprets the essence of this in two simple but effective drawings seen in Figure 2-3. In this, an economical use of the simple but highly recognisable symbol of a heart demonstrates the power of visual mediation for unifying otherwise independent things. The heart shape he uses is irrelevant here (and apparently in the point he wishes to make). What is important is the use of a mediating device (the heart) as an intervening act of unification between two entities.

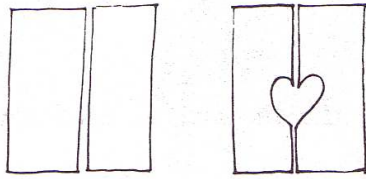


Figure 2-3 Alexander's depiction of ornamentation uniting a split world

Source: Alexander et al., 1977: 1148

Alexander explains the meaning behind this abstract representation, and shows its potential as a simple model for applying the principle to scale, from the largest of forms to the tiniest of particles.

In the left-hand diagram where there is a cleavage that is sharp, the thing and its outside are distinct entities—they function individually as wholes—but they do not function together as a larger whole. In this case the world is split. In the right-hand diagram where there is ambiguous space between them, the two entities are individually entire, as before, but they are also entire together as a larger whole. In this case the world is whole...[extending] throughout the material universe, from the largest organic structures in our surroundings, to the very atoms and molecules. (Alexander et al., 1977: 1148)

This principle of mediation depicted by Alexander's recognition of ornament as a pattern language is highly appropriate here, but limited in scope in the sense that few of the earlier mentioned objects could be appropriately defined as ornament (although they might possess the qualities of ornamentation). Other important roles, such as 'information', 'persuasion', 'magic', 'metalinguistic and phatic' functions (Barnard, 2005: 13–18) are also central to this inquiry, which attempts to define a new 'pattern language' for the city (to borrow Alexander's phrase).

To reiterate, the phenomena referred to here is a distinct set of objects, things and symbols (by comparison to those we might usually associate with the city, such buildings) seen in most urban environments. For the majority of time they are experienced as part of everyday life through our visual sense. At its most intense, although often place specific, it is known to the majority of people through what has been described by Jean Baudrillard ([1981] 1994: 1) as *precession of simulacra* (original italics) – an abstract model that once represented reality but now precedes it.

Although typically experienced in urban settlements, the phenomena is not central to discussion about cities by built environment professionals – architects, landscape architects, engineers, or planners – though many of these professions have an interest in it. This research explores the hypothesis that it is central to the working of a city. No single term yet appears to capture, with enough scope and diversity, the phenomena as it is explained here. As previously suggested, this difficulty in designation is an integral part of this inquiry and from this concern two further basic questions emerge: *What exactly are is being studied? Where shall the study be located?*

Answers to these two questions are dealt with in the early part of this study, whereas the earlier question about naming is more prominent in the latter part of the inquiry. However, all three collectively form the background to the initial research question, something now discussed in more detail.

2.3 Establishing the initial research question

The tentative starting point for the research began with the broad question: *What are the visual communication requirements of a built environment?* (Harland, 2006)

This is a wide-ranging question and will be shown to require a range of disciplinary perspectives to formulate an answer. The question is difficult to locate in an established field of academic research, not least because of the ambiguity of the phrases *visual communication* and *built environment*, neither of which can be found in a typical dictionary. Whilst they may have meaning (informal and formal) within the confines of specialised academic disciplines, for example art and design, or geography, an issue arises about the relative meaning of these phrases in a transdisciplinary academic and non-academic context. It is useful at this point to briefly consider each of the components of the research question.

What is meant by visual communication? It seems that visual communication, and its disciplinary associations, is only now beginning to occupy scholars. Newark (2002: 118) argues that the phrase has been in limited use since the mid-twentieth century, closely associated with art & design. For example, Gombrich (2000) uses it in the title of his book *The uses of images: studies in the social*

function of art and visual communication. But what does he mean by it? Gombrich refers at length to drawn non-art objects outside the realm of fine art painting. By this he means a diversity of image based activity, and artefacts, that include fresco painting, altar frontal pieces, pictures that adorn the walls of the home, outdoor monuments, political symbolism, pictorial satire, pictorial instruction, and doodling (2000: 10–12).

Coinciding with this interpretation by Gombrich at the turn of the millennium, was the launch of an academic journal named *visual communication*, with a broad coverage stated in the launch publicity material as: still and moving images; graphic design and typography; visual phenomena such as fashion, professional vision, posture and interaction; the built and landscaped environment; and the role of the visual in relation to language, music, sound and action. The journal claims visual communication to be interdisciplinary, drawing from a diversity of subjects that include: anthropology, communication studies, discourse studies and semiotics, media and cultural studies, sociology, and disciplines dealing with history, theory, and practice of visual design. The scope is wide.

Since then, academics have claimed visual communication to be new, diverse, and rapidly evolving (Smith et al., 2005: ix). Such descriptions suggest that investigating visual communication must consider many perspectives. This will be undertaken in more detail further on in this dissertation. Before this is done, the second part of the initial research question also requires closer scrutiny to determine if there is a commonly held view about what built environment means. Does it mean any environment built by humans, such as the inside of a computer, a car or building? Does it refer to a beehive – a very particular kind of built environment by non-humans?

What is meant by built environment? Taking environment on its own the psychologist discussing hunger and appetite describes environment as being the ‘domain beyond the skin’ as opposed to the ‘physiological domain ... under the skin’ (Blundell and Hill, 1995: 24). The *Oxford Dictionary of English* (2005) describes environment as ‘the surroundings or conditions in which a person, animal, or plant lives or operates’. Whereas the environment is interpreted as something humans create within the ecological framework of ‘land, air, water and

wildlife' (Arvill, 1976: 9). The term *environment* appears to describe a variety of conditions and situations.

Closer to an architectural view, Teymur (1982: 44–48) confirms environment can be everything non-human, as in the environmental space around us, or the structure of that space. He suggests it to be a qualifying statement, as in 'a good environment for children to grow up in'. As a term it is used liberally to accompany all sorts of situations and conditions: political, social, economic, religious, physical, cyclical, contextual, relational, experiential, scenic, geographic, economic, a game, and more. Humans seemingly build many things, from cars to lifestyles. The general view appears to be that environment is non-human and Teymur depicts this with a simple diagram showing the human being within an environmental domain that is non-specific in its variability. See Figure 2-4. The human being, as a point of reference, is placed at the centre of their environment, in the way that a sociologist may also see the individual as an inseparable part of society (Watson, 1995: 59).

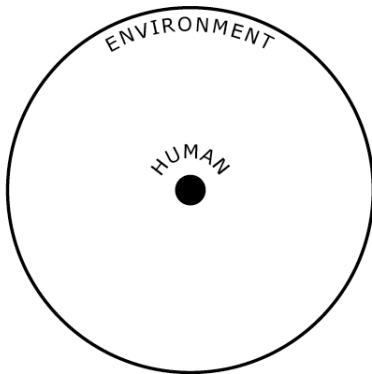


Figure 2-4 The relation of human to environment

Source: Teymur, 1989: 139 (redrawn)

By using the phrase built environment prominently in the initial research question, it was assumed to be an established recognisable term, perhaps in the same sense as a description found in the relatively established discipline of Geography:

The built environment is that part of the physical surroundings which are people-made or people-organized, such as buildings and other major structures, roads, bridges and the like, down to lesser objects such as traffic lights, telephone and pillar boxes. (Goodall, 1987: 49)

This useful definition helps on a number of levels, not least because of utmost importance here is the extent of what ‘lesser objects’ might be in relation to the phenomena of interest here. Also, the inclusion of ‘people-made’ and ‘people-organised’ is especially relevant because in order to understand why something exists it is helpful to know how it comes into existence. By this is meant not just the physical making process, but also the thinking included in the making in the way that Richard Sennett (2009: ix), arguing for the value of craft, says that ‘making is thinking’.

How is visual communication in the built environment made? Attempting to answer this question must lead one to consider the apparent diversity of visual communication, and the variable scale of the built environment. Significant here is the syntax of the initial research question. Situated within this is the importance of relationship between the two entities, their dependency on each other, and how to assess the contribution each makes to the other in the functioning of a city.

If the initial research question is to be taken literally, what arises is the complex issue about whether it is possible for an inanimate object (in this case, the built environment) to have a ‘requirement’ or a ‘need’! If so, how is this determined? Or, is it only the users of the built environment who have needs. This differentiation – perhaps between a *technical* or *social* function – deserves closer attention. Through this, a convenient polarisation is inferred between the kind of ‘systematic’ approach by what is often referred to as scientific method, and the kind of ‘unsystematic’ approach associated with humanities subjects, referred to by C.P Snow ([1964] 1993) as a ‘two culture’ divide.

The *technical* approach is closely linked to *technology*, the former concerned with ‘matters of practical construction’, the latter more about the ‘modern distinction between knowledge (science) and its practical application ... within the selected field’ (Williams, 1983: 315). The *Oxford Dictionary of English* states technology as being ‘the application of scientific knowledge for practical purposes, especially in industry’, whereas ‘technical’ comprises four definitions, the most useful for the purpose here being ‘involving or concerned with applied and industrial sciences: an important technical achievement’ (Soanes and Stevenson, 2005). It is also described as an adjective ‘relating to a particular

subject, art, or craft, or its techniques: technical terms.’ In the context of the built environment, in urbanism there is reference to ‘planning and technology’ and the ‘functional-technical’, whereby ‘technical’ is about implementation and ‘site preparation, roads, sewage, bridges, etc.’ In this case the ‘functional’ means ‘spatial consequences’ (Westrik, 2005: 433) ‘Technical’ analysis and ‘know-how’ is discussed through ‘technical and physical properties’ and ‘site, building materials, and construction’ (Mácel, 2005: 63-64). The ‘technical’ is thought of alongside ‘...economical, cultural and political contexts’ (De Jong and van Duin, 2005: 91). Therefore, a technical, or scientific approach appears to be about practicality, applied, industrial, scientific, but also relating to techniques in art and craft. Within the built environment it is predominantly concerned with physical infrastructure. On this basis, there is a technical aspect to visual communication in the built environment.

The *social* crosses over between non-academic and academic settings.

Concerning the latter – and also according to the *Oxford Dictionary of English* – the academic context for the subject is sociology, concerning itself with ‘the study of the development, structure, and functioning of human society’ (op cit). This appears to be the case since the term sociology was coined by French philosopher Comte in 1830, though not used in English until 1943 (Williams, 1983: 295). Similar to technology, O’Brien (1993) argues that sociology can be thought about in a number of ways: as a ‘profession’; a ‘collection of methods’; for ‘studying empirical questions’; an ‘array of theories’; a ‘set of...areas of interest’; or a ‘branch of learning’ (ibid: 2–3). Closer to the notion of social function, it explains how society is ‘made possible, reproduced ... and contested’ (Barnard, 2005: 61). Extending the functional element, ‘functionalism’ is a specific sociological theory about ‘consensus’, ‘society as a system’, ‘social disorder’ and ‘criticism’ (Taylor et al., 1995: 15).

In this thesis *social function* is meant in relation to ‘human systems’ and ‘how people create meaning’ (Alexander, 2003: 1). If the social is the way of being for society, it has been suggested by Raymond Williams (1983) that there are two ‘senses’ within which it is understood:

as our most general term for the body of institutions and relationships within which a relatively large group of people live; and as our most abstract term for the condition in which such institutions and relationships are formed. (ibid: 291)

Visual communication in the built environment is social in that it is concerned with the structure and functioning of human relationships in systematic, meaningful and sizable ways. An understanding of these phrases and the concepts they relate to, are important for determining how a research inquiry of this kind progresses. It can be approached from a science angle, or a social science and humanities perspective, or both. Whichever is assumed, the question arises: *How shall the research question be researched?*

This research takes as its starting point social science and humanities. Sir Adam Roberts, President of the *British Academy*, explains this approach in contrast to that taken in science, technology, engineering and maths (STEM), as follows:

The humanities explore what it means to be human: the words, ideas, narratives, and the art and artefacts that help us make sense of the world we live in; how we have created it, and are created by it. The social sciences seek to explore, through observation and reflection, the processes that govern the behaviour of individuals and groups. Together, they help us to understand ourselves, our society and our place in the world.
(2010)

Words, ideas, narratives, art, and artefacts in the world feature prominently in this research, as does the process of creation, observation, reflection, and behaviour. Within this 'art' is a critical starting point. As a study in social science and humanities, this research is about 'art in society', a relationship depicted in a diagram used by Victoria Alexander (2003: 249), shown in Figure 2-5. The specific background to this approach, and interpretation, will now be discussed specifically concerning the professional bias of the Researcher.

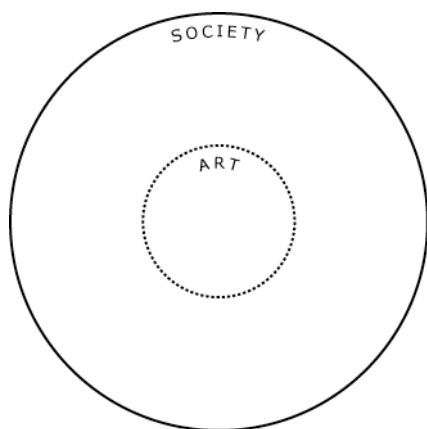


Figure 2-5 Art in society

Source: Alexander, 2003: 249 (redrawn)

2.4 Background to the research

Discussion about the background to this research must include an explanation about the prior experience and training of the Researcher (Creswell, 2003: 22). Before doing so, the importance attached to background explanation in a research investigation will be made clear. When and where further research questions emerged, will also be explained, demonstrating progression from past experience, current concerns and future application. Made explicit is the view expressed by some that research is carried out in a tradition that reflects prior experience – for example, quantitative research is likely to attract those familiar with its qualitative approach and literature (Creswell, 2003: 22). However, in the case where there is an absence of a research tradition, such as can, and will, be explained in the case of art and design (the background of this Researcher), it is difficult to assume an approach based on a preconceived research tradition. The professional and personal values held by the Researcher are therefore ‘spelt out’ in the following narrative, approximating to:

...the elicitation and analysis of data that is sensitive to the sense of temporal sequence that people, as tellers of stories about their lives or events around them, detect in their lives and surrounding episodes and inject into their accounts ... the approach is not exclusive to a focus on life histories. (Bryman, 2008: 696)

This method is associated mainly with ‘what is said ... the way a story is related ... dialogue ... use of words and gestures’ by other sources, but also the source may be oneself in a state of reflection’ (Bryman, 2008: 553). In the following pages this latter approach is used, accompanied by visual reference material to expand and compliment points made in the text. Adopting and adapting a *narrative analysis* approach identifies and clarifies the equivalent prior learning experience of the Researcher, in preparation for further inquiry. As part of this early narrative, the text will continue to identify key questions that have help to structure a ‘reflexive text ... [that] informs or reminds readers that the author has interpreted data to construct the version they are reading and that the reader has an involvement in and a position on the research topic’ (Coolican, 2004: 235). Creswell (2003: 180) suggests that the audience for the research must understand the researcher’s position, especially regarding past experience, or what has been referred to as *personal bias*. Bryman (op cit) advises that **personal bias** encroaches on the research process at various points:

- choice of research area;
 - formulation of research questions;
 - choice of method;
 - formulation of research design and data collection techniques;
 - implementation of data collection;
 - analysis of data;
 - interpretation of data;
 - conclusions.
- (ibid: 24–25)

Understandably, the research approach to this inquiry is biased by the Researcher's background in art and design. With this in mind – the prior experience of the Researcher – a disclosure of personal bias, must question the starting point for research. *When, and where, does research start?* This is an important question to ponder, because of the mature-student status of the Researcher, and the inescapable influence that twenty-years of a particular kind of professional design practice has on thinking processes.

Bias to susceptible forces is the same for qualitative and quantitative research. As suggested 'an individual trained in technical, scientific writing, statistics, and computer statistical programs who is also familiar with quantitative journals in the library would most likely choose the quantitative design' (Creswell, 2003). The same might be said for a qualitative design study. In fact, prior to this research, the Researcher does not claim to know of quantitative or qualitative journals in art and design, due to the fact that this aspect of a research-led education did not figure much, if at all, in the 'vocational' degree programmes associated with the former polytechnics in the United Kingdom in the 1970–1980s (the formative experience of this Researcher). Then, (and still prevalent today), were the trade journals that feature numerous examples of graphic designed objects associated with the field – often showcasing the work of leading professional practitioners – for example *Creative Review*. That said, now, and since the change of polytechnics to the so-called 'new universities' in the UK, there is a wider range of references that straddles practice, critical studies and research, *Eye* magazine being one such example, as well *Information Design Journal*, possibly the most established research-led publication directly related to the field, since its launch in 1979. More will be explained about the historical context for art and design higher education in chapter four.

The issue of a starting point for research is worth dwelling on. In the field of literary criticism, the question of starting point has been discussed by Bennett and Royle (2004) who ask: ‘When will we have begun?’ (ibid: 1).

This question raises a series of fundamental problems in literary criticism and theory. Does a text begin as the author puts his or her first mark on a piece of paper or keys in the first word on a computer? Does it begin with the first idea about a story or poem, or in the childhood of the writer, for instance? Or does the text only begin as the reader picks up the book? Does the text begin with its title, or with the first word of the so-called ‘body’ of the text? (ibid: 1)

Discussed at length is the beginning of well known literary texts, such as John Milton’s *Paradise Lost*, Dante’s *The Divine Comedy*, or T.S. Elliot’s *The Wasteland*, amongst others. But they conclude their arguments with the declaration that as with ‘beginning literary studies ... the idea that everything begins with the author or with the reader or with one particular text is both deeply compelling and deeply false’ (ibid: 8).

In the interest of a ‘compelling’ rather than ‘false’ account of the background to this research, the next few pages declare the bias held by the Researcher. This is not merely a biographical description, but a displaced narrative that ‘recounts practice’ in the traditional ‘scientific’ sense (de Certeau, 1984: 78). It is displaced in that it reflects on a practice that, at the time of writing, happened more than a decade ago. As an ‘art of speaking’, the ‘scientific legitimacy’ of ‘narrativity’ is said to embody practice and theory, and de Certeau claims ‘a theory of narration is indissociable from a theory of practices, as its condition as well as its production’ (ibid: 77–78). *Narratology* is about the relationship between ‘story’ and ‘plot’, the former being an actual account of events, the latter being ‘those events as they are edited, ordered, packaged, and presented in what we recognise as a narrative’ (Barry, 2002: 223). The following pieces together the professional ‘plot’ preceding this research.

The phrasing of the initial research question was conceived in ignorance of more learned understandings about research, the nature of visual communication, and the potential for ambiguity of meaning in the phrase ‘built environment’. The background to this was a period of professional design practice that developed into a desire to explore a specialist topic beyond what seemed achievable within the confines of everyday studio practice, the responsibilities of running a design

studio, and employing staff. This spanned more than a decade in private design practice and a further period in higher education that facilitated a transition from full-time practitioner to full-time academic.

The background to establishing this initial research question is, in the main, rooted in the Researcher's professional design practice since the mid-1980s and specifically during the late 1990s. Between 1986 and 2000 this amounted to the undertaking of over one thousand design projects in a practice commonly referred to as graphic design. In broad terms this comprised the design of artefacts that, in the main, integrated the representation 'words' and 'pictures' in a variety of media. These resulted from a systematic approach to the conception, planning, production and implementation of visual elements, usually comprising typography, photography and illustration (the latter two often supplied or commissioned from a third party), within the context of a set brief usually negotiated with a client.

In the late 1980s, the Researcher spent a three-year period as a designer at the London design consultancy Tatham Pearce Limited, who in 1987-88 had been appointed to redesign the Land Rover corporate identity. See Figure 2-6 for an indication of an historical and contemporary version of the Land Rover logotype. This involved the development of a worldwide implementation exercise by a small team of graphic designers, led by David Pearce. Aside from the many and varied opportunities to work on the design of visual identities, annual reports, and brochures, time spent at Tatham Pearce provided an early formative experience of designing products that will appear in the built environment. For example, the design for the relationships between logotype and lettering used on Land Rover dealer showroom fascias and other external signage. See Figure 2-7. (These designs provided part of a four-page pamphlet supplied to dealers enabling them to make initial planning enquiries to local authorities, in particular detailing fascia, 'totem' signs, and projecting signs.)



Figure 2-6 Land Rover logotype old and new
 Source: Robert Harland. Left, Coors Brewery Shropshire 2005
 Right, Market Harborough Railway station car park 2009



Figure 2-7 Dealer signage for Land Rover
 Source: Land Rover International Dealer Identity Guide, 1989

This experience of assisting the implementation process for the Land Rover corporate identity involved determining critical relationships between the various elements of the scheme – for example, the integration and application of logotype, typeface, and colour. Although the design for these specific elements was already established when joining the firm, the process of implementation still required design decision-making to guide the assembling of elements through determined visual relationships. For example, establishing the visual relationship between logotype and lettering size on building fascia panels, as well as application to vehicle livery and different building types. This consisted of a lengthy design process liaising with showroom interior designers, as well as interlinking with other on-going projects such as signing for the main Land Rover production plant at Solihull in the West Midlands, UK. A few examples include determining how the basic elements were applied to parts-delivery vehicles as livery; in a pre-digital age, and as with most corporate identity schemes of the time, colour match recommendations were required in a number of applications such as Pantone reference colours and process colour for printing, and matches for Coates ink, British Standard, Perspex, RAL and Dulux paint; and the application of different fascia types to multi-dealer showrooms.

This overall approach to design conforms with the sentiment behind a traditional post-war definition of graphic design by Alan and Isabella Livingstone in their book *The Thames and Hudson Dictionary of Graphic Design and Designers* (1992: 90). This reads as ‘the activity of combining typography, illustration, photography and printing for purposes of persuasion, information or instruction’. The emphasis here is on the integration of different visual elements, the unification of these different parts into an overall impression, and collaboration between various kinds of practitioners – and their practice – often using vastly different methods of production. In this sense, the active part of graphic designing might be described as a methodology that incorporates specific methods of practice and production.

This relatively distant professional context is the background to the development of a critical way for thinking about ‘visual communication’ and ‘built environment’. However, returning to the question about when research starts, the starting point for the period of research reported in this thesis dates specifically to 1998, some ten years after the earlier mentioned design work for Land Rover.

By this time, the Researcher ran a private practice in London. Harland Design was then a small graphic design practice trading between 1991–2001. At its busiest it employed a designer and two design assistants with some administration support, but most often it was the hands-on graphic design practice run in the capacity of a sole-trader. During this period, the London based architecture and urban design firm Timpson Manley invited Harland Design to collaborate in the design of a ‘pedestrian/visitor orientation and signage system for the Greenwich Town Centre area’ (1998) in South East London. Timpson Manley were nearing the end of urban design work for the redevelopment of Cutty Sark Gardens (a project that won a Civic Trust Award), and had designed the Millennium Visitor Centre in Greenwich, adjacent to Cutty Sark Gardens, at approximately the same time. The design for the visitor centre had contained a sizable exhibition element and the graphic design component of this had been designed by Timpson Manley, but with no apparent specialised knowledge of the fundamental elements of graphic design. This is known because Harland Design consulted briefly on the latter stages of the project. From this point, more discussion took place between Timpson Manley and Harland Design about the further potential for collaboration. The process that followed participation in the Greenwich Town Centre signage work marked a shift in thinking for the Researcher, specifically about the nature of commissioned work that involved ‘graphic’ elements, and the extent to which other design professionals are involved in the process.

Prior to this, Harland Design experienced an approach to the process of commissioning work that usually consisted of one, sometimes two individuals, often in a marketing services role. This might have been a senior executive, a marketing director or managing director, or owner of a business. Most often one or two people were responsible for the briefing process, subsequent judging of design proposals and the post-project evaluation. Hardly ever did this require the formality of a typewritten briefing document – most work being commissioned through face-to-face conversation, note taking and a ‘question answer’ dialogue to determine the requirements of the brief (not all clients being able to explain what *was* needed).

Participation in the design for pedestrian orientation and signage in Greenwich Town Centre introduced a more formal approach, and a larger range of client

interest and involvement in the commissioning process. Revisiting the *Brief for Consultants* document some twelve years later, we find in paragraph two of the introduction under the sub-heading ‘Who is the Client?’ a widespread number of disciplinary interests representing the client are stated as follows:

The client for the work is Director of Development and Leisure in Greenwich Council. The project will be managed by a Steering Panel consisting of representatives from the GEPM Engineering Division, Tourism Development Manager, Planning Department, Communications Unit of the Greenwich Development Agency, linked by members of the Greenwich Town Centre Agency. (Anon, 1998).

The individuals involved in ‘steering’ the project, listed on page 9 of the briefing document were drawn from many different professional disciplines, interest groups and levels of society. These included: two Ward Councillors; the Chair, Leisure Services; Vice Chair, Leisure Services; the Chief Executive of the Greenwich Development Agency; the Tourism Development Manager; the Greenwich Area Manager; the Head of Strategy London Tourist Board; the Tourist Information Centre Manager; the Head of Communications; representatives from Greenwich Planning, Communications Unit, Government Office for London, National Maritime Museum, Greenwich Tourism Partnership, Marketing Leisure Services, Greenwich Foundation for Royal Naval College, The Greenwich Society, and Greenwich Town Centre Agency. This extensive list demonstrates a wide-ranging number of disciplinary interests that the project needed to satisfy.

What is significant about this is that unlike the commissioning of some architectural projects, it is highly unusual for there to be so many diverse interests in the commissioning of typical graphic design project work. However the briefing document for the Greenwich Town Centre pedestrian orientation and signage listed the required skills to undertake the work as: a. Project Management; b. Signage Planning; c. Graphic Design; d. Product/Furniture Design (op cit: 5). This is not only an atypical group of skills (for mainstream graphic design practice) but also is indicative of the commissioning of design in a cross-disciplinary context requiring an inter-disciplinary approach. That said, this is nothing new in the context of graphic design and architectural design (many multi-disciplinary design practices evolved to provide this since the 1950s, such as *Design Research Unit* or *Building Design Partnership* in the UK). But in the case of this project experience, and the development of a critical approach to

working in a cross-disciplinary context, interdisciplinary working directly resulted in the asking of questions that specifically emerged from graphic design experience, rather than those that might typically be considered as management, planning or product/furniture related questions.

The questions that emerged during the Greenwich project were to assist graphic design practice in the service of urban design. These were supported by a number of visual prompts and formed the basis of the first presentation to the steering committee—see Appendix one. These questions emerged from visual research undertaken in Greenwich town centre, and were presented as succinctly written statements supported by visual data. The process demonstrated how visual artefacts we see in the built environment, identified through a process of practice based visual research (that is, visual research as part of professional design practice), led to a design process that encapsulated a form of visual feedback to the practitioner provoking further questions to stimulate design inquiry. Taken on their own, the following list of questions and the nature of intent, show how their brevity needed supporting visual elements to substantiate the question:

- | | |
|-----------------------------------|--|
| <i>Which message?</i> | questioned the amount of visual clutter in messages found at key junctions in Greenwich; |
| <i>Which Greenwich?</i> | questioned the relevance of historical, contemporary and political representation in the presentation style of the place name; |
| <i>Whose authority?</i> | questioned the control of sign application; |
| <i>Which type of information?</i> | questioned the relevance of duplicating symbols. |

These served to raise consciousness, provoke discussion and clarify certain aspects of the client brief, avoiding the potential for misunderstanding. Such potential is found in the briefing paper in the statement requiring the scheme to: ‘provide minimum visual clutter’; ‘relate to a modern as well as historic setting’; ‘...link with other systems in adjoining areas’; and be ‘[c]apable of incorporating the *Time for Greenwich 2000* logo in short term only’ (op cit: 6). For example, ambiguity resides in the phrase visual clutter. It can relate to both physical objects and visual messages, neither interpretation being clear in the briefing document.

The question *Which Greenwich?* stimulated discussion about what might be a suitable 'image' for Greenwich, and how the process could contribute to establishing, in the client's words, a 'brand' for Greenwich, perhaps in the form of a new logotype or symbol. This led to the need for establishing some clear distinctions about what a pedestrian sign could and could not do, as well as clarity on more fundamental issues such as choice of typeface, quality of surface finish, and how decisions on such issues could contribute to what might be considered 'brand values' for Greenwich. These kind of discussions resulted in a focus on specific design decisions, such as which typeface should be used on the signs. This turned out to be more complex than imagined by those on the steering group. It further developed into a discussion about if it should be the same typestyle used by the Greenwich Development Agency on their notepaper, compliment slips and business cards – their visual identity 'house style' document recommended the typeface Sabon.

The seemingly 'innocent' question about choice of typeface, asked by one of the steering committee members, typifies the potential for uninformed design decisions that influence a design decision-making process. Often, these kinds of decisions can suffice, but risk restricting the full potential of a final design outcome. This is worth dwelling on for a moment as it highlights the potential for lesser quality decision-making in the application of graphic design principles, and illustrates how poor decisions influence how objects in the environment appear. Before discussing how this came to be resolved, and the inappropriateness of the Sabon typeface in this situation, Figure 2-8 indicates some of the key visual elements in the final Greenwich town centre scheme. Shown here is the first presentation board featuring a photograph of visual clutter with the accompanying question *Which message?*; a guideline page for the final recommendation for the place name Greenwich, and the sub-identity for Maritime Greenwich; an example of a finger post; and a detail of fret-cut lettering for the location sign in Cutty Sark Gardens. These four images provide a snapshot of the overall scheme development.

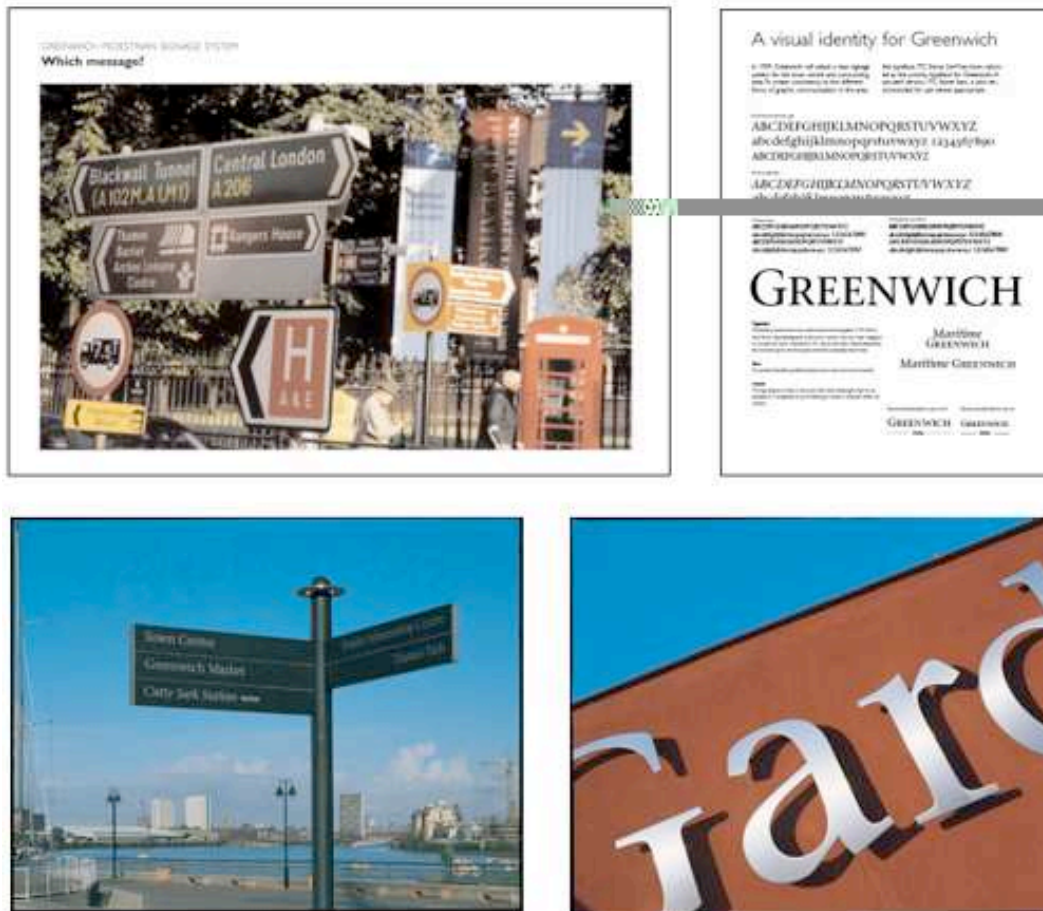


Figure 2-8 Greenwich pedestrian signing system

Source: Harland Design, 1999 (photography for bottom two images by Tom Lee)

Referring to the suggestion by the client that the typestyle might be Sabon, a brief recounting of the issues in 1998 that led to establishing an argument against Sabon, shows graphic design process in the same sense as what Donald Schön (1991) describes as ‘a reflective conversation with the situation’ (ibid: 76–104). This is focused on a fundamental issue in graphic design work – the choice of typeface – and how such a rudimentary exercise, if taken lightly, impacts on the detrimental quality of the built environment, albeit in a small way.

In order to understand how this came to be contested, a brief elaboration of Schön’s ideas in the context of the graphic design practice at Harland Design at the time will be helpful.

Every competent practitioner can recognise phenomena—families of symptoms associated with a particular disease, peculiarities of a certain kind of building site, irregularities of materials or structures—for which he cannot give a reasonably accurate or complete description. In his day-to-day practice he makes innumerable judgements of quality for which he

cannot state adequate criteria, or he displays skills for which he cannot state the rules and procedures. Even when he makes conscious use of research-based theories and techniques, he is dependent of tacit recognitions, judgements, and skilful performances. (ibid: 49–50).

In this Schön is discussing an 'entire process of reflection-in-action which is central to the "art" by which practitioners sometimes deal well with situations of uncertainty, instability, uniqueness, and value conflict.' The value conflict present in the issue of a suitable typeface for Greenwich refers to the tension between the trained and untrained eye, the client supplier relationship, or a sense of the familiar and unfamiliar. Schön describes a thinking and doing activity that is implicit in 'our feel for the stuff with which we are dealing' or 'our knowing is *in* our action.' Michel de Certeau (1984: 70) suggests this to be 'a knowledge that is unaware of itself.' In the case described here, the 'stuff' for which a feeling is known is the availability of typefaces for use by the graphic designer. Working with this stuff results in a build up of knowledge over time that is put to use, often without any outwardly expressed knowledge.

Based on this, it is reasonable to think that the recognition, judgement and skilful performance apply to practice in graphic design. Schön recognises this when further refers to Chris Alexander's *Notes Toward a Synthesis of Form*, noting that cultural artefacts develop through 'successive detections and corrections of bad fit until the resulting forms are good' (op cit: 52–53). In the case of a suggestion that Sabon be used as the typeface on a pedestrian signage system for Greenwich town centre, based on a sort of practical knowledge gained from working with typefaces over a period of fifteen years or so, the idea to use Sabon immediately resulted in an investigation into what might be a more suitable typeface for Greenwich town centre. A number of possible typefaces were found to be equally good (and some not so), the only criteria being that a serif typeface would best show a like-for-like comparison with Sabon. Alternatives included the typefaces Caslon, Bembo, Perpetua, Garamond, Joanna and Stone Serif—and these were tested through a process of placing typeset words, in the various typestyles on a wall in the Researcher's design studio, whilst retreating gradually to see which best retained their legibility as distance increased. Legibility in this sense is a common term used referring to the visual clarity, size, contrast and spacing of a typeface or body of text (Lidwell et al., 2003: 124–125) – this concept will be further explored. The result of this exercise then formed the basis of the

next presentation to the steering committee. Typeface options were shown and their respective merits discussed before a direct comparison was made between the two typesyles of Sabon and Stone Serif. See Figure 2-9.



Figure 2-9 Presentation board for Greenwich pedestrian sign typeface
Source: Harland Design, 1999

The visual comparison revealed that there is better legible serif typefaces than Sabon, even though Sabon is a more legible than many older typefaces such as Garamond. The overall quality of the individual letterforms in Sabon and Stone were compared, with some speculative knowledge of the likely application in mind, and the range of materials and production values involved in the manufacturing process. A direct comparison of the subtle detail drawing of the lower part of a lowercase e, and its terminal, and the relative size of the counter

shape within the top of the e, gave an indication of how robust Stone Serif is by comparison, and whether it was likely to maintain its shape during the different manufacturing and reproductive processes. (The terminal is a broad term for the end point of a stroke of a letterform, whereas the counter is the partially or fully enclosed negative space inside a letterform (Kane, 2002: 4)).

Also, the direct comparison of the x-height ratio compared to the length of ascender and descender of the letterform also indicates how clear a typeface will be to read. For example, Figure 2-10 demonstrates the comparison of the x-height for Sabon and Stone Serif revealing the proportion of x-height for Stone Serif to be considerably larger. (The x-height refers to the height in any typeface of the lowercase (small letter) x. This is usually compared with the relative height of an ascender (the upward stroke on a lowercase b, d, h, or k) and descender (the downward stroke on a lowercase p, q, or y) (Lidwell et al., 2003)).

Sabon *xx* Stone

Figure 2-10 Comparison of x-height between Sabon and Stone Serif

This was conducted as a purely visual exercise based initially on an intuitive response that Sabon was inappropriate. Stated to the steering committee in these terms, this enabled them to make the same visual judgements and reach the same conclusion—that Stone Serif was a more suitable typeface choice than Sabon.

On reflection, and with hindsight, a brief historical account of the two typefaces supports this decision. The typeface Sabon was designed by Jan Tschichold in the early 1960s, and is what is known as a ‘text typeface’ (Meggs and McKelvey, 2000: 52). That is, it is designed primarily for book typography. Named after Jacques Sabon, a pupil of the sixteenth century French type cutter Claude Garamond (Bringhurst, 1996: 231), it was designed in response to the requirements of master printers in Germany who wished to use a typeface that looked the same whether set using the traditional approach of hand setting hot metal type, or the machine-setting approach favoured by Linotype or Monotype machines, (these were large international corporations who manufactured

typefaces and typesetting machinery). Based loosely on the design of the typeface Garamond, Meggs & McKelvey (2000: 115) comment that Sabon has a taller x-height and shorter descenders that, by comparison, increase its readability when set in small body text.

By comparison, Stone Serif was designed by Sumner Stone in the mid-1980s and subsequently issued by Adobe and ITC in 1987 and 1989 respectively. It is described as having an ‘abnormally large x-height’ (Bringhurst, 1996: 232) and is likely to perform well in both refined and crude conditions (ibid: 94). It also has the advantage of being part of a wider type family that includes a sans serif and semi serif version.

The decision to favour Stone Serif over other serif typestyles is also supported retrospectively by recommendations made in the Sign Design Guide (Barker and Fraser, 2000: 41). This publication, issued soon after the installation of the scheme in Greenwich, cites Sabon as one of five recommended serif typefaces for use on signage – the others being Baskerville, Bembo, Century Schoolbook and Times New Roman. On a ‘like-for-like’ basis the x-height for Stone Serif is more generously proportioned than all of these. See Figure 2-11.



Figure 2-11 Comparison of x-heights

What this serves to demonstrate is that a tacit approach to design decision making, based on a practitioners knowledge-in-action, reveals something about how some graphic designers act some of the time.

Subsequent experiences to this, through the further development of a professional working relationship between Harland Design and Timpson Manley, resulted in design proposals for signage schemes in the City of Westminster and Liverpool, Walthamstow town centre, as well as the City of Canterbury and its

outlying areas of Whitstable and Herne Bay. These differing contexts invariably involved the redesign of pedestrian signage as part of a wider scheme of street furniture. Consequently, visiting places and becoming familiar with the local context became an ongoing practice based learning experience, incorporating adhoc aspects of visual research. This included photographing local landmarks, buildings, street furniture, public art, signage and generally gathering ephemeral material such as postcards and promotional leaflets – much of it featuring local cultural references, as seen in Appendix two.

Less ephemeral was the disparate quality of standard street furniture items in Canterbury such as fingerpost signs, which were of comparatively poor quality in their general appearance (though usually they could be read). These were occasionally untrustworthy in the direction of the fingers, often with poor visibility due to orientation, and overall positioning within the streetscape. On the many various examples of printed matter, place names appeared in all manner of typestyle and application, not many appearing to have been given much thought in relation to appropriateness. See Figure 2-12.



CANTERBURY WHITSTABLE HERNE BAY

Figure 2-12 Detail of visual research for Canterbury, Whitstable & Herne Bay

Source: Robert Harland, 1999

Design proposals submitted to the City of Canterbury, by Harland Design in consultation with Timpson Manley, attempted to bring together many of these disparate visual elements and physical objects into a cohesive system that fully integrated graphic design and urban design. The scheme attempted to link three very different locations in the county of Kent in South East England, two of them being coastal towns.

Graphic design proposals incorporated the use of three typefaces designed by Eric Gill, and the commissioned illustration work of Andrew Davidson. See Appendix three for full details of what was to be an un-built proposal. Eric Gill (1882–1940) is highly regarded for his work as a sculptor, letter-cutter, typeface designer and illustrator, in the twentieth century. The graphic design proposals for Canterbury, Whitstable and Herne Bay recommended his typographic ‘trilogy’ of Perpetua

(for Canterbury), Joanna (for Whitstable) and Gill Sans (for Herne Bay) to deal with all text based information. The distinctive nature of this recommendation is the commonalities found in the skeletal structure of Gill's type designs, distinguished in part by the shape of the 'leg' in the capital R. This complemented the dual ability of Andrew Davidson's approach to illustration, distinguished by their use of flat colour, as well as his highly refined approach to wood engraving. This introduced the opportunity for an interpretative approach to image use.

These projects required the professional expertise of two design firms from significantly different subject disciplines, one graphic, the other architecture. The work further presented opportunity to experience first hand cross-disciplinary design activity and interdisciplinary thinking (aside from what existed in the practice of graphic design, through its integrative activities). This is the foundation of experience upon which many of the questions in this inquiry are based. In terms associated with professional practice and education, the Researcher's perspective, or personal bias, is drawn from a working knowledge of four key domains that exist on a continuum between what is referred to here as micro and macro ways of thinking and doing: type design, typographic design, graphic design, and art and design. See Figure 2-13. This is enhanced by more specialised understanding of typographic design and graphic design. More detailed discussion about the micro-macro duality takes place towards the end of chapter four in section 4.7.

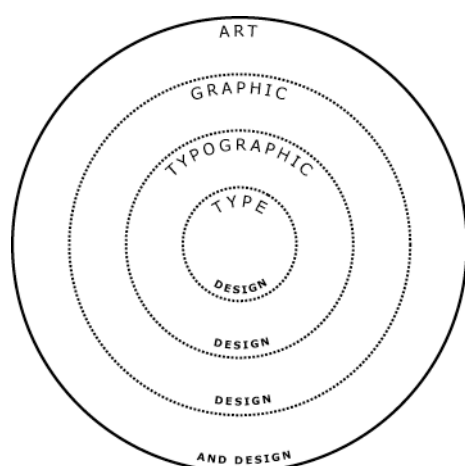


Figure 2-13 Art and design, graphic design, typographic design, type design

The desire to explore this more thoroughly culminated in a conscious move by the researcher into higher education and an academic career as a lecturer at the beginning of 2001, initially at the University of Derby, then Nottingham Trent University, and most recently at Loughborough University. This enabled more opportunity to continue visual research, but unattached to a specific design project brief experienced in an industrial, rather than educational setting.

A continuation of an emerging interest in looking closer at the built environment and recording aspects of it using photography led the way to recognising visual research as a tool for assisting the conscious identification and articulation of research questions, as well as assisting rational inquiry. This approach by the Researcher began to develop in 2002 soon after in taking up a teaching post at the University of Derby. At the same time, the creation of diagrams became a useful modelling tool for curriculum design in graphic design. For example, a simple drawing of a three-part venn diagram by the Researcher (Harland, 2007) marks a critical point in the pre-research degree phase. See Figure 2-14. Drawing diagrams to assist thinking is a constant tool throughout this study to explore relationships.



Figure 2-14 Relationship sketch for graphic design pedagogy

Source: Harland, 2007 [2002]

Looking more critically at the built environment, and questioning the origin of objects found in it provoked an interest in the kind of decision-making processes manifest in material form, informed by the application of graphic elements. This is directly influenced by approaches to research in design practice.

The visual appearance of objects in the built environment, evidenced using photography, serves as a stimulant for reflective inquiry into object design. For example, the pedestrian route between the railway station and city centre in Derby, is marked by a distinct set of six pedestrian finger post signs, plus a sculpture marking the beginning of the route at the station. The appearance of these objects displays a confused sense of purpose. See Figure 2-15. Not only does

the application of lettering and symbol invite close scrutiny, the whole sign design must be questioned. Not least because the sign structures incorporate ‘sculpted’ elements that seemingly distinguish the objects not only as public pedestrian signage, but also as public art. The degree to which it succeeds as either is open to debate. For example, the recessed lettering and human symbol is vulnerable to shadows cast over the letter shapes and symbol, causing the shapes to appear with a two-tone ‘vignette’, from light to dark. This lessens the visible character width and displays insufficient contrast against the mid-tone blue background, rendering the typeface almost unreadable from oblique angles. In fact, maximum legibility only appears achievable when standing directly perpendicular to the sign surface. This does not conform to general guidance that signs should not be vulnerable to the glare of light, and lettering should contrast with background colour (Joint Mobility Unit Access Partnership, undated: 23).



Figure 2-15 Derby pedestrian fingerpost sign details

Source: Robert Harland 2004

Furthermore, every sign fascia is positioned parallel to the route, the information therefore being mostly unseen by pedestrians on the route. Approaching each sign at an oblique angle culminates in the information being virtually invisible until the pedestrian is level. See Figure 2-16. Whilst this might serve a useful

purpose for pedestrians joining the route at right angle to it, or more specifically, in direct alignment to the facing orientation of the information, the orientation of the fingerpost in this way is a questionable strategy appearing to hinder rather than enhance the user experience.

With respect to the objects apparent aspiration to be public art, judgement on this should be reserved on the assumption that the quality of a piece of art is difficult to ascertain and a matter of individual taste. However, what must be questioned is the function and purpose of this scheme. Notwithstanding the fact that these objects reside in a city in one of the leading developed nations of the world, one might ask: *What are the circumstances that contribute to the appearance of such objects? How effective are these particular pedestrian signs? Who is responsible?* These few questions, derived from looking at the objects in the public realm with a ‘critical eye’, lead to the broader question: *How does pedestrian signage happen?* This will not be answered directly here, but is connected to the core of this research.



Figure 2-16 Orientation of pedestrian signs in Derby

Source: Robert Harland 2004

Beyond this short city centre route, and throughout the centre of Derby the range, diversity and quality of visual messages is an immense assortment of signs, symbols and structures, for public consumption. Figure 2-17 shows a glimpse of some of these, not only in the scope and diversity, but also the context for display. A Sainsbury’s supermarket sign is orientated vertically so as to rise above the smaller retail units; a cycling and pedestrian sign is covered over by overgrown

foliage, upright posts that carry illuminated traffic signs are spray painted with a stencilled number 106451 (meaningless to the non-lighting engineer); local newsagents advertise their sponsor on the fascia; information panels for local places of interest are painted over with graffiti; freestanding boards on the public highway seek to advertise independent retailers; a traditional direction sign is styled with serif capitals and an arrow device that is more akin to an archer's arrow than that used on statutory road signs; combined arrow, place name, museum symbol and colour depict tourist destinations; and new pedestrian finger posts display legible white typography on dark fingerposts, as well as better quality steel alternatives.

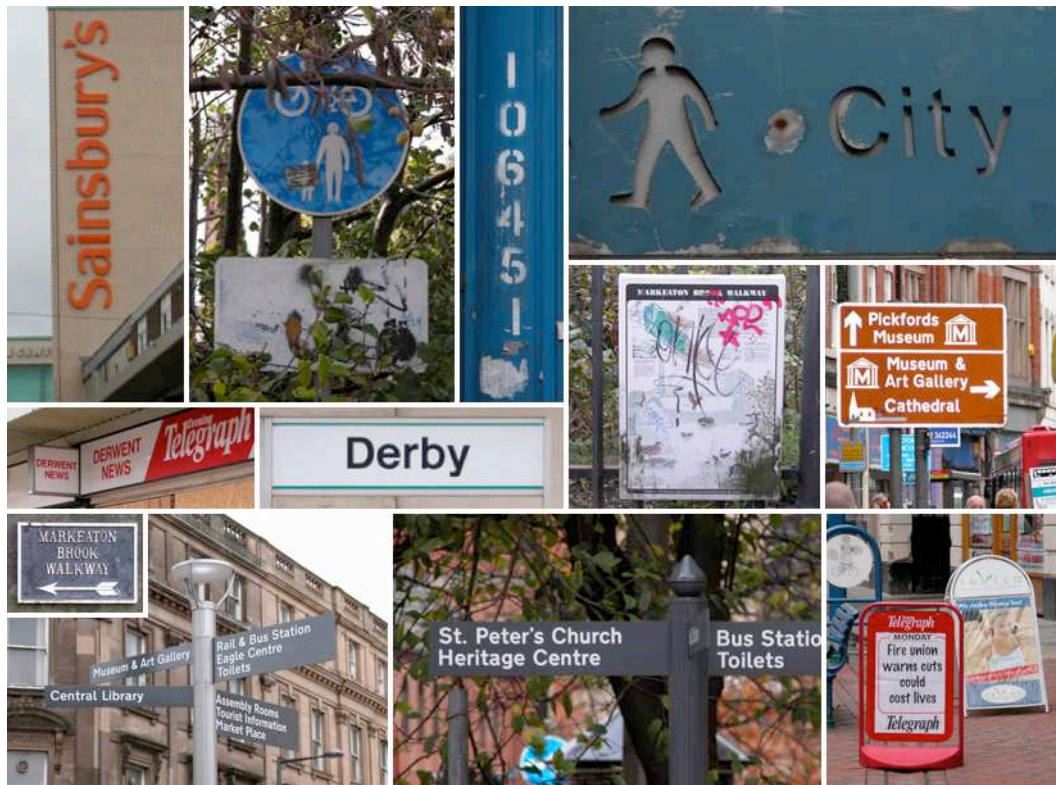


Figure 2-17 Collage of signs in Derby city centre

Source: Robert Harland, 2004

Within this collage of signs found in Derby further questions reside. For example, why does the sign for Pickfords Museum and Museum & Art Gallery require two museum symbols? If the main purpose of a symbol is to aid non-English reading visitors to find their way, in this case the visitor would need to understand English to differentiate between the two museums. Are they looking for the Museum & Art Gallery, or Pickfords Museum? Is it Pickfords Museum or Pickford's Museum? How much thought has been given to the value of symbol

and word combination in this example? Or, is the sign maker simply following rules and not understanding the context?

With all this in mind a comparative question emerges about the difference between the design of a pedestrian sign finger post found in Derby, and an equivalent object found in Bristol. Such a comparison illuminates the suggested inadequacies of the scheme in Derby, more pronounced when placed alongside an equivalent scheme from Bristol, photographed within a year or so of each other. The Bristol scheme is more complex all together, being spread over a much wider part of the city centre. It incorporates the use of location names, maps and in general displays a better contrast between letters and background, more orderly arrangement of more varied elements, distinctive use of colour to enhance legibility, and sign structure that is designed to perform no more than it's role as a support to the display of lettering, symbols and maps. Whereas, the Derby scheme structure seems to aspire to a different set of values that utilises the structure as a form of expression, competing with, and overpowering, the display of lettering and symbols. See Figure 2-18.

The question has already been asked: *How does pedestrian signage happen?* If one of these signs is considered to perform better than the other (this has not been tested), it can be speculated that there is a particular kind of knowledge that leads to the manifestation of pedestrian signs, for better or worse. If so: *What kind of knowledge is manifest in pedestrian signage?*

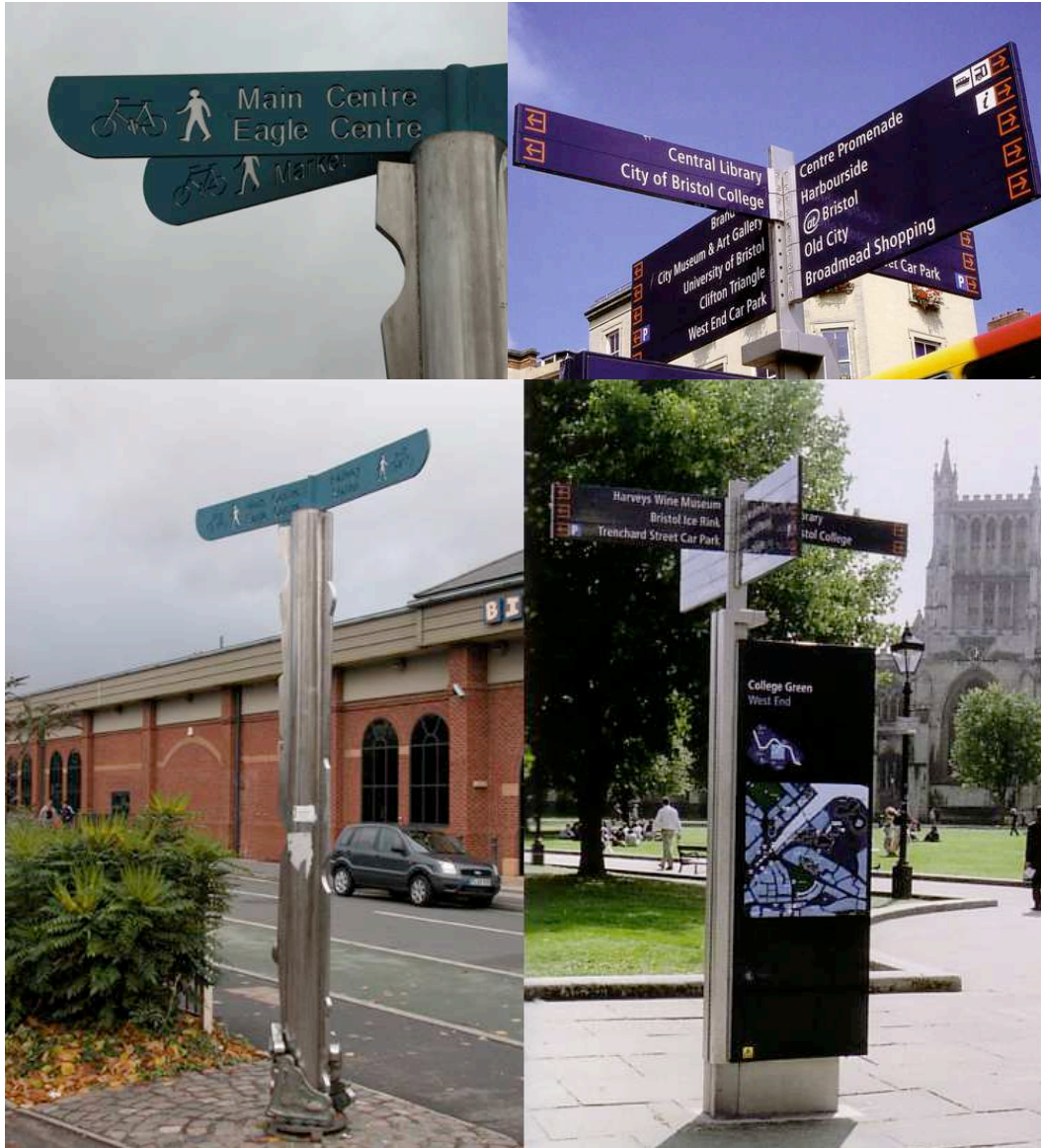


Figure 2-18 Comparison of finger post sign in Derby (left) and Bristol (right)

Source: Robert Harland 2004 and 2005 respectively

This question is clearly dependent on an understanding of what good signage is, and what the contributing factors are. But, in keeping with the intention here – to outline the origins of this research – the nature of good signage, and the circumstances behind its creation, is as much a political issue as aesthetic one. For example, using another visual comparison, this is demonstrated through a different kind sign found typically in cities.

In the second half of the twentieth century many city dwellers will recall the brash fascias of fast food restaurants such as Burger King and McDonald's. These

usually consisted of a bold red fascia, the restaurant name and logotype or symbol prominently displayed. In the case of McDonald's a bold white typographic representation of the restaurant name on the red background ran across the length of the premises above the window facing the main thoroughfare. This is accompanied by what is often referred to as the 'golden arches' that is also an M. It would be uncommon to see this bold identity in any other combination of colours. See Figure 2-19.



Figure 2-19 McDonald's restaurant, Hong Kong

Source: Robert Harland 2007

However, in the middle of Rome at the turn of the millennium, McDonald's were not allowed to use their corporate red and yellow for their premises at *Piazza di Spagna*, the place of the popular 'Spanish Steps' tourist attraction. Instead the local authorities supposedly insisted that McDonald's blend in with the local architecture. This resistance to what would be architecturally insensitive, brash, and in keeping with retail fascia culture that usually stands out rather than blends in, was considered interesting enough for the tourist visiting Rome, appearing in the *Rough Guide to Italy* (Harland, 2002). See Figure 2-20.



Figure 2-20 Directions to McDonald's restaurant, Piazza di Spagna, Rome

Source: Robert Harland, 2009

In this setting the established McDonald's name and symbol appear white out of a bronze coloured fascia panel, in an attempt to harmonise the relationship between graphics and architecture. Although, this more subdued combination is not applied to the wall mounted signs that help tourists find McDonald's when approaching the Piazza di Spagna along side streets. This restrictive position taken by the authorities in Rome appears to have been influential judging by the number of McDonald's fascia panels in UK cities that no longer adhere to the

McDonald's red yellow fascia combination. It might be seen as pioneering in its resistance to the spread of corporate visual culture on high streets and in the commercial district of cities worldwide.

This appears to be an aesthetic concern, but, conversely, the city authorities in Rome appear less discriminating about the use of red on other signs in historically sensitive areas of the city. They allow the city metro symbol, also in red and utilising a capital M, to appear against a backdrop of traditional architecture and urban space. See Figure 2-21. This may be justified and dictated by the importance of underground transportation in the city, but it also suggests that the aesthetic quality of such objects in historically sensitive places is not necessarily a primary concern.

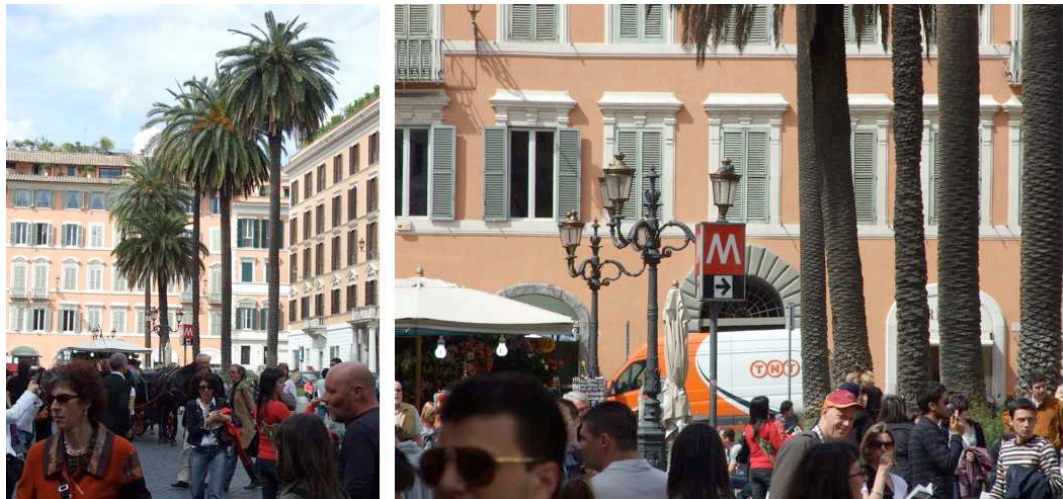


Figure 2-21 Metro sign in Rome
Source: Robert Harland, 2009

This discussion – about the development of the initial research question – began by looking at the origins of the initial research question and its problems. Furthermore, the background to the research has been discussed at length, due to the Researcher's experience of working in a particular field of design practice. This narrative about practical experience, explains some of the professional values held by the Researcher. It responds to arguments that researchers are vulnerable to personal bias throughout the research experience, and that the audience for the research need to know the past experience of the Researcher. The starting point for the research has also been questioned. In doing so a case has been reinforced for the background to the research being declared as part of

the research. This conforms with the idea that the “researchers’ attitudes should be fully discussed” (Coolican, 2004: 235), clearly indicating that this should not be taken lightly. But how much or how little detail should this entail? What exactly does personal bias refer to? So far, this has been limited to specific experiences relating to the Researcher’s former design practice in the built environment, and although more could be said based on a wider set of project choices, the chosen examples illustrate specific points that have helped shape the inquiry. Discussion about this will therefore conclude now, until the need arises to return to practical examples.

A number of other questions have arisen through constituting the initial research question, identifying the problems associated with it, and narrating the background circumstances that have led up to this inquiry. In particular, cross-disciplinary contexts in practice reveal much potential for misunderstandings. This also highlights concerns about where to locate research of this kind, and how it should be conducted. The Researcher’s perspective originates from a field of activity that has a very limited research tradition compared to established academic subjects taught in the traditional university sector in the UK. Yet important questions emerge about how certain objects found in the built environment happen. In particular, the bad examples of pedestrian signage, street furniture and visual clutter shown insinuate a particular kind of knowledge is missing from these situations—most noticeable when poor design decisions have clearly resulted in poor quality outcomes. More will be said about this further on.

2.5 Developing an approach to the initial research question

So far specific questions have been stated that relate to the phenomena being researched, and these substantiate the formation of the initial research question. Stating these has served merely to help raise concerns and structure the discussion. Some have been answered in part and will be further investigated. Others have served more to emphasize a point. Collectively restated below as a brief reminder, there is a predominance of *what* and *how* questions:

How shall the phenomena be named?

What exactly are is being studied?

Where shall the study be located?

How shall we name it?
What is meant by visual communication?
What is meant by built environment?
How is visual communication in the built environment made?
How shall the research question be researched?
When, and where, does research start?
How does pedestrian signage happen?
What kind of knowledge is manifest in pedestrian signage?

These specific questions have been identified as the research has progressed. They further enhance an earlier and more variable set of questions that emerged from the Researcher's prior experience. These were closely associated with a diverse set of disciplines, activities, preoccupations, and consternation about professional roles. Thirteen questions were identified, and formed the basis for an exploratory conference paper by the same name as the initial research question *What are the visual communication requirements of the built environment?* (Harland, 2006). The paper is reproduced in Appendix four. These originated directly from the Researcher's reflection and contemplation about prior experience in design practice. The scope of these questions, predominantly *what* and *how* related, as well as *who* (some could be rephrased as *why* questions) expanded the initial research question, but none were privileged. The range is too wide to determine where the research should be situated. With this in mind, the questions contributed to the overall aim to examine the relationship between visual communication and the built environment. Three objectives contribute to this:

1. to distinguish and contextualise the subject areas that relate to the research question;
2. to consider the 'knowing' and 'unknowing' context for the creation of visual communication in the built environment;
3. to formulate an academic framework to enable further investigation.

These objectives will now be explored using a framework for theory building that focuses on the what, how and why. Ken Friedman has suggested that building theory benefits from an approach that recognises four distinct elements that answer six questions (2005: 10). He refers to David A. Whetton's (1989) work about 'What constitutes a theoretical contribution?' These are simply stated as

‘what’, ‘how’, ‘why’ and ‘who-when-where’. Friedman explains ‘[t]he “what” element articulates the factors that must be considered part of an explanation of the phenomena under study’ (2005: 10) and Whetten determines these to consist of two criteria: ‘comprehensiveness’ and ‘parsimony’.

A summary of the paper *What are the visual communication requirements of a built environment?* will now extend (and reduce) in relevance the key components of the research. The intention is to establish the important ‘what’ factors. Whetten proposes that the significant factors – ‘variables, constructs, concepts’ – must be contemplated when explaining ‘social or individual phenomena of interest’ (1989: 490). These have so far been discussed in terms of objects, but no fixed patterns, theories or ideas have been made explicit that relate these objects to the initial research question.

Geography has been mentioned as providing an early definition clarifying the breadth of the phrase *built environment*. This incorporated large- and small-scale approach to exploring people-made and people-organised material things, some more closely related than others. Furthermore, the relevance of the initial research question to universal approaches in geography has been explained.

A general description for students studying geography as part of the National Curriculum in the UK states ‘Geography is concerned with people as well as landscapes, with economic as well as ecological systems. The character of places – the subject’s central focus – derives from the interaction of people and environments’ (Waugh, 1995: 6). The effective and affective implication behind the final part of this definition offers much potential to explore the research questions from a geographic perspective. Specific attempts to define geography, suggest it is more difficult to define than this. In fact, although students of geography at university study ‘the Earth, about humans’ relationship with the Earth, and about peoples’ relationships with one another – all of which we know vary across time and space’ (Clifford et al., 2009a: xiii) there are numerous ideas that contribute to the structuring of geography. ‘[S]pace, place, time, scale, landscape, nature, systems, globalization, development and risk’ are the essential concepts (Clifford et al., 2009a: xiii).

What makes geography a useful subject in this research are the claims that as a field of study, it is 'empirical', 'practical', and 'integrative' of 'physical' and 'human' spheres of influence that are exclusively 'geographical' and 'isolationist' (Agnew et al., 1996: 5). Geography is said to address 'concrete questions of where and under what conditions a wide range of phenomena connected to the Earth and its occupancy occur' (Agnew et al., 1996: 5). It is through a concern for human relationships – evidenced in the clear distinction between 'human' and 'physical' geography (Goodall, 1987: 217) – that geography is linked to other fields such as behavioural science. This brief portrayal of geography leads to the question: *How might Geography help to define the research?* This question is answered in greater detail in section 4.3 of chapter four. In the meantime, it is worth noting three connected ideas in human geography that will help frame a wider context for this research in geography. These are:

- (i) spatial analysis – the recording and description of human phenomena around the earth's surface, with special attention to the significance of space as a variable;
- (ii) the study of the interrelationships between human beings and their environment, both natural and socio-economic; and
- (iii) a regional synthesis which combines the first two themes in specified localities. All can be pursued on a variety of spatial scales.
(Goodall, 1987: 217)

Each of these is appropriate to the central concern of this research: recording and describing phenomena; interrelationships between people and places; the fusion of locale. Consider the examples discussed earlier on. The Land Rover logotype is used to identify a range of products sold worldwide. The oval shape, inner cream key line, italicised capital lettering (sans serif in its overall appearance but with small serifs), the broken line linking the two words together (adapted from an earlier logotype), the dark green colour. These all symbolise a set of values that could be associated with British heritage – robust, quality, countryside, upper class, royalty, all reinforced by the endorsement of four royal warrants held by the company. The presence of Land Rover, through its worldwide dealer network, means the product, and its visual representation, is ubiquitous (Anon, 1989). See Figure 2-22. If wanting to buy a new Land Rover vehicle, the presence of a dealer showroom in the built environment tells exactly of the place to go.

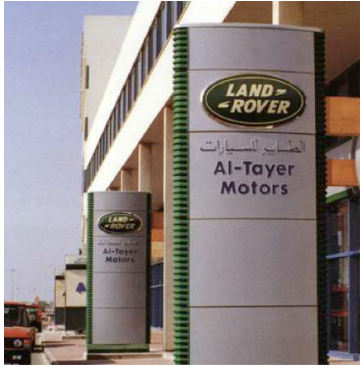


Figure 2-22 Land Rover 'totem'

Source: Land Rover International Dealer Identity Guide, 1989: 24

In the late twentieth century the intrusion of 'corporate identity' became a familiar sight in many built environments as architecture became the backdrop for the corporate identity of retail. In the case of Land Rover this happened with the aid of a relatively small but significant number of graphic design decisions about how certain things should appear, relating to lettering style, shape, colour combination and coordination. These contributed to the corporate identity of Land Rover.

At this point it is worth a brief note on use of terminology to explain the connections being established here, especially highlighted by this discussion about Land Rover. Corporate identity is a term that emerged in the second half of the twentieth century to describe the design and systematic implementation of large scale visual identity programmes for major corporations who wished to communicate with diverse audiences, often beyond their own national boundary. This extended the centuries old idea of using visual marks, trademarks and stamps. These schemes were developed by and for a widespread number of corporations who adopted the approach for use in manufacturing (Olivetti, IBM), broadcasting (CBS, abc, MTV), transport (The New Haven Railroad), banking (Chase Manhattan), oil (Mobil Oil), air transport (Lufthansa), events (Mexico Olympic Games), all featured by Meggs (2006) in the book *A history of graphic design* in the chapter *Corporate Identity and Visual Systems* (ibid: 399–423). More recently in the early twentieth first century corporate identity continues to evolve and extend as a design activity and is closely linked to the development of 'corporate branding' (Davis, 2005: 10).

Using the Land Rover logotype as an example, the relevance of this phenomena to the research question can be explained in terms borrowed from cognitive science. According to Zenon W Pylyshyn (2007) the basic concern of cognitive science is how the mind connects to the world (ibid: 1). Visual ‘things’, or ‘objects’, that have been discussed so far at various scales, play a critical role in what Pylyshyn discusses as ‘behaviour and its relation to environmental conditions’ in the context of studies in perception (ibid: 17). Things and objects are said to have ‘**defining properties**’ and ‘orientation’ in a scene is an example of this (ibid: 12). ‘Colour and shape’ are ‘visual appearance properties’ (ibid: 19) held in a ‘**configurational pattern**’ at the core of the connection between the mind and the world. According to Pylyshyn ‘properties belong to things ... [and] it is important that the combination of properties that belong to the same thing be somehow indicated’. He notes this to be important when there is a need for description using properties as ‘encoded representation’ (ibid: 85).

It is now widely accepted in cognitive science (as well as in computer science) that many generalizations cannot be stated without recourse to the notion of representational content: Many of the things we do can be explained only if we refer to how we represent the world, what we see it as, what beliefs and goals we have (ibid: 4).

Cognitive scientists have developed their own vocabulary for addressing questions about the connection between mind and world, but also acknowledge the need for different questions that are answered in different vocabularies (ibid: 2). What can be learned from cognitive science about how intellectual faculties bond with the environment is said to be at least twofold: ‘semantic’ and ‘causal’ (ibid: 5). Semantic originates from the Greek word for ‘significant’, as in sign, concerned with meaning in language, or the relationship between ‘a sentence and what it expresses’. Causal is more a state of balance between cause and effect. The impression given by Pylyshyn is one of the mind-world connection being dependent on understanding these two distinct aspects of relationship. The concept of **relation** must therefore close to the core of any discussion about visual communication and the built environment.

Relation is ‘the way in which two or more people or things are connected; a thing’s effect on or relevance to another’ (Soanes and Stevenson, 2005). The *way* referred to here is the combination of *graphic properties* contained within the configurational pattern of what will be termed here as the *graphic object*. The suggestion that it is both a human and non-human condition is debateable and

this will not be explored here, having earlier questioned if an inanimate object can have a need on the basis that the idea of relation must be culturally constructed. However, in terms of analysing the graphic properties of an object, it is assumed both meanings are useful. For this reason, a differentiation is made between relation and related. Graphic properties can be *related* within the context of a graphic object, and that object can be part of and related to a larger socio-environmental system. This is the case with the Land Rover logotype in Figure 2-22, whereby the wider socio environmental system includes tangible and intangible things that include material concerns, writing systems, architecture, global economic and cultural forces, to name a few. However, the way an object is interpreted by a human will be known as *relation*. It is assumed that graphic elements can be related to each other in a wider socio-economic context, as can human beings, but a human is not usually directly related to an object in a physical or material sense. In Figure 2-23 *relation* and *related* are therefore depicted at the interface between object and human, within the larger environmental context. Together these will be referred to in this study as ‘relationship’.

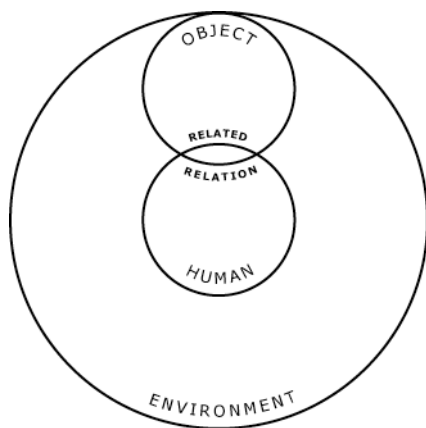


Figure 2-23 Human object environment relationship

Returning to the idea of corporate identity as architecture, it can be discussed from many perspectives. The example of McDonald’s has already been mentioned. In the early twenty first century the prominence of large global retailers on the high streets of UK towns and cities, and elsewhere, has developed into a major concern to some. For example, in 2002 a report by the charity *the new economics foundation* (nef) [sic] drew attention to ‘Clone Town Britain’ and a concern for a loss of local identity and too much homogenisation on the high

streets of UK towns (Harland, 2006: 9–10). Their survey revealed that in towns between 10,000 to 100,000 population, especially at the higher end, as much as 70% of the high street is dominated by ‘chain stores’. The visual aspect of this scenario is illustrated in the form of a collage of shop fascias, captured in a later version of nef’s report (Simms et al., 2005). See Figure 2-24.



Figure 2-24 Corporate identity as architecture

Source: Simms, Kjell & Potts, 2005

The initial report announces a national survey to ‘find out why the places that we live and shop seem to be turning into clone towns’ against a ‘global backdrop’ and loss of diversity in the high street (Conisbee et al., 2004: 2). The later version of the report states in its introduction pages:

nef's Clone Town Britain Survey released people's deep sense of unease about the increasing uniformity of our high streets, and the wider impacts that this is having on our local economies and communities. Launched in 2004 the Survey enabled people to broadly quantify the loss of diversity on their own high streets, and large numbers took up the challenge. Here are the results. As this Report shows, we are reaching a critical juncture: We can choose to take action that will lead to thriving, diverse, resilient local economies across the UK; or, we can do nothing and condemn ourselves to bland identikit towns dominated by a few bloated retail behemoths. The choice is ours. (Simms et al., 2005)

Following on from the earlier discussed example of local authorities in Rome resisting the implementation of the McDonald's corporate red and yellow fascia in the Piazza di Spagna, *nefi* identify numerous other examples of resistance: Carmel in California banned formula restaurants; Western Australia aggressively promote a buy local policy; Ocean Beach in California has banned chain stores; Homer in Alaska banned 'big-box stores; local authorities in France can veto the building of supermarkets over 1000 square metres; Poland has also introduced similar laws; Malaysia banned the building of 'hypermarkets' in Kuala Lumpur, and the states of Johor and Penang due to saturation; Cuernavaca near Mexico City resisted a new American *Costco* store because it was to be built on a 'historically significant site'; in Carbondale, Colorado voters rejected a 23,400 square metre shopping centre housing a *Target* store (Conisbee et al., 2004: 19). This serves to demonstrate that although economic issues relating to planning and regeneration decisions are the main cause for concern, there is also an ecological argument (2004: 7) and a concern:

[t]he result is a world of growing homogeneity and blandness, where local difference, flavour and colour is erased in the pursuit of uniformity, and where big business sets the aesthetic agenda – be it in architecture, physical appearance, fashion or foodstuffs. Clone towns and clone cultures are spreading across the globe. (Conisbee et al., 2004: 10).

Much of this concern must include a rejection of visual retail culture associated with development. The presence of this aspect of visual culture in cities (as well as smaller urban environments) will be of interest to the human geographer. For example, how might corporate visual culture represent and reflect key concepts and methods in geography? Consider the British retailer Marks & Spencer. Waugh (2000: 425) tells us that Marks & Spencer often occupies the most valuable sites within the central business district of a city, due to their ability to pay the highest rents. This suggests that corporate identity as architecture acts as the public facing visual identity and most significant representational element in

empirical work associated with central place studies in Geography, and a tangible example of the economic factors spoken of by Herbert & Thomas (1990: 8) specifically related to retail and wholesale trade.

These identifications and interrelationships between people and places offer many perspectives on the phenomena. Some will be returned to in more detail. The *new economics foundation* uses the global visual culture of retail, notably on the high street, but also in shopping malls, to symbolise deep economic, social, cultural and political concern. Looked at from another perspective, there are further fundamental issues that extend beyond the anti-corporate stance of their work. Art offers a perspective that brings to life the importance of relation in the mind world connection. According to Nigel Spivey, a lecturer in Classics at Cambridge University, ‘art made the world’. Apparently, this is so because in the evolution of man the primary function of the hands changed from being an aid to human transportation to making tools and holding things—leading to ‘the creation of art’ (Spivey, 2005: 8). In 2005 Spivey presented the BBC television series *How art made the world*, and wrote an accompanying book by the same name. Programme two (in a series of five) *The Day Pictures were Born* begins with a sequence whereby Spivey opens the programme from the back seat of a London ‘Hackney’ cab. This takes approximately two minutes, and features a brief human experience of ‘visual communication in the built environment’. The sequence begins in a typical city street scene looking down a road (which appears to be in London). He expounds ‘[t]here’s something we do hundred’s of times a day without even noticing it. It’s an ability that we utterly depend on in our lives, yet we take for granted. Just watch.’

The camera fixes on a white circular sign on the side of the street (approximately 500mm in diameter and 1500mm from the floor on a pole) containing a symbol of a London black taxi. The camera then cuts to Spivey leaving the taxi and entering a railway station through a passage, the camera fixing on the pedestrian information sign above the passage. It is a sign of a lift, showing a combination of symbols for a lift – a wheelchair user, person pushing a pushchair – and the word ‘Lift’. The film cuts again to a ‘louvered’ information panel showing train destinations; and again showing more pedestrian symbols – arrows, pictograms and lettering – in white and yellow on a dark blue background. Then on to the direction of the toilets and pictograms denoting male and female (in this case

black symbols above an arrow on a yellow background); and onto the station concourse, where there are retail outlets. The action then scans across a set of illuminated menu panel displays of fast food outlets, featuring photographs of food and price options; and back to the concourse and a large billboard size display showing moving images of what appear to be some kind of news feature. As the filming cuts from scene to scene, Spivey continues: ‘We see some lines and can give them meaning. We can tell one shape from another. And, we understand that an arrangement of colours can represent something’. He walks down the platform and onto the train, declaring: ‘The ability to read images is an essential part of our lives ... but what if we didn’t have this ability? Imagine we couldn’t understand images. What would our world be like?’

The film sequence is then replayed, but as the journey unfolds the film technology deletes (by fading out) the symbols denoting taxi; lift access; concourse directions; male and female toilet; photographs of meal choices; and the news broadcast. See Figure 2-25. During this replay sequence, he continues: ‘Well, for a start, images would never have been invented. We’d have lost something we totally rely on. Life would be impossible. And our world would be unrecognizable.’ He closes the sequence standing on the concourse and asserting: ‘But at some point in our ancient past that’s what the world looked like – imageless. Now of course pictures dominate our lives. Well, this is the extraordinary story of how we humans discovered the power of images ... how they created the world we live in today’.



Figure 2-25 Sequence from ‘How art changed the world’
Source: Spivey, 2005. (Read left to right, top to bottom)

The claim that art made the world is bold and provocative. The example used here, taken from the television series is a very small but significant slice of Spivey's argument that incorporates a diversity including 'cave painting', 'ceramics', 'pyramids' and 'palaces' across five continents spanning 100,000 years. Nevertheless, the specificity of the examples selected is useful to illustrate the point of this research. In part, this answers the question: *What does art have to do with the research?*

The principle behind this was depicted earlier with the simple use of the heart metaphor situated between two upright rectangles. See Figure 2-3. It should now be clear that as far as this research is concerned, one of these rectangles stands for people and the other for place. The heart device (chosen for no apparent reason by Alexander) is an arbitrary device but could stand for many other images that are read and facilitate not only interrelationships but also interactions between people and places, guiding behaviour. Alexander used this drawing to explain the purpose and function of the word ornament, but the examples discussed so far should demonstrate this to be an inappropriate term in the context of this research. The purpose behind the examples mentioned by Spivey is more than to adorn, decorate, embellish or embroider (though these are relevant at times). Ornamentation may suggest one function, but there are others that lead to the question: *What is the function of the phenomena?*

Before discussing the issue of function, a return to an earlier used term describing a detailed aspect of visual quality in the built environment is necessary. Then, the word **legibility** described the clarity of a letter shape (sometimes referred to as 'letterform' or 'typeform') in the same sense that Phil Baines and Andrew Haslam explain it in their book *Type and typography* (2005: 125). They make a distinction between legibility and readability, the former being the ease in recognition of alphabetic characters in a font, the latter typically describing the characters as they are arranged as words and sentences as part of an overall layout, for example, on a page. The earlier discussion about the typeface Stone Serif, argued for appropriateness on the basis of better legibility than Sabon. A visual comparison of x-height suggested Stone Serif to be more legible.

Legibility in this sense is not a fixed standard, but temporal and dependent on socio-cultural influences. For example, the common use today of typefaces, based

on the Roman alphabet, typically seen in magazines or road signs, would be unfamiliar to a fifteenth century German scholar used to reading in the style found in the manuscripts of the day (Baines and Haslam, 2005: 125). Then, familiarity with the typestyle known as *Black letter* formed the prevailing idea in the mind of the reader (Morison, 1930 [1995]: 63) and the basis for the lettering style used in the first printed book, the *Gutenberg Bible*. This style is referred to by Meggs & Purvis (2006: 69) as ‘compact textura’, and its deployment contributes to what is believed by them to be a ‘superb’ example of ‘typographic legibility and texture’.

In typographic convention today, legibility is said to be the variable quality between ‘function’ and ‘aesthetics’ (Jones, [1972/73] 2001: 23). Legible is seen as clear. Illegible as unclear. When discussing this variability, the functional and aesthetic appear to be at opposite ends of a continuum, and some strive for one or the other. For example, Bernd Zürker ([1978] 2001) justifies the aesthetic approach by using words such as ‘semantic and persuasive effectiveness’ to explain the intent behind Wolfgang Weingart’s work. His typography sacrifices legibility and readability in favour of ‘subjective patterns of thinking’ that encapsulate ‘artistic and personal qualities’. (ibid: 59–61)

The scope for subjectivity and quality in legibility and readability, and the subtle difference between legibility and readability made by Baines & Haslam, is demonstrated in Chuck Byrne’s (2004) explanation that:

The legibility of type involves the character and style of the typeface, the colour and contrast of the letters in their surroundings, the size, letter spacing, line length, and leading of the type, and the distance and angle which it is viewed. (ibid: 7)

These concerns add up to more than the clarity of a letter shape. However, it can be assumed that a wider set of concerns beyond the simple difference between two letter shapes, influence readability, and the letter shape will be affected by its application in colour, surroundings, scale, distance and angle (as seen in Figure 2-31). These can be added to what appear to be the core factors of readability: ‘word length, word commonality, sentence length, number of clauses in a sentence, and number of syllables in a sentence’ (Lidwell et al., 2003: 162–63) How, therefore, can the idea of legibility, and readability, be useful to discussions

about visual communication? *What determines legible & readable visual communication?*

This question has been answered in part by discussion about how the idea of legibility and readability are thought about in the field of type design and typographic design. These are aspects of visual communication. Type design is about the design of typefaces. Typographic design is the way that typefaces are utilised. Returning to the earlier discussion about cognitive science, and the work of Pylyshyn, at a basic level a letter shape – often seen as a stylised ‘typeface’ – can be interpreted as a property, or set of properties, held in a configurational pattern. Not only is this the case for a printed page, or, for example, text on screen as part of a website, but also as an environmental element in the context of road signage or other objects of graphic communication such as billboards.

The printed page is an appropriate device to focus attention at this point, not least because it has been acknowledged (Harland, 2006: 10) that Kevin Lynch (1960) linked the printed page with the built environment in his very early discussions about legibility in *The image of the city* (ibid: 3). In fact, he introduces the metaphor in his first paragraph about legibility, stating:

Just as this printed page, if it is legible, can be visually grasped as a related pattern of recognisable symbols, so a legible city would be one whose districts or landmarks or pathways are easily identifiable and are easily grouped into an over-all pattern. (ibid)

Similarly, this use of metaphor to link the physical nature of architecture with graphic communication is also recognised in gothic cathedrals as ‘[t]he bibles and the encyclopaedias of both the illiterate and the literate’ (Rowe and Koetter, 1978: 48). Lynch uses the metaphor as a precursor to justify his concern about the recognition and coherence of the parts that make up the cityscape. Included in this are the active ‘visual sensations of colour, shape, motion, ... light, smell, sound, touch, kinaesthesia, sense of gravity, and perhaps of electric or magnetic fields’ (op cit: 3). He recognised (but considers ‘sketchy’) the work of European and American psychologists on orientation since the late nineteenth century. Also, he emphasised the now familiar phrase ‘way-finding’ (now rarely hyphenated) and the ‘devices’ associated with this activity, such as those mentioned earlier at the beginning of this chapter. Lynch is concerned with the ‘look of cities’ and their manifestation as visual form, believing this to be ‘a

special kind of design problem' and important for the development of the mental image (ibid: v). By comparison to the psychologists approach that he believed to be too individualistic, he sought a more generalised view he referred to as 'common mental pictures' (ibid: 7). 'Identity, structure and meaning' formed the analytical basis for the environmental image, and Lynch argued that through meaning we recognise that when we undertake a basic activity, such as leaving a room, the distinctiveness of the door is inseparable from the idea that it is an opening for leaving the space, supported through a spatial relationship with the observer (ibid: 8). Lynch argued that meaning, interdependent with visual recognition, reasserts the importance of distinctiveness and relation, the latter reinforcing a link between the urban planning concerns of Lynch and the mind-world interests of Pylyshyn.

The psychologist's perspective on these ideas is perhaps best explained by Abraham A. Moles (1989) in his paper *The legibility of the world: a project of graphic design*. This is remarkable in the first instance for its title and the elevation of graphic design to a place of significance beyond the traditional parameters of printed matter. Moles interpretation of graphic design is free from the mainstream practice of the subject as it developed in the middle decades of the twentieth century. Emerging from a translation into English from French (that is sometimes unclear), Moles asserts that in the context of 'daily life' its 'environmental framework' must be '*rich in stimuli ... stable ... free from pollution ... [and] rapidly accessible*'. 'The world must be *legible*' (original italics). By this he argues for maximum accessibility, clear and inexpensive, pure and ideal in time, space and the representation of knowledge. Achieving this, is reliant in part on studying everyday life by utilising the methods of *micropsychology* (original italics) in what he refers to as the 'entire web of life' and its 'micro-scenarios': 'micro-anxieties, micro-pleasures, micro-structures, micro-events, or micro-decisions'. (ibid: 119)

Moles envisaged graphic design as a process of preparatory 'sign engineering' connecting to symbolic landscapes he called *ideoscenarios* (original italics). These included the mundane activities such as 'finding the lost and found office in the airport or the train station, cashing a check, or learning how to run a dishwasher with help from a manual' (ibid: 120). He calls this 'social function',

but in a more banal sense than the way Gombrich (2000) uses the term, as discussed earlier.

In the same sense that Lynch draws attention to the connection between the legibility of the printed page and the legibility of the city, Moles is more explicit in distinguishing the space of graphic design as *real space* and *the printed page* (original italics).

■ *real space* : boulevards, hallways, streets, train stations, piers, sidewalks, stairs, shop windows, signs, households shells, offices, work places. A whole series of spaces and of volumes are symbolically marked, and therefore they become symbols: examples are the door, the elevator, the teller window

■ *the printed page* : a privileged and universal space. The European DIN A4 format flat surface of paper, for example, or the standard size of a poster, a space made for viewing, which the graphic designer fills, using what the manufacturers of components – the printer, the draftsman, the photographer – offer to the page make-up, which is the synthesis of a global form starting from particular elements.

(Moles, 1989: 120)

Moles attempts to elevate the idea of graphic design to something more than simply applying an aesthetic sensibility to the design of a train timetable or yoghurt carton. He argues that our existence is symbolic, through the ‘things, products, and actions’ we typically name as a ‘door, an arrow, a corporate identity, a logotype, a traffic sign’. These ‘symbolic aspects of the environment’ represent a kind of ‘knowledge through signs’ (ibid: 120), often made up from of a rudimentary set of ‘arrows, rectangles, frames and lines, angles and circles’ that become ‘tools and functions of behaviour’ (ibid: 124). The application of this way of thinking, something that might be called *graphic design knowledge* to real space, and the printed page, indicates a difference in scale of thinking about representation. One can only assume that Moles arguments about representation scale up and down through the micro-scenarios he suggests. This provides a fundamental concern for this research an raises perhaps the most important question this research will address: *How does ‘graphic’ legibility scale up and down?* Possible answers to this question will be directly addressed in section 4.7.

Although Lynch uses the analogy of the printed page and the city to introduce the idea of legibility, he does not explore this further in terms of the nature of page

design. He is primarily interested in the composite image of the city object derived from all the senses, but recognises its social and emotional importance (ibid: 2–4).

Lynch maintains that a good mental image of the environment contributed to the creation of an harmonious relationship between humans and their surroundings, reinforcing the mind-world bond discussed earlier. ‘Identity’ and ‘structure’ are characteristics of the environmental image, formed in part by the physical quality of objects that make up what Lynch called *legibility*. He also calls this *imageability* or *visibility* (original italics) and introduces the idea of the city as an ‘artistic object’, after the work of Stern (who Lynch tells us used the term *apparency*). The object is ‘sharp’ and ‘intense’, well-formed’, ‘distinct’, and ‘remarkable’ (op cit: 10). These characteristics explain, to some extent, legibility as an expression of art that is not only socially relevant, and also exhibits the kind of *visceral* qualities of *emotional design* discussed by Don Norman (2004: 65–69).

The emotional and social relevance of the city is arguably more important now than at any other time due to the fact that more people live in urban settlements than rural dwellings. It is an everyday experience for most people, and therefore an everyday thing. Norman is concerned with ‘everyday things’ (often using the words ‘things’ and ‘objects’ interchangeably) on the smaller scale of ‘books, radios, kitchen appliances, office machines, and light switches’ ([1988] 2002: 2). Humans respond to these smaller objects in complex ways, influenced by internal and external forces. Norman argues that the design of these basic things can be determined by three distinct approaches: ‘visceral’, ‘behavioural’ and ‘reflective’ (2004: 65). Visceral design is natural and environmental in the sense that humans are highly sensitive to ‘powerful emotional signals’ derived from human, environmental and ecological factors (ibid: 65). Like Moles intention to link legibility with graphic design, Norman makes the clear distinction that ‘[e]ffective visceral design requires the skills of the visual and graphic artist and the industrial engineer. Shape and form matter’ (ibid: 69).

The behavioural level is all about ‘performance’, the components being ‘function, understandability, usability, and physical feel’ (ibid: 70). Function is said to come first. Finally, the *reflective* position introduces the ideas associated with

‘message’, ‘culture’ and ‘meaning’ associated with ‘things’, ‘self-image’, or ‘reflective self-image’ (ibid: 83–84). In this final concept, Norman encourages us to reflect on the how much or how little we care about whether socks match the rest of an outfit – ‘all properties of reflective processing’ (ibid: 84) in the same sense as the earlier discussion about how defining properties contribute to configurational patterns.

Similar to Lynch’s and Moles’ ideas about the legibility of a door as a symbol, Norman takes this idea one step further by inviting us to interact with the idea of a door.

Consider the door. There is not much you can do to a door: you can open it or shut it. Suppose you are in an office building, walking down a corridor. You come to a door. In which direction does it open? Should you pull or push, on the left or the right? Maybe the door slides. If so, in which direction? I have seen doors that slide up into the ceiling. A door poses only two essential questions: In which direction does it move? On which side should one work it? The answers should be given by the design, without any need for words or symbols, certainly without any need for trial and error. (ibid, [1988] 2002: 3)

The fact that the answers are so infrequently given by design [of a door] and rely so frequently on words or symbols is perhaps an indication of the tension between visual communication and the built environment. When is one more important than the other? When and how do we know to think of both as one object? *When is visual communication the built environment? When is the built environment visual communication?*

The idea of legibility offers a focal point for exploring these questions. It is an established principle and well understood in typographic design and graphic design, as well as architecture and city planning (Harland, 2006: 10). As a general concept it is defined as ‘handwriting or print ... clear enough to read’, the latter originating from the Latin *legere*, ‘to read’ (Soanes and Stevenson, 2005, original italic). The key difference is the scale of application in the sense that the legible object might either be a letterform or city. Legibility is a meaningful term that scales up or down, and highly relevant to the arguments presented here because of the shared acceptance of the term. Built environment professionals associate it with the work of Kevin Lynch and his ideas about how the visual form of the city is ordered and intelligible (Harland, 2006: 10-11). Visual communication

professionals associate it with typeface design and the application of typefaces and lettering in general though as a principle it can be applied to a wide-ranging set of objects.

In attempting to establish some important ‘what’ factors, a further set of questions have emerged that demonstrates the potential scope of the initial research question. This has linked the research to geography and art; introduced the idea of function; conveyed the usefulness of legibility and readability; raised the important issue of scale; and highlighted a merged perspective of visual communication and built environment. This has been punctuated with a further set of short questions, grouped here as a reminder:

How might Geography help to define the research?

What does art have to do with the research?

What is the function of the phenomena?

What determines legible & readable visual communication?

How does ‘graphic’ legibility scale up and down?

When is visual communication the built environment?

When is the built environment visual communication?

In broad terms, the variables stated in the initial research question have been expressed as ‘visual communication’ and ‘built environment’. In the studio practice experience of the Researcher this articulation was manifest through the combined practice of graphic design (and the graphic designer) with urban design (and the urban designer). Researching the relationship between the two fields of activity, and their products, now emerges as the main focus of this dissertation. This narrower focus developed out of four key questions that emerge as the research developed beyond the formative stages.

How does visual communication reflect urban geography at a local (micro), intermediate (meso), and global (macro) level, and what is its scope in relation to the ‘function’ of an urban environment?

What are the similarities and differences in processes of graphic design and urban design?

If we consider the idea that graphic design is an aspect of visual communication, and urban design represents the integrated interests of

the built environment professions, what can be identified as the product of graphic design as urban design?

What examples of 'best practice' enable future built environment professionals to consider 'visual communication in the built environment' as an essential planning tool?

These 'associated subquestions' (Creswell, 2003: 103) capture the essence of the early exploratory study, and concentrate the extent of the wider discussion. The initial research question represented a starting point for the research, but as has been suggested the scope of this is extensive, and the Researcher's interest lie not in the examination of the relationships between visual communication and the built environment, but the comparative nature of graphic design and urban design within the shared domain of 'design'. This takes into account the domain from which the research questions have emerged. From this point onwards the interest and activity centres on what Creswell calls a 'central question'. Thus, the point the central issues can be distilled into the question:

What is the manifold and manifest relationship inherent in graphic design as urban design?

How to respond to this question will be discussed in terms of research strategy, research design and research methods, before considering how graphic design as urban design is manifold and manifest. This can be explored against an integrated backdrop that considers three critical relationships mentioned earlier. These are: sign and SIGN; human and environment; art and society. These are configured in Figure 2-26. However, before progressing to a discussion about research strategy, design and methods, the following will address *why* this research is needed.

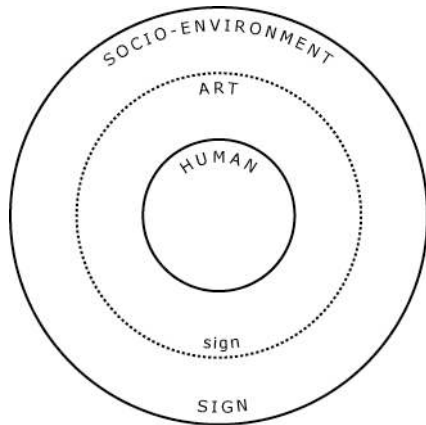


Figure 2-26 Critical relationships in the graphic urban design domain

2.6 The need for research

Referring to the book *Learning from Las Vegas* (Venturi et al., 1977), Las Vegas is portrayed as a ‘communication system in which repetitive urban identification elements are represented by neon signs, street signs, lettering and other types of graphic signs’ (Silva Gouvêla et al., 2009: 342). However, it is not clear what a *graphic sign* is. Furthermore, Silva Gouvêla et al argue that ‘the visual, aesthetic and cultural identity of the city is made up of, amongst other things, its graphic elements; which act as ‘urban flows (wayfinding) or as landmarks that identify and name city locations and therefore contribute to defining the city’s informal structure’ (ibid: 344–345). Yet, the phrase *graphic elements* goes unqualified. One might reasonably assume these to be the variety of picture, pictogram, ideogram, and phonetic sign components that can be seen in studies of signs, such as Baines and Dixon’s *Signs: lettering in the environment* (2003). Their work exemplifies the difficulty in isolating specific properties of sign design (e.g. lettering) without including the configuration of other ‘elements’ such as colour, shape, material, scale and location.

Silva Gouvêla et al attempt to isolate typography in their study *Letters and cities: reading the urban environment with the help of perception theories* (2009) in São Paulo. Nevertheless, the examples they provide still reside within a broader context that is closely aligned with a pictorial, pictographic, or ideographic element. They refer to ‘characters that form words, dates and other messages composed of letters and numbers’ as a ‘subset of graphic elements’ (2009: 345) but, again, it is unclear what a graphic element is. Eight important groups are listed as:

1 Architectonic typography: permanent inscriptions, such as a building name or number, which are usually designed and built at the same time as the building.

2 Honorary typography: inscriptions designed to honour characters or events, such as those found on most public monuments.

3 Memorial typography: funerary inscriptions found in restricted urban spaces, such as gravestones found in churches and cemeteries.

4 Registered typography: trade inscriptions, by public or private companies, such as telephone and sewage services providers, usually located in gratings and manholes.

5 Artistic typography: artistic lettering design on commission, such as paintings and sculptures using letters and numbers.

6 Normative typography: inscriptions that are part of regulatory and information systems for city traffic, such as road and directional signs.

7 Commercial typography: lettering found on temporary signs, such as those found on shop fascias, attached to a building after its construction and, in most cases, replaced by other signs from time to time.

8 Accidental typography: unofficial, unauthorized inscriptions, such as graffiti and tags, usually not planned, and inscribed without the permission of architects, construction companies, developers and owners.

(ibid: 345–346).

Rather than isolating graphic elements, as is the case with the above work of Silva Gouvêla et al above, or graphic elements not being fully acknowledged as is the case with the work of Baines and Dixon amongst others, this research argues for the need to define the idea of a graphic element. In doing so, the wider urban context is the starting point for the research, as opposed to a detail that is lettering. The following discussion therefore further outlines the need for research of this kind in the urban context.

In *The Connected City* (1997), Robert Cowan asks the question: Who shapes cities? His answer reads as follows:

Politicians in central government and on local councils; civil servants; business people; accountants; engineers, property and estate agents; investors; organisers of art events and festivals; creators of public art and those who commission it; fire and crime prevention officers; managers of

leisure facilities; tour operators; health service planners; education policy makers; transport operators; promoters of economic development; and members and managers of a wide variety of quangos, statutory organisations, agencies and community groups. ... Also, of course, in a relatively modest way, planners, urban designers and architect. ... All these people ... are ... the real urban designers. (Cowan, 1997: 16)

One must therefore assume that the phenomena under consideration here is the result of the work undertaken by such people. Some of the outcomes of their efforts are detailed in *The Design of Urban Space* (Anon, 1980), where the phenomena is found in a chapter about 'Signs, Advertising, Information'. Information is said to 'pepper' the urban environment and a concern is shown for the proliferation of 'traffic signs', 'pedestrian signs', 'hoardings', 'poster boards', 'name signs' and 'placards for commercial advertising'. Advertising is also recognised as being 'essential' and desirable'. There are other kinds that fit within a category of 'public information' including 'notice boards, bus information, pedestrian signs, town maps, and street finders, etc'. (Anon, 1980: 98)

These are variously manifested in recommendation drawings for 'traffic signs/secret signs', 'gantries', 'pedestrian signs', 'street name plates/boundary signs', 'bus/train signs', 'advertising posters', and 'commercial name signs'. Additionally, in the chapter 'Structures', bus shelters are seen to carry advertisements, 'awnings/sunblinds' are adorned with stripes, 'lifesaving equipment' features, 'flagpoles', 'clocks', 'traffic signals and controls', 'pedestrian crossings', and 'illuminated traffic bollards' are detailed in a chapter on 'Street furniture'. It is assumed all these fit within the scope and control of urban design.

At the same time the *Design Council* and the *Royal Town Planning Institute* in the UK published *Streets ahead*, concerned with the quality of the street environment. The publication features a visual survey of streets throughout the world, emphasizing many ways to create interesting street schemes. This includes the painted mural to improve a neglected subway [underpass], poster units, information boards and display cabinets. Decorative paving is also considered an important contributing element and examples are shown from Fresno, California; Lisbon; and Glenrothes. Additionally, coloured surfaces feature as a functional indication of a bus lane. (Anon, 1979: 5–14). Careful thought is encouraged to avoid poorly placed signs that might be better situated against a building rather than free standing blocking the pavement. This contributes to a high regard for the 'selecting' and 'siting' of street furniture. (Wood, 1979: 27)

In *Streets ahead*, signing in particular is singled out for its ‘confusion or clarity’ (Kindred, 1979b: 54–60). The visual properties contributing to ‘systematic signage’ – as a variable expression of public service – is described as graphic design, but the overall standard in Britain is considered ‘poor’ by Kindred. Signs are explained as being either ‘symbolic’ or ‘written’ representations and the kind of design decisions include the specification of ‘lettering’. In one example the typeface Cooper Black is suggested to be preferable to the ‘merciless onslaught of Helvetica’. Images of the statutory road sign system in the UK feature prominently, not all good, and a critique is offered about the potential for poor traffic signs to mislead the unfamiliar traveller. Much of this is about the poor siting of signs, or too many small signs situated together on a single pole. Occasionally the discussion about traffic regulation signs introduces descriptive language to identify the sign in ‘graphic’ terms, as in reference made to a ‘chevron’ board – the kind situated on a roundabout. Confusion and legibility are also questioned through featured examples respectively from Michigan in the United States of America, or ‘attractive’ but ‘discreet’ signs in Paris implying poor visibility for the motorist.

The control of parking and access warrants a section in its own right. In this, attention is drawn to the misuse and status of language in a legal sense. Focus is given to the time and concentration required to interpret certain signs and the use of lighting technology to reinforce a message at night. Yellow lines are also questioned and alternative suggestions are mentioned, such as the idea that lines should indicate parking, rather than no parking. (Anon, 1979: 71–72). These examples are part of the systematic approach used by national governments. They belong to the public domain and are controlled by national design standards. However, the private domain is discussed in the form of shop front design and its impact on the architecture of the premises. One of the key discussions in this context is that of the relationship between shopfront [sic], fascia, and lettering style that dominate the street, leading to ‘uniformity, anonymity and mediocrity in our high streets’ (Rodd, 1979: 73–76). Less formal and ‘inexpensive’, but discussed at length, is the potential for flags and banners to create ‘dynamic’ displays of colour and movement to the built environment. (Kindred, 1979a: 77–80)

A significant part of the guidance offered in *Streets ahead* is allocated to discussion about 'advertising in the environment'. Advertising in this context is discussed very early on as a moral dilemma on two fronts. On one hand it is concerned with economic growth and subsequent rise in living standards. On the other, is the promotion of a materialistic way of life that encourages production and consumption, against the longer-term interest of society. The author of this section, Michael Middleton, does not dwell on this dilemma, preferring to concentrate on the aesthetic factor and the 'impact of posters and signs upon urban character and quality', or as it is known to planners 'amenity' (1979: 81–86). It appears that since the early twentieth century the key influences on the presence and regulatory control of advertising in the built environment in the UK, has been the outdoor advertising industry, voluntary environmental societies and most recently the local planning authorities. This is not discussed in detail here by the Researcher, but serves to explain some of the tensions associated with the presence of advertising in the built environment.

Streets ahead also emphasises 'decorative features' such as murals, showcases, clocks, statues, fountains, town name signs and graffiti as ways of improving places. These are varied in their physical nature and combine two- and three-dimensional qualities at various scales (Anon, 1979: 92–96). All of the above mentioned examples might be considered a selection of objects that reside within the domain of the urban designer. (These will fit into Jon Lang's use of the term urban objects). The book is a comprehensive guide aimed at addressing some of the visual and environmental problems that came to exist in towns and cities in the twentieth century. As well as offering guidance and good practice for a diverse range of design activities that will not normally be associated with the core design activities of architecture, landscape architecture, planning and civil engineering, it highlights the radical developments associated with the 'Woonerfs' in Holland. These residential schemes give pedestrians priority over vehicles, and this principle guides the sensitive integrated design of signs, road layout and street furniture in the way that signs are more noticeable for their absence (Burall, 1979: 68). This is an important point to reinforce in this inquiry in the sense that understanding the full extent of the relationship between graphic design and urban design may contribute to knowing when and where signs are unnecessary.

In *Streets ahead* graphic design is mentioned only in discussion about the confusion and clarity of road signs. Yet at a fundamental level, there is no difference between some of the items discussed here, such as the design properties of a road sign and a clock face. The configuration differs, but fundamentally the design is composed of alphabetic characters and arrows. See Figure 2-27. In the examples below, both are respectively positioned within a familiar white geometric shape (rectangle and circle), each contains further geometric shapes within, numerals, names, arrow devices emanating from a central point, and a border. Both are positioned in public places and perform a communication function. The question arises: can they both be examples of graphic design? The answer must be yes on the basis that the road sign is thought to be a product of graphic design, and is fundamentally the same as the clock face. Both are functional, but stylistically different. The defining properties are the same but configurational pattern different. These are more than typographic design, but less than urban design.



Figure 2-27 Road sign compared to clock face

Source: Robert Harland.

Left; Market Harborough 2008, Right; London St Pancras International, 2010

Furthermore, this raises the question about what kind of design activity should describe the appearance of a coloured road surface, a decorative pavement, a chevron board, a shopfront, a flag or banner, an advertising hoarding (large permanent or small temporary), a mural, even graffiti. This is generally unclear, but these are designed objects. Can these all be called objects of graphic design? Or graphic objects? This is a key question in this research. Set in the wider context of this inquiry, a further question arises: *To what extent can objects*

found in the built environment be called the product of graphic design, and therefore be considered a property within an urban design configuration?

These questions are complicated by the ambiguity and potential misunderstanding associated with the word 'graphic'. *Streets ahead* features two interpretations of this. Graphic design has already been noted as the design process associated with traffic signs. However, the word 'graphically' is also used to describe two drawings, from the same perspective, of a town market scene 'before and after a thorough and sensitive application of street furniture' (Wood, 1979: 31). The scope of the term 'graphic' will be further discussed in the next chapter (see section 3.7). In the meantime it is helpful to consider when a particular kind of thinking relating to visual communication is absent in the built environment. It might be called 'graphic thinking'. A collection of images in Figure 2-28 attempts to do this by illustrating a number of graphic incongruities: sign duplication (Rose Street and Rose Street); private public sector duplication (Aldi Aldi); miscalculation of sign layout (Via Castell[o]); obliteration of road marking and lettering (KEEP CLEAR); unrefined letter spacing (ingr esso), ('kerning' or 'tracking' as it is known to typographers); poor fascia sign colour legibility (Pugh & son Saddlers); inconsistent yellow painted and non-painted bollards; abbreviated words (PKING); and lack of 'joined-up' visual thinking (yellow lines that could have adjoined).



Figure 2-28 Absence of 'graphic' thinking

Source: Robert Harland, 2006–2010

Nevertheless it does exemplify an absence of a particular kind of thought, and it is the nature of such a thought that is of interest here. These are one-off isolated examples and as such cannot be taken to be the norm. However, the reason for featuring them here is to demonstrate how much these objects, in the built environment, are taken for granted and generally go unnoticed. What is more, some of these go unrecognised in the earlier list of named phenomena that those interested in the urban context concern themselves with. For instance, a bright yellow bollard is unlikely to be central in a discussion about Mitchell's earlier mentioned use of the term inscription (2005: 3–19). Furthermore, consider the idea of a yellow line. The yellow line now appears to be a standard feature of the everyday urban landscape. The same can be said of the white line. Taken further, one can consider the importance of the simple *line* in the urban landscape to be an essential property of urban life and the urban configuration. A line can symbolise the control of traffic, determine the playing surface for a sporting event

and define the space into which a penalty is kicked in a rugby or football match, it is decorative, and indicates caution on a staircase. See Figure 2-29.



Figure 2-29 The line in urban design

Source: Robert Harland, 2006–2010, Sao Paulo, Windsor, Pompeii, Loughborough

The line also plays a role determining architectural form. Consider the arena at Melbourne Park where Australian Open tennis is played, shown in Figure 2-30. The white line at the outer limit of the court determines the shape of the arena.



Figure 2-30 The line as a component of architecture

Source: The Guardian, 6 February, 2010

It has been established in this discussion – about the need for research – that urban designers recognise a range of objects that enhance the quality of the

streetscape. However there are other elements – graphic elements – that do not typically fall within the range of items usually discussed but represent a particular way of thinking about the built environment. This is recognisable as much in absence as presence. Some of these elements are part of a graphic system, but their scale is comparatively small in the built environment.

There is an impending need to better understand the role of graphic elements in urban environments because of the continued expansion of urban settlement in number and size. Mass urbanisation in the second half of the twentieth century means that many urban dwellers entered the twenty first century in a situation relatively unknown. The severity of this is described by the philosopher A.C. Grayling (2010), who argues that the migration of people is ‘the outstanding phenomena of the twentieth century’. He suggests the scale of movement from rural to urban and the resulting displacement ‘dwarfs’ the effects of war (ibid: 153–156). This raises important questions about the management of cities, specifically relating to influxes of ethnic communities, and the languages they speak. Locating the research in language will be further examined in section 4.4 of chapter four.

Since the turn of the millennium, there has been a stream of startling facts reported in the news media about world population growth and the state of world cities. Just before then, it was announced that ‘[t]he sixth billionth inhabitant of the Earth has arrived’, tripling global population since 1927, and resulting in the United Nations Population Fund (UNFPA) proposing to introduce policies to stabilise world population at 7.9 billion by 2050 (Casciani, 1999). In the UK the BBC (2004) made widely available familiar questions and concerns known to built environment professionals with a sympathetic ear to a concern for sustainability. The ‘chaos’ of some cities, such as ‘problem-ridden’ Lagos (Nigeria), Addis Ababa (Ethiopia), Yaounde (Cameroon), Nairobi (Kenya), and Monrovia (Liberia), was contrasted with the relative control of others, for example Dara es Saleem (Nigeria), Hergeisa (Somalia), Accra (Ghana), and Kigali (Rwanda), and Johannesburg (South Africa). This highlighted problems of corruption, refuse collection, poor transport infrastructure, lack of clean water, poor planning and a general dysfunctionality. In 2006 BBC News reported:

- In 1955, there were 732m urban dwellers making up 29% of the world's population. In 2015 there will be 3.8bn, making up 53% of the world's population.
- Urban growth worldwide was at its fastest in the mid 20th Century, slowing gradually as more and more parts of the world have made the shift from being predominantly rural to predominantly urban.
- Africa has consistently been the region with the highest rate of urban growth since 1955, although the percentage of its population (38% in 2005) living in cities is smaller than that in any other major region.
- Latin America and the Caribbean urbanised early, only a little behind the rich countries of Europe and North America. The region crossed the 50% urban threshold in the 1960s. In 2005, 77% of its population were urban dwellers, more than 72% of Europeans who lived in cities.
- Although Asian growth rates are slowing, the volume of people being added to the region's urban population each year is vast. In 1960, with only 22% of its population urbanised, Asia overtook Europe in terms of numbers of urban dwellers. In 2015, Asia will have more urban dwellers than the rest of the world put together, even with only 45 % of its population urbanised.

(BBC, 2006)

In the first decade of the twenty first century 180,000 people per day are said to add to the number living in cities (Kinver, 2006). Yet contrary to efforts by politicians to stem the influx, the United Nations see urbanisation as a good thing that can stimulate economic growth and solve social problems (BBC, 2007).

In 1950 only seven cities worldwide had more than five million inhabitants. By 2015 there are expected to be more than sixty (BBC, 2006). Table 2-1 shows the original seven and their respective growth since 1950. Tokyo and New York have remained at the top of the group, but perhaps the most significant statistic is the stability of the London population, having changed little over the second half century, and unlikely to have noticeably changed by 2015. The other six show significant increases with Tokyo, Shanghai and Buenos Aires demonstrating the largest percentage increases with each having roughly trebled in size.

Table 2-1 Seven world cities over 5 million since 1950 (1950-2015)

Source: UN DESA (2005) (at <http://news.bbc.co.uk/go/pr/fr/-/1/hi/world/5029654.stm>)

City	Country	1950	1980	2005	2015
Tokyo	Japan	11.3	28.5	35.2	35.5
New York	US	12.3	15.6	18.7	19.9
Shanghai	China	6.1	7.6	14.5	17.2
Buenos Aires	Argentina	5.1	9.4	12.6	13.4
Moscow	Russia	5.4	8.1	10.7	11.0
Paris	France	5.4	8.9	9.8	9.9
London	UK	8.4	7.7	8.5	8.6

Tokyo has been the largest city since 1975, but since 1950 the balance between the largest urban agglomerations in developed and developing countries has shifted dramatically. Gradually the rise of cities such as Mexico City, Sao Paulo, Mumbai and Delhi as cities with more than 15 million inhabitants has grown in number. These cities dramatically overshadow the European cities that dominated the mid-twentieth century, and London, Paris and Moscow no longer feature. By 2015, approximately twenty-five cities will be larger than Paris, and thirty cities bigger London. Table 2-2 shows that only two out of ten largest cities will be in what now might classify as developed countries. In 1950, the majority were from developed countries.

Table 2-2 The ten largest urban agglomerations 1950–2015

Source: Tannerfeldt and Ljung, 2006, p. 176 (bold text represents more than 15 million)

1950	1975	2003	2015
New York	Tokyo	Tokyo	Tokyo
Tokyo	New York/Newark	Mexico City	Mumbai
London	Shanghai	New York/Newark	Delhi
Paris	Mexico City	Sao Paulo	Mexico City
Moscow	Osaka	Mumbai	Sao Paulo
Shanghai	Sao Paulo	Delhi	New York/Newark
Rehn-Ruhr	Beunos Aires	Calcutta	Dhaka
Beunos Aires	Los Angeles	Beunos Aires	Jakarta
Chicago	Paris	Shanghai	Lagos
Calcutta	Beijing	Jakarta	Calcutta

The current state of world cities, and the rapid expansion of many since the 1950s, is clearly a contemporary concern. Controlling metropolitan expansion

puts increasing responsibility on urban planning to help cities use design to manage growth (UN-Habitat, 2008: 187). Subsequently, there is a telling symmetry in the idea that the urban design activity during the next fifty years must address problems that have arisen over the previous fifty years. Challenging questions have emerged: how does the modern 'megacity' function? What are the social, cultural, economic and environmental challenges? What will be required from designers for the future urban environment? It seems that answers to such wide-ranging questions must be allied to 'design' capability. The City of São Paulo, is at the heart of confronting these challenges. As one of the largest and fastest growing 'megacities' (Tannerfeldt and Ljung, 2006: 176–177) it possesses all of the problems and privileges of a twenty first urban agglomeration. Its colonial past, and legacy of considering the environment merely in terms of exploitation, industrialisation and urbanization, make it a prime example of a place way beyond what Henri Lefebvre (1996) has called 'the critical point'. This describes a period of exorbitant expansion when the 'practico-material morphology' and 'form of urban life' rapidly change. (ibid: 123)

The urban design challenges in São Paulo are manifold. For example, three aspects of city life that are historically separated by disciplinary concerns are linked by current socio-economic problems. Challenges of homelessness, visual literacy, and water use, need 'holistic approaches' (Brown et al., 2010b: 240) to transdisciplinary research in order to address massive challenges in the urban context. A significant part of this challenge is to encourage the idea of 'the connected city' in 'practical' ways by 'connecting the city's fabric' and 'connecting the people who shape the city' (Cowan, 1997: 3). Scale of thinking is important in this to ensure that in cities of considerable size and complexity there are sufficient energy and material resources for all citizens, including the excluded. These challenges must be linked through the dimension of urban design in ways that encourage material as well as political democracy (Harland and Loschiavo dos Santos, 2010). For example, in the case of São Paulo's water management system, population growth severely threatens access to clean water, and this is compounded by problems of water contamination linked to the extremes of rapid industrialization and poor social housing. Subsequently, '[t]he second half of the twentieth century has witnessed a growing concern with the negative impact of human activity on the physical environment' (Woodhouse, 2000: 141).

The communication dimension to this challenge is known to urban design. Jon Lang (1994: 170) has suggested that the communication function of the city is arguably the primary activity, closely integrated with the economic function. 'People also make displays for each other through the expressive acts they perform and through ways they structure the very fabric of the city, as a whole and in the details' (ibid). Lang is clear in his distinction about communication being 'person to person multisensory interaction' or 'mediated' exchange. The second of these is the concern of this thesis, and Lang attempts to explain the communication function:

There are many forms of mediated communication: verbal in written form, mathematical symbols, graphic in drawings, visual and sonic in film and artworks, but also the patterns of the built environment. (Lang, 1994: 170, citing Kepes (1966) and Rapoport (1982)).

Lang recognises that urban designers facilitate and improve communication between people in the public realm but also that this is extremely complicated. This is because of the independent way different modes of communication happen. Consequently, urban designers have tended to focus on the role transportation plays in fashioning the public realm (ibid: 171). He cites Jane Jacobs' work in suggesting that this is why many modes of communication have therefore been overlooked. Jacobs ([1961] 1993: 196–197) is interested in a controlled 'exuberant diversity' in city districts generated by a density of people using facilities throughout the day and evening. This generates economic activity, and therefore one assumes enhances the importance of communication. She identifies three kinds of population who participate in this: workers, residents and visitors to the area each enjoy the 'shop down the street selling prints, a store that rents diving equipment, a dispensary of first-rate pizza, a pleasant coffee house' (ibid: 200–201). These facilities are relatively small in scale, and result in many of the items of information that were earlier noted as peppering the urban realm.

The growth of cities since the 1950s has coincided with an interest in writing about 'information' in the built environment. This appears to have emerged in the UK in the post-war years of the late 1940s, regarding a need for clear information for public transport systems, under the guise of 'good design' (Stiff, 2009a). Gradually the emergence of design as a 'profession' in the post-war years (Dormer, 1996: 9) resulted in more focus on the presence of objects in the built

environment. For example, *Design*, the monthly journal for manufacturers and designers, featured an article on ‘signpost design’ little more than a year after the magazine launched (Tomrley, 1950). This featured work by the Ministry of Works Chief Architects’ Department, responsible for signing many buildings in the UK ‘ranging from palaces to shelters’ (ibid: 12). Notably, the article is an early example of public interest in the standard of lettering on public signs.

The appearance of new street nameplates [in Cambridge] led to a protest against the shape and spacing of their sans serif capitals from the University Printer, which was followed by debate in the Town Council and discussion in the *Cambridge Daily News*. (ibid: 14, original italics)

The debate emphasised not only the need for ‘enlightened standards’ of ‘inscriptional lettering’ but also the introduction of ‘a system of letter-spacing which can be applied by untrained operatives’ to enhance the legibility of signs seen obliquely. Figure 2-31 shows the new street nameplates (top) and an alternative scheme (bottom) by the stone carver and letterer David Kindersley.



Figure 2-31 Alternative street name plates in Cambridge circa 1949

Source: Tomrley, 1950: 14

Further articles appeared in *Design* throughout 1950 in various numbered issues. Number 19 featured ‘van lettering as part of a consistent Design Policy’. Later that year Number 21 included an article about heating engineers standardising the design for painted, printed or engraved lettering on their contractor’s signboards, as well as a small article on the *Notebook* page about the use of ‘Egyptian lettering’ on shop and inn signs in the East and North Midlands. This pre-empted the now familiar use of Egyptian lettering at the Festival of Britain. The *Notebook* page for Number 22 also recognised praise given to the bus-stop

signs for London Transport in publications such as *Transport World* (January 1944), *Architects Journal* (March 1944) and *Art & Industry* (October 1946). In *Design* the sign display is focussed on the London Transport roundel symbol with BUS STOP centred in the cross bar. It is described as ‘a frameless folded sheet of enamelled iron, mounted on a concrete post (with a jaunty red metal tip for its finial) which incorporates a panel for timetables on the side facing the pavement’ (Anon, 1950: 32). The London Transport roundel features again in an article in number 31 (Carrington and Harris, 1951). Furthermore, in an article called *Legibility or “architectural appropriateness”?* Noel Carrington (1951: 27–29) is critical of the use of ‘Egyptian’ lettering for Festival of Britain and uses several illustrations to demonstrate that sign posting is not large enough, lettering against a ‘dazzle background’ makes for slow reading, small scale application of lettering, and problems with shadow on relief lettering.

By 1954, Number 69 introduces the idea that a design issue as small as the choice of lettering, or the inter-character spacing of letters, is synthesised into a the wider discussion about street furniture (Williams, 1954). The article begins as follows:

Visit practically any city, town or village in the British Isles and you will find evidence of the bad design and careless siting of street furniture. Look at the main street in some of the larger cities and you will find an appalling muddle of objects. This haphazard sprouting has even outpaced the rapid growth of road transport and other forms of communication, leaving a surfeit in conflicting shapes, sizes, styles and colours. Much of it defeats the primary object and leads to the confusion of road users and pedestrians alike. (ibid: 15–16).

The article talks about a ‘multiplicity of objects’ that include ‘street lighting’, ‘traffic signs’, ‘street name-plates and numbers’, ‘postal pillar-boxes’, ‘signals’, ‘guard rails’, ‘telephone and police boxes’, ‘beacons’, ‘electrical transmission poles’, ‘bollards’, ‘seats’, ‘litter baskets and bins’, and ‘fire alarm posts’. The look of street nameplates, shown in Figure 2-32 is compared for their use of material and relief (York Rd), shape of letterform (the use of Gothic and italics considered confusing) (Buckingham Palace Rd), and good quality letter spacing (Church Gate).



Figure 2-32 Street name plates in street furniture compared

Source: Williams, 1954: 33

Since this recognition of a particular kind of design in the urban environment, there has been an ongoing interest in the graphic elements of the built environment. This is evidenced in a slow succession of books with lettering at their core, the first of which claims to be Nicolette Gray's *Lettering on buildings* (1960). This is followed by Alan Bartram's *Lettering in Architecture* (1975), *Fascia lettering in the British Isles* (1978a) and *Street name lettering in the British Isles* (1978b); and Jock Kinneir's *Words and buildings: the art and practice of public lettering* (1980). Phil Baines and Catherine Dixon have carried on this tradition with their book *Signs: lettering in the environment* (2003) and numerous other publications document through photographic evidence the scope and variety of 'signs'. Broader in scope is James Sutton's *Signs in action* (1965) which also includes symbols as hanging signs, assorted hand-painted signs, hand-drawn price tickets on market stalls, neon signs that are pictorial and word based. This is strongly influenced by the material featured in Herbert Spencer's magazine *Typographica* (1949–1967) who drew attention to such mundane objects as manhole covers as early as 1963. Rick Poyner (2002: 70) describes Spencer's 1961 photograph of the façade for Bar Toto in Rome as 'both palimpsest and collage, as successive modes of communication overlay but never entirely obliterate earlier styles of graphic address: stone-carved lettering, graffiti, post

box, advertising, neon sign'. *Typographica* featured all kinds of graphic address found in the built environment during the course of its publication, and these are covered by Poyner (2002) in his book about the magazine of the same name.

Some books are more particular and quirky. For example, *Graphicswallah* by Keith Lovegrove (2003) features many hand painted murals and advertisements in India. *Paris Underground* by Caroline Archer with Alexandre Parré (2005) documents 300 years of paintings, drawings, graffiti and sculpture on the walls of 177 miles of manmade tunnels under the streets of Paris. In the same hand-made mode is John Baeder's (1996) *Sign language: street signs as folk art*, a collection of handmade street signs in America portrayed as folk art. Similar is the approach taken by Ed Fella in *Letters on America: photographs and lettering* (2000), who presents 1134 'Polaroid' photographs of lettering made of

wood, metal, paint, sticky-back plastic, etched, behind glass, behind bars, torn and layered ... alone or clustered together, isolated or juxtaposed, fresh or faded, direct or distorted; from in-your-face dayglo to subtle tones that are obscured, reflected, as shadow, as drop shadow with shadow, or even as a sunburnt memory of a lost message (Lewis Blackwell in Fella, 2000: page not numbered).

In the same vein but wider in scope that incorporates pattern and decay, a year earlier than Fella's book, Jonathan Miller published a book of images he had taken over a thirty year period on a 'cheap automatic camera'. *Nowhere in particular* (1999) is a random selection of photographs that include decaying facades where lettering has been removed and left a residue of erosion to discolour a surface, but leaving a trace of a letterform. He featured photographic details of torn billboard posters reminiscent of work by French artists Raymond Haines and Jacques Villeglé in the 1950s, featured in the exhibition *La peinture après l'abstraction 1955-1975* (Anon, 1999).

More geographically specific and politically motivated are Terry Tillman's (1990) images of graffiti on the Berlin Wall, in his book about freedom *The writings on the wall: peace at the Berlin Wall*. The reality of everyday life as it is represented in graphic form is also the preoccupation of Jan Williams and Chris Teasdale who extend the interest of Fella, Miller, Tillman and others to what is arguably the most comprehensive collection of images that expose the scope and diversity of graphic elements in the urban environment. The scope is too wide to describe here but images can be seen in their publications *Welcome to Britain: a*

celebration of real life (2005) and *Is Britain great?* (2007), or at www.thecaravangallery.co.uk. These are idiosyncratic photographs of imperfect objects. Irregularity is also found in the most conformist of images, as seen in Philip Carter's (2000) picture book *1057* about different interpretations seen in 94 photographs of the road marking for a cycle lane from the official traffic signs regulations in the UK. Conversely, more refined and ornate are the decorative signs Arnold Schwartzman's (1998) book *Designage: the art of the decorative sign*. Images of signs as a subject for documentary photography are readily available to the researcher looking for extant data.

Built environment professionals also use images to explain their interest in managing the environment. Stephen Carr's (1973) *City Signs and Lights* study into the chaotic array of public and private signs and lights in the city of Boston is a review of 'policy proposals, demonstration projects, and field testing and evaluation' to make the 'plan of the city more legible and visible'. This is undertaken utilising many photographs, drawings and diagrams. Perhaps the most comprehensive project of its kind, the proposal called for the establishment of a city department of public information to manage 'environmental information systems'. This is its main focus rather than an analysis of the 'cultural symbolism of signs and lights' (ibid: 2). Kevin Lynch acts as urban design consultant to the project, and Herman and Lees provide graphic design consultancy, linking the two critical aspects of research reported in this thesis. Not until the early 1990s do the disciplines appear to unite again with any significance. *Wayfinding: people, signs and architecture* (Arthur and Passini, [1992] 2002) is seemingly the first notable attempt to elaborate on Lynch's ideas about 'way-finding' from the early 1960s, although Passini appears to have been working in wayfinding since the early 1970s, completing his PhD thesis *Wayfinding: a study of spatial problem solving* in 1977. Since the relaunch of Arthur and Passini's book in 2002 wayfinding has become a focus of attention, and many articles in places such as *Information Design Journal*, and design research conference papers, now inquire further into the field. Well illustrated case studies feature in books such as *Wayfinding: designing and implementing graphic navigational systems* (Berger, 2005) that highlight the phrase 'environmental graphic design' as a new specialisation. This is said to represent the merging of graphic design and architecture with the assistance of fields such as industrial design and urban planning (ibid: 10).

The principles and practices involved in the graphic dimension of wayfinding is the subject of Per Mollerup's book *Wayshowing: a guide to environmental signage principles & practices* (2005). Mollerup tells about a number of principles that are applied to a range of contexts including hospitals, airports, rails, museums and cities. This discusses:

- the difference between wayfinding and wayshowing;
- practical theory about why many signs do not work;
- the function of signs as identification, direction, description and regulation;
- the importance of toponomy;
- sign content as typography, pictograms, arrows, guidelines, and maps;
- sign form as colour, size, format, grids and groupings;
- location, mounting and lighting;
- inclusive design, (especially visual impairment and means);
- the importance of planning and its processes, and branding.

To bring this discussion back to the functioning of a city, Kate Ascher's book *The works: anatomy of the city* ([2005] 2007) offers a contemporary overview of how a city works. The book provides in text, diagram and photographic form an explanation about how New York works: traffic signals and traffic cameras; traffic calming measures; the art of manhole covers; street markings for street repair; street signs (and the evolution of a street sign of which there are over a million in New York); parking meters; the letter system of subway names and the use of tokens between 1910 and the 1990s; subway system signals; steam vents; fire alarm boxes; and policing. All of these carry some form of graphic address.



Figure 2-33 'Functioning' graphic objects in New York
Source: Robert Harland 2010

The above represents a brief introduction to the scope and diversity of graphic elements in the city. It offers a particular perspective based either on a unique interpretation or a systematic perspective. Within established formal design systems that utilise writing, colour and shape, similarity and variability is vulnerable and dependent on local context. For example Figure 2-34 shows, in what is generally considered a universal sign for STOP, how shape and colour is consistently applied utilising an octagon shape and the colour red, but with a changing writing system to suit the local context. These objects are said to be so familiar that too many can lead to ignoring them and subsequent accidents (Mustienes and Hilland, 2009: 62).



Figure 2-34 Stop signs

Source: Mustienes and Hilland, 2009: 69

That said, in Carr's earlier noted report for the city of Boston, it was proposed that the STOP sign be grouped with two others that say DO NOT ENTER and YIELD. These are seen on the left in

Figure 2-35. The recommendation, seen on the right, is that because the red stop light is also round, all three signs should conform and be circular in shape, and use red. Reference is made to the British system and the suggestion that both a round and triangular sign shape is also used for stop, and considered unnecessary. In fact, the British system uses an octagon with STOP (meaning stop and give way), a circle with STOP (for a manually operated temporary 'STOP'

sign), and a triangle with GIVE WAY (for approaching a major road) (HMSO, 1993). The recommendation is that ‘any circle requires a braking action to a greater or lesser degree. This is a very simple rule to learn and demands less of the driver than the disparate signs that are currently used’ (Carr, 1973: 94). This follows logic and supports the report’s aspiration not only to improve the fabric of Boston, but also have universal appeal. However, accepted practice elsewhere in the world, as seen above in Figure 2-34, in places notably less complicated than Boston, suggest obstacles to this ambition, as well as financial constraint. For example, in New York there is said to be 130,000 ‘priority regulation’ signs, a category that includes the stop sign (Ascher, [2005] 2007: 20).



Figure 2-35 Braking sign recommendation for Boston

Source: Carr, 1973: 94

The need for research is based on numerous factors. First, the design of urban environments is dependent on knowledge and understanding from many different sources, some proposed only recently. In this research graphic design, is recognised as one of these. Second, urban design acknowledges a number of ways to enhance the built environment and benefits are explained by different

communities of practice. However, these are often limited views that perhaps overlook a level of detail that may not fall within the education of a built environment professional. Examples of this might include the selection of a font, or design for a banner. Third is the recognition that at times there is an absence of ‘visual logic’(van der Waarde, 2009) in the way some standard graphic elements are applied. Fourth is the ubiquitous nature of some basic human mark making activity, such as the standard white line. How might such simple but effective devices be fully acknowledged as contributing to urban design? Finally, rapid development of urban environments since the mid-twentieth century places increasing pressure to confront how cities will function in the next fifty years and beyond. Social, cultural, economical, environmental, technological and political factors have been shown as likely to play a significant part in this. This thesis attempts to identify how knowledge about graphic design as urban design can enhance understanding of how cities work (or not). This is undertaken with an emphasis on the social dimension.

Aside from the many objects that have already been mentioned as representative of the phenomena, the status of the object must also be questioned as it has been discussed so far, and will again be explored. For example, the function of the stop sign will at times also be adjoined to the function of a human in an environment. This suggests the idea that the stop sign may only be part of a larger graphic object that communicates messages and identifies warning in ways that are also conveyed with articles of clothing, as shown in Figure 2-36. In this sense the graphic object is animated as part of a performance.



Figure 2-36 The graphic object as part of graphic performance

Source:

Left, *The Observer* newspaper, 13.02.11.

Picture caption reads 'The UK's child pedestrian death rate is one of the EU's worst – but patrols are at risk'. Image is uncredited.

Right, *The Guardian* newspaper, Tuesday 7 December 2010

Picture caption reads 'Parents and pupils negotiate snow to get to Lowport primary school in Linlithgow, West Lothian, between Glasgow and Edinburgh'. Photograph: Gordon Jack/scotimage.com

2.7 Contribution to knowledge

The need for research suggests there is much to discover about visual communication in the built environment, at a time when massive changes are happening in urban environments. Graphic design offers the opportunity to view the urban context from a particular perspective. Few attempts appear to have been made to do this comprehensively. On this basis, this dissertation satisfies two objectives. The first is an original contribution to understanding the urban environment from the perspective of graphic design, for the benefit of urban design. The second is to evidence a research training experience – the research training courses, conference and journal papers – as part of this written dissertation. Phillips and Pugh offer some suggestions about how the first objective may be achieved:

...an original contribution can be rather limited in its scope and indeed should be: apply this theory in a different setting, evaluate the effects of raising the temperature, solve this puzzling oddity or review this little-known historical event. (Phillips and Pugh, 2000: 35)

From these examples by Phillips and Pugh, applying a 'theory' in a different setting resembles how this research has evolved. Although this is not entirely accurate. This research is more about building theory than using existing theory because the perspective that informs the generation of theory – that of art and

design – is generally considered by educationalists in art and design to be ‘under-theorised’. This is according to Linda Drew and other members of the Design Research Society Design Pedagogy Symposium at Coventry University, 28 February 2011 (at which the Researcher gave a paper presentation).

With regard to graphic design, a lack of theory is because the concerns of education in the subject have largely been about ‘how’ to be a graphic designer and not ‘why’ (Ellen Lupton in Armstrong, 2009: 6). This dissertation reports on a transition from a ‘how’ perspective to a ‘why’ perspective, within the context of urban design. It is interdisciplinary research in the sense that the concerns of graphic design are overlapped with urban design. Moreover, the study also considers the multidisciplinary perspective that embraces ideas from philosophy, cognitive science, geography, linguistics, and visual communication. The research benefits from a diverse range of views that centre on what will become known as the *empirically external graphic object* (after Kant) in urban design, or in shortened form the *urban graphic object*. The conclusion to the research is that the urban graphic object can be analysed in spacio-temporal terms using micrographic, mesographic and macrographic analysis. This thesis explains the development of a theory towards understanding **the empirically external micrographic, mesographic and macrographic urban object**.

A number of examples featured in this thesis indicate the scope of what such an object might be. Nevertheless, the instance of a Christian cross is used here to explain how this theory might be utilised. The cross as a form of representation is made from a vertical and horizontal overlapping line. The example shown in Figure 2-37 is a further case of the simple white line being utilised. Configured in the form of a cross and inscribed with the name of a person and a representation of a poppy flower, it is a micrographic urban object. ‘Button R’ will mean little to people visiting the garden, and most will fail to look at individual crosses. The experience of the cross extends to a mesographic level when the display is appreciated collectively on the lawn. As a macrographic object, the image utilises the universality of the cross as a representation of the Christian church seen in a rural and urban context. See Figure 4-3. The Roman alphabet also applies to this level of analysis, as does the legibility of the colour white against the green grass.



Figure 2-37 Remembrance Sunday display, Market Harborough

Source: Robert Harland, 2010

2.8 Summary

This chapter has examined issues related to naming the phenomena, the early development of research questions, the professional bias of the Researcher, the formation of the initial research question, the necessity for research, and contribution to knowledge. It has been concerned mainly with establishing the framework of ideas, or ontological assumptions.

Different perspectives have been shown across a spectrum of writers interested in the phenomena and various parts have been named. These vary from the relatively overlooked manhole cover in the street to the large screens on top of buildings that now adorn many cities. Lettering is the smallest detail at which the phenomena has been discussed. Outdoor publicity captures a much wider scope. Inscription as a generic phenomenon describes an action but is more commonly associated with the words or symbols on a monument. Sign will orientate most design related professionals towards a specific object using lettering and symbols, but the word is used more widely by semioticians. Language to name the phenomena is problematic.

Much time has been allocated to explaining the context from where the research emerged, and especially the Researcher's professional background. This has helped to explain sensitivity towards the phenomena that will not ordinarily be the interest of most built environment professionals, for example, the importance of x-height in typeface selection.

There has been some minor deviation into areas such as geography and cognitive science, as well as featuring some work by traditional academic disciplines such as classics. This precedes a suggestion that some core research topics are linked by Kevin Lynch in his work on legibility. This has been further extended by Abraham A Moles, who is more direct with his assumptions about the importance of graphic design as a tool for understanding the world.

Finally a case has been made about why this research is important now. Urban design has been explained as a broad community of practice concerned with many aspects of the phenomena. However, in general the urban designer's use of language appears limited in its scope to explain the subtle aspects of the phenomena, and the full extent of its impact. Signs are of interest to many, each having their particular view of the phenomena either as artefacts or systems. The typographer places lettering at the centre of concern. Whereas the city planner must consider the city on a larger scale and will have little time to think about the quality of a letter shape. It is hypothesised that a better understanding of these subtleties will be increasingly needed for the present and future state of urban environments in developed and developing nations. The contribution to knowledge attempts to address this in a small part by proposing a model for analysing the phenomena as micro-meso-macrographic urban objects, this idea culminating in chapter four. Until then the following chapter about research strategy, design and methods will explore a number of epistemological issues that contribute to shaping a response to the key questions that have emerged in chapter two.

3 Research strategy, design and methods

Thinking about images means being led into certain thoughts by images.

(Elkins, 1999: 87)

3.1 Introduction

This chapter is about research strategy, research design, research methodology. Having outlined in the previous chapter the background to the research, the Researcher's bias, and the emergence of a diverse set of 'what' and 'how' research questions, the need for research and contribution to knowledge, these issues will now be considered against established ideas, approaches and practices in academic research.

The chapter begins with an exploration into how understanding the environment happens in terms of experience, reasoning and research. Established models for deductive and inductive approaches to theory and research are explained and key authors are introduced that will be referred to throughout this chapter. In particular Alan Bryman's work on *Social Research Methods* (2008), Cohen, Manion and Morrison's *Research Methods in Education* (2003), and John W. Cresswell's qualitative, quantitative, and mixed methods approach to *Research Design* (2003) provide the key references. Closer to the built environment is the importance to this research of De Jong and Van der Voordt's work on *Ways to study and research urban, architectural and technical design* (2005b). The importance of ontology, epistemology and methodology is also explored and various aspects of research strategy, design and method are outlined in more detail.

Within an overview of research strategy, design and methods, the core proposition related to this research topic is clarified: the idea of *graphic design as urban design*. Some strategies are considered as possible approaches to research, such as *grounded theory*, and this serves to recognise the importance of visual data as a primary data source. Consequently *visual culture* and *visual ethnography* are introduced for their relevance to the 'visual'. This precedes an emphasis on James Elkins and his work on *The Domain of Images* (1999), in which he examines the usefulness of images as part of an approach to rational inquiry. Elkins is keen to draw attention to what in 1900 was referred to as 'pictorial method' (ibid, 1999: 39, citing Cambrosio, Jacobi, and Keating). The conclusion to this selective literature review is the realisation that this research inquiry follows more an inductive qualitative approach within a deductive framework, that builds methodology around utilising specific tools. These are

referred to here as *graphic method* located in what Derek Layder (1998: 18–20) calls an *adaptive theory* approach in social research.

The introduction of *narratology* in the previous chapter as a specific method to explain the origins and background to the research, and the subsequent development of research questions, must be thought of as a precursor to this chapter. The explanation of the Researcher's background in professional design practice required an earlier utilisation of this approach.

Chapter three seeks to explore:

- understanding: experience, reasoning and research;
- ontology, epistemology and methodology;
- research strategy, design and method;
- visual culture and visual ethnography;
- graphic method in adaptive theory.

3.2 Understanding: experience, reasoning and research

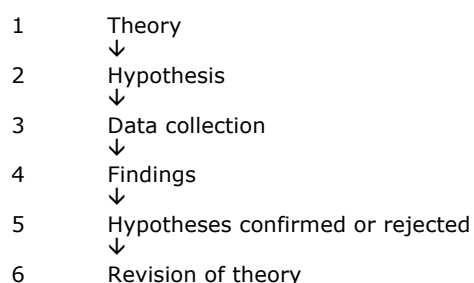
People have long been concerned to come to grips with their environment and to understand the nature of the phenomena it presents to their senses. The means by which they set out to achieve these ends can be classified into three interdependent broad categories: experience, reasoning, and research (Cohen et al., 2003: 3, citing Mouly [1978]). Experience is a mix of practical events and observed facts, resulting in the acquisition of knowledge and skill. It is a valuable source of hypotheses and questions about the world. This has been demonstrated in the previous chapter. However, Cohen et al (2003: 3) acknowledge that experience alone is restrictive in a search for truth due to it being based on personal rather than collective participation. Reasoning, however, is less about practicality and observation. It is more the ability to think, understand and use logic to form judgements. In doing so reasoning is said to be undertaken in three ways—two that are inverted, and one further description that is a combination of the two. These approaches to reasoning are referred to in the research literature as deductive reasoning, inductive reasoning and the inductive-deductive approach (Cohen et al., 2003: 4–5).

The first of these begins with theoretical rather than practical starting point. Bryman (2008: 4) favours this approach, believing it to incorporate inductive

reasoning within the process of deduction. In the context of social research, he argues for deductive reasoning as the prevailing view of the correlation between theory and social research. This appears consistent with the ‘myth’ that an exclusively inductive approach is impossible (Phillips and Pugh, 2000: 17). The deductive approach relies on theory guiding research through five out of six stages (Bryman, 2008: 4). Bryman argues that the first five stages of this approach are deductive, but beyond stage five revisions take place and are fed back into the process at the appropriate point. See Table 3-1.

Table 3-1 The process of deduction

Source: Bryman, 2008: 10



It should be clear by now that there is no starting theoretical position in this research that informs a hypothesis – the practical experience and observations of design practice is the starting point. A deductive approach is less relevant here due to an explicit lack of theoretical understanding. An inductive approach determines that theory is the outcome of research, and begins with observations and findings that result in the generation of theory. This resembles the approach reported in this thesis. The contrast is seen in Table 3-2.

Table 3-2 Deductive and inductive approaches to theory and research

Source: Bryman, 2008: 11

Deductive approach

Theory → Observations/Findings

Inductive approach

Observations/Findings → Theory

This difference between a deductive approach and inductive approach has been aligned to quantitative and qualitative research respectively. Creswell (2003: 125–136) locates the deductive approach in quantitative studies when he talks

about the location of theory at the beginning of a research plan, whereas inductive reasoning is the ‘end point’ and more commonly used in qualitative research. See Table 3-3. Looking at the two approaches, this research does not set out to test a theory and determine a measurable outcome – it asks open-ended questions that aspire to build theory based on experience. On this basis, it is more inductive than deductive, more qualitative than quantitative.

Table 3-3 Typical deductive-quantitative inductive-qualitative approaches

Source: Creswell, 2003: 125–134

The deductive approach typically used in quantitative research

Researcher tests or verifies a theory
 ↓
 Researcher tests hypotheses or research questions from the theory
 ↓
 Researcher defines and operationalizes variables derived from the theory
 ↓
 Researcher measures or observes variables using an instrument to obtain scores

The inductive logic of research in a qualitative study

Generalisations, or theories to past experiences and literature
 ↑
 Researcher looks for broad patterns, generalisations, or theories from themes or categories
 ↑
 Researcher analyses data to form themes or categories
 ↑
 Researcher asks open-ended questions of participants or records fieldnotes
 ↑
 Researcher gathers information (e.g. interviews, observations)

Deductive and inductive approaches to the relationship between theory and research can be developed together in one study that utilises both quantitative and qualitative data. This is the *inductive-deductive* approach mentioned earlier, or what is also referred to as **mixed methods** research, a combined approach to gathering research data (Bryman, 2008: 603).

3.3 Ontology, epistemology and methodology

The framework of ideas informing this research reflects an ontological position derived from professional design studio practice, and the nature of doing graphic design work. This emerges from a particular field of design practice experience discussed earlier, and depicted in Figure 2-13. This portrayed the relationship between type design, typographic design, graphic design within art and design. The essence of this may now and be placed within the wider sphere of urban design, as an interdisciplinary perspective on how the built environment is brought into existence and evolves. See Figure 3-1. The relationship between

aspects of this are not yet theorised, but will soon be explored. The associated epistemology is also influenced by this context, and the methods used for data collection will be seen to have some resemblance. But before considering this in detail, ontology, epistemology and methodology requires more explanation.

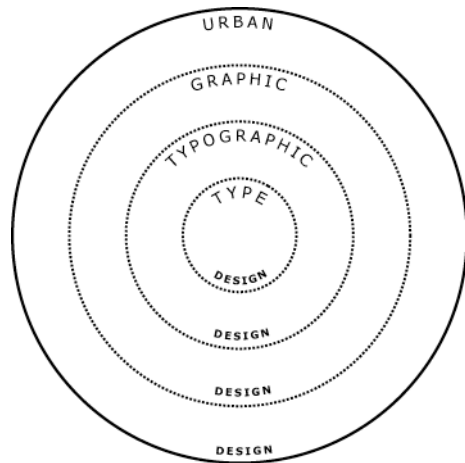


Figure 3-1 A type-typographic-graphic-urban-design continuum

Conducting research in the social sciences – social research – requires more than an understanding of deductive, inductive and mixed methods approaches to relating theory and research (Bryman, 2008: 13). Additionally, the researcher must consider ontology, epistemology and methodology. Ontological, epistemological and methodological activity defines three interconnected and collective aspects of the research process that lead to data collection.

Linked closely with ethics (axiology), ontology, epistemology and methodology have been described by Denzin and Lincoln (2000: 157) as a paradigm for providing a basic set of beliefs that direct research actions. They explain that ontology describes the framework of ideas (theory) the researcher brings to the investigation, and the subsequent set of questions, or epistemology, that result from this position (ibid: 18). To some extent this is evident in the earlier discussion about the Researcher's prior experience and the questions that emerged (and have since emerged) from that experience. Methodology represents the particular ways by which the researcher analyses empirical materials, or data, gathered in relation to the research questions, providing a written account of the process. This has already been partially reported in this study using narrative analysis. This demonstrated how research reporting has been undertaken by the

researcher from what Denzin and Lincoln (op cit: 18) interpret as ‘within a distinct interpretive community that configures, in its special way, the multicultural, gendered components of the research act’. Some argue this to be a non-scientific approach. Put another way, Burrell and Morgan (1979: 3) use the phrase ‘anti-scientific’ to describe the role of human nature in the subjective-objective dimension of social science research (Cohen et al., 2003: 7) .

Linking together these aspects of the research process is necessary. Referring to the work of Hitchcock and Hughes in 1995, Cohen et al (op cit: 3) focus their work on the nature of inquiry in educational research on the belief that ‘ontological assumptions give rise to epistemological assumptions; these in turn, give rise to methodological considerations; and these, in turn, give rise to issues of instrumentation and data collection.’ See Table 3-4.

Table 3-4 The nature of inquiry

Source: Cohen, Manion and Morrison, 2003, p. 3. (after Hitchcock and Hughes, 1995)

Ontology → **Epistemology** → **Methodology** → **Data Collection**

The framework of ideas informing this research reflects an ontological position derived from professional design studio practice, and the nature of doing graphic design work. This emerges from a particular field of design practice experience discussed earlier, and depicted in Figure 2-13. This portrayed the relationship between type design, typographic design, graphic design within art and design, and can be placed within the wider sphere of urban design as one interdisciplinary perspective on how the built environment is brought into existence and evolves. The relationship between aspects of this are not yet theorised, but will soon be explored. The associated epistemology is also influenced by this context, and the methods used for data collection will be seen to have some resemblance. But before considering this in more detail, ontology, epistemology and methodology requires more detailed analysis.

The Oxford Dictionary of English (2005) describes ontology as ‘the branch of metaphysics dealing with the nature of being’. In the context of discussing *A philosophical framework for an open and critical transdisciplinary inquiry*, Jacqueline Y Russell explains ontology in philosophy as ‘[t]he study of the nature

of things in the world and whether or not something is real, or what kind of real it is' (2010: 33). To study the nature of something is to be concerned with the basic or inherent features, character, or quality of it as phenomena. In this research, the phenomena is graphic objects within the urban object. The research aspires to develop a 'schema' that, in the words of Immanuel Kant ([1781] 2007: 652–653), is a 'systematic ... unity of manifold kinds of knowledge under one idea'. The idea in this research is urban design, and within that graphic design represents a manifold kind of knowledge that is in itself an idea that unifies core elements. Kant names the construction of such a system as **architectonic** (meaning an artistically pleasing structure).

Earlier, ontology was explained as a framework of ideas, in which case a framework must include the concepts and beliefs that 'form' the world as humans know it. These can include 'philosophical', 'religious', 'aesthetic', 'scientific', 'artistic', 'historical' and 'political' ideas (Anon, 1995). Ideas can be expanded and explained over time and categorised in ways that explain wide-ranging phenomenon, including the development of imagination, spirituality, places, anti-authority and the development of human understanding (Watson, 2006). None of these can claim any right to superiority in what Michael Foucault (1994) calls a 'history of ideas' that cross disciplinary boundaries (ibid: 153) and 'continuously determines relations' (ibid: 158).

Explicit in Peter Watson's (1995) history of ideas is the emergence of language, the development of notation, the simple use of zig-zag lines associated with water, the carved inscriptions of what are now recognised as the letters M and V to depict the female uterus and vulva in Neanderthal times, and the gradual development of ideographic, hieroglyphic and alphabetic writing systems (ibid: 53–71). Notably, the development of writing, alongside cities and monumental architecture, organised religion and specialised occupations, is considered by archaeologists to be what constitutes 'civilisation' (ibid: 68–71). Some take the view that writing is the 'the invention of inventions'. This is said to be amongst many important ideas that emerge only when humans start to live together in cities. As Watson puts it, '[t]he city is the cradle of culture, the birthplace of nearly all our most cherished ideas' that are derived from a 'competitive, experimental environment' (ibid: 99–100). These ideas develop out of what Lefebvre calls the manifold knowledge of 'social space' (1991: 68). The 'Idea' is

supreme in what he goes on to explain ‘contains a great diversity of objects, both natural and social, including the networks and pathways which facilitate the exchange of material things and information. Such “objects” are thus not only things but also relations’ (ibid: 77). The diversity of the object as a thing and as a relation is represented in physical form, depicted here in Figure 3-2. These are multiple and exist in the world as man-made additions to it, informed by the abstract ideas that emerge in metaphysics, and the social space of individual and collective activity. ‘Every social space is the outcome of a process with many aspects and many contributing currents, signifying and non-signifying, perceived and directly experienced, practical and theoretical’ (ibid: 110).

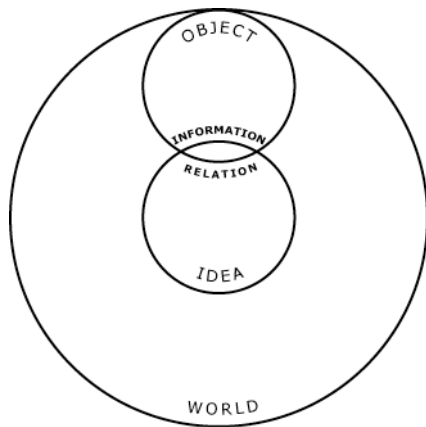


Figure 3-2 The idea object world interface (after Lefebvre)

In social research, the object is also referred to as *entity*. Denzin and Lincoln (2000: 8) use the word entities, consistent with Bryman’s (2008: 18) use of the term ‘social entities’ when describing social ontology pertaining to the ‘nature of social entities’. The question Bryman highlights is whether these entities exist independent of social action, in which case they can be considered objective entities or if they are socially constructed, through social perceptions and actions. These opposing views, respectively referred to philosophically as the ‘nominalist-realist’ debate support the idea that either ‘objects of thought are merely words’ or ‘objects have an independent existence’ not dependent on the ‘knower’ (Cohen et al., 2003: 6). Bryman (op cit) points out that these two positions, respectively referred to as objectivism and constructivism, are usefully illustrated using two important central issues in social science research –organisation and culture.

Objectivism treats organisation, or an organisation, definitively as an object in its own right. It invariably has rules and regulations, procedures, clearly defined

roles, hierarchy, mission statement. The organisation demands conformity, the learning and application of rules and regulations, the following of procedures, and a clear sense of responsibility and guidance in how activities are carried out. Cultural issues in objectivism appear to be less about rules and regulations and rely more on external customs and values that socialise people by subduing their own beliefs and values through constraint and the need and expectation to conform to the wider cultural and sub-cultural group (Bryman, 2008: 19).

Constructionism challenges notions that organisation and culture are pre-determined and external. These are substituted with more flexible patterns of ongoing negotiation between parties, established through constant change, revised agreement. Similarly, culture is seen as an ‘emergent reality in a continuous state of construction and reconstruction’ (ibid: 20) rather than something coercive. It develops through a process of interaction. Despite a tendency for constructionism to be used as a term to indicate how social knowledge, or ‘knowledge of the social world’ (ibid: 21) is not determinable, Bryman (op cit) argues that constructionism asks the researcher to think about social reality as the evolving achievement of social actors. That is, internal and unrestrained, in a way that is opposed to notions of objectivism.

To consider the STOP signs in Figure 2-34 from an objectivist or constructionist perspective places emphasis on different properties. The shape and colour demonstrate a conformity with global aesthetic qualities, whereas the use of language in the middle of the sign requires flexibility, negotiation with local communities, and knowledge and understanding of social actors.

Social ontology appears to be concerned with inquiry into the constitution of things and relations. The initiation, development and implementation of ideas are central to this in real terms. This reality might be considered a product of what Lefebvre calls social space, in a metaphysical and physical sense. In recognising and constructing social space, the question arises: *What might a graphic urban design ontology be? What framework of ideas shapes this domain?* These questions link to epistemology.

If we follow the logic set out earlier that epistemological assumptions follow on from ontological assumptions: *what is epistemology?* This has been succinctly

described by Bryman (ibid: 13) as ‘what is (or should be) regarded as acceptable knowledge in a discipline’, and is concerned with its origin and appearance, how it is amassed and made known to other people (Cohen et al., 2003: 6).

It seems this is much debated in the same way that the objectivist constructionist duality in ontology takes up two opposing positions. The nature of social science is defined by Burrell and Morgan in terms of a ‘subjective–objective’ duality (1979: 3). They suggest the nature of knowledge might be ‘hard’, ‘real’, and ‘tangible’, or ‘soft’, ‘subjective’ and ‘spiritual’ (even ‘transcendental’) (ibid: 2), based on what Cohen et al (2003: 6) describe as ‘experience and insight of a unique and essentially personal nature’. This duality has been discussed in detail by the Researcher in the presentation *The graphic design pendulum – the swing between information and affectation* (Harland, 2009b), and in conference papers *The Dimensions of Graphic Design: in Theory* (Harland, 2009a) and *The Dimensions of Graphic Design and Its Spheres of Influence* (Harland, 2011). These conference papers are reproduced here (slightly amended and reformatted) in appendix five and appendix six respectively.

Social reality, as an object of study, clearly offers the prospective researcher the opportunity to draw on traditions developed in the natural sciences. But it is equally clear from the discussion so far that many have rejected these traditions in favour of opposing views, and named as such. For example, positivist and anti-positivist. Within the canon, the use of these terms does not always appear fixed, and writers refer to ‘epistemological’ considerations using a variety of terms. This is evident when Burrell and Morgan (op cit) and Cohen *et al* (op cit) initially refer to anti-positivism as positivism’s contrasting epistemology, and yet Bryman refers to it as **interpretivism** (2008: 15) which he states is ‘an epistemological position that requires the social scientist to grasp the subjective meaning of social action’ (ibid: 694). Furthermore, both positivist and anti-positivist viewpoints use alternative terms in social psychology and sociology, those being ‘normative’ and ‘interpretive’ traditions. Or, if discussing this in the context of the influence of theology, the term ‘hermeneutics’ is deployed by Bryman, in place of interpretivism, it being ‘concerned with the theory and method of the interpretation of human action’ (ibid: 15). When the term **hermeneutics** is used, it relates to the conflict between positivism and hermeneutics, concerning the difference between explaining or understanding human behaviour. Similarly, Bryman proclaims one of the causes of anti-positivism (or interpretivism,

depending on which school of thought one aspires to) is an approach to social research called **phenomenology** (ibid). Described by Bryman as an ‘intellectual tradition’, it is thought by Denscombe (2007: 75) to be an alternative to positivism. In straight forward terms, he explains that phenomenology stresses subjectivity (rather than objectivity); description (more than analysis); interpretation (rather than measurement); agency (rather than structure), concerned mainly with people’s perceptions or meanings; attitudes and beliefs; feelings and emotions. With all this in mind, epistemological considerations are defined by Burrell and Morgan (op cit) as two distinct ‘dimensions’. These dimensions essentially locate either a subjective or objective approach at the extreme, with some traditions clearly taking opposing views, while others demonstrate characteristics of both (such as *realism*).

Having outlined some of the issues (and potential confusion) in ontology and epistemology, **methodology** is now clarified. *What is methodology?* A definition of methodology, as it appears in the *Chambers 20th Century Dictionary* (Kirkpatrick, 1983), reads as ‘a system of methods and rules applicable to research or work in a given science or art.’ A less precise definition, but perhaps more useful in its breadth, appears in the *Oxford Dictionary of English* (2005) as ‘a system of methods used in a particular area of study or activity.’ The earlier definition features both methods and rules, the difference being that a method can be interpreted as being an informal way of doing, whereas the term ‘rules’ has more a sense of regulation, principle, control or governance.

Whereas ontology considers ‘What is the nature of reality?’; epistemology asks ‘What is the relationship between the inquirer and the known?’; methodology is concerned with how we ‘gain knowledge’ of the world (Denzin and Lincoln, 2000: 19). How this is done is characterised by the approaches taken to collecting data, forcing the consideration of methodological choices. In doing so, defining methodology essentially explains how the phenomena in question will be studied and how specific research methods, or techniques, are used to do this (Silverman, 2005: 107). (This chapter gradually reveals the research methods used to address the key research questions).

In social research there are a number of strategies and methods that contribute to defining methodology. Strategies enable the researcher to apply approaches to

specific ‘types of investigation’ and ‘kinds of problems’ (Denscombe, 2007: 4). These are said to include: surveys; case studies; experiments; ethnography, phenomenology; grounded theory; mixed methods; action research and supplemented by four methods: questionnaires; interviews; observation; and documents. These enable the researcher to clarify, accurately measure, and determine facts and evidence about the subject matter. (ibid: 133)

Before exploring these strategies and methods in more detail, it is helpful to return to the work of Burrell and Morgan and their recognition of an additional set of assumptions pertaining to human nature, and the environment that human beings inhabit (op cit: 2–3). This is relevant to research in the urban environment. They argue that by its very nature, all social science is predicated on the existence of human life. Human beings respond to their environment in two ways: **deterministic** and **voluntaristic**. The former – determinism – represents the view that human behaviour is a consequence of the setting within which he or she is situated, and therefore conditioned by their environment. Alternatively the state of being human is perceived to be much more ‘creative’ and controlling of the environment. This is described as voluntarism. Burrell and Morgan capture the subjective–objective dimensions of social science research in their scheme for analysing assumptions about the nature of social science, seen here in Table 3-5. (The original table positions the subjective approach on the left, and vice versa. The reason for this alternation is that it supports the Researcher’s decision in the thesis to position objectivity on the left and subjectivity on the right, as shown in Table 3-5.

Table 3-5 Scheme for analysing the nature of social science

Source: Burrell and Morgan, 1979: 3

The objective–subjective dimension		
The objectivist approach to social science		The subjectivist approach to social science
Realism ←	ontology	→ Nominalism
Positivism ←	epistemology	→ Anti-positivism
Determinism ←	human nature	→ Voluntarism
Nomothetic ←	methodology	→ Ideographic

Burrell and Morgan (op cit: 2–3) argue that methodological debate is similarly polarised between nomothetic and ideographic positions, relating to different ontologies, epistemologies and models of human nature. Nomothetic means ‘relating to the study or discovery of general scientific laws’ (2005) and contrasts with idiographic, which is more particular than general. The nomothetic way embodies the approach of the natural sciences, exposing hypotheses to scientific testing through quantitative data analysis, such as surveys and questionnaires, testing and standardised research instruments. On the other hand, ideographic methodology emphasises closeness to the subject, and involvement in day-to-day actions and events – the subject unfolding during the investigation.

In summary, the apparent polarised approaches to ontology, epistemology, human nature and methodology, perhaps most evident in the work of Burrell and Morgan, offers a range of terms used in the literature to represent different locations for this research. These are listed in Table 3-6, referencing opposing views labelled in appropriate terminology. In general, these views appear to sit at either ends of an objective-subjective continuum and researchers align themselves with one or the other, and some in between.

Table 3-6 Summary of terms used to describe objective-subjective debates

Source: Bryman, 2008; Cohen, Manion & Morrison 2000; Creswell, 2003; Burrell and Morgan, 1979;

Objective	Subjective
<i>Ontology</i>	
objectivism ←	→ constructivism
nominalist ←	→ realist
external reality ←	→ internal reality
words ←	→ objects
objectivism ←	→ subjectivism
<i>Epistemology</i>	
acquired ←	→ experienced
detached ←	→ involved
positivist ←	→ anti-positivist
normative ←	→ interpretive
normative ←	→ hermeneutics
hard ←	→ soft
(real) objective ←	→ subjective (false)
tangible ←	→ spiritual
<i>Human nature</i>	
determinist ←	→ voluntarist
<i>Methodology</i>	
nomothetic ←	→ idiographic

Discussion here has sketched out some of the key issues, definitions and terms for ontology, epistemology, and methodology. It has been suggested that each is informed by the previous, beginning with a framework of ideas that comes from the researcher's perspective. Combining this into a systematic unified approach to research can be described as architectonic, and this is appropriate for exploring social space that is both object and relationship focused. The nature of reality, the relationship between researcher and knowledge, and how to gain knowledge about the world has been explained. Implementing the framework of ideas, answering questions, and generating data will now be explained as research design, strategy and method.

3.4 Research strategy, design and method

In the context of post-graduate research, and particularly the presentation of findings in a thesis, methodology is linked to research strategy (Bryman, 2008: 21) and research design (Cohen et al., 2003: 75). Undertaking research therefore requires key decisions about strategy, design and method. However, Bryman (op cit: 30) points out that the difficulty with these words is that they can be interpreted to mean similar things. A thesaurus typically offers the following alternative nouns for each of these three words:

Strategy	plan, approach, policy, procedure, scheme
Design	plan, blueprint, draft, drawing, model, outline, scheme, sketch
Method	manner, approach, mode, modus, operandi, procedure, process, routine, style, system, technique.

Strategy and design are especially difficult to distinguish from each other in that both pertain to some sort of plan or scheme, although the latter also indicates the manifestation of something that might be a tangible object, whereas strategy and method both describe an approach or procedure that is intangible. It is therefore worth attempting to further clarify the difference between these three terms in relation to research.

What is research strategy? In social science, research strategy often utilises the dual terminology of quantitative research and qualitative research. Despite the familiarity and perceived usefulness of this, the distinction between the two is

contested among those who write about methodology – some are committed to it, but others such as Bryman (op cit: 21) think it outdated.

The adoption of a strategy relates closely to the way a research question is formulated. For example, Yin (2003: 5) relates strategy to three specific conditions: the kind of research question; the amount of control over events; and the balance of focus between historical and contemporary events. The strategies in Table 3-7 indicate the suitability of some approaches set against different kinds of research questions.

Table 3-7 Relevant situations for different research strategies

Source: Yin, 2003: 5 (original source COSMOS Corporation)

Strategy	<i>Form of research question</i>	<i>Requires Control of Behavioural Events?</i>	<i>Focuses on Contemporary Events?</i>
Experiment	how, why?	Yes	Yes
Survey	who, what, where, how many, how much?	No	Yes
Archival analysis	who, what, where, how many, how much?	No	Yes/No
History	how, why?	No	No
Case study	how, why?	No	Yes

However, the research literature is inconsistent and occasionally confusing in its explanation of research strategy (also referred to as strategy of inquiry). Bryman (op cit: 22) refers to research strategy as ‘general orientation to the conduct of social research’ distinctly meaning quantitative and qualitative ‘clusters’. Other writers are more specific and refer to a set of recognisable approaches that include survey, experiment, case study or ethnography. The terminology used to discuss these varies. See Table 3-8. For example, it is suggested by Bryman that grounded theory is a framework for qualitative data analysis, but there is disagreement about what grounded theory is amongst writers as some consider it a ‘distinct method or approach to qualitative research in its own right’. (ibid: 541). For others, it is for the generating of theory, and this contestation is apparent in the clear difference between an approach and a theory (ibid). ‘A grounded theory is one that is inductively derived from the phenomenon it represents’ (Strauss and Corbin, 1990: 23), referring to the resulting theory than the approach.

Table 3-8 Approaches to defining research strategies

Bryman (2008)	Quantitative; Qualitative; Mixed methods
Descombe (2007)	Survey; Experiment; Case study; Ethnography, Phenomenology; Grounded theory; Mixed methods; Action research.
Cohen, et al (2000)	Survey; Experiment; Case study; In-depth ethnography; Action research; Testing & assessment.
Creswell (2003)	Survey; Experiment; Case study; Ethnography; Phenomenology; Grounded theory; Narrative; Sequential; Concurrent; Transformative.
Yin (2003)	Survey; Experiment; Case study; Archival analysis; History.

The wider approach to research strategy focuses on quantitative, qualitative and mixed methods, but Bryman (op cit: 35–64) supplements this with an explanation of five different types of research design: experimental design; cross-sectional or survey design; longitudinal design; case study design; and comparative design. At a fundamental level the difference between qualitative and quantitative approaches is clear:

The word *qualitative* implies an emphasis on the qualities of entities and on processes and meanings that are not experimentally examined or measured (if measured at all) in terms of quantity, amount, intensity, or frequency. Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. Such researchers emphasise the value-laden nature of inquiry. They seek answers to questions that stress *how* social experience is created and given meaning. In contrast, quantitative studies emphasize the measurement and analysis of causal relationships between variables, not processes. Proponents of such studies claim that their work is done from within a value-free framework. (Denzin and Lincoln, 2000: 8)

The use, again, here of the word entities suggests the independent and distinct existence of something, or ‘somethings’, as an object, article, being or substance – and what can be identified as its qualities in terms of excellence or characteristics. Within the context of qualitative research, these social entities are likely to be well known to the researcher with situation specific frames of reference.

By contrast, quantitative research aspires to be more quantifiable, calculating and as objective as humanly possible, or as Bryman states ‘an objectivist conception of social reality’ (op cit: 140). Cause and effect is determined by changeable factors

rather than procedure and development. In terms of information gathering, quantitative research is broadly defined as ‘the collection of numerical data’, though it is much more than simply presenting numbers (ibid). That said, neither qualitative or quantitative research are distinguished as entirely independent approaches. In ‘good research’ they are often mutually supportive (Denscombe, 2007: 247). It appears that the distinction is best used in the way data is handled, reinforcing an idea that certain kinds of data lend themselves to certain kinds of analysis. Where the two approaches are seen as mutually beneficial, and are present in the same inquiry that involves collecting and analysing data from a number of perspectives, this is known as the mixed methods approach mentioned earlier. Creswell (2003: 13) attempts to link these wider approaches with more specific strategies. See Table 3-9.

Table 3-9 Alternative strategies of inquiry

Source: Creswell, 2003: 13

Quantitative	Qualitative	Mixed methods
Experimental designs	Narratives	Sequential
Non-experimental design, such as surveys	Phenomenologies	Concurrent
	Ethnographies	Transformative
	Grounded theory	
	Case study	

Illustrating Bryman’s point – that categorising quantitative and qualitative approaches to data collection is difficult – Denscombe (op cit: 7–34) presents the opportunity for survey as useful for both quantitative and qualitative analysis. An overview of specific research strategies by Denscombe is provided in appendix 6.7 outlining the main advantages and disadvantages of a range of commonly used strategies. These include *survey, case study, experiments, ethnography, phenomenology, grounded theory, mixed methods, and action research*. In addition to these, Creswell (2003: 15) lists *narrative, sequential, concurrent* and *transformative* approaches, whilst Cohen *et al* (2003: 77) mention *testing and assessment*. Yin (2003: 5) adds *archival analysis* and *history* to the list as distinct strategies. These seven strategies are worth further brief explanation.

At this point it is worth noting that research strategy differs from research method, and Bryman (op cit: 31) uses the example of *case study* to distinguish between the two. He argues that a case study is an approach, rather than a method. This contradicts the inclusion of case study by Cohen *et al* (op cit: 77) as a specific method – alongside biography – as well as strategy. In this situation, it

might be assumed to mean that small case studies undertaken by the researcher can result in useful data, or that perhaps case studies undertaken by others are useful sources of secondary research. That said, Bryman (op cit: 30) argues that as a strategy for research, case study research does not provide data. Research methods provide data, as part of case study research strategy, or other strategies.

Much is written about research strategy and much is confusing in use of terminology to the new researcher. Research strategy reflects to the nature of research questions, controlling factors, and temporal events. It is spoken about as quantitative or qualitative, though it appears that neither state is achievable and a formal or informal combination of the two appears the norm. More specific is reference to recognised approaches such as *survey*, *case study* or *ethnography*, amongst many others. Some of these are contested as either an approach or theory, such as *grounded theory*. Writers are selective about what they choose to feature as a variety of approaches, be it the generalised difference between *quantitative* and *qualitative*, or specific inclusion of particular strategies such as *narrative* (or *narrative analysis*, or *narratology*). The question might be asked how clear and reliable might a statement be about research design when there is ambiguity and difference in terminology? This will not be answered here, but confirms that the language of research is fallible.

Exploring research design is the next objective. *What is research design?*

Planning the collection and analysis of data is referred to as 'research design' (Bryman, op cit: 31). Creating a research design has been likened to the creation of a mandala (a detailed circular motif representing the universe in Hinduism and Buddhism) (Creswell, op cit: xix). It requires moving from great attention to detail to seeing a wider perspective. Research design is therefore often referred to as the development of a framework for collecting and analysing data (Bryman, op cit: 31. Creswell, op cit: 3). Inevitably, decisions are made about prioritising certain 'dimensions' of the research process, and the factors that contribute to this are summarised by Bryman in terms of the importance attached to:

- expressing causal connections between variables;
- generalizing to larger groups of individuals than those actually forming part of the investigation;
- understanding behaviour and the meaning of that behaviour in its specific social context;
- having a temporal (i.e. over time) appreciation of social phenomena and their interconnections.

(op cit)

Research design is not always clear and often undeclared in an empirical study, but it is supposedly there nevertheless (Yin, 2003: 19). The logical approach suggests that once a strategy is adopted, the investigation must then be planned. The plan must be logical, and aim to connect the initial research questions via empirical data to the conclusions, or as a scheme for getting from *here* (questions) to *there* (answers) using a number of steps (ibid: 19). A minimum of four problems must be dealt with in this process:

what questions to study,
 what data are relevant,
 what data to collect, and
 how to analyze the results.
 (ibid: 19, citing Philliber, Schwab, & Samsloss, 1980)

This research is not about experiment or measurement, quantities, amounts, intensities or frequencies. It is about socially constructed reality, dependent on the intimate relationship between researcher and what is studied. It is about how social experience is interpreted and created, through designed objects within a designed context. In this sense, the research design has the hallmark of a value-laden qualitative study. Qualitative research methods are the focus of attention moving forward, on the basis that, simply put, 'qualitative methods can give the intricate details of phenomena that are difficult to convey with quantitative methods' (Strauss and Corbin, 1990: 19).

Research design, for this Researcher, has been a relatively autonomous process, given the time spent working in design practice. However the kind of design practice undertaken was largely an implicit rather than explicit process, not often explained beyond the stages outlined in a typical design project proposal and estimate. Nevertheless, the process of designing in a practice context requires

great attention to detail and being able to see the wider perspective. Often this is done within a framework of ideas that the designer and client bring to the problem, and ‘data’ is collected and generated to inform the process. The success of this is dependent on asking questions in the client and supplier relationship, and having the kind of ‘reflective conversation with the situation’ spoken about by Donald Schön (1991: 76–104). ‘Methods’ are used in this process, as has been previously mentioned, but these are rarely discussed as research methods. Attention now turns to research method in an academic context.

What is research method? Approaches to research strategy are supplemented by specific research methods for generating data. Bryman (op cit: 31) describes a research method as a data collection technique. Denscombe (op cit: 133–226) discusses four of these in detail: questionnaires; interviews; observation; documents. Similarly Creswell (op cit: 184–188) identifies four basic types: observations; interviews; documents; and audiovisual material. He omits questionnaires but highlights the use of audiovisual materials that Denscombe includes in his definition of observation (op cit: 239). In the context of educational research Cohen *et al* (op cit: 77) identify a further five in a total listing of nine techniques: interviews; questionnaires; observation; tests; accounts; biographies and case studies; role playing; simulations; and personal constructs. A summary list is shown in Table 3-10. It is worth noting again at this point how some terms appear in name as research strategy and research method, case study being one example.

Table 3-10 Some research methods

Source: Creswell, 2003; Denscombe, 2007.

Questionnaires
Interviews
Observation
Documents
Audiovisual materials
Tests
Accounts
Biographies
Case studies
Role playing
Simulations
Personal constructs

3.5 Ontological and epistemological considerations

Before determining which of these may be useful to this research, it is helpful to further clarify the ontological and epistemological position of the Researcher.

Returning to the earlier stated research question, prominent are the words *manifold* and *manifest*. *The Oxford Dictionary of English* (2005) states that former means ‘many and various... forms or elements’. The latter means to be ‘clear or obvious to the eye’, ‘show’ and ‘demonstrate’. Manifest, from the Latin ‘manifestus’, is the source word for manifestation and is ‘an event, action, or object that clearly shows or embodies something abstract or theoretical’.

This research inquiry is about the scope and diversity of graphic design as urban design. The potential misinterpretation and personal interpretation of these terms means that any inquiry of this kind will be vulnerable to criticism. This is expected, and why the scope of inquiry extends beyond the fields of activity within which these subjects reside, as is demonstrated throughout the dissertation. Graphic design as urban design is associated with events, actions and objects, and as both adjective and noun, is uniquely placed as language to embrace all of the forms and elements that might be considered to reside in the topic. Critically, research methods must therefore appropriately reveal what is manifold and manifest.

When we use the terms graphic design and urban design, it refers to something abstract in the sense that these have been relatively unknown terms that are, perhaps, less noun and more adjective like. Rarely do we hear someone refer to a magazine as ‘informative graphic design’, or a fine public square as ‘good urban design’. It is more likely to be called an informative magazine, or a good public square in the way one might describe a specialist publication, or the South Bank complex on the River Thames in London. This research therefore sets out to manifest something that is essentially an abstract idea. Ways to do this will be explored in the following chapter.

The key research question emerged from four related questions that: (a) assumed a link between visual communication and the scale of urban geographic interests, with particular emphasis on the function of the urban environment; (b) speculated about overlapping interest between graphic designing and urban designing; (c) sought to identify the outcomes of an interdisciplinary domain; and (d) aspired to recognise best practice. Each of these alone could be the sole basis

for progressing the inquiry. None will be ignored, but to aid progress the scope and diversity of the relationship between graphic design and urban design has been prioritised. The intention therefore is to explore the potential for a preliminary framework for further considering the idea of graphic design as urban design, or as it may also be stated if this premise is accepted – graphic design in urban design.

Put another way, this intention borrows from Jon Lang's (2005) phrasing when he designates the products of city planning, landscape architecture, and architecture, in relation to the nature of urban design. In his book *Urban design: a typology of procedures and products*, the first of three chapter titles that make up part two of the book reads: 'The products of city planning and the nature of urban design'. The same follows for landscape architecture and architecture (ibid: 61–145). (Lang does not discuss civil engineering in the same way). In a similar sense, and to paraphrase Lang, this research seeks to identify **the products of graphic design and the nature of urban design**, within a paradigm that assumes both graphic design *as* urban design, and *in* urban design.

Lang depicts the present state of urban design in 'relation to the other design fields' (meaning architecture, landscape architecture, city planning and civil engineering) (ibid: 394). He represents this by using four independent squares, arranged around a square, to represent the other design fields. These are linked by a slightly smaller square that sits in the middle, linking the four other squares, but also occupying an independent space. This visual representation delineates the nature of urban design and the products of the four design fields it is said to be predominantly associated with.

In the same sense, a number of other design fields less concerned with the function of a city (but present within it) might be added to this rendition. For example, transport design, lighting design, or product design, to name some. The list of design products (and services) that might prefix the word design in the phrase 'the products of ... design and the nature of urban design' is extensive and supports the idea that much design can be thought of *as* urban design. Graphic design is one of those design fields. In Figure 3-3 the idea of graphic design as urban design is portrayed on the left. This illustrates how graphic design is added as a fifth frame to Lang's diagram, and also overlaps with the territory of urban design. As with the four design fields that Lang foregrounds – architecture,

landscape architecture, city planning and civil engineering – this suggests that graphic design has its own concerns as well as some that directly overlap with urban design. Graphic design can be thought of *as* urban design, in the same sense that it can be thought of as book design, as website design, or as sign design, and others. Still, when any of these other design fields are determined as more prominent, the adverb may change from the conjunction *as* to the preposition *in*. The former *compares* graphic design with urban design whereas the latter *locates* graphic design within urban design. The idea of graphic design *in* urban design is portrayed on the right in Figure 3-3.

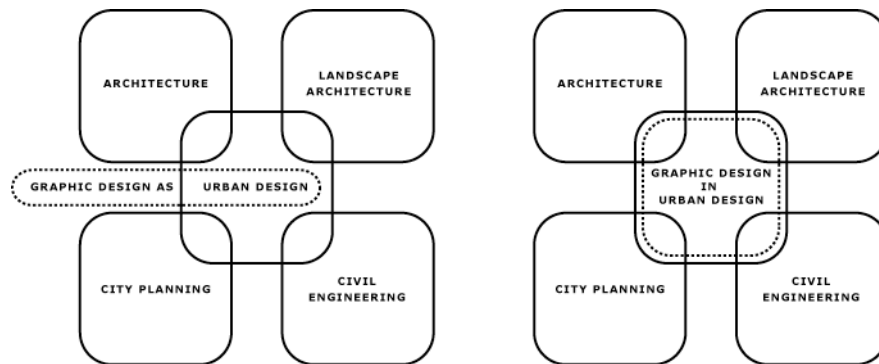


Figure 3-3 Graphic design as and in urban design

Source: after Lang, 2005: 394

Lang states that '[a]ll cities have a design. It is created by thousands of individual design decisions within a framework of capital investment decisions and within a legal code' (ibid: 32). Except, not all of these decisions, if considered critically from the emancipatory perspective of human interest (Russell, 2010: 46) necessarily reside within architecture, landscape architecture, city planning or civil engineering.

This research is also concerned with graphic design *in* urban design, but in order to fully appreciate this possibility one must first acknowledge graphic design *as* urban design, and recognise that urban design concerns are absent, or at very least unknown, in much graphic design decision-making. This research seeks to clarify this situation.

Research tradition generally assumes that a researcher adopts an approach to research strategy, methodology, methods and analysis, from those discussed in the literature on research. Some of these approaches have been discussed here and the focus has turned towards qualitative research. In qualitative research Silverman (2005) advises that the researcher asks two questions:

- Exactly what methods do we have in mind (e.g. interviews, focus groups, observation, texts, audio or video recording)?
- In what ways are these methods relevant to our research problem and to our model of how the world is put together?

(ibid: 6)

In this research, because it is concerned with scope and diversity, the subject fits with a number of research strategies. Using Denscombe's list of eight earlier noted strategies, most of these could be adopted: survey, case study, ethnography, phenomenology, grounded theory, mixed methods or action research. The possible exception is experiments, due to the prevalence in this research of imprecise terminology, 'soft' subject matter and focus on 'real world' practical settings. Experimentation as an approach might be useful for determining future comparative approaches that are situated in the same practice setting. Philosophising about graphic design as and in urban design requires more than the consideration of the idea as an abstract concept, if the research aspires to a level of philosophical discourse. It must also be constituted on 'observation and experience, inner and outer' that goes beyond artificial experimentation (Schopenhauer, [1850] 2004: 81). Many of the research strategies outlined by Denscombe (op cit) incorporate observation, such as survey or ethnography. But experience appears rooted more in phenomenology or action research. Whereas grounded theory appears to allow for a flexibility of approach, and according to Denscombe (ibid: 104) is suitable for 'new topics and new ideas'. With this in mind, it is worth considering grounded theory in more detail.

This research is more inductive than deductive, in that observation and findings have resulted in the development of theory, derived from open-ended questions. It closely resembles a grounded theory approach. Grounded theory is in part defined by an adaptable approach that builds theory from data. Henwood and Pidgeon (2006: 344–349) state this as clearly relevant to 'real world problems

and phenomena' as researchers are able to make use of their disciplinary knowledge to develop refined research questions. They suggest the following observations when reporting on grounded theory process:

- At the outset of the account elucidate the context of the research
 - State how sampling decisions were initially made. Did they change over time as the analysis developed?
 - Document the process of analysis in as transparent a way as possible.
 - Fully describe and/or define key categories.
 - What negative examples are there that do not fit the emergent theory?
 - Try to reflect the complexity of the account (however messy this might seem).
 - Use diagrammatic, network or tabulated representations to summarise linkages and key concepts.
 - Document whether respondent validation was attempted, and to what effect.
 - Document the analytic and personal commitments of the researcher (reflexivity).
- (ibid: 361)

In particular, this research has attempted to contextualise research questions as they have emerged. The process has, in part; been documented in symposium and conference papers, attempted to be categorical in description, used diagrams to explain important relationships as they have emerged, and narrated the personal bias of the Researcher. Writers in the field of psychology, such as Charmaz and Henwood (2008) further explain this approach:

Grounded theory methods consist of a systematic inductive, comparative, and interactive approach to inquiry with several key strategies for conducting inquiry (Charmaz, 2006a). Grounded theorists integrate and streamline data collection analysis through making systematic comparisons throughout inquiry by interacting with their data and emergent analyses. We start analysing data from the beginning of our data collection and begin building inductive analyses but do not stop with inductive logic. Rather, the logic of grounded theory requires comparisons and checks that enable us to shape our emerging theoretical ideas about the data while keeping these ideas grounded in data. We gather data, compare them, remain open to all possible theoretical understandings of the data, and develop tentative interpretations about these data through our codes and nascent

categories. Then go back to the field to gather more data to check and refine our categories. (2008: 240–241)

In this short explanation there is an intensity of streamlining, analysis, comparison, checking, gathering, theorising, interpretation, interaction and grounding of data. The process is visualised as a diagram by Henwood & Pidgeon (op cit: 348). See Figure 3-4. It is structured through five key project phases stages: aims and questions; data preparation; initial analysis; core analysis; and outcomes. These appear to happen through multiple interacting channels rather than through a linear process. The forward thrust of this is thus refined by continuous revisions to the initial research questions through open coding and memo writing, which also stimulates the refinement of data collection. Indexing, modelling and theorising feed back into the coding and writing process, and in turn provoke more data collection alongside theoretical sampling. Out of this emerges the key concepts, definitions, memos, relationships and models, and theoretical accounts.

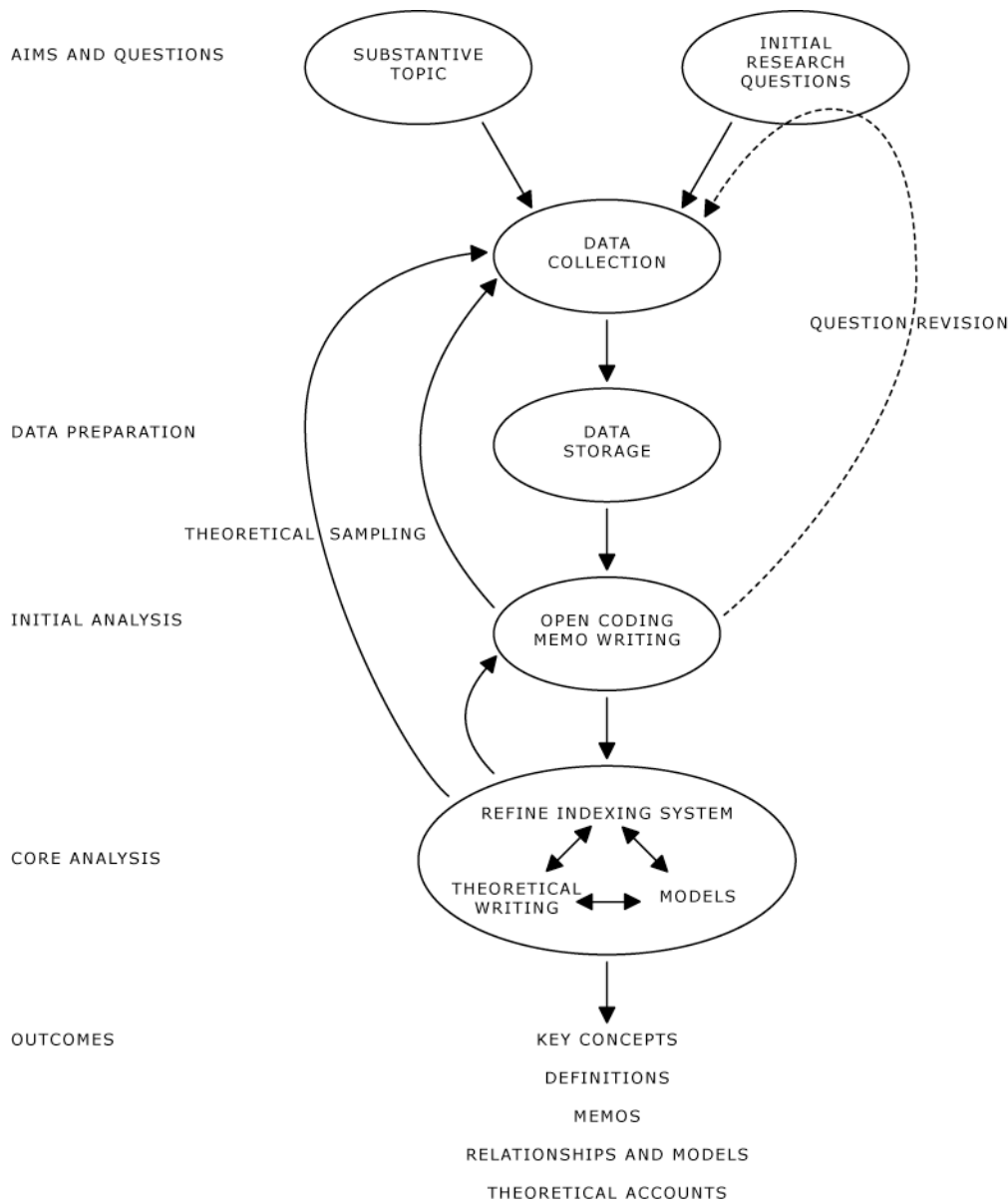


Figure 3-4 Flow of work in grounded theory studies

Source: Henwood & Pidgeon (2006) (redrawn)

It seems that of fundamental importance in grounded theory is the continuous data collection process. This is initially shaped by the choice of topic, but also continuous revision of initial research questions, data storage, coding and memo writing and theoretical sampling. Data collection in qualitative research therefore needs some further clarification.

Silverman (2005: 153–154) names five different kinds of data: interviews, field notes, texts, visual data, transcripts. Field notes, texts, and visual data are important in this inquiry. The latter is an expansive category that includes lens-based media such as video or photography, or what Silverman calls ‘naturally occurring observational data’ (op cit: 162–163, citing Emmison and Smith, 2000), such as street signs and advertisements. ‘Naturally occurring data’ is data that helps us understand the role of everyday visual elements in human interaction with their environment, such as a bus sign (ibid: 246–248).

Visual data is the primary data form in this research and is now explored in detail. There are two distinct kinds recognised in qualitative research:

- artefacts (e.g. photographs, movies, advertisements and cartoons)
- how people actually use what they see to navigate the world (e.g. as pedestrians walking on busy city streets, as employees carrying out tasks by looking at the screens of PCs, as museum goers gazing at exhibits or actually looking at the kinds of artefacts listed above).

(Silverman, 2006: 243–244).

Understanding the first of these is straightforward, and we can assume that as media they contain ‘images’ (still and moving) that relate to research questions. (Artefact – or artifact as is the American spelling – here and throughout this thesis, means man-made object rather than the abstract idea of ‘something’ made, such as the idea of social order, as noted in the work of French philosopher and mathematician René Descartes (Barnard, 2001: 34)). Sociologists have used this kind of visual data, although with irregularity until more recently (2006: 244). Bryman (op cit: 424) goes as far as saying that the recent interest and use of visual materials in qualitative research is a ‘striking development’. Sociologists also recognise what is referred to by some as ‘documents of life’ (Macionis and Plummer, 2002: 53). This is visual data – diaries, letters, photos, video diaries, memos, graffiti, memoirs, notes, inscriptions, films, paintings – all of which is formed into six categories:

1. Life stories;
 2. Diaries;
 3. ‘Logs’ and ‘time budgets’;
 4. Letters;
 5. Photographs;
 6. Film and video.
- (ibid: 53–54)

The second kind of visual data, more concerned with how people interact with the world, requires some further elaboration as it is not clear exactly what form the data takes, and if it is live or recorded. It is seemingly less about artefact as image, and more about the experience of artefact as object, as 'place', 'setting' or an environment as a 'cultural product' (Silverman, 2006: 244, citing Emmison 2004).

Inquiry that uses visual representation as central to environmental behaviour is also known 'interaction analysis' (ibid). Yet, the apparent relationship between the individual and the artefact in this visual method, although clearly something observed as visual, is unclear as visual data, unless we accept that a live event (as opposed to recorded event) is also data. This discussion about 'visual data', visual methods, visual elements, visual materials, and visual representation, leads to the consideration of two phrases that must be important when discussing the visual aspect of data collection and analysis and what is referred to in the literature as 'visual research'. These are 'visual culture' and 'visual ethnography' and will now be introduced in more detail.

3.6 Visual culture and visual ethnography

Visual culture and visual ethnography appear to be emerging ideas at the turn of the millennium. The former is of interest here because practitioners of art and design are responsible for some of the artefacts that produce visual culture, and subsequently provide sources of data. Through the production of artefacts, in the context of interacting with environments, artists and designers 'relate to markets, publics and audiences' (Barnard, 1998: 8). This is relevant because qualitative researchers, particularly social scientists who practice ethnography as a method, have substantial interest in visual materials both as a supplement to data collection and as an independent object of interest (Bryman, 2008: 433). In addition, contemporary ethnographers who subsume the visual in their research believe they have something to offer artists, seemingly because of their belief that subjectivity is central to the production of knowledge (Pink, 2007: 1).

Across the social sciences and humanities – particularly social anthropology, sociology, and geography – visual research that involves 'practical work' is increasingly discussed and referred to as 'visual methodologies' (ibid, 2007: 2).

Gillian Rose's (2007) book *Visual methodologies: an introduction to the interpretation of visual materials*, written in a geographic context, is about the 'study and interpretation of visual culture', and emphasises the link between visual culture and visual ethnography.

It states the obvious to say the common element in these phrases is the 'visual', but there are subtle and important differences that writers on 'visual culture' historically debate, particularly between the meaning of the words *sight*, *vision*, *visual* and *visuality*. Attempting to distinguish between vision and visuality, Rose (op cit: 2) characterizes vision as mainly 'physiological', whereas visuality is about the ways vision is 'culturally constructed', or what Hal Foster designates as the 'social fact' of visuality (Mirzoeff, 2009: 89). At a simple level, sight is construed as the process central to discussions about looking, gazing, observing, or surveying, but some think it as predominantly physiological or neurological. That said, in discussions about visual culture sight is singular and scant. Rather, 'vision', more than sight, is the plural sensual psychological experience in the conscious and unconscious mind, or as Mirzoeff (op cit: 4–5) puts it, a 'mixed-mode of perception'. Even so, it is argued that vision is not the 'terrain of visual culture until vision becomes visuality ... that which renders the process of History viable to power' (op cit: 5). These subtle but seemingly clear distinctions require a return to a core issue here about what visual culture is. Clearly it is complex and requires clarification.

What is visual culture? Malcolm Barnard addresses this question at the beginning his book *Approaches to understanding visual culture* (2001: 1) having raised the same question in his earlier book *Art, design and visual culture* (1998). Then, he described visual culture as a 'notion' that cannot be understood or explained simply by analysing 'visual' and 'culture' separately. The two must be considered together and in relation to each other. His conclusion was that an explanation of visual culture is made up of different and distinct notions that are culturally specific and consisting of 'different conceptions of the visual and the cultural' (ibid: 30).

Later, Barnard (2001) offers an argument that visual culture is better explained and understood as social science than natural science. Using the metaphor of blinking and winking, borrowed from Gilbert Ryle, this is respectively natural and

unnatural (ibid: 19–40). ‘Blinking is the object of natural science while winking is the object of social science. Blinking may be explained by biology, physiology and chemistry, for example. Winking is more appropriately understood by disciplines like psychology, philosophy ... and anthropology’ (ibid: 28).

An abundance of books chart the rise of interest in visual culture since the 1970s, making it a fluctuating visual field (ibid: 1) that studies what Barnard describes as the ‘social and cultural construction of visual experience’ manifest in the ‘institutions, objects, practices, values and beliefs’ that are ‘visually produced, reproduced and contested’ in society (ibid: 197). In keeping with this social dimension, visual culture takes an interest in mundane things that are not necessarily the product of formally trained artists and designers but might be. It aspires to offer an alternative interdisciplinary approach to art history and design history, especially the various form giving activities that result from ‘fashion, furniture design, photography and graphic design, ... painting, car design and film’ (ibid: 198). These closely resemble core subjects in formal art and design higher education in the UK.

The study of visual culture, and therefore explanations and understandings of visual culture is more aligned with social (or human) science than natural science, and the example of blinking and winking suggest it extends beyond artefacts. In this sense the scope is too wide for this research. But Barnard (ibid: 29–38) outlines how visual culture can be explained and understood through two traditions of inquiry: phenomenology and structuralism. More specifically he explains this as the ‘hermeneutic tradition’ and ‘structural tradition’.

The Penguin Dictionary of Sociology describes **hermeneutics** as ‘the theory and method of interpreting meaningful human action’ (Abercrombie et al., 1988: 112) and derives from the many interpretations of and in Bibles when they were hand-written by scribes. Hermeneutics is about the search for authenticity over interpretation. But hermeneutics does not appear in name as a listing in some dictionaries such as the Oxford University Press *A Dictionary of Sociology* (Marshall, 1998). There, it is included under ‘interpretation, interpretive sociology’ as the ‘science of interpretation’ (ibid: 327). It does, however, appear in *The Oxford dictionary of philosophy*, described as the ‘method of interpretation first of texts, and secondly of the whole social, historical and psychological world’

(Blackburn, 1996: 172) differentiated from objective scientific method. The second part confirms why hermeneutics is well suited to the study of visual culture. It is interested in the individual perspective—the way individuals produce visual culture from their social, historical and psychological perspective. Visual culture, therefore, can be said to be the result of observable explicit relations.

The **structural** tradition, or structuralism, is also a sociological term but places society before individuals. Simply put, it is a ‘sociological perspective based on the concept of social structure’, but more specifically structuralism names ‘unobservable’ or ‘underlying’ social structures that ‘generate observable social phenomena’ (Abercrombie et al., 1988: 245). It prioritises social structure over social action even when social reality oscillates (Marshall, 1998: 646). ‘The common feature of the structuralist position is the belief that phenomena of human life are not intelligible except through their interrelations. These relations constitute a structure ...’ (Blackburn, 1996: 364–365).

Figure 3-5 attempts to capture these two different approaches in diagrammatic form. On the left side, the action of the individual (A) and the manifestation of the visible artefact (hexagon) reflect the social, historical and psychological interpretation of the creator. Conversely, on the right side, underlying social structures (S) generate the artefact through their interrelations, but these are invisible, or at least out of view, and beyond that which can be comprehended through direct observation.

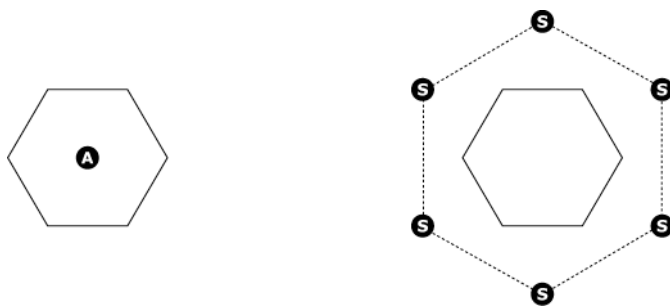


Figure 3-5 Hermeneutic & structural approaches to visual culture

Visual culture as social science can be explained and understood using the methods associated with phenomenology and structuralism, but this is clearly dependent on how the research questions guide the data collection process and identification of appropriate visual data. Some ethnographic researchers have

adopted the phrase visual ethnography to explain their interest in gathering and using visual data in their research, and this approach is considered valuable for its potential and overlap with the practical methods used by artists and designers.

Before a more detailed discussion about visual ethnography, it is worth a reminder about what **ethnography** is. It can comprise of direct observation into people and places through empirical research. Theory development and testing evolve from intricate, subtle, deep and detailed inquiry with an emphasis on holistic explanations about processes and relationships that is distinct. It can be culturally specific and the researcher is reflective of their relationship to the research, and the natural setting within which the research happens. The downside to the approach, according to Bryman (2008: 698) is that the 'realist' dimension that encourages independent non-sensory speculation, can seemingly be at odds with the social construction of concepts in 'relativism' (Marshall, 1998: 134). At times, it may be incoherent and lack analytical, critical and theoretical accounts, perhaps more descriptive in outcome. Furthermore, the researcher's familiarity with the topic may lead to oversight simply through a lack of critical judgement. Ethnography's origin lies in social anthropology and the detailed reporting about peoples or cultures. The link between ethnography and visual culture is therefore implicit.

It is reasonable to assume that ethnographic questions guide the collection and analysis of visual data in visual ethnography. However, visual materials used in the visual ethnographic process differ in two ways. The first exist already and might take the form of 'people's collections of photographs and images in newspapers and magazines' (Bryman, 2008: 424). These are described by Bryman as '*extant*' visual materials, meaning they already exist (op cit original italics). Alternatively, images are generated in response to the research, called 'research-driven' images. These are used to develop discussion, as an *aide-mémoire* or independent data sources outside of supplementing the written notes of the researcher.

The predominant way that visual images are used is a 'realist' approach, utilising them as factual information for further interpretation by the ethnographer. This contrasts with what is called a 'reflexive' approach whereby the generation of images, particularly photographs, is a sensitised approach affected by the

researcher's 'age, gender, background, and academic proclivities' (ibid: 427), as well as their collaborators. This two-fold distinction between **realist** and **reflexive** frameworks, made by Bryman, is with reference to the work of Sarah Pink who since the millennium has written about the work of visual ethnographers in *Doing visual ethnography* (2007). She argues that 'realist uses of the visual in ethnography should be qualified by a reflexive awareness of the intentions behind such uses and their limits as regards the representation of truth' (ibid: 33).

This realist and reflexive approach is demonstrated by Bryman in a focused research discussion about what he calls 'Disneyization' (2008: 425). He explains this as an interest in the influence of Disney theme parks on modern society and economy. Similarly, the term 'McDonaldization' by George Ritzer describes the domination of sociocultural processes based on the fast-food restaurant culture (Steger, 2003: 71). Bryman reflects on his book *Disneyization* in 2004 in which coincidentally he uses several photographs of a themed McDonald's restaurants in Chicago to illustrate what he was describing in words. These photographs helped him recall the context, as well as the restaurant, with its 'rock 'n' roll' theme. These photographs were taken whilst attending an academic conference in Chicago, which provided the 'opportunity' to specifically take photographs of the restaurant exterior and interior. In this example photography appears to perform more than a mere 'recording method and support for a word-based discipline' (Pink, 2007: 13). It is stimulating the memory about subject matter and its context, and illustrating this to others. In this sense the visual is forming part of 'human imaginations and conversations' and playing a 'central role in human discourse' according to Pink (ibid: 32).

Imagination is thus part of the experience of using visual data and must therefore be understood for the benefit of this research. It is to state the obvious that **imagination** happens in the head but it is integral to vision, visual and visuality. It contributes to understanding 'creativity' (Gregory, 1987: 171), 'insight, vision and originality', relating to 'memory, perception and invention' (Brown et al., 2010a: 4–5). Pinker argues it is a mental faculty alongside 'language', 'walking', 'grasping', and 'planning' – all collectively dependent on vision providing a descriptive component to the brain from 'retinal depiction' (1997: 214). Hence, visual imagination is based on received images present in the mind. Imagination

is a requirement for *transdisciplinary* thinking, incorporating ‘personal’, ‘local’, ‘strategic’, and ‘specialized’ knowledge. For example, individuals who wish to change the society within which they live [or are born into] will use imagination as a central component in the process (Brown et al., 2010a: 4–5). It is critical for creating the ‘collage’ (Tversky, 1993) of visual relationships that link human (internal) and environmental (external) factors in the way depicted earlier in Figure 2-4. New relationships happen through what Immanuel Kant explains as imaginative synthesis, a ‘blind but indispensable function of the soul’ (2007 [1781]: 104).

This discussion about visual research might have begun with a statement about the obviousness of the taken for granted sensory act of seeing. Christopher J Pole begins a discussion about *Visual research: potential and overview* (2004) by declaring that to

‘... address issues relating to the visual image as the medium through which we might come to know the social world, we are in a sense, merely drawing on something that most of us do and take for granted during all of our waking hours’ (Pole, 2004: 1).

However he is quick to point out that although the sense of sight is used to render the world around us, this is not usually with the intention of giving rise to data. That data, say as photographic image, may be of the ‘everyday’, rather than an ‘everyday’ image. The distinction – between the photograph that depicts the everyday as conscious data, and a photograph that is an everyday image unconsciously taken for one’s own purpose and private use – is important to this research investigation because as well as consuming everyday images of real life scenarios that are not mediated, we consume mediated images such as photographs in a newspaper. Photographs of the everyday in a newspaper are one kind of everyday photograph in the public domain, and mostly the consequence of a professional photography or amateur photography. Another kind will be the archived family photograph that is in the private domain and generated by people who are neither professional or amateur photographers. Although these images are not taken as conscious attempts to realise research data, but as a desire to capture the moment, Harrison (2004: 25) notes that these images may have historical relevance to others. But regardless of whether images are taken to generate research data or for personal pleasure ...

individuals will at any particular time occupy a certain kind of relationship to production processes and to any image or set of images. Meanings of photographs will change, and the process of memory, history making, narration and self-actualisation, are on-going features of personal and social relations with photography. (ibid)

More can be said about visual research, visual data, visual culture and visual ethnography. In fact, there appears to be a desire in the qualitative research community to expand this aspect of research, and one can only imagine how this might develop with more involvement from artists and designers whose domain is predominantly visual. This appears to be encouraged by visual ethnographers such as some of those mentioned earlier, and it will be interesting to see how much multidisciplinary practices shape future research agendas that include visual research in social science. For example, as well as sociologists, geographers make critical use 'images' in their research as charts, graphs and maps, even though some prefer not to refer to these as images, due to implications of superficiality associated with the way some images 'refract, reflect and alter the world' (Crang, 2005a: 78). This view appears to be challenged as some human geographers, such as Mike Crang (ibid) explore the relationship between image and reality. He is interested in exploring a dependency on the visual as an aspect of perception or orientation in relation to scale and location. One visual example he uses is three versions that show the development of the London Underground map between 1908 and 1933, when the map moved from a close representation of the actual topography of London to a diagrammatic approach that aspired to 'clarity' rather than the actual locations of stations in relation to each other in the city. Crang's interest appears to demonstrate a willingness for some social science subjects to embrace the 'image' rather be suspicious of it.

Denzin and Lincoln invite qualitative researchers to explore new ways of knowing when they state:

We need to learn how to experiment with visual (and nonvisual) ways of thinking. We need to develop a critical, visual sensibility, a sensibility that will allow us to bring the gendered material world into play in critically different ways. We need to interrogate critically the hyperlogics of cyberspace and its virtual realities. We also need to understand more fully the rules and methods for establishing truth that hold these worlds together. (Denzin and Lincoln, 2000: 636)

Following this call, it is reasonable to suggest that artists and designers have something to offer to this agenda. Their training is almost entirely focused on

developing a critical, visual sensibility in different ways. With this in mind, the focus must now turn to the use of visual data in this research.

It will be clear now that photographs provide the most significant source of visual data in this research inquiry. These in part have been taken from the literature and in this sense the research utilises 'extant' images. However, the majority of images that inform the research are 'research driven' and have been taken in a number of settings. A small number of these have been used throughout the text either to illustrate or support issues discussed in the text. Other kinds of visual data are also found in the pages of this thesis. These include typefaces, pictographs, facsimiles of postcards, stills from a DVD, diagrams, sketches, digitally manipulated images. Such variety prompts a closing discussion in this chapter about the what James Elkins (1999) has called *The domain of images*.

3.7 Towards graphic method in adaptive theory

The word 'image' can be take to mean a number of things. A dictionary listing includes words such as 'representation' (e.g. 'sculpture' or 'painting'), 'visible impression' (e.g. lens-based such as that generated by a 'camera', 'telescope', 'microscope', or 'video screen'), 'optical appearance' (e.g. that produced by a 'mirror' or 'refracted through a lens') (Soanes and Stevenson, 2005). Image is also known in mathematics as a mapping between points and sets. Less tangible is its interpretation of a 'mental representation or idea', or as a 'person or thing that closely resembles another', a 'likeness', or 'idol' in the biblical sense. These tend to be observed meanings, or perhaps images that are received by the viewer. It can also be that image is consciously given, displayed, exhibited or staged by a person or organisation. Finally, it can be a 'simile' or 'metaphor'. Image has multiple meaning, and is therefore an ambiguous word.

In his book *The domain of images* (1999) Elkins takes an extensive look at the meaning and fundamental use of 'pictures, writing, and notation'. His argument is that science technology, commerce, medicine, music, and archaeology produce a 'vast array' of visual images that are not art in the same sense that recognition is given to the products of art, such as 'painting, drawing, photography, and printmaking' (ibid: ix). Elkins mention of these denotes the close relation to art and his work at the School of the Art Institute of Chicago in art history, but in fact he points out that the largest set of objects under his consideration belong to the

term 'graphism' (ibid: 82). However, of the four examples of art, only photography is likely to feature in sociological discussion about working with visual data. Of interest to this research is Elkins work in the same book on the classification of images, as a contributing factor to what was earlier called for by Denzin and Lincoln as a need to experiment with visual ways of thinking (ibid). It is worth reiterating that Elkins is interested in what he calls 'nonart' images.

Taking a practical look at the difficulty of classification immediately prompts Elkins to recognise that the field of visual images is vast but without a 'working classification' connections between images and problems are unrecognisable. In particular this is difficult for 'art-historical methodology' and 'visual theory' (Elkins, 1999: 82) and perhaps also limiting for the potential of visual sociology and the social sciences in general.

Elkins first makes the case for up to three and as many as seven domains of images. One domain is an undivided 'single conceptual field'; two domains divides between 'words and images'; three between 'pictures, writing and notation'; and as many as seven frames that derive from the 'triangulation' of pictures, writing and notation (ibid: 82). In the first of these Elkins critically examines the appropriateness of 'image ... visual artifact ... graphism ... text ... writing' – none being considered satisfactory in a cross disciplinary context. For example, image is explained as being propagandist and scientific in discussion about 'light-rays'; visual artifact is too object focused and overlooks meaning; text is used in literary and visual theory and 'sounds awkward' when it is said of pictures. As pointed out by Elkins (op cit: 82–83) even though text 'is meant as a neutral term, it is not — as evidenced by the fact that (written) texts do not get called pictures or images. He persists with the use of image and visual 'artifact' to name a single domain, but when talking about the totality of 'picture, written letter, and piece of writing he favours the Greek *gramma* seemingly just ahead of the verb *graphein*, meaning 'write, draw, or scratch' (ibid).

His discussion about two domains is centred on the 'word–image' mix of letters and writing, with iconic signs and representational marks. Caution is stressed because of an 'ill-understood' sense of difference between the two, found across the various disciplines. He asks 'What single subject of inquiry could possibly do

justice to these different constructions?’ (ibid: 84). The following list makes the point:

word	image
language	picture
language	art
verbal	visual
<i>poesis</i>	<i>pictura</i>
<i>inscriptio</i>	<i>figura</i>
denotative	connotative
code	uncoded image
semiotic	nonsemiotic
narrable	inennarable
written text	depictive text
writing	painting
discursive field	figural field
<i>discours</i>	<i>figure</i>
oppositional	continuous
digital	analog
structured	unstructured
systematic	non-systematic
Meaning	Being
saying	showing
truth content	sense
proposition	“silence”
propositional	nonpropositional
disjoint	nondisjoint
attenuated	replete

(Elkins, 1999: 84, original italics)

A triad of domains integrates picture, writing and notation (or symbol), (as in the case for the *grammae* that is a map). Elkins spends more time explaining this option than his arguments for one and two domains, venturing into the use of ‘mathematical depictions’ as an integral part of developing his thinking and exploration of the various intersections and overlaps that occur when combining three domains. To enhance the discussion, he makes use of diagrams. His first diagram employs the use of the same visual device of an equilateral triangle that is ‘seen’ in Gaetano Kanizsa’s ‘famous’ illusory figure (Gregory, 1987: 245). See Figure 3-6.

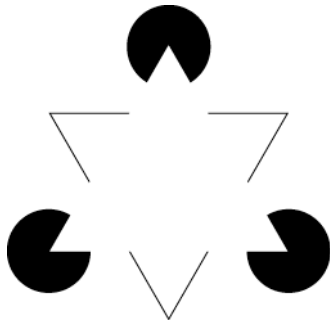


Figure 3-6 Kanizsa's 'famous' illusory pattern

Source: Gregory, 1987: 245

Four of Elkins diagrams are combined here Figure 3-7. In the first, Elkins explores the idea of an open internal space with access to and from the three domains, and a central fourth space. This space emerges from the traditional venn diagram configuration that is seen in the second diagram, which has seven distinct areas within the overall delineation of spaces. Then, a third diagram utilises a continuous line to dissolve the idea of four additional areas of 'significant overlap' into four basic 'organic shapes' that is more 'harmonious' and bound by one continuous loop (Elkins, 1999: 86). A fourth diagram is described as using 'Borromean rings' and serves to illustrate the idea that 'there is no center to any of the fields, and that the existence of a field is a matter of its circumference ... rather than the empty space it encloses' (ibid).

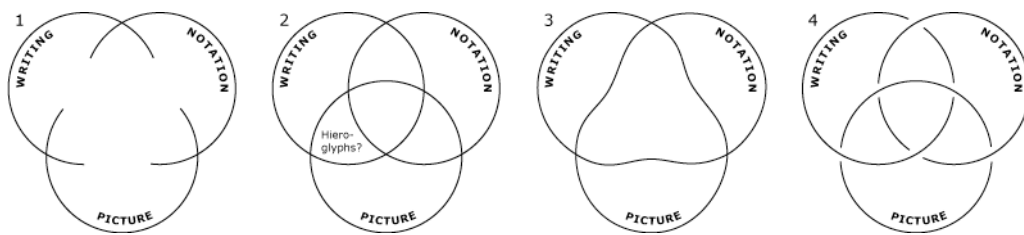


Figure 3-7 Four diagrammatic variations of the three domains of image

Source: Elkins 1999: 85–86 (shown here redrawn, reconfigured and numbered, as a group of four)

Two examples of this idea are given by Elkins illustrating the interlocking rings (ibid: 86–87) from a contemporary and historical context. One is the Olympic Games symbol, and a second the 'knotted rings' of the renaissance *impresa* for the Medici family shown in part in Figure 3-9 below. (The Italian word '*impresa*'

dates back to 1588, and is ‘a device with a motto used in the 16th and 17th centuries’ (www.merriam-webster.com: accessed Friday 10 September 2010)). In the fourth example of interlocking rings shown above, the rings are inseparable whether there are two or three rings, as is the case with a chain link. This is a permanent coupling. In this there is no absolute reliance on a tripartite relationship – the same device can be used for as few as two rings or an infinite number of rings. In the example of the *impresa*, there is a subtle but significant difference in the way the rings are linked. The configuration of the rings is such that the meaning is different than that of an inseparable interlocking structure upon which rings may be continually added. In the *impresa*, if one ring is removed the remaining two are not connected.



Figure 3-8 The renaissance *impresa* for the Medici family

Source: Elkins, 1999: 86–87

Clive Richards (1984: 6/17) explains this configuration in a thirteenth century diagram of the Holy Trinity, representing ‘the unity and indivisibility’ or ‘the three in one’ of God the Father, God the Son and God the Holy Spirit. ‘The Trinity’ or ‘Holy Trinity’ (as it is often referred to) will be found in Eastern and Western Churches as a visual metaphor for the central belief of the Church. It symbolises God as ‘one substance’ and at the same time ‘three distinct, separate persons: God the Father, God the Son, and God the Holy Spirit.’ (Taylor, 2003: 6) Richards observes:

If one studies the three hoops it will be clear that they are all interlocked, and a physical model could not be taken apart without breaking one of them. What is important in that they are interwoven in such a way that if one is removed, the remaining two cease to be linked. We are to assume

that in a similar way the trinity is at the same time both three and one and can never be thought of, for example, as two plus one. (ibid)

A simplified interpretation of the Trinity is seen in Figure 3-9, similar to the simplicity of the diagrams used by Elkins in Figure 3-7. This may appropriately represent a domain of images made up of three interdependent elements that offer more than an accumulation implied by adding and subtracting rings linked to one and another. In the example of a map given by Elkins, if the writing, notation or picture element is removed, it may still function in part through the interlinked arrangement of two elements, it may even still be considered a map, but it is perhaps not functioning as an ‘image’ of a map in totality.



Figure 3-9 Diagrammatic interpretation of the Holy Trinity

Elkins (ibid: 87) calls this ‘playful’ approach to working with diagrams ‘diagrammatic fantasies’ and though he acknowledges that these depictions may be ‘too schematic, or there is something inherently wrong with using a diagram to represent the tripartite division’, he then justifies this by explaining how such use of diagrams has helped structure his thinking. ‘A diagrammatic fantasy is also a rational inquiry, because we might learn as much by what the diagrams suggest as by applying pictorial and linguistic evidence.’ His process appears to be part of his learning experience and he sums this up by stating ‘[t]hinking about images means being led into certain thoughts by images’. (ibid)

What is also significant about the way Elkins uses diagrams as *graphic method*, is that he appears to use the process to determine the content for part two of his book, when, based on the seven ‘spaces’ that are marked out in a venn diagram of three circles, he then explores seven distinct domains of image as an expansion of his exploration of the two- and three-part sectioning. In doing so, he

triangulates writing, picture, and notation in order to frame seven kinds of images’ moving ‘gradually from “pure writing,” contaminated only by typography or calligraphy, through increasingly pictorial forms (for

instance, pictographic scripts) toward the idea of a pure picture. The writing dissolves, leaving a purely visual residue ... [to] begin again with partnerships of writing and pictures and move through increasingly complex aggregates of writing, pictures and notation—leading eventually to the question of whether there might be something like pure notation. In that sequence, both writing and pictures burn away, leaving only notation.’ (ibid: 89–90)

This does not quite map onto the tripartite venn diagram as too much of his categories appear to rest between writing and pictures, but evidence suggests the process stimulated his thinking. Reading these categorisations, the use of language suggests more opportunity for explanation but this will not be done here beyond Elkins (op cit: 253–261) glossary listing for seven categories.

Allographs (or Allomorph)

A variant of a morpheme that leaves its [sic] syntactic function intact. Calligraphy, typography, and layout produce allomorphic alterations of characters and entire scripts.

Semasiographs

- (1) A sign that does not denote sounds in spoken language.
- (2) In Geoffrey Sampson’s definition, a sign that denotes a meaningful element, as opposed to an element of meaning.

Pseudowriting

- (1) Any set of disjunct signs that appears to be writing but cannot function as a record of a language or a transcript of a full system of writing.
- (2) In palaeography, an indecipherable scribbling imitation of cursive script.

Subgraphemics

The study of images whose signs are disjoint but lack formatting or syntactic order.

Hypographemics

The study of images comprised of nondisjoint signs: either apparently multiple signs (as in some petroglyphs), or apparently single (as in potters’ marks).

Emblemata

Any picture accompanied by a text—for example, a book illustration together with its caption. In sixteenth- through eighteenth-century usage, an emblem is comprised of a *pictura*, an *inscriptio*, and a *subscriptio*.

Schemata

- (1) Images with pictures, writing and notation, usually based on reference lines and other geometric configurations.
- (2) In philosophy, an image taken to be poised between perfect reproductive verisimilitude and perfect ideational abstraction.

One might consider at this point what this all has to do with visual communication in the built environment, or graphic design as and in urban design. Its relevance is that diagrams of this kind, aside from their mathematical appeal and therefore assumed importance, confront us in everyday urban situations as designed objects. We may see the Holy Trinity symbol as part of a religious building. Or, consider the presence of the Olympic Rings at an Olympic venue, as shown in Figure 3-10. This is seen from afar and in close proximity, but probably with little regard for the details of configuration.



Figure 3-10 The Olympic rings symbol, Seoul

Source: Fieldwork 2009

Stifling this discussion here is necessary because this chapter began as a discussion about research strategy, design and methods. And although Elkins classification may offer a useful structure for further investigation, the interest here is specifically in how diagrammatics participate in a rational inquiry, and as a form of visual method. Drawing diagrams to assist thinking has been a constant tool for exploring relationships throughout this study. These are discussed as ‘graphical representations’ by Teymur, and he acknowledges the common application of this approach in scientific inquiry. ‘Graphical representations are one of the *tools* of scientific inquiry, and a *form* of discursive activity. Without appropriate symbols most ideas and concepts could not be expressed or even *thought of*’ (Teymur, 1982: 152, original italics).

This approach to using diagrams to structure a research process is useful. It could be described as resembling the networks, nodes, links, spatial elements and routes found in ‘graph theory’, a branch of mathematics, but also used by human geographers for quantitative analysis (Goodall, 1987: 197–198). In geography the ‘skills of reading and constructing graphic modes of communication, such as maps, diagrams and pictures’ is known as ‘graphicacy’ (Clifford et al., 2009b: 343). One does not need to extend this idea too far to link Elkins visual method to

some of the work that graphic designers do when they design diagrams, in terms of what Richards calls specialist or non-specialist kinds (1984: 2/16). We can deduce from this that art historians, (for example, Elkins), and geographers, at least, ‘graphic design’ as part of their research process. They appear to use a tool known as graphic method. Or, building on one of Elkins adopted recommendations, an extended set of tools that might be called a *grammae method*. In this one can recognise the use of writing, pictures and notation, including objects named as diagrams, photographs, drawings and typography. The potential for this is worth a closer look.

In his book *The Cambridge Encyclopedia of Language* (1987) David Crystal examines the medium of language in its different forms as speaking and listening, writing and reading, and signing and seeing. In doing so he refers to examples of how graphic expression reveals the many ways in which English language pervades public life, using examples such as letterforms on shop windows (ibid: 4). In discussion about ‘the functions of language’, Crystal argues that ‘graphic power’ through writing and print combine to impose a ‘purely visual effect’ on the viewer (ibid: 11). Human group identity is reinforced through ‘graphic identity’ in the form of British newspaper mastheads such as *The Sun*, *The Mirror*, *The Times*, *The Daily Telegraph* and *The Guardian* (ibid: 13). He goes on to suggest that the most likely way of experiencing the diversity of ‘visual language’ is through the identification of innumerable people, places and objects and in particular the ‘street names, public signs, ... house numbers, registration plates, ... shop fascias’ that figure prominently alongside more ephemeral items such as ‘name tags, compliments slips, publication titles, identity cards, product labels, ... letter headings, tickets’ and more (ibid: 55). Crystal argues that this identity is revealed through ‘stylistic identity’. On a personal level it is made known through individual voices and handwriting style (graphology) and at an institutional level through corporate identity programmes (ibid: 66–67). In this the word ‘graphic’ emerges as prolific within the wider context of design.

In this desire for identity the word ‘graphic’ is profuse. Yet until recently the term graphic design went largely unnoticed to the world beyond art and design (Barnard, 2005: 1). At the point it began to gain in recognition, and be embedded as a practice in wider economic, social and cultural processes – most probably the 1980s coinciding with the publication and first edition of *A history of graphic*

design (1983) by Philip B Meggs, it was a little understood term. This remained the case as recent as the early 1990s, especially in America (Barnard, 2005: 1). At that time the subject announced its own dictionary definition in Livingstone and Livingstone's *Dictionary of Graphic Design and Designers* (1992: 90). This definition typically included the integrated use of typography, illustration, photography, and printing for persuasion, information or instruction.

Before then mainstream dictionary definitions relied on the single word 'graph' to group a number of related terminologies. Going back as far as 1983, the *Chambers 20th Century Dictionary* (1983) included in a sequence of words beginning with 'gra' the words '... grape ... graph ... grapple...'. Within the entry for graph is a number of variants: '... grapheme ... graphemic ... graphic ... graphics ... graphis ... graphite ... graphic arts ... graph paper ...' to name some. Fast-forward to the early twenty first century and the *Oxford Dictionary of English* (Soanes and Stevenson, 2005) suggests an elevated status for many of these terms. The sequence included for words beginning with 'gra' offers us twenty-two independent words between grapevine and grapnel, as follows:

grapevine...
 graph¹...
 graph²...
 -graph...
 grapheme...
 -grapher...
 graphic...
 -graphic...
 graphicacy...
 graphical...
 graphical user interface...
 graphic arts...
 graphic design...
 graphic equalizer...
 graphic novel...
 graphics...
 graphics card...
 graphics tablet...
 graphite...
 graphology...
 graph paper...
 graph theory...
 -graphy ...
 grapnel... .

On this evidence it would seem there has been something of a graphic revolution over the twenty-year period spanning the turn of the millennium. In analysing the abbreviated form of the stand alone term ‘graphic’, it relates also to visual art: drawing, engraving, lettering. It also means ‘clear and vividly explicit details’. Furthermore, graphic is the ‘products of graphic arts’ – in ‘commercial design or illustration, or diagrams’.

In this close association of subtle references the phrase graphic design spans the process of planning, the integration with mark making, and impact. This, perhaps, is one of the reasons why graphic design has been a difficult term to quantify. This difficulty is no more evident than within the field, let alone beyond. It is spoken of to mean all of these qualities, or any of them individually. Add to this the further interrogation of definitions of design and the debates broaden with emphasis on the ‘planning’ dimension, or the ‘modelling’ activity referred to by Bruce Archer (1976: 12). (Archer’s work will be expanded further in chapter four, see section 4.7). Graphic design might mean the integration of text and pictures, but it clearly means for some the process of generating the ‘text’ and the ‘picture’ in its material form. In art history terms, in its abbreviated sense graphic is synonymous with image and visual artifact (Elkins, 1999: 255).

Taken separately graphic and design employ a range of different modelling practices. For this reason there is a strong case for the single word ‘graphics’ to be used to represent the aspect of design that deals with the manifestation of image as visual artefact, in the sense that Elkins (op cit) uses the term. Dictionary definitions tend to favour graphics as something relating to visual art. This does not render the omission of design as problematic, when thinking about wider contexts. Some in design research may acknowledge that the distinction between art and design may well be a matter of personal preference but before settling on the term Design to name a third area in general education, beyond Science and Humanities, Archer professed ‘the Arts’ as an ideal name (1976: 11).

In the Archer sense, graphics should be regarded a branch of design (or art and design), in the same sense that physics is regarded a branch of science (and used as a term consistently between general and higher education). In straightforward terms the *Compact Oxford English Dictionary* describes physics as ‘concerned with the nature and properties of matter and energy’. Graphics is concerned here

with the nature and properties of writing, pictures and notation (Elkins, 1999: 91). One assumes that matter and energy can be studied independently or in relation to each other. The same can be said of writing, pictures and notation.

In this abbreviated sense, it might be proposed that *graphics* represents the specialist subjects that have developed in art and design in the UK since 1969, from a subject base known predominantly as graphic design. Then, core art and design subjects were classified as fine art, graphic design, three dimensional design, textiles and fashion (Drew et al., 2008: 45). Now the diversity found in graphics across the art and design sector in the UK (due to expansion since the 1992 when the majority of schools of art and design entered the University sector) maintains the frequent use of graphic, or graphics, as a common denominator (Harland, 2007) among the many hybrid programme names. Within art and design there is an obvious link to the ‘typographic’ and the ‘photographic’. Beyond this, it extends to subjects as diverse as language studies and geography, through their respective use of ‘graphetics’ and ‘graphicacy’.

Objections to the use of a single term will come from those who suggest the term ‘graphics’ as being ‘vacuous’ and ‘self-referential’ (Stiff, 2009b: 10). These opinions may be useful to those who prefer specialist knowledge domains. (One might wonder if the same arguments were made in physics – derived from the Latin *physica*). Graphics is derived from the Greek *graphikos*. In support of a general term we should be mindful of what Richard Buchanan (2001) has explained as a ‘new battle of the books’:

We possess great knowledge, but the knowledge is fragmented into so great an array of specializations that we cannot find connections and integrations that serve human beings either in their desire to know and understand the world or in their ability to act knowledgeably and responsibly in practical life. While many problems remain to be solved in the fields that currently characterize the old learning—and we must continue to seek better understanding through research in these areas—there are also new problems that are not well addressed by the old structure of learning and the old models of research. (2001: 6)

Problems of classification in the domain of images are well known (Elkins, 1999: 82). But there is no doubt about the usefulness of the term graphics across the higher, further and general education sector, whether we wish to discuss ‘graphic skills’ (Stiff, 2009b: 11) or the ‘contemporary scientific and mathematical graphics’ (Elkins, 1999: 222). The use of the term is central to James Elkins

attempt to group images into seven categories (ibid). In this is the realisation that the term *graphics* is not exclusive to art and design. There is clearly a ‘graphic science’, a ‘graphic art’ and a ‘graphic design’. *Graphics* is therefore a useful term for exploring the potential for cross-disciplinary perspectives that include the work of built environment professionals. This exploration of visual methods with a focus on visual research, visual data and the specific tools of extant and research-driven imagery, provokes a return to the wider discussion about methodology, and confirmation that this research can be located in established approaches to research. Adopting one of these approaches, or locating the data analysis in a recognisable strategy, is dependent on what Miles and Huberman (1994: 7, citing Tesch, (1990)) suggest as four areas of research interest:

1. the characteristics of language
2. the discovery of regularities
3. the comprehension of the meaning of text/action
4. reflection

If data used in this research were analysed as a grounded theory study, this would fall within the second of these – the discovery of regularities, & the identification and categorisation of elements, leading to an exploration of their connections. Within the same group of approaches, data may also be considered appropriate for ‘ethnographic content analysis’. As a study in ethnography of communication it will address the first category – the characteristics of language – perhaps as discourse analysis within communication. Earlier in the thesis, the focus was on the idea of the subject as a phenomenon, suggesting that the comprehension of the meaning of text/action might also be an approach. Furthermore, much of the discussion about the Researcher’s bias suggests a reflective approach for educational purpose. All these approaches and possibilities are linked through types of qualitative research shown in Figure 3-11.

THE RESEARCH INTEREST IS ...

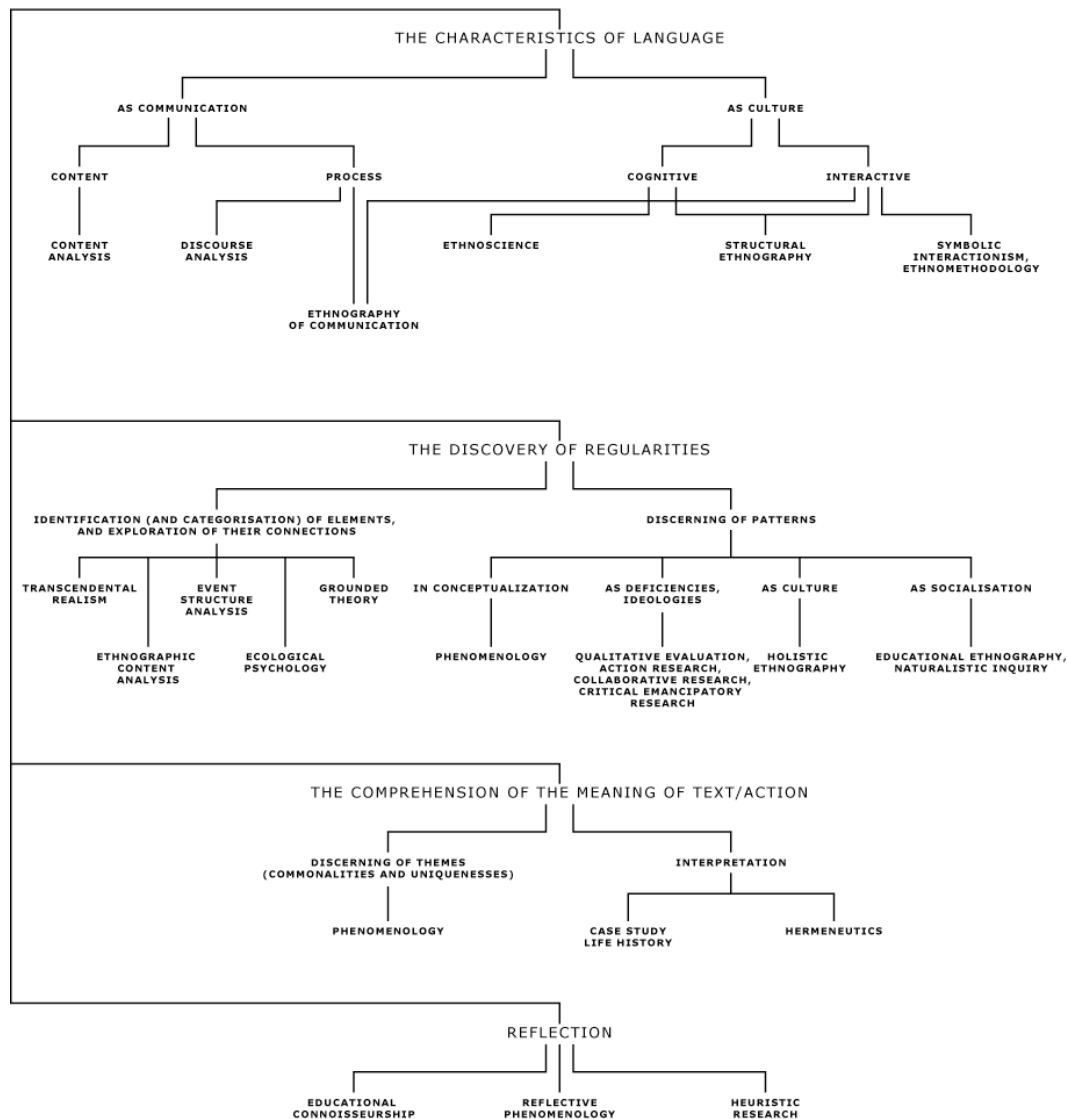


Figure 3-11 Graphic overview of qualitative research types

Source: Miles and Huberman (1994: 7, citing Tesch, (1990))

The earlier discussion about grounded theory confirms that such an approach might be well suited to this research, especially due to the emergence of theoretical insights. Earlier, 'adaptability' was recognised as an advantage to a grounded theory approach. Denscombe states that grounded theory is

fairly adaptable, lending itself to use with a variety of qualitative data collection methods (e.g. interviews, observation, documents) and forms of data (interview transcripts, fieldwork, texts) ... [with] a *focus on practice* (human interaction) and what is practical (pragmatic philosophy) which makes the approach well suited to studies in areas, such as health,

business and education, that are concerned with understanding and improving matters in terms of interpersonal relations. (op cit: 104, original italics)

At first glance this sits comfortably with this research topic. There is enough scope in the interpretation of interpersonal relations to extend to the phenomena introduced at the beginning of the thesis. However, Derek Layder exposes some limitations in the grounded theory approach, in his work towards the acceptance of something he refers to as an **adaptive theory** approach (1998: 18–20). One of the most significant differences between grounded theory and adaptive theory is that adaptive theory combines ‘an emphasis on prior theoretical ideas and models which feed into and guide research while at the same time attending to the generation of theory from the ongoing analysis of data’ (ibid). Grounded theory is said to be concerned only with theory that emerges from data collection. Layder also argues that grounded theory rejects ‘general theory’ (sometimes also referred to as ‘grand’ or ‘speculative’ theory) (ibid), whereas adaptive theory remains open to ‘good theoretical ideas’ that in the ‘overall goal of cumulative knowledge (rather than disparate and isolated fragments).’

Grounded theory is also said to dismiss phenomena that ‘are not only or simply behavioural...’ in the sociological sense. Whilst the visual artefacts central to this research might be considered a supplement to behavioural studies, this inquiry does not take an approach that specifically analyses behaviour, although behavioural scientists may find the visual artefacts in question of interest. Sources of adaptive theory are theoretical and empirical and include general theory, substantive theory, extant data and emergent research data (ibid: 163). This closely resembles the approach taken in this thesis.

Focus on adaptive theory is from a sociological practice perspective that links theory and social research. This thesis also combines the unavoidable influence of design practice and the Researcher’s own personal bias, bringing into play further considerations. These can be argued to align with the adaptive theory approach explored by Layder in ‘the personal, the local and the strategic, as well as specialized contributions to knowledge’ characterized by Brown et al (2010a: 4) as ‘transdisciplinary’ inquiry. They refer to transdisciplinarity as ‘collective understanding’. It differs from multidisciplinary inquiry which is generally the amalgamation of unique approaches behind a single purpose, or interdisciplinary

(the overlap between two disciplines to create a new one). The diversity of transdisciplinary inquiry – personal, local, strategic, and specialized – leads to a ‘collective’ approach (Brown, 2010: 102) assumed to come from a diverse project team perspective. Such a study ‘can be guided by a search for optimal outcomes’ and ‘approaches to research design will necessarily be eclectic, looking among all the suitable possibilities for a good match. The inquiry research methodology is designed to fit the focus of the inquiry, not the other way round.’ (ibid: 104)

The core influence on this research investigation resides in the disciplinary perspective of graphic design, and its wider educational context of art and design. However, the research began with an interdisciplinary perspective on graphic design in urban design, based on the Researcher’s background in design practice. This consisted of direct experience at the interface between the two. Nevertheless, despite much of the research strategy, design and methods demonstrating intentions that are sympathetic to a grounded theory approach, the research has developed into something that considers the transdisciplinary perspectives of a much wider subject base than anticipated, including pre and post experience of professional studio practice and research. It has been argued that the transdisciplinary imagination is central to how this is undertaken. Taking this idea, and those explored by Layder in social research, this inquiry resembles what might be best explained in methodological terms as **a transdisciplinary adaptive theory approach using graphic method within the wider scope of grammae method**. This seems to capture an approach that links design practice with social research, and the idea that design as a social act results in social phenomena from a social practice.

3.8 Summary

Chapter three has explored some of the wider issues associated with research strategy, design and method, and attempted to bring into focus some of the approaches relevant to the development of this research. Various models have been discussed from established research disciplines, notably social science and education. Some basic questions have been asked about how to understand phenomena, leading to ontology, epistemology and methodology. Research strategy, design and method have also been covered in detail leading to a focus on how one might research graphic design as and in urban design. Subsequently, approaches to visual research have been discussed in detail. Some deviation has

also happened to open up discussion throughout, and reflection on the work of Elkins has suggests that visual methods offer much potential to extend the research beyond the issues and concerns of social science into the concerns of art and design.

Elkins claim that diagrams are a form of rational inquiry supports the approach in this research. This has been discussed as 'graphical representations' by Teymur, who, amongst others, acknowledge the common application of diagrams in scientific inquiry. 'Graphical representations are one of the *tools* of scientific inquiry, and a *form* of discursive activity. Without appropriate symbols most ideas and concepts could not be *expressed* or even *thought of*' (Teymur, 1982: 152, original italics).

4 Ways to study and research graphic design as urban design

Mathematical knowledge is no more rigorous than philological-historical knowledge. It merely has the character of 'exactness' which does not coincide with rigor. To demand exactness in the study of history is to violate the idea of the specific rigor of the humanities.

(Heidegger, 1978: 96)

4.1 Introduction

Chapter four examines the research questions, as they have developed, from different disciplinary perspectives. The question that developed during the early part of the inquiry – stated in chapter two – asked: *What is the manifold and manifest relationship inherent in graphic design as urban design?* It has already been shown that established academic disciplines offer perspectives on how this question may be answered. This chapter extends and expands this by further considering ways to study and research graphic design as urban design. It is established that although graphic design and urban design are relatively recent disciplines reflecting long established practices, these activities can also be located in traditional areas of knowledge.

Two of these are examined in depth in this chapter: geography and language studies. Furthermore, visual communication is discussed, due to the significance of the term in the initial research proposal that linked visual communication to the built environment. Then, the research question is explored in relation to art and design, the subject where graphic design is most likely to be located in the UK higher education sector. Finally, urban provides the context for exploring the phenomena identified at the beginning of chapter two.

Throughout this chapter ideas and concepts emerge that enable the research topic to be recognised as transdisciplinary by nature and universal in its relevance. Graphic design as urban design is shown to be manifold and manifest in many academic subjects. The chapter concludes with an explanation of an analytical framework for thinking about graphic design as urban design. This benefits from a recognition that there is a class of objects in the built environment that possess qualities associated with what can be referred to as *empirically external graphic objects* (after Kant). It is proposed that objects of this kind can be analysed within what will be explained as a *micrographic*, *mesographic* and *macrographic* framework.

This approach is developed from ideas that emerge from within art and design, geography and the social sciences in general, urban design, and empirical data that is extant and research-driven. In particular, photographic images and diagrams help to conclude the discussion and contribute towards explaining how recommendations and further research may be undertaken.

The chapter begins with a discussion about:

—ways to study and research graphic design as urban design;

followed by an exploration into how the research question is:

—located in Geography;

—located in Language;

—located in Visual Communication;

—located in Art and Design;

—located in Urban Design.

4.2 Ways to study and research graphic design as urban design

Ways to study and research graphic design as and in urban design is difficult to locate in any single academic discipline. It is further complicated by debate about whether graphic design or urban design can be thought of as disciplines. Despite the popularity of graphic design as a professional studio practice in the twentieth century, and increasingly in education from secondary school to research degree study in higher education, it has been suggested by Buchanan that graphic design remains a 'field' rather than a discipline (Poyner, 2008: 76–77). Yet, terminology is confusing related to its status as a discipline, field or subject. In the UK, information about new qualification for 14-19 year olds Creative and Media Diploma (beginning in September 2009), state 'disciplines include 2D and 3D visual art, graphic design, product design, fashion, textiles, drama, advertising, dance, music, film and many more' (<http://yp.direct.gov.uk/diplomas/>). Yet it is also implied that as a field graphic design has significantly grown since the 1980s to be viewed as a discipline (Kang, 2008: 322). Similarly, since the 1960s urban design has been acknowledged as a recognised field of activity (Carmona et al., 2003: 19) though increasingly taking the form of a discipline in its own right (Lang, 2005: 393). Both names are relatively new.

Robert Waller (1979) captures the difficulty locating the study of graphic communication as a field, or discipline, in its own right:

The study of graphic communication has been approached in a variety of ways, but by different disciplines and for different purposes; a rich but challenging literature confronts the newcomer. The problem of interpretation and integration is that each of these specialisms – they range from art history and the philosophy of science to psychology, sociology and ergonomics – tends to approach the issue from its own restricted perspective; it is rare to see the nature of graphic communication itself as the primary focus of investigation, rather than as an extension of a central framework designed for some other purpose. (Waller, 1979: 213)

Waller appears to be suggesting that there are few, if any, opportunities to view the whole field of graphic communication, and attempts to do so have been from number of distorted perspectives. This too can be argued about graphic design (assuming there is a difference between the suffixes *communication* and *design*), in the sense that it appears to be rare to discuss what it is as a distinctive entity, independent from its formative domains of typography, illustration, photography

and print. When viewed from a specialist perspective, each has the tendency to bias discussion. Not surprisingly, approaching graphic design from any of these perspectives will reveal an understanding of graphic design from that perspective. In this sense, when graphic design is studied from an individual perspective, it has a tendency to be biased by typography, illustration, photography or print. This is a perspective from within but in order to understand the idea of graphic design as and in urban design, it is preferable to minimise such bias and assume an holistic approach.

The holistic view, compared to the specialist approach, is acknowledged by Donald Schön who cautiously advises that ‘subspecialities’ and ‘individual’ perspectives work against a ‘wholeness of experience and understanding’ (1991: 60). Aligned with this concern, this research aspires to a wholeness of experience and understanding, with specific reference to graphic design as and in urban design. Nevertheless, the question arises about where the professional and academic knowledge associated with understanding this relationship resides. *Where does knowledge about graphic design as and in urban design reside?* To answer this question, it is necessary to understand how knowledge is classified.

Classifications of knowledge, as reviewed by Michael Woolman (2006: 144–148), have been developed over time through various categories, classes, forms, realms, faculties and areas. He suggests that Francis Bacon categorised knowledge under seven headings, derived from his observation that ‘[h]istories make men wise; poets witty; the mathematics subtle; natural philosophy deep, moral grave; logic and rhetoric able to contend’ ([1601] 1915: 151). Melville Dewey (1851-1931) took a practical and systematic approach to organising knowledge by indexing library books (now known as the Dewey Decimal System, and according to Woolman is the ‘most widely used library classification system in the world’). He also explains that more recent philosophical concerns have determined knowledge classification systems, such as Hirst & Peters’ reference to ‘forms of knowledge’ in their book *The Logic of Education* in 1970, or Philip Phenix’s description as ‘realms of meaning’ in his 1964 publication *Realms of Meaning (Curriculum & Methods in Education)*. These are listed in Table 4-1. Clearly, knowledge classification is an evolving act of humankind and will be exclusive until the point that new knowledge emerges with substance.

Table 4-1 Areas of knowledge

Source: Woolman, 2006: 146-148 (tabulated)

Categories (Bacon 1601)	Systems (Dewey 1876)	Forms (Hirst & Peters 1970)
History	000 Generalities	Formal logic & mathematics
Poetry	100 Philosophy	The physical sciences
Mathematics	200 Religion	Understanding of our own and other people' minds
Natural History	300 Social Sciences	Morals
Moral Philosophy	400 Language	Aesthetics
Logic	500 Natural sciences & mathematics	Religion
Rhetoric	600 Technology (Applied sciences)	Philosophy
	700 The Arts	
	800 Literature & rhetoric	
	900 Geography & history	
Realms of meaning (Phenix 1964)		
Symbolics	<i>Language, mathematics</i>	
Empirics	<i>Physical science, life science, psychology, social science</i>	
Esthetics	<i>Music, visual arts, movement arts, literature</i>	
Synnoetics	<i>Religion</i>	
Ethics	<i>Morals, ethics, history</i>	
Synoptics	<i>Philosophy</i>	

It will therefore be no surprise that graphic design does not feature in any of these lists. No authors have charted the history of graphic design – a relatively new field – until the emergence of Philip B Meggs' *A History of Graphic Design* (1983). It is now in its fourth edition published as *Meggs' History of Graphic Design* (2006). Richard Hollis followed this in 1994 with *Graphic Design: A Concise History*, revised and expanded (2001). Since then there has been the publication of *Graphic Design History* (Heller and Ballance, 2001); *Typography and Graphic Design: From Antiquity to the Present* (Jubert, 2006)(Roxane Jubert, 2006); *Graphic Design: A New History* (Eskilon, 2007) and *Graphic Design History: A Critical Guide* (Drucker and McVarish, 2008). In addition to this, graphic design history can be traced through numerous books on design history, such as Jonathan Woodham's *Twentieth-Century Design* (1997) or John Heskett's *Design: A Very Short Introduction* (2005). However, these histories are largely written from what has been described as a 'Euro-American' perspective (Chou, 2006: 1–8).

Bacon's categories offer limited opportunity to locate the study of graphic design or urban design. Both can be situated within the category of history and both

have been directly linked to the concepts of classical rhetoric (Buchanan, 1985). From Dewey's range of headings, aside from Generalities, graphic design can be directly linked to religion, social science, language, technology, the arts, literature and rhetoric, and geography & history. Similarly urban design might be studied in relation to religion, social science, and geography & history. Whereas, regarding the notion of Hirst and Peters' 'Forms', aesthetics and religion apply to both graphic design and urban design. However, Phenix's use of terminology for 'Realms of Meaning' perhaps offers the most useful and inviting set of descriptors. Graphic design and urban design can be related to all of these, with the possible exception of synoptics (relating to similar points of view expressed by the Gospels of Matthew, Mark and Luke).

Bacon, Dewey, Hirst and Peters', and Phenix offer different ways to group knowledge, but in terms of creating new knowledge (the central concern of most Universities), the establishment of faculties, departments and schools in Universities help to divide knowledge through a more detailed and accessible process related to educational provision. Woolman also gives examples of how universities classify knowledge through their taught courses, and examples are given for Oxford University and Princeton University, shown in Table 4-2.

Table 4-2 University classification of knowledge

Source: Woolman, 2006: 146-148

Oxford University

Archaeology and Anthropology	Human Sciences
Biochemistry, Molecular and Cellular	Law (Jurisprudence)
Biological Sciences	Materials Science
Chemistry	Materials, Economics and Management
Classical Archaeology and Ancient History	Mathematics
Classics	Mathematics and Philosophy
Classics and English	Mathematics and Statistics
Classics and Oriental Studies	Medicine
Computer Science	Modern Languages
Earth Sciences	Modern Languages and Linguistics
Economics and Management	Music
Engineering Science	Oriental Studies
Engineering, Economics and Management	Philosophy
English Language and Literature	Philosophy and Modern Languages
English and Modern Languages	Philosophy, Politics and Economics (PPE)
European and Middle Eastern Languages	Philosophy and Theology
Experimental Psychology	Physics
Fine Art	Physics and Philosophy
Geography	Physiological Sciences
History (Modern)	Theology
History (Ancient and Modern)	
History (Modern) and Economics	
History (Modern) and English	
History (Modern) and Modern Language	
History (Modern) and Politics	
History of Art	

Princeton University

Programmes in:	
African Studies	Linguistics
African-American Studies	Material Science and Engineering
American Studies	Medieval Studies
Applications of Computing	Musical Performance
Applied and Computational Mathematics	Near Eastern Studies
Biophysics	Neuroscience
Creative Writing	Russian and Eurasian Studies
East Asian Studies	Teacher Preparation
Environmental Studies	Theatre and Dance
European Cultural Studies	Visual Arts
Contemporary European Politics and Society	Women and Gender
European Politics and Society	Writing Program
Finance	
Hellenic Studies	Architecture and Engineering
Humanistic Studies	Engineering and Management Systems
Judaic Studies	Engineering Physics
Language and Culture	Geological Engineering
Latin American Studies	Robotics and Intelligent Systems

These lists are obviously not permanent, nor are they universal, and titles have and will change as new subjects emerge or are popularised. For example, English (described initially as a 'practical subject') was first introduced into curriculum at University College in London in 1828 two years after the college was founded. English then spread at degree level via newly established universities in England,

but was not introduced to the University of Oxford until 1894 (Barry, 2002: 12–14).

In terms of the knowledge domains listed above, the actions and outcomes of graphic design thinking is arguably implicit in many, either as a form of representation, or object of study. For instance, it is difficult to imagine the study of some subjects, such as African Studies, not featuring elements of graphic communication as it is central to the study of images as ‘visual art’ and ‘non-art’ (Elkins, 1999: ix). In *The domain of images* James Elkins (op cit) distinguishes between art and non-art images as fine art and popular culture respectively, where art is only part of a richer field that includes objects not celebrated by traditional approaches to art history. He argues for a history of art within a vast history of visual artifacts. With respect to scientific subjects, graphic communication, as the visualisation of scientific research, is implicit in the process of disseminating research findings, and therefore a significant part of the research process.

For example, consider the development and announcement of deoxyribose nucleic acid (D.N.A.). The paper announcing the discovery appeared as a single page article in the research journal *Nature*, featuring two columns of text and a single diagram (Watson, 2004) to represent the three dimensional modelling process used by Francis Crick and James Watson. The diagram, considered by Marcus du Sautoy (BBC, 2010) to stand above all others in the second half of the twentieth century, was drawn by Francis Crick’s wife, Odile Crick, a professional artist trained at the Royal College of Art in London. A model of the double helix structure can be found in the Oxford University Museum of Natural History. See Figure 4-1.

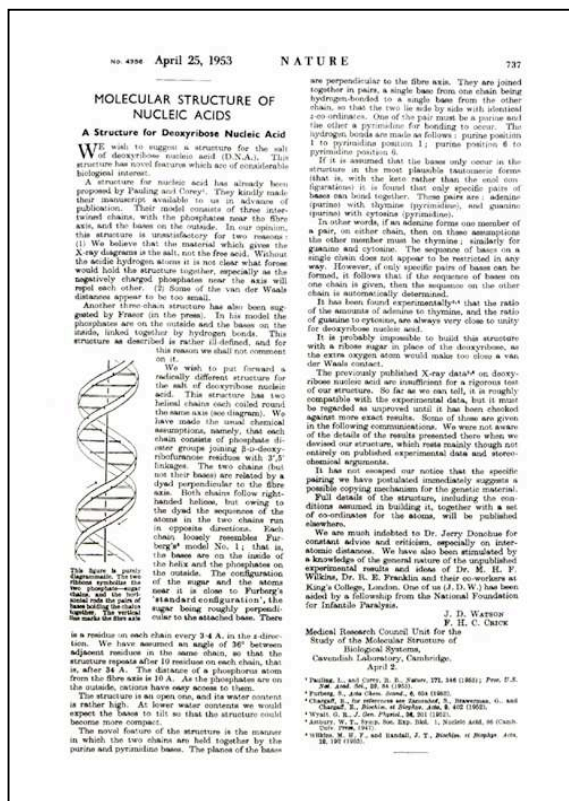
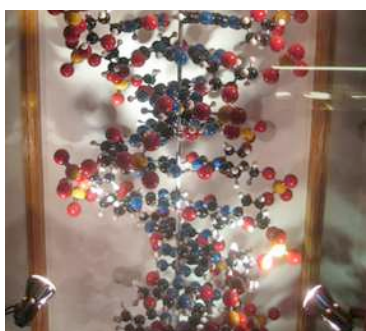
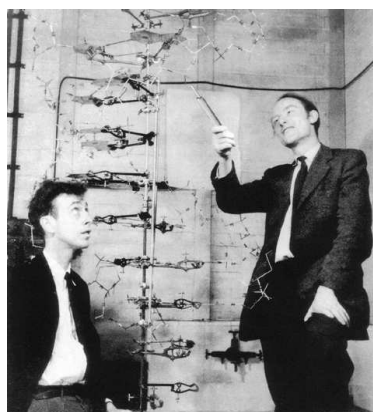


Figure 4-1 The graphic communication of D.N.A.

Top left. Crick and Watson with their 'model of the double helix' Source: Watson, 2004

Right. Article in Nature announcing the discovery of D.N.A. Source: Watson, 2004

Bottom left. Double helix model at Oxford University Museum of Natural History Source: Robert Harland, 2009

As well as faculty, departmental and school structures in higher education, external agencies also reflect the organisation of knowledge. For example, the Quality Assurance Agency for Higher Education (QAA) in the United Kingdom produce benchmark statements for a range of taught undergraduate subjects in universities, colleges of higher education, and some further education colleges. These are wide-ranging and grouped by subject. See Table 4-3. The Quality Assurance Agency for Higher Education (QAA) is an independent body established in 1997 to 'encourage improvement in the management of the quality of higher education' and 'safeguard the public interest'. Subject benchmark statements provide one of the mechanisms by which this is achieved (<http://www.qaa.ac.uk>).

Table 4-3 Subject benchmark statements for UK undergraduate study

Source: www.qaa.ac.uk/aboutus/qaaIntro/intro.asp#one

Accounting	Masters awards in business and management
Agriculture, forestry, agricultural sciences, food sciences and consumer sciences	Materials
Anthropology	Mathematics, statistics and operational research
Archaeology	Medicine
Architecture, architectural technology and landscape architecture	Music
Area studies	Optometry
Art and design	Pharmacy
Biomedical science	Philosophy
Biosciences	Physics, astronomy and astrophysics
Building and surveying	Politics and international relations
Business and management	Psychology
Chemistry	Social policy and administration and social work
Classics and ancient history	Sociology
Communication, media, film and cultural studies	Theology and religious studies
Computing	Town and country planning
Dance, drama and performance	Veterinary science
Dentistry	Welsh/Cymraeg
Earth science, environmental sciences and environmental studies	
Economics	<i>Academic and professional standards for the health professions:</i>
Education studies	Dietetics
Engineering	Health visiting
English	Midwifery
Foundation degree	Nursing
Geography	Occupational therapy
Health studies	Orthoptics
History	Physiotherapy
History of art, architecture and design	Podiatry
Hospitality, leisure, sport and tourism	Prosthetics and orthotics
Languages and related studies	Radiography
Law	Speech and language therapy
Librarianship and information management	
Linguistics	

In the United Kingdom (UK), graphic design, and the various named activities that precede it (such as commercial art) has typically been located in schools of art and design since the middle of the twentieth century. Until 1992 these resided outside the university sector. But although art and design is a relative newcomer to the university sector art and design as a formally taught subject in education can be traced back to the establishment of government funded schools of design in the first half of the nineteenth century, the first of which opened in London in 1837 (ADM-HEA and NESTA, 2007: 7). Most schools of art and design were merged into the new polytechnic sector in the 1960s and early 1970s and polytechnics subsequently changed to university status in 1992 (ADM-HEA and NESTA, 2007: 8).

Art and design as a subject is long established, and older than many of the major UK universities in cities such as Liverpool, Birmingham, Manchester, Sheffield, Leeds and others, many of which were initially established as university colleges teaching London University degrees (Barry, 2002: 14). Consequently, art and design, and therefore graphic design, does not feature in traditional lists of knowledge classification by comparison to established university subjects, such as mathematics or medicine, which can be found in knowledge classifications old and new.

In fact, neither graphic design nor urban design feature in the current subject nomenclature used by QAA. The revised subject benchmark statement for art and design (QAA, 2008a) favour the generic term of visual communication, preferring not to identify particular specialisms that have been associated with the subject since the early 1970s. Whereas the initial benchmark statement covering the period 1998-2000 stated: 'Art and design provision is characterised by the diversity of the range of specialisms and awards. The major specialisms are fashion/textiles, fine art, graphic design, photography/film/television and three-dimensional design' (QAA: 1).

Regarding urban design, a review of the subject benchmark statements for the professional disciplines associated with it reveals little or no mention of urban design. The statement for architecture, architectural technology and landscape architecture (QAA, 2000a) (rewritten in 2008 in the singular 'architecture') refers to the 'cultural context' and 'knowledge and understanding' of architecture focused on 'histories and theories of architecture and urban design.' Landscape architecture (QAA, 2007b); engineering (QAA, 2006); and town and country planning (QAA, 2008b); contain no mention of urban design.

Given this absence of the terms graphic design and urban design, it is not surprising that these do not feature as academic disciplines in broader academic subject groupings. For example, consider the key disciplines located in the humanities and social sciences (Anon, 2010), listed in Table 4-4. These are all academic subjects, but some are more closely related to a professional practice or vocational pursuit, such law or theology & religious studies, than others that perhaps more align to academic research. None can be said to feature the kind of practical pursuit one might expect in a design subject.

Table 4-4 Key disciplines in humanities and social sciences

Source: The British Academy, 2010

History
 Literature & language
 Psychology
 Economics
 Law
 Medieval studies
 Archaeology
 Classics
 Geography
 Linguistics
 Sociology
 African and oriental studies
 Theology & religious studies
 Philosophy & ethics
 History of art & music
 Anthropology
 International relations
 Political studies

Until now in this dissertation, only the earlier reference to the work of Nigel Spivey, a classics lecturer, recognise the products of what is discussed here in terms of graphic design as urban design, outside of the art and design domain. Nevertheless, it is argued in this dissertation that graphic design and urban design is present in a number of established academic disciplines. Geography and languages studies are two of these, and these will now be explored in more detail with the intention that they offer valuable external perspectives on this inquiry.

4.3 Located in Geography

A closer look at the discipline of geography presents a number of perspectives to explore the research question in depth, as suggested in section 2.5. Geography is concerned with both ‘natural’ and ‘human-created’ environments. It is an expansive and ever expanding subject and definitions appear to be continually evolving. David Waugh’s book *Geography: an integrated approach* cites a statement from the Geographical Association’s booklet *Geography in the National Curriculum*:

Geography is concerned with people as well as landscapes, with economic as well as ecological systems. The character of places – the subject’s central focus – derives from the interaction of people and environments. (Waugh, 1995: 6)

Simplistic ways to explain geography, and what geographers do, appear to rely on subdividing the discipline into *physical* and *human* geography, but this is

considered as ‘crude binary division’ (Hefferman, 2009: 5). A glance at the kind of phenomena that explains geography to secondary school pupils in the UK exemplifies this, as shown in Table 4-5. The physical or human dimension is more obvious in some than others.

Table 4-5 Some geographic phenomena

Source: Waugh, 2000

Plate tectonics, earthquakes and volcanoes	Population
Weathering and slopes	Settlement
Drainage basins and rivers	Urbanisation
Glaciation	Farming and supply
Periglaciation	Rural land use
Coasts	Energy resources
Deserts	Manufacturing industries
Rock types and landforms	Tourism
Weather and climate	Transport and interdependence
Soils	World development
Biogeography	
World climate, soils and vegetation	

Clifford, Holloway, Rice, & Valentine suggest that geography diverges into three traditions: ‘the physical sciences tradition’, ‘the social science tradition’, ‘the humanities tradition’ (2009a). Each of these partly reflect the development of the subject. Geography in the physical sciences tradition aligns its practice with the diversity of scientific methods and philosophical frameworks that have developed over a number of centuries (Richards, 2009: 21). However geography in the social science tradition appears to be more recent. Since the 1970s human geographers have identified with the social science disciplines of economics, political science and sociology, more recently associating themselves with Marxism, feminism, postmodernism and post-structuralism (Johnston, 2009: 46). Whereas geography in the humanities tradition is associated with humanistic, cultural and historical study of human creativity, knowledge, beliefs, ideas, imagination and experience (Blunt, 2009: 66).

Reverting to the basic duality of physical and human geography, one notable difference is the approach to research methods. For example, physical geographers are more likely to use observation and measurement, whereas

human geographers are more likely to observe and interpret. Consequently Hefferman (2009: 3) points out that there is a multiple of histories associated with the discipline. The humanities tradition is most useful to this research.

Human geography is humanistic and theoretical in its approach to the study of the ‘conscious, creative and meaningful activities and experiences of human beings ... [h]uman meanings, emotions and ideas with regard to place, space and nature’ (Cloke et al., 2005: xiii). This has been organised by Cloke Crang & Goodwin (2005) as sets of foundations, themes and issues, as shown Table 4-6.

Table 4-6 Foundations, themes and issues in human geography

Source: Cloke, Crang & Goodwin, 2005

Foundations	Themes	Issues
Culture–nature	Cultural Geographies	Emotional geographies
Society–space	Development Geographies	Place
Local–global	Economic Geographies	Diasporas
Control–freedom	Environmental Geographies	Migrants and refugees
Self–other	Historical Geographies	Travel and tourism
Image–reality	Political Geographies	Commodities
Masculinity–femininity	Social Geographies	The media
Science–art	Urban and Rural Geographies	War/peace
Relevant–esoteric		Globalisation and protest
		Care

Of these different approaches taken to organising geography by Waugh, or Cloke, Crang & Goodwin, some are directly related to the visual communication need of a built environment. For example, two random selections from the aforementioned lists is reinforced by the idea that some settlements began as key decision-making points for travellers. ‘New diasporas’ (Van Hear, 1998) lead to the on-going influx of people into new environments, placing much demand on notions of orientation and infrastructure. Visual communication in a built environment exists as a direct result of the interaction of people and environment. It is assumed here that the products of graphic design make a significant contribution to how well or not so well that interaction takes place. This process of interaction will vary in scope according to the complexity of the relationship between people and the environment within which they find themselves, the time and scale of requirements varying between local (*micro*),

intermediate (*meso*), and global (*macro*) levels.

Several of the phenomena listed by Waugh – populations, settlements, urbanisation, manufacturing industry, service industry, transport and trade, and world development – have already been recognised as offering a framework for exploration (Harland, 2006: 5) in this research. To this can be added the geographer's interest in matters of culture, image, art, development, economics, environment, history, politics, society, urbanism, emotion, place, travel, tourism, commodities, media, war, protest, and more. These will not all be defined here, but an understanding of the function of the modern urban environment will help to draw out some of the more relevant points associated with these topics.

Describing the 'function' of a modern urban environment is difficult to do. Many are multi-functional and the term function is perhaps most useful for identifying why a settlement establishes itself. In geographic terms, 'function' is used as a form of classification to describe the economic and social development of a settlement, referring to its main activities. For example, the function of a settlement may be; route centre; administration; retail; religious; or residential. Geographers have classified settlements by function, though more recently this is considered less useful because of post-industrial societies and the changing nature and speed of development (Waugh, 1995: 364). Examples used by Waugh include a changing Cornish fishing village becoming a holiday resort, or the impact of out-of-town retail centres changing the retail function of inner city shopping areas. ('Cornish' describes the character of Cornwall, a county in the south-west corner of the UK). Table 4-7 shows how in geography settlements might be classified by function.

Table 4-7 Classification of settlement type based on function

Source: Waugh, 1995: 364

Rural	Urban	Developing countries
Global	Developed countries	Developing countries
Market and agricultural	Mining	Administration
Route centre/transport	Manufacturing/industrial	Marketing/agricultural
Small service town	Route centre/transport	Route centre/port
Defensive	Retail/wholesale	Mining
Dormitory/overspill/satellite	Religious/cultural	Commercial
	Trade/commerce/financial	Religious
	Administration	Residential
	Resort/recreation	
	Residential	
	New towns	

Geography offers a variety of methods and concepts through which the research question might be considered. A full exploration of Geography and all its concepts and methods is an undertaking too big for this research. However, some examples are now considered.

Earlier discussion explored the idea that built environment can mean any environment that is man made, no matter how small and insubstantial, or big and complex. For this, the *local-global* foundation identified by Cloke *et al* listed in

Table 4-6 offers a useful approach. Three schematic accounts of the local-global discussed by Philip Crang include ‘the world as *mosaic*, the world as *system*, and the world as *network*’ (2005b: 34–50, original italics). See Figure 4-2. Although now considered to be unrealistic (Castree, 2009: 161), as mosaic ‘boundaries’ and ‘borders’ are emphasised, ‘unique characters, personalities and traditions’ are known as being distinct, but the influence of one distinct area over the other is recognised as potentially threatening. As system, the global is given more prominence and the cultural, political, economic relations, such as the capitalist world economy, is seen as dominant. In crude terms, and to use the example provided by Crang, this determines that Europe is rich and the Philippines poor. As network, ‘connection’ is favoured over the ‘collection’ and ‘comparison’ approach of the mosaic and system model respectively. The local and the global makes a set of ‘connections’ and ‘disconnections’ referred to as ‘glocal’.

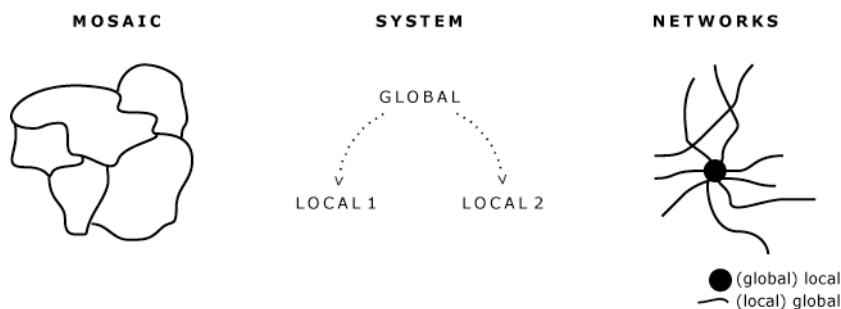


Figure 4-2 Figures of the local-global: mosaic, system and network
Source: Crang 2005b: 38 (redrawn)

Furthermore, the *image-reality* foundation recognises the value that images have in geography, whilst at the same time acknowledging that the word image has

negative connotations (in geography and science) because of a tendency to suggest superficiality rather than factual evidence. This is challenged by Mike Crang who argues that the situation is more complex, and although pictures can be ‘non-factual’ and misleading, they also ‘shape action by people’ and impact on ‘how they move through society’ (2005a: 78). Local-global and image-reality both directly relate to how we perceive and experience the scale of urban place. In his discussion about image-reality, Mike Crang uses the development of the London Underground map as an example of how a person’s experience is shaped (2005a: 82). Similarly, Philip Crang demonstrated that there are different ways to conceive of scale in his discussion about local-global.

Also, related to the physicality of the built environment is the idea of settlement type. The diversity of different built environments is considerable due to each settlement having developed continually through its own specific functional needs. Waugh (1995: 151) suggests that through these functions we can group different environments. In geography there are commonly accepted types of settlement that are classified as either rural or urban. Rural settlements might include those categorised as; isolated, hamlet, village, and small market town, whilst urban settlements are; larger town, city, and conurbation (megalopolis) (1995: 365). See Table 4-8. Essentially these are divided by several factors, including size of population, economy, services, land use or social values, such as age of population. Rural settlements conform to a number of different shapes or patterns, described as ‘morphology’, and this can be broken down into seven types: isolated; dispersed; nucleated; loose-knit; linear or ribbon; ring and ‘green’ villages; and planned.

Table 4-8 Settlement types
 Source: adapted from Waugh, 1995: 365

Rural	Urban
Isolated > Hamlet > Village > Small market town	Larger town > City > Conurbation

The hierarchy of settlement model can be useful for exploring the similarities and differences between visual communication requirements in different settlement types. A number of questions will relate to such matters. *What is dependent on settlement size? What is place specific? How are settlement types linked? How are transportation routes differentiated? What is the function of house numbers*

and names? How prevalent is retail branding in different settlements? How do we recognise a public telephones? How relevant is religious symbolism? How is individual and group identity enforced? These kind of questions might contribute to a better understanding of distinctive place aesthetics and vastly different environments may incorporate similar forms of representation. Figure 4-3 shows two extremes for the placement of the Christian symbol of the crucifix in a rural and urban settlement.



Figure 4-3 Rural and urban crucifix

Source: Robert Harland, Longano, Italy, 2006; and Times Square, New York, 2010

These conform to the basic same shape by utilising a horizontal and vertical line (as noted earlier at the end of section 2.7) but are produced by vastly different means of production, and serve very different communities. The crucifix in a rural outskirts of the southern Italian village of Longano is in essence the same as crucifix in the middle of Time Square in New York. In geographic terms, the relevance of this begins to orientate discussion towards the sub-fields of cultural geography and imaginative geographies, then further towards the field of material culture and visual culture. From within this context (but by no means exclusive to it) a key phrase emerges for this research: **representation**.

A geographer's interpretation of representation is as

the cultural practices by which human societies interpret and portray the world around them and present themselves to others. In the case of the natural world, for example, these representations range from prehistoric cave paintings of creatures that figured in the lives of early human groups to the televisual image and scientific models that shape our imaginations today. (Cloke et al., 2005: 140)

In Stuart Hall's book *Representation: cultural representations and signifying practices* representation is 'the use of language, of signs and images which stand for or represent things' (1997: 15). Hall goes on to say that '... there are *two* processes, two systems of representation ... meaning depends on the system of concepts and images formed in our thoughts which can stand for or 'represent' the world, enabling us to refer to things both inside and outside the head' (1997: 17). Secondly, there is a system of exchange between humans in the form of 'language', in the general 'written', 'spoken' and 'visual' sense. In Hall's explanation representation is the 'production of the meaning of the concepts in our minds through language' and the words 'real' and 'fictional' differentiate between a dual interpretation. Hence, a mental and material use of the word representation is distinguishable.

Representation as a mental faculty, appears to be dependent on what Kant refers to as the 'synthetic unity of apperception' (2007 [1781]: 124), that is, 'the mental process by which a person makes sense of an idea by assimilating it to the body of ideas he or she already possesses' (Soanes and Stevenson, 2005). Kant uses the example of a triangle:

... we think of a triangle as an object by being conscious of the combination of three straight lines according to a rule by which such an intuition can always be presented. This unity of rule determines all the manifold, and limits it to conditions which render the unity of apperception possible; and the concept of this unity is the representation of the object = X (2007 [1781]: 136)

More than making sense of an idea, representation appears to express the internal 'thought', 'concept', 'idea' or 'feeling' as external thing (for example, object or people event) as language, as sign, as image (Hall, 1997: 1–30), each of which possesses a material quality in the same sense that a physicist might argue does speech. Blackburn states that 'in the material mode of speech objects and their relations are the topic' (1996: 143) seeming to suggest that the material (external) object of speech is relationship. In the context of this inquiry material refers to something that can be experienced and has been produced to varying degrees by 'the craftsman, the engineer, and the scientist' (Whiteley, 1977: 14).

The outside-inside and material-mental duality of representation is shown in Figure 4-4 whereby object, language, sign and image, are external to idea concept, thought and feeling, existing in material terms rather than mental terms.

What can be deduced from this is that explaining representation in terms, such as image, is inexact. It has been shown earlier that the word sign also has multiple uses and is therefore ambiguous to use in a cross-disciplinary context. For this reason, in the diagram immediately below, the circles in the venn diagram are shown to overlap, suggesting definitions such as *representation* are problematic as the terms closely associated with it are ambiguous.

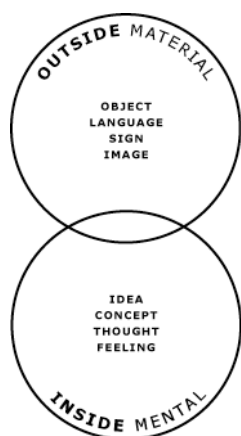


Figure 4-4 The inside outside domains of representation

Difficulty exists in the process of selecting words that might occupy either of mental and material domains, as many are interchangeably used in mental/material or outside/inside discussion. Words such as ‘thing’ equally might stand for ‘inanimate material object as distinct from a living sentient being’ or ‘action, event, thought, or utterance’ (Soanes and Stevenson, 2005). An example of this can be drawn from Kant. The following passage demonstrates how his use of terminology requires close inspection to determine how one might ‘obtain representations’ to establish a concept.

Whatever the process and the means may be by which knowledge refers to its objects, **intuition** is that through which it refers to them immediately, and at which all thought aims as a means. But **intuition** takes place only insofar as the object is given to us. This again is only possible, for us human beings at least, when the mind is affected by the object in a certain way. The capacity (receptivity) to obtain representations through the way in which we are affected by objects is called **sensibility**. Objects are therefore **given** to us by means of our sensibility. Sensibility alone supplies us with **intuitions**. These intuitions are **thought** through the understanding, and from the understanding there arise **concepts**. But all thought must, directly or indirectly, by way of certain characteristics, refer ultimately to intuitions, and therefore, with us, to sensibility, because in no other way can any object be given to us.

The effect produced by an object upon the capacity for representation, insofar as we are affected by the object, is **sensation**. An intuition that refers to an object through sensation is called **empirical**. The undetermined object of an empirical intuition is called **appearance**.

That in an appearance which corresponds to sensation I call its **matter**; but that which brings about the fact that the manifold of the appearance can be ordered in certain relations, I call the **form** of appearance... Now, that in which alone sensations can be ordered and placed in a certain form cannot be sensation again. Consequently, despite the fact that the matter of all appearance is given to us only *a posteriori*, its form must lie ready for the sensations *a priori* in the mind, and must therefore allow of being considered apart from all sensation.

(Kant, [1781] 2007: 59, original bold and italics)

In this passage, which begins Kant's *Transcendental Doctrine of Elements*, in the book *Critique of pure reason* ([1781] 2007) he seems to suggest mind and object are separate, and sensibility is the entry point through which an object must pass in order to be intuited and thought about. Objects are given to us through sensibility, and intuition makes this instantaneous. This leads to thought and the development of concepts that in turn are part of intuition and sensibility. However, the word *object*, to describe things external and physical is contested by Kant. 'We may indeed call everything insofar as we are conscious of it, an object; but it requires a more profound investigation to discover what this word may mean with regard to appearances, not insofar as they (as representations) are objects, but insofar as they only signify an object' (2007 [1781]: 213). He refers to the *transcendental object* as being known to neither as inner or outer intuition, but, the *empirical object* is the former 'if represented only in a relation of time' and the latter 'if it is represented **in space**', apparently suggesting that *empirically external* objects are outside of us.

More can be said about this in terms of what Simon Blackburn calls 'Kant's revolution'. 'Kant sees that when it comes to space and time, size, shape, and the objective order, to have a concept is not to have a mental picture. It is to have an organizing principle or rule; a way of handling the flux of data' (Blackburn, 1999: 255–256). In this, Blackburn highlights a critical distinction between an object that is deduced from experience, say as a resemblance or picture, and one that is determined by '*categories of thought*' (ibid).

Based on Kant's explanation, Figure 4-5 attempts to show how the empirically external object is 'given' to us through sensibility, and via intuition (feeling), thought, concept, and ideas. It is determined as empirical through the 'effect' of sensation. Sensibility and sensation appear to operate at the threshold between the internal mental and external material systems of representation. A cube is used to illustrate this. Depicted is the idea of a cube (a six sided three dimensional shape made up of equal proportions arranged symmetrically); how one might conceive of a cube (in relation to other objects); think about a cube (in terms of what it might be used for, for example, a dice); and what emotions might a cube invoke (for example, a building, or the role of a dice).

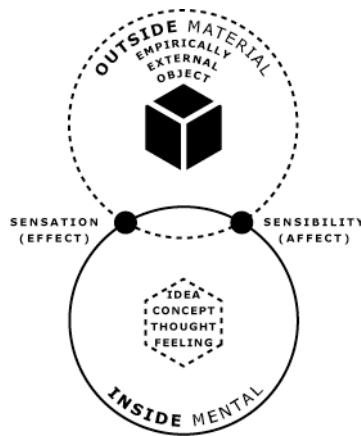


Figure 4-5 Representation through sensibility and sensation

Figure 4-4 showed how Hall uses **image**, alongside language and sign, to stand for or represent things, and it was seen in that diagram as an external material concern, or what might now be described as occupying the space referred to in Figure 4-5 as an empirically external object of representation. Similar to the word representation (and the earlier mentioned use of the word sign), it has already been stated that image too carries a dual meaning that is both external and internal. This deserves more attention because 'idea creation' has been one of the central themes in the work of the Researcher throughout this research (Harland, 2007).

In his book *Iconology: image, text, ideology* W.J.T. Mitchell (1986) confirms that the word image is closely associated with 'the very idea of an "idea"' and the Greek origins of the verb 'to see' (ibid: 5). Similarly, the Latin counterpart of image is 'imago', meaning 'likeness, picture, statue; ... mental picture, idea'

(Collins, 1997). Mitchell asks the question ‘What is an image?’ and finds in his answer widespread ambiguity across ‘some intellectual disciplines’ that differ in their use of the term:

... mental imagery belongs to psychology and epistemology; optical imagery to physics; graphic, sculptural, and architectural imagery to the art historian; verbal imagery to the literary critic; perceptual images occupy a kind of border region where physiologists, neurologists, psychologists, art historians, and students of optics find themselves collaborating with philosophers and literary critics. (op cit: 10)

Accompanying Mitchell’s account is a ‘family of images’ diagram (Figure 4-6) that categorizes likeness, resemblance and similitude with five image differentiations – graphic, optical, perceptual, mental, verbal – each appearing to be a sub-category of image as likeness, resemblance and similitude. Three of these (graphic, optical, and verbal) appear to be external material objects of representation, whereas the remaining two (perceptual and mental) are internal representations. This is useful here in demonstrating that as with much of the terminology associated with representation, meanings are not fixed but at least appear to have physical and metaphysical properties.

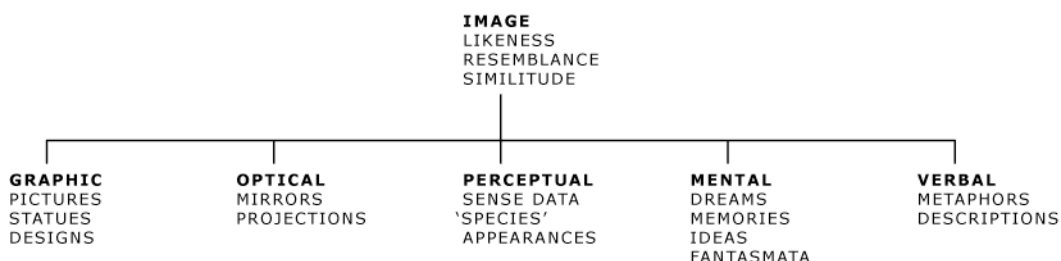


Figure 4-6 Family of images

Source: Mitchell, 1986: 10

This further confirms *representation* as an ambiguous word, be it in the context of cultural geography or the work of Kant. Nevertheless, returning to representation in cultural geography, it is suggested that representation is one of the ‘central practices which produce culture’ and it is one of five central ideas in what has been called the ‘circuit of culture’ (Hall, 1997: 1) as shown in Figure 4-7. The **circuit of culture** shows how representation, as a mental and material phenomenon, is part of and reinforces identity, production, consumption and regulation. Some concrete examples of this will now be discussed that show how representation is part of cultural geography, is manifest as graphic imagery, and

reinforces identity in the built environment. This will be done by framing the discussion within a local-global foundation in geography, and illustrating how the mosaic, system and network approaches are represented through graphic empirical external objects.

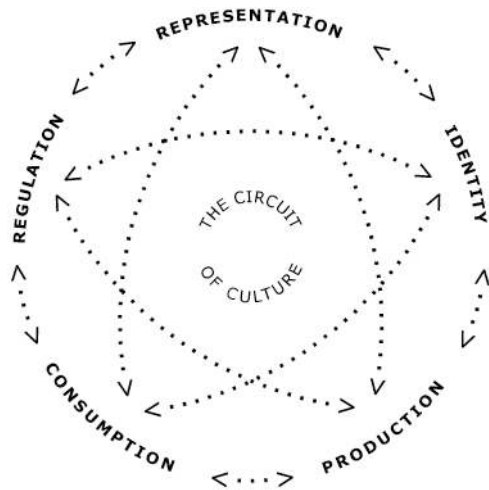


Figure 4-7 The circuit of culture

Source: Hall, 1995: 1 (redrawn)

In the human geography literature the idea of **colonialism** will help concentrate the discussion on the idea of representation and some of its various interpretations. Nash argues that colonialism is ‘the rule of a nation-state or other political power over another, subordinated, people and place. This domination is established and maintained through political structures, but may also be shape economic and cultural relations’ (2005: 158). It is a political geography as well as cultural geography. Although colonization was practiced in ancient Greece, the ‘age of colonialism’ in the fifteenth century happened when European powers led by Spain and Portugal expanded into Africa, Asia and the New World using forceful means to establish new settlement (Johnston et al., 2000: 93).

One such example is Portugal’s discovery of Brazil in 1500 and the subsequent beginning of colonization some thirty years later. By 1584, it is estimated that Portuguese Brazil’s population consisted of ‘25,000 whites, 18,000 domesticated Indians and 14,000 black slaves’ making a total population of approximately 57,000 (Bitterli, 1989: 57–60). Since then, in a predominantly Spanish speaking continent, Brazil has maintained its Portuguese connection through spoken

language, having resisted attack in the early decades of colonization in the sixteenth century from other European countries. Brazil stayed aligned with Portugal, who at the time were considered ‘markedly superior to the Spanish’ (1989: 68–69).

As well as language, other objects of representation are synonymous with the colonial link between Portugal and Brazil. Consider the distinct visual quality of the street and pavement surfaces in the old part of Portugal’s capital city Lisbon. Many are covered with a distinct monochrome mosaic of cobble paving that also, in parts, depict street markings for pedestrian crossings, bus and motor traffic lanes, and form ornate patterns and motifs on pavement surfaces. See Figure 4-8. The distinctive cobble surface contributes to the whole pedestrian, tram and motorcar user experience in a way that is unique in its extensive application.

Mosaic patterns can be found in most cities of the world as a decorative surface. Some examples appear in Phil Baines and Catherine Dixon’s book *Signs: lettering in the environment* (2003: 138–139). (They describe two basic techniques as broken or specially cut tile work, or working with regular shapes that are arranged to suit the regular size of the tile). Mosaic is present in New York’s Times Square in various guises. It appears to offer a distinctive pattern that is instantly recognisable, and human in its ‘hand-made’ appeal. As pavement, it is perhaps at its most splendid at the Foro Italico in Rome, where it depicts mythological scenes and slogans (ibid: 166–167). In this instance it is more decorative than functional.



Figure 4-8 The monochrome mosaic of cobble paving in Lisbon

Source: Robert Harland, 2006

With regard to colonialism and representations of colonialism, the mosaic paving is not exclusive to Lisbon. The same cobbled pattern can be found in the city of São Paulo, Brazil, as shown in Figure 4-9. As representation, this is an example of visual language through visual material as visual culture. As image, it does not typically fit into any of the categories in Mitchell's family of images. It is not optical, perceptual, mental or verbal, but it can be called graphic in the sense that it is design and may be pictorial. It is created through design, is historical in its association, political in its implication, and identity enforcing. The outcome can be defined as a geography of material and visual culture that is a transnational externally empirical graphic object. What appears to be a distinctive feature of Lisbon can also be found as a distinctive feature in São Paulo, as a representation about how two nations are linked through their colonial history. Earlier it was mentioned that the mosaic is a metaphor for distinct identities and recognisable personalities and traditions. This differentiates between one place and another. In the example of cobble paving found in Lisbon and São Paulo, mosaic is both a mental and material metaphor.



Figure 4-9 The monochrome mosaic of cobble paving in São Paulo

Source: Robert Harland, 2006

The system, or world-system, approach treats the world as a 'single economic and social entity' (Crang, 2005b: 43). As such, some objects of representation aspire to universality and lack local identity. In architectural terms this approach

conforms to the ‘social Utopianism’ of what is known as *The International Style* (Jencks, 1985: 40). In graphic terms, its equivalent is *The International Typographic Style* emanating from Switzerland and Germany in the 1950s with ‘objective clarity’ as its aspiration (Meggs and Purvis, 2006: 356). At its simplest and most accessible to everyday life, *The International Typographic Style* promoted what Barnard describes as ‘... the use of simple typeforms because they were universal, clear and impersonal’ (2005: 128). Subsequently this influenced the visual presentation of many public sign systems on transportation networks. For example, the place names that have welcomed passengers at many railway stations in the UK since 1965 are free from any reference to local identity. These sign systems made exclusive use of sans-serif typography, often in the typestyle *Helvetica* – one of the defining visual characteristics of this style. Shown in Figure 4-10 are examples of station name signs designed by Margaret Calvert and Jock Kinneir for the British Railways signing system in 1960s, using a typeface similar to *Helvetica*, called *Rail Alphabet*. These signs continue to be seen on the rail network in the UK, despite many having been replaced due to privatisation of the network in the 1990s (Walters, 2009: 47), as ‘represented’ in Figure 4-11.



Figure 4-10 British Railways signing system

Source: Robert Harland, Derby 2005, Loughborough and Leicester 2010



Figure 4-11 Replacement station name signs

Source: Robert Harland, Bournemouth, Greenwich, and Nuneaton, 2009

The basic properties of the signs designed in the 1960 using *Rail Alphabet* – black sans serif lettering, centred layout, white background and rectangular shape – are also a standard feature for place name signs on some roads in Europe. In Southern Italy, and in the UK, using the same visual language and configuration, car drivers are greeted with the same visual experience when entering the southern Italian city of Isernia, as if entering the small hamlet in Leicestershire known as Care. See Figure 4-12.



Figure 4-12 The simple place name welcome

Source: Robert Harland, Care, UK, 2010 and Isernia, Italy, 2008

By comparison with the signs designed in the 1960s for British railway stations shown above, the basic properties differ mainly in the use of miniscule letters for the railway signs (Derby) and majuscule letters for roads (Isernia), and what appears to be a narrow black border on the road signs. What is more, a subtlety of

difference can be found in the typeface design for these examples – something that will be overlooked by the layperson (and probably the majority people trained in the visual arts). For example, the straight ‘leg’ on the majuscule R is a characteristic on the signs for Care and Isernia, but the same majuscule letter R in the Rail Alphabet does not have a ‘straight leg’ but drops vertically from the ‘bowl’ incorporating a small concave and convex curve at the top and ‘tail’ of the stroke (not shown) similar to that of Helvetica which looks like **R**. (The ‘tail’ of the capital R is also known in typographic terms as a ‘leg’, also seen on a majuscule K. The ‘bowl’ is the rounded shape that defines the ‘counter’ – the negative shape within a letterform (Kane, 2002).

Such small details as these, found in typeface design, or type design, have been said to contribute to a sense of national identity. Phil Baines (1999: 26–36) refers to this in his review of the design for the British road sign system, developed by Jock Kinneir and Margaret Calvert, in the late 1950s and early 1960s. This idea has also been adopted in an unpublished paper given by the Researcher at the *Forms of identity in the designed environment: An architectural design and global difference research symposium*, Nottingham Trent University, 17 September 2007. The full text and accompanying images are provided in Appendix six, explaining how micro design concerns contribute to the everyday experiences and expectations.

Much more can be said about the potential for Geography as a basis for investigating the research questions that emerge from the wider scope of visual communication in the built environment, and graphic design as urban design. A glance at the geography literature suggests that it is yet to consider the level of detail that concerns the graphic designer, typographic designer, or type designer. For example, Mike Crang’s interest in image-reality and making images, highlights the London Underground Map by tracing its development through three representations between 1908 and 1933, when Harry Beck designed the diagrammatic version that has been used since (2005a: 82). Detailed analysis of the design of the map through this period, and since, includes the design by Edward Johnston in 1916 of a patented typeface for the Underground, extending to station signage and a ‘logo’ that is still in use today (Meggs and Purvis, 2006: 242–243) across the complete range of visual communications produced by London Transport since. Adrian Forty discusses this in detail. He begins with the

remark that '[o]f all the ways in which design can influence the way we think, the only one to have been acknowledged widely has been its use to express the identity of organisations' (2005: 222). Forty follows this claim with a detailed historical analysis of the creation of London Transport after the amalgamation of 165 companies in 1933 (2005: 231) into a unified design system from typeface design to architecture. (The London Underground symbol is shown in Figure 4-30 and in appendix six).

This is significant in the sense that our experience of images is more than as original artefacts, but also as systems of visual culture that are familiar and experienced by the majority rather than minority. At a basic level, the alphabet is such a system, but also, the wider system created by graphic design is where it is most commonly located in contemporary life.

If it is agreed that such issues are a matter for human geographers, some brief clarification about what human geographers do is necessary. 'Writing the earth' and 'writing the world' make up the two distinct aspects of human geography, as shown in Figure 4-13. The former is concerned with the human-nature relations – the universality and ecology of the earth. The latter is about society-space relations, or the constitution of human life through space. It is about what humans do, somewhere. This relates to ideas about location, distance, place, travel, scale, and distribution, amongst other things (Cloke et al., 2005: xi). In this sense we return to the earlier discussion in this thesis about social space, or socially produced space. By this human geographers mean an emphasis on 'how space is socially constructed and experienced, rather than being a backdrop to social life' (ibid).

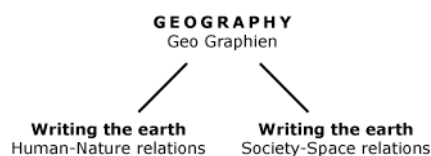


Figure 4-13 Geography: writing the earth, writing the world

Source: Cloke, Crang and Goodwin, 1999, p. xi

Geography appears to have relied on similar qualities associated with graphic design as an integral part of its function and sense of purpose. Furthermore, urbanisation is as an integral aspect of it as a field of study. Yet there is no

mention of graphic design or urban design in the UK higher education subject benchmark statement for geography, although there is an expectation that geographers must have a ‘deep’ understanding of mediated communication, and be conscious of how they employ ‘geographical concepts, techniques and expertise’ (QAA, 2007a) to urban and rural planning. The following paragraph, taken from the benchmark statements confirm these observations:

The literal derivation of the term ‘geography’ is Earth-writing. Geographers should show knowledge and critical understanding of the diverse manners of representation of the human and physical worlds. Maps have an important historic role as representations of the world, and geographers should be conversant with their modern forms and dimensions. However, geographers should have a similar depth of understanding of other representational forms, including texts, visual images and digital technologies (particularly GIS and remote sensing). (QAA, 2007a: 5)

Such an understanding is recognised by Mike Crang (2005a: 78) who suggests that because geographers produce images of the world, they must also understand the role of images, and what this says about those who look at them. He argues that geographers have a reluctance to acknowledge the importance of ‘images’ because of the potential for images to be perceived as superficial, not factual, ambiguous and partial. Notwithstanding, he suggests that there is a geography of the ‘photogenic’, such as the sort of images that appear in the brochures and postcards for tourist destinations. This *simulacra* – an image or representation that may be an unsatisfactory imitation – is valued in the work of Baudrillard where reality is called into question. The example of themed restaurants in a shopping mall is discussed, such as a Parisian café display façade.

These ‘images’ are also part of the terrain of graphic design because they are often created through the process of graphic design. This idea must be extended beyond the visual image to include the use of language. For example, if we see a street sign that says *Rose Street* as seen in Figure 2-28, it is unlikely that there will be a smell of roses. Moreover, every time a purchase is made in McDonald’s, this is far removed from the authentic drive-in experience envisaged by ‘Dick’ and ‘Mac’ McDonald who opened their first food service business east of Pasadena in 1937, cooking the hot dogs, mixing shakes and waiting on customers (Love, 1995).

This extends to the physical representation of the McDonald’s restaurant. Their first building was an octagonal structure, built in 1940, and unlike the modern

day experience of a McDonald's restaurant found in Times Square, New York. See Figure 4-14 for a short evolutionary glimpse at the McDonald's restaurant. These are as much matters of misrepresentation as well as simulacra. One cannot fail to notice in the original building the absence of the familiar M symbol associated with McDonald's, known as the 'golden arches'. This was not part of the original architectural experience until the first licensed restaurant in 1952. Originally they were proposed by one of the McDonald brothers as an addition to an 'attention-grabbing design' for a new store by architect Stanley Meston. However, they were finally added to the building design by a neon sign maker who came up with the yellow colour so it could be seen from a distance (Love, 1995: 20), subsequently becoming an integrated architectural element in the new restaurant buildings.



Figure 4-14 The simulacra of McDonald's

Source: *Left and centre*, Love, 1995. *Far right*, Robert Harland, Times Square, 2010

On an international scale, one might also consider the idea of representing a country through a logotype or symbol. *Can there be a geography of logotypes and symbols?* These play a significant role accompanying photographs that are used in advertisements for tourist destinations contributing to what has become known as place branding. In the geography subject benchmark statement it suggests that 'the ideas of place, space and time should inform geographers' (op cit: 5) critical understanding of the nature of difference within the human world. The proliferation of logotypes and symbols as a form of place representation appears to be a contemporary phenomenon. It is a significant aspect of tourism and many countries have created their own kinds of simulacrum, as forms of national representation used as an alternative to other kinds of national identity, such as the national flag. See Figure 4-15. In keeping with this there is an emerging body of literature on 'nation branding' and 'place branding', notably from people such as Wally Olins (2003) or Simon Anholt, who is concerned with 'the images and identities of places, economic development and international communications theory' (Anholt).



Figure 4-15 Visual identity for different countries

Source: Al Bardawiel, 2008: 22

Moving on from this and back to the wider view in geography, possibly the most useful aspect of geography is the many concepts and methods associated with the discipline. Some have already been discussed and overall these are too numerous to mention. *Place* is one of those concepts and this has been featured already in terms of the local-global of human geography. Place is seen by Noel Castree as a matter of ‘connections and boundaries in an interdependent world’ (2009: 153–172), and an earlier variation on the metaphors for understanding place as mosaic, system, and network shown in Figure 4-2 is the similarly phrased *mosaic*, *switching point*, and *node* (Castree, 2009: 162, citing Crang (1999)). The second of these offers the only notable alternative in diagrammatic terms, it being portrayed as a circuit board. This is not shown here but what is notable is that geography is a fluid subject with conceptual inconsistencies in the way some key concepts are represented over time, due to advances in research. For example, Herod (2009: 217–235) frames the local-global idea more in terms *scale*, this being not only about the politic and sociology of real material things but also as a means of constructing and comprehending the world. Once again, metaphor is used as a device to depict scale in five different ways; as a ‘ladder’, as ‘concentric circles’, as ‘Matryoshka (nesting) dolls’, as ‘earthworm burrows’, and as ‘tree

roots'. All of these show the local–regional–national–global concept. What is more, geographers have thought about the local-global relationship in different ways, and Herod (2009: 230–231) lists six of these:

1. The global and the local are not actually things but ways of framing situations.
2. The global and the local each derive meaning from what they are not.
3. The global and the local simply offer different points of view on social networks.
4. The global is local; scratch anything global and you find locality. For instance, multinational firms are actually multilocal rather than global.
5. The local is global; the local is only where the global processes 'touch down' on the Earth's surface.
6. All spaces are hybrids of the global and the local; they are glocal.

Considering some of the objects of representation featured in this part of the discussion – the crucifix found in Longano and New York, the cobbled paving of Lisbon and São Paulo, the McDonald's restaurant, or place name sign – these fit best with item 4 and 5, and in particular 6, in the sense that they appear as glocal images of representation.

Understanding such geographic concepts as place and scale is seemingly dependent on the use of **metaphor**, a key method in the Humanities (Cross, 2006). Metaphor is apparent throughout this thesis. Before now, it has been cited as having been used by Christopher Alexander to explain the importance of ornamentation, by Kevin Lynch to explain legibility, and by Malcolm Barnard to explain visual culture. With respect to qualitative research data analysis, Miles and Huberman are bold in stating that metaphors 'have an immense and central place in the development of theory' and explain metaphors to be '*data-reducing devices ... pattern-making devices ... decentering devices ... ways of connecting findings to theory*' (1994: 250–252, original italics). Related to the earlier

discussion about representation, image and the internal mental domain, researchers into the idea of metaphor focus on it to help in the understanding of conceptual thinking and how humans relate to their environment.

The concepts that govern our thought are not just matters of the intellect. They also govern our everyday functioning, down to the most mundane details. Our concepts structure what we perceive, how we get around in the world, and how we relate to other people. Our conceptual system thus plays a central role in defining everyday realities. If we are right in suggesting that our conceptual system is largely metaphorical, then the way we think, what we experience, and what we do everyday is very much a matter of metaphor. (Lakoff and Johnson, 1980: 3)

Metaphor appears to be critical in the work of human geographers, and it has been used by this Researcher to explore the ‘territory’ of graphic design as a ‘nation state’ (Harland, 2009a) and in terms of ‘dimensions’ (Harland, 2007) in the same sense that the Potter and Sarre (1974) attempted to define the *Dimensions of society* in the 1970s. Then, Potter and Sarre asked the reader to

[i]magine that we have the task of familiarising people with a continent that contains at least five countries. Each country has its own history, way of life, dialect, institutions, literature, and ideology. Each has a core territory, but some have larger areas peopled by separatists. Worse, there are substantial areas where two or more countries claim jurisdiction, and other areas not claimed at all. How are we to communicate the nature of this continent? (ibid: 3)

Communicating the nature of a continent might well be the responsibility of many disciplines. Geography is one of them. Its concern with issues of space and place, and specifically the urban system, offers other useful models that are of interest to this research for at least two reasons. First because of the approach to establishing frameworks for analysing the urban system, and second, because of the approaches to using diagrams to represent and explain the urban system in visual form (Herbert and Thomas, 1990: 61–97). One such example is Walter Christaller’s *Central Place Theory*, established in Germany in 1933, but not translated into English until 1966. That sought to make clear the distribution and sizes of towns, and the support they provide for their hinterlands. This is depicted in the geography literature to varying degrees of complexity, using a series of diagrams. It is shown here in Figure 4-16 as one diagram that should be read from left to right. It demonstrates how the sphere of influence of a single central place evolves into an urban system of first-, second- and third-order settlements

that acquire an increasing hinterland as the sphere of influence develops. This happens when first-order settlements (villages) are recognised in overlap areas between two or more central places, and dispersed second order settlements (towns) come under the influence of third-order places (city).

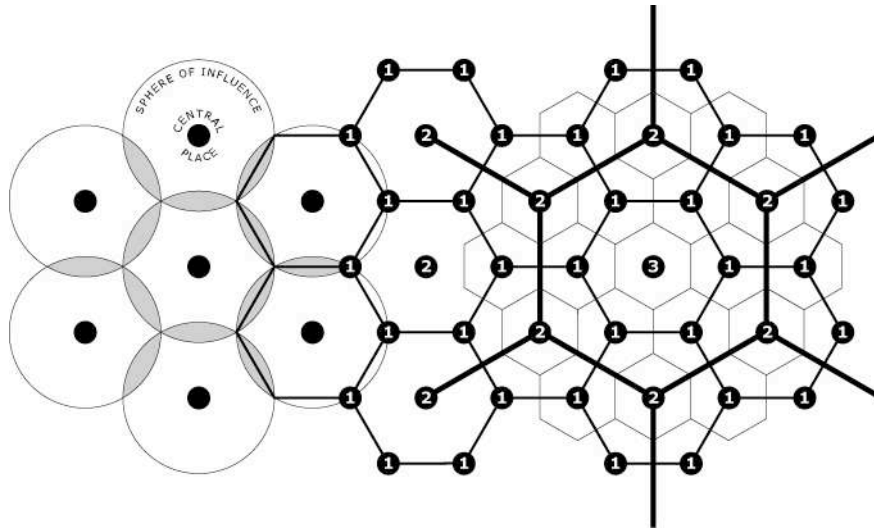
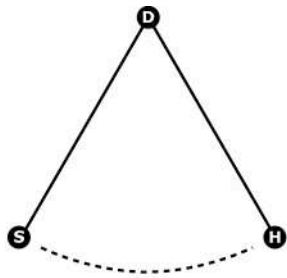
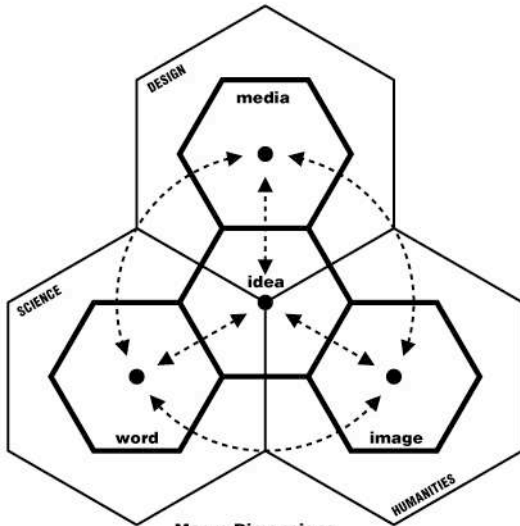


Figure 4-16 Depicting Christaller's central place theory

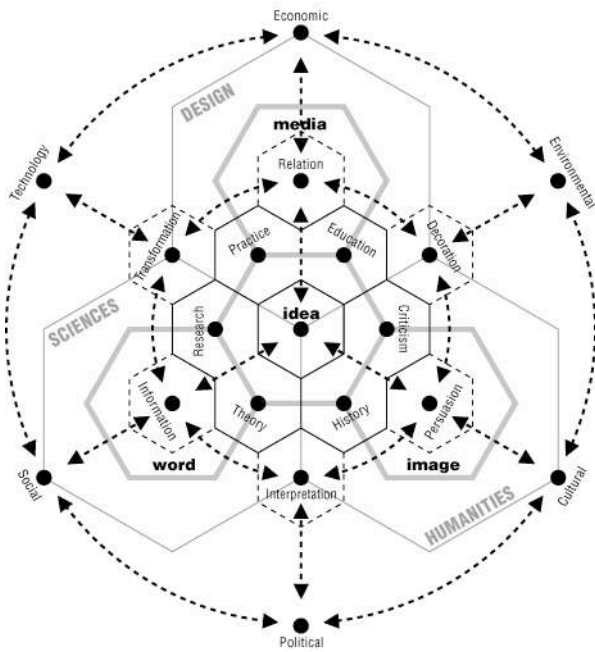
Clearly such a model is of its time and before the megacities of today. But, the depiction of this idea allows for an understanding of how scale and influence might be shown in other contexts. This might also help explain how the local-global concept can be modelled in other disciplines. This diagrammatic modelling technique also offers much potential for depicting graphic design as urban design. Three sketch models that show how the approach might depict the dimensions of graphic design have been shown in a paper presentation to delegates at the Information Design Conference, London (Harland, 2009b). The paper, *The graphic design pendulum: the swing between information and affectation*, explored the idea of graphic design being a process that benefitted from both science and humanities, and the metaphor of the pendulum attempted to show how products of graphic design were as much about appropriateness than objective or subjective approaches to design practice. Three diagrams (slightly refined for presentation in this thesis) that attempted to illustrate this point are shown in Figure 4-17. The content for each diagram is an early attempt to include key words from the literature, and show the relationships between the domains at different scales.



The Graphic Design Pendulum



Macro Dimensions of Graphic Design



Micro Dimensions of Graphic Design

Figure 4-17 Test macro and micro diagrams

Source: Harland, 2009b

The significance of this point leads to the final aspect of geography that will be considered here: **graphicacy**. Alongside the established term *cartography* (usually associated with geography) *graphicacy* is a key method in geography (Clifford et al., 2009b). The term stems from the work and concern of geographers Balchin and Coleman, who in 1965 published the article *Graphicacy should be the Fourth Ace in the Pack* in *The Times Educational Supplement* (5 November). (This is a year earlier than is cited by some geographers, who will have seen an article of the same name in *The Cartographer*, 3: 23–8, 1966). In 1972 Balchin gave a precise definition as ‘the communication of spatial information that cannot be conveyed adequately by verbal [meaning written rather than spoken] or numerical means’ (Boardman, 1983: preface). Initially, they called for more teaching of the subject in primary school, but since it has been adopted as a research method in geography teaching in higher education.

Whereas cartography has as its focus all issues relating to mapping and maps – ‘development, production, dissemination and study of maps’ – graphicacy is said to be concerned with the ‘skills of reading and constructing graphic modes of communication, such as maps, diagrams and pictures’ (Perkins, 2003: 343). It is claimed as one of four geographic competencies that ‘educated persons should develop’ (Nelson, 1999, citing Mark Monmonier (1993)) alongside articulatory, literacy and numeracy, as defined below:

Articulatory	fluency in oral expression (language and presence)
Literacy	fluency in reading and writing effectively
Numeracy	fluency with the manipulation of numbers
Graphicacy	fluency in the construction and interpretation of graphic modes of communication (graphs, diagrams, illustrations, photographs, sculpture, icons, and maps)

Although this description for graphicacy is not quite as succinct as those given for articulatory, literacy or numeracy, it is notable for its inclusion of sculpture and its omission of typography and lettering. This introduces a three dimensional element but is perhaps more about the needs of the visual impaired (Perkins, 2003: 346) than artistic expression. Despite the importance of lettering on maps as ‘one of the most difficult areas of cartographic design’ (Perkins, 2003: 358), lettering is excluded from this definition. Nevertheless, in general, the argument for graphicacy suggests it is a ubiquitous human process and part of the everyday

social experience, and yet it is claimed by Monmonier (op cit) to be neglected in arts-based academia in favour of literacy.

Reviewing the potential relationship of graphic design and urban design to any of these areas of knowledge is a significant undertaking that would require much historical research. Some aspects of this undertaking are revealed throughout this thesis. The objective has been to suggest that the subject can be located in many traditional and contemporary areas of knowledge. One approach has been suggested as architectonic. An alternative approach is now considered, discussed by Martin Dade-Robertson (2009) in a keynote conference presentation at Loughborough University in July 2009. He spoke of architectonic systems and linguistic systems approaches to understanding meaning in art and design. The linguistic approach is therefore now explored by locating the research question in the study of language.

4.4 Located in Language

How might the research topic be located in language? Before this can be answered it must be established that the study and science of human language is referred to as **linguistics**—a practical and philosophical subject (Fromkin and Rodman, 1983: Preface). It is usual for discussion about language to begin with spoken language, and the idea that language distinguishes humans from animals. To know language is to speak and be understood by others, who can reciprocate. Steven Pinker advises that language is one of the ‘wonders of the world’ because ‘we can shape events in each other’s brains with exquisite precision’ (1994: 15). But there is some degree of debate in linguistics between traditional verbal communication that is independent of other kinds of communication (such as facial expression), and non-verbal communication that might include ‘printed texts’ incorporating ‘typography’ and ‘page layout’ or ‘illustrations’ (Graddol et al., 1994: 3), Consequently, describing language can be divided into key topics:

- The nature of writing
- The sounds of language
- Sentence and word structure
- Meaning
- Writing systems
- Face-to-face interaction
- Discourse and text

(Graddol et al., 1994)

Of these seven, this research closely relates to writing systems as non-verbal communication and as material objects. It has been argued that speech is the most elementary form of linguistic expression because humans generally learn to speak before learning to write (Graddol et al., 1994: 134) but in the historic development of interpersonal communications the development of writing appears to address the restrictive and limited scope of speech. For example, speech required face-to-face contact, but this is often impractical and therefore unreliable. Hence, there developed a need to record communication with more permanence over time and distance, at first of a numerical nature, but then the earliest kind of explicit written communication evolved as *pictographic*.

Pictographic symbols encoded thought and speech approximately 4000-5000 years ago, and because of this historical significance, language is regarded by some as the greatest of human inventions (Robinson, 2007: 7). This is not to suggest that humans only started to communicate in mediated form at that point. Prehistoric visual communications have been found in Africa that are over 200,000 years old, and the often cited cave paintings in Lascaux in France date between 15,000–10,000 B.C. (Meggs and Purvis, 2006: 5). Nevertheless, most artefacts that historians use when referring to systematic writing, appear to date within the last 6,000-7,000 years.

An historical account of the development of writing systems has been the concern of many academic disciplines, and much has been written. This thesis is not an historiography and therefore an account of the development of writing systems is limited. That said, it is worth returning to the earlier discussion about areas of knowledge to explore the academic scope for the research in the domain of language. Bacon's categorisation of knowledge – history, poetry, mathematics, natural history, moral philosophy, logic, and rhetoric – as listed in Table 4-1, allows the opportunity to study the idea of graphic design as rhetoric.

Rhetoric is what Neil Mercer (2000: 73) succinctly calls the 'art of persuasive language' that originated in ancient Greece as shrewd argumentation.

Understanding rhetoric as good argument in a philosophical sense, rather than doctrine, is what is meant by it being considered an art, enough so as to be studied in medieval universities (Blackburn, 1996: 330). Whereas the earlier discussed systematic approach of Dewey allowed for the subject to be placed within *language*, in Phenix's *Realms of Meaning* it could be located in *symbolics*.

However, specificity is required before adopting some of these terms as useful ways to study graphic design as urban design. For example, one explanation of symbolics appears to be concerned with a ‘peculiar’ kind of mathematical truth based on studying the meaning of symbols as abbreviation rather than studying the world (Russell, 1961: 168). ‘Symbolic logic’ is a term that has been used in formal logic to mean the use of ‘schematic letters and variables (‘symbols’)’ as a substitute for categories in a sentence (Blackburn, 1996: 369). The Oxford Dictionary of English (2005) explains symbolic logic clearly as ‘the use of symbols to denote propositions, terms, and relations in order to assist reasoning’ (2005).

Symbols are used by all societies. A. C. Grayling has questioned if there is ‘some philosophical reason for their significance’ (2010: 196–201). One way to think about this philosophically is to imagine life without symbols, as shown previously in Figure 2-25, or without the writing systems that have been invented by humans. Or, as Grayling brings to attention, without ‘[p]erhaps the most taken-for-granted symbols in the world ... those used in airports worldwide to indicate the presence of toilets’ (ibid: 198).



Figure 4-18 Universal toilet signs

Source: Robert Harland, 2007, Photographs from Hong Kong International Airport

Furthering this idea, these symbols, often alongside a symbol of a person in a wheelchair, and a baby to indicate ‘nappy’ changing facilities, can also symbolise

a changing public attitude towards sanitation that is now inclusive – something that had not been conceived of until the twentieth century. Until then, Rendell has argued, public spaces were dominated by the ‘spatial and gendered ideology’ of ‘public-male-city/private-female-home’ (1998: 75).

The Great exhibition recognized that the lack of facilities [conveniences] was a real impediment to female mobility in the urban realm ... a morning’s shopping was all we could manage for one day, for, strange as it seems now, the big shops had no restaurants, no rest rooms, no conveniences for toilet, however dire one’s needs. (Penner, 2001: 38)

This small diversion seeks to further demonstrate how closely related the focus in this research topic is to traditional ways of knowing, and contemporary issues of representation in the world. There appears no doubt that symbols are important, materialistically and philosophically, perhaps in that order. Teymur argues that ‘[w]ithout appropriate symbols most ideas and concepts could not be expressed or even thought of’ (1982: 152). More closely related to graphic design, Buchanan suggests that a concern for visual *symbols* (original italics) stimulated the activity of graphic design as a practice, arguing that as a ‘place’ rather ‘category’ it is the first of ‘four orders of design’ (2001: 10). See Table 4-9. (Place is used by Buchanan in preference to category to reflect a shift in practice and research from ‘grammars and logics’ to ‘rhetoric and dialectic’).

Table 4-9 Buchanan's four orders of design

Source: Buchanan, 2001: 12

	<i>Symbols</i>	<i>Things</i>	<i>Action</i>	<i>Thought</i>
<i>Symbols</i>	Graphic Design			
<i>Things</i>		Industrial Design		
<i>Action</i>			Interaction Design	
<i>Thought</i>				Environmental Design

Taking this idea by Buchanan, that graphic design and symbols is a first order concern in design, and that thinking about environmental design is a fourth order objective, when the same information is reconfigured to fit and relate visually to

earlier diagrams, such as Figure 2-26, it is possible to show the central position (but not necessarily *the* central position) that graphic design occupies in the environment. This is shown in Figure 4-19. To some extent this depicts and expands the ideas mentioned earlier in the work of Moles about the legibility of the world, and the claim by Lang about the importance of communication, both in section 2.5. Perhaps the most useful aspect to the four concentric orders of design is the way that thought is shown to expand and take in the whole world-view, perhaps better described as the holistic mindset cited from Schön mentioned at the beginning of this chapter in section 4.2.

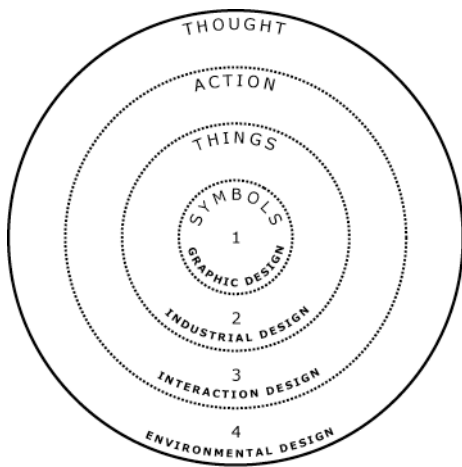


Figure 4-19 Four concentric orders of design (after Buchanan)

Returning to the core issue here about this research being located in language, the following discussion builds on an earlier introduction to the work of David Crystal as part of the discussion about research strategy, design and methods. Then, the text touched on graphology and moved on to the possibility of the ‘graphic’ image. Now, the context of English language and the work of David Crystal will be explored and extended.

Graphology is described by Crystal as the ‘linguistic system which makes use of [graphic] medium’ and studying the ‘physical properties of the graphic medium’ is referred to as ‘**graphetics**’ (1987: 177). This includes handwriting, printing, electronic media and other writing systems. A distinction of this kind is useful for understanding the difference between spoken and written language, and perhaps explains why rhetoric and language appear in early knowledge classifications and academic structures, whereas writing systems have been considered of secondary

importance. Crystal confirms that in the history of language study, speech and writing have been separated despite written language being pre-eminent as the 'medium of literature' and consequently dictating grammatical standards. Nevertheless he also argues that although the study of written language is not as long-standing as spoken language but that now there is equality as 'graphic substance' is compared with 'phonic substance' (1987: 179).

Possibly the most significant aspect of Crystal's work with regard to graphic design, is what he refers to as 'graphic expression'. He uses the term 'graphic' to describe aspects of spoken language for which there is no tangible form of representation. He states:

Written language displays several unique features, such as punctuation, capitalisation, spatial organisation, colour and other graphic effects ... but the majority of graphic features present a system of contrasts that has no spoken-language equivalent. (1987: 179)

It is not initially clear what is meant by 'effects' or 'features' but Crystal goes on to suggest that certain types of written language such as timetables, graphs, and complex formulae are not best communicated through recitation. This is described as 'graphic expression' whereby the term 'graphic' is used to convey many kinds of written language that utilises technology that is print and screen based. He confesses that the huge diversity of graphic expression makes simple classification difficult, but based on the work of Michael Twyman, Crystal suggests seven strategies that are summarised in Table 4-10. We experience examples of these types of graphic expression on a daily basis, but to the vast majority of us they are unnoticeable. Such micro design decisions are evident when we read magazines, restaurant menus, football league tables, organisational charts (family trees), dictionary pages, and shop fascias.

Table 4-10 Types of graphic expression

Source: Crystal, 1987: 183–184 (after Twyman, 1982)

Pure linear	Word spaces, line endings, pages
Interrupted linear	Spaces between words, line breaks
Lists	An ordered series of lines
Matrices	A table of rows and columns
Linear branching	Tree diagrams
Non-linear viewing	Inordinate presentation that enables horizontal and vertical reading
Graphic symbolism	Graphic 'properties' that add 'extralinguistic' meaning

It is, perhaps, more appropriate to call this ‘typographic expression’, as most of these conventions are realised in dealing with the arrangement of letterforms through typographic design. The term ‘graphic’ should be more appropriately applied to a wider range of uses. In fact, Crystal is careful about his use of the term ‘graphic’, wishing to avoid the use of the phrase ‘graphic language’ that he suggests is associated [confusingly] with other fields such as typography, as well as ‘the use of pictures, graphs, musical notation, and so on’ (1987: 182). He argues this by referencing Michael Twyman’s ‘modes of graphic expression’. In his analysis of graphetics and graphology, Crystal hypothesises that ‘graphetic science’ should consider an assortment of apparatus and ‘associated human skills’ needed to construct and deconstruct the semantics of mark-making in different media regardless of language (1987: 185).

Such details of graphic expression have until now focused on relatively small scale examples. More appropriate examples for this are used by Crystal in his discussion about the types of writing systems, and the ‘**graphetic factors**’ of size, style, configuration, and direction (of writing) as part of ‘non-phonological systems’ that are pictographic, ideographic, cuneiform, hieroglyphic, and logographic (1987: 197–200). Modern pictographs (or pictograms) on road signs have their origin in ancient pictographic symbols and more abstracted ideographic meanings.

W.J.T. Mitchell positions these in sequence as part of ‘tableau’ that depicts an ‘illustrated history of the development of systems of writing that follows a sequence from picture → pictogram → ideogram → phonetic sign (1986: 27). See Figure 4-20 The sequence is developed from his critique of the ‘verbal image’ and the assumption since the seventeenth century that ‘words signify ... the “mental images” that have been impressed on us by the experience of objects’ (ibid: 22).

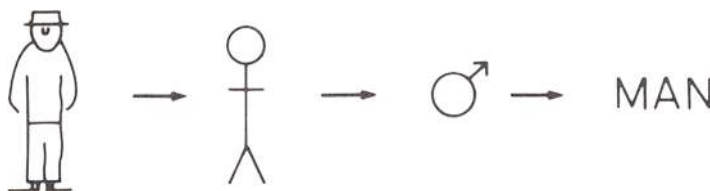


Figure 4-20 Picture, pictogram, ideogram, phonetic sign

Source: Mitchell, 1986: 27

The sequence is developed from his critique of the ‘verbal image’ and the assumption since the seventeenth century that ‘words signify ... the “mental images” that have been impressed on us by the experience of objects’ (ibid: 22). Mitchell summarises this by stating ‘[a] word is an image of an idea, and an idea is an image of a thing.’ Pre-empting the sequence above, *picture* is derived from an ‘object or original impression’, pictogram based on ‘idea or mental image’ and phonetic sign is a ‘word’. More will be said about the distinction between the pictorial, or graphic image as ‘external’ and the ‘internal’ mental ‘poetic’ image (ibid: 25) but for the time being this may be depicted below in Figure 4-21.

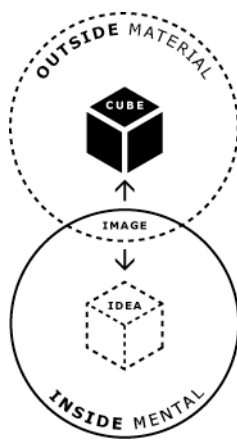


Figure 4-21 The mental and material image

More related to the objects studied in this dissertation, Crystal illustrates the pictograph (pictogram) and ideograph (ideogram) with reference to the United Kingdom statutory traffic signs, shown in Figure 4-22. The pictographic sign uses a recognisable symbol for the car and water, the intention being to ‘picture’ the danger to motorists. The ideographic sign, shown depicting ‘no right turn’ is more abstract and less pictorial, using more simplified elements. In Crystal’s study these examples of ‘modern signs’ are juxtaposed with examples of early Hittite ideograms dating back to the 2nd millennium BC, carvings on a monument (obelisk) of scenes and Assyrian cuneiform texts from 858–824 BC, and Egyptian hieroglyphic inscriptions such as those that appear on the Rosetta Stone.



Figure 4-22 Two statutory traffic signs in United Kingdom

Source: The Traffic Signs Regulations and General Directions 1994: 62, 72.

Left: Pictographic sign for *Quayside or river bank ahead*

Right: Ideographic sign for *No U-turns for vehicular traffic*

These symbols, or their international equivalents, are known and used on a daily basis. As are modern logograms or logographs (a term Crystal acknowledges as slightly misleading and suggests ‘morphographic’ as possibly being more appropriate) are also familiar to us as simple scientific notations, probably the most basic and widely used being + (plus), – (minus), ÷ (divide), × (multiply) and = (equals) (1987: 197–200). These are some examples of the symbolic logic mentioned earlier in the discussion about rehetoric.

The examples discussed here, and given by Crystal, illustrate graphic expression with what might be framed as a focus on communication as information, rather than affectation (or the more commonly used word persuasion) (Harland, 2009b). However, he also considers the language of advertising as demonstrating a vivid example of graphic expression as persuasion. In this there is a direct link to the earlier mentioned traditional academic subject of rhetoric, or what has also been called ‘visual rhetoric’ (Atzmon, Undated). This also resonates with calls for a contemporary approach to rhetoric for analysing and describing advertising, as recognised by Bonsiepe (1999 [1965]: 167–173); by Kinross who critiques the neutrality of ‘information design’ as ‘effective graphic and typographic communication’ (1989–143); and by Barnard (2005: 15) who discusses the persuasive function of graphic design. Furthermore, Karel van der Waarde affirms that graphic design decisions are made resembling ‘...three forms of visual argumentation: visual logic, visual rhetoric and visual dialectics’ (2009: 5).

Crystal makes use of two photographs to exemplify his interest in the language of advertising. One is of an advertising structure described as a ‘poster pillar’ and commonplace in several European cities. A second is an advertising site in Piccadilly Circus, London. See Figure 4-23. His caption to this image reads:

The daily barrage of advertising in London’s Piccadilly Circus. A walk through the centre of any city places us in contact with thousands of advertisements, in the form of posters, physical models, and neon signs. But it is unlikely that we ‘see’ (that is, consciously register) more than a tiny fraction. (1987: 391)



Figure 4-23 Advertising sign in Piccadilly Circus, London

Source: Crystal, 1987: 391

Piccadilly Circus is a familiar location used by those interested in the relationship between visual and verbal modes of communication, perhaps because it has evolved as one of the most aggressive public displays of graphic expression. Times Square in New York offers a similar visual experience. As a feature of the built environment, Piccadilly Circus continues to evolve, as do comparative spaces. This is evident in the various postcards that have featured the location since the beginning of the twentieth century (Phillips, 2000). See Figure 4-24. That said, Crystal is referencing the period in the early 1970s.

John Berger also uses an image of advertising signs in Piccadilly Circus in his book *Ways of seeing*, to exemplify the way publicity images ‘belong to the

moment but speak to the future' (1972: 130–131). He suggests the 'great hoardings and the neons of the cities of capitalism are the immediate visible sign of "The Free World"' and we see these as we 'turn a page, as we turn a corner, as a vehicle passes us'. (Berger, 1972: 129–131).



Figure 4-24 Piccadilly Circus, 1901, 1949, 1996
Source: Phillips, 2000

According to Crystal, the aim of such advertising is to 'draw attention to a product or service in order to sell it' (1987: 391). His image of Piccadilly Circus focuses on a graphetic representation of the generic range of products made by large corporations – Philips, Kodak and Sanyo – reinforcing the 'brand image' of these companies. Clearly the advertisements focus on the company name, and it is the stylistic elements of the name presentation, or its 'visual material form' (Atzmon, Undated: 5) that establishes a relationship and builds familiarity with the kind of products made by these companies. In such cases, the advertisements by these large international corporations concentrate on recognition and reinforcing public perceptions of the company name in hope that they will remember this in future to aid the identification of their products and establish 'brand loyalty'. This is one of the rudimentary approaches to how language and advertising combine. In a field that often employs highly sophisticated combinations of word and

image, these examples of visual rhetoric closely relates to spoken language equivalents such as speeches, sermons and public announcements. Crystal acknowledges that analysing the use of language in this context is controversial, especially in relation to ‘ethics’ and the ‘effects’ of ‘hard-selling tactics’ (1987: 390).

Studying graphic design as urban design, from the perspective of language, must essentially be about how language as communication is represented in the urban environment, in its many guises, with its many intentions, associated actions and consequences. The scale of such a project is massive, and probably a life’s work, covering and involving a wide range of practical and academic subjects from sign writing to symbolism, deviance to distinctiveness, from fashion and fiction to name a few. Through his on-going research into language, Crystal (2003) comprehensively covers an exhaustive number of related topics, for instance, the origin of place names (toponymy) such as the mythical naming of Piccadilly Circus after a ruffed lace collar worn in the 17th century (2003: 146). Or the fact that approximately one third of Australian place names are Aboriginal by origin (2003: 98) in a country where there is a predominance of ‘Australian English’ (2003: 350–353) as the most commonly spoken language. He discusses ‘semantic change’ as in the use of words such as ‘salon’ (2003: 138); grammar, including the appropriate placing of apostrophes (2003: 203); ‘graphemic symbolism’, or the abbreviated use of certain letters, such as a P for parking (2003: 268); historical abbreviation, for instance the use of ‘Ye’ instead of ‘The’ as in *Ye Old Coffee Shoppe* (2003: 41); deviance through incorrect spelling, as in the case of a UK supermarket chain *Kwik Save* (2003: 275) (no longer in existence); historical influence in the naming of places and streets, such as the obvious reference to *French Street* (2003: 31); or the dismissing of majuscule letters in favour of all miniscule letters, as in the *superdrug* logotype (2003: 275). These are shown by Crystal with a number of photographic images as visual evidence of these various phenomena. See Figure 4-25.

To this can be added notions of ‘visual form’ relating to the ‘pace of an oral performance’, diversity in the use of structure, space, and shape characterize ‘semantic structure’ and ‘tempo’. Visual form is discussed with reference to printed material, such as a poem, and this can be related to the physical nature of an urban environment, and how we ‘read’ cities. (Crystal, 2003, p. 417)



Figure 4-25 Composite of language specific signs

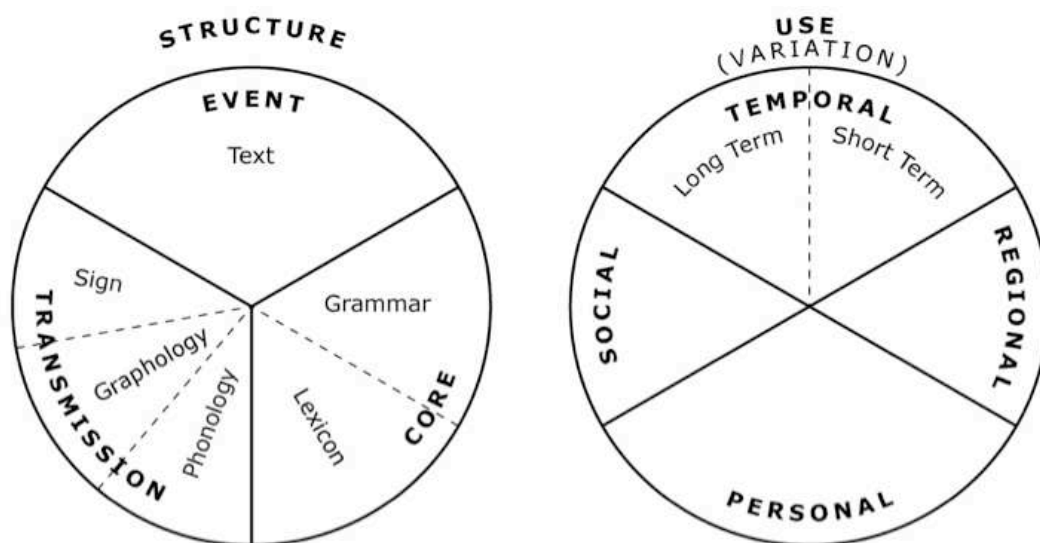
Source: Crystal, 2003

It is not the intention here to explore graphic design as urban design from a language perspective. Should this have been the case, it is worth concluding here with an indication of how this might be done, by reinforcing the idea that graphic design can be a legitimate viewpoint from which to view a complex subject. This can also be done from within this brief examination of Crystal's work.

At the beginning of his book, *The Cambridge Encyclopedia of The English Language* (Second Edition) (2003), Crystal states that in order to study language it is necessary to model it (ibid: 2). His idea of such a model is based on the English language, and locates the subjects 'central characteristics' in terms of its structure and use.

Table 4-11 Structure and use of English language

Source: Crystal, 2003: 2-3

**Text**

A coherent, self-contained unit of discourse. Texts, which may be spoken, written, computer-mediated or signed, vary greatly in size, from such tiny units as posters, captions, e-mails, and bus tickets, to such large units as novels, sermons, Web pages and conversations. They provide the frame of reference within which grammatical, lexical, and other features of English can be identified and interpreted.

Sign

A visual language used chiefly by people who are deaf ... signing systems which have been devised to represent aspects of English structure, such as its spelling, grammar, or vocabulary.

Graphology

The writing system of a language. Graphological (or orthographic) study has two main aspects: the visual segments of the written language, which take the form of vowels, consonants, punctuation marks, and certain typographical features; and the various patterns of graphic design, such as spacing and layout, which add structure and meaning to stretches of written text.

Phonology

The pronunciation system of a language. Phonological study has two main aspects: the sound segments of the spoken language, which take the form of vowels and consonants; and the various patterns of intonation, rhythm, and tone of voice, which add structure and meaning to stretches of speech.

Social variation

Society affects a language, in the sense that any important aspect of social structure and function is likely to have a distinctive linguistic counterpart. People belong to different social classes, perform different social roles, use different technologies, and carry on different occupations. Their use of language is affected by their sex, age, ethnic group, and educational background. English is being increasingly affected by all these factors, because its developing role as a world language is bringing it more into contact with new cultures and social systems.

Personal variation

People affect a language, in the sense that an individual's conscious or unconscious choices and preferences can result in a distinctive or even unique style. Such variations in self-expression are most noticeable in those areas of language use where great care is being taken, such as in literature and humour. But the uniqueness of individuals, arising out of differences in their memory, personality, intelligence, social background, and personal experience, makes distinctiveness of style inevitable in everyone.

Temporal variation

Time affects a language, both in the long term and short term, giving rise to several highly distinctive processes and varieties.

Long term: English has changed throughout the centuries, as can be seen from such clearly distinguishable linguistic periods as Old English, Middle English, and Elizabethan English. Language change is an inevitable and continuing process, whose study is chiefly carried on by philologists and historical linguists.

Cont.

Lexicon

The vocabulary of a language. Lexical study is a wide-ranging domain, involving such diverse areas as the sense of relationships between words, the use of abbreviations, puns, and euphemisms, and the compilation of dictionaries.

Grammar

The system of rules governing the construction of sentences. Grammatical study is usually divided into two main aspects: *syntax*, dealing with the structure and connection of sentences; and *morphology*, dealing with the structure and formation of words.

Short term: English changes within the history of a single person. This is most noticeable while children are acquiring their mother tongue, but it is also seen when people learn a foreign language, develop their style as adult speakers or writers, and, sometimes, find that their linguistic abilities are lost or seriously impaired through injury or disease. Psycholinguists study language learning and loss, as do several other professionals, notably speech therapists and language teachers.

Regional variation

Geography affects language, both within a country and between countries, giving rise to regional accents and dialects, and to the pidgins and creoles which emerge around the world whenever English first came into contact with other languages. Intranational regional varieties have been observed within English from its earliest days, as seen in such labels as 'Northern', 'London' or 'Scottish'. *International* varieties are more recent in origin, as seen in such labels 'American', 'Australian', and 'Indian'. Regional language variation is studied by sociolinguists, geographical linguists, dialectologists, and others, the actual designation depending on the focus and emphasis of the study.

It is useful to see a term like graphic design having significance in such a model (see the note on Graphology). But within this model it is suggested that a *text* is an 'event' and may be manifest in many different ways, whereas a *sign* is something very much more specific than the way the word is used elsewhere, be it semiotics or wayfinding. Notably, sign and graphology here are different parts of what Crystal calls *transmission*. Within *graphology*, graphic design is described as having 'patterns' made up of spacing and layout that contribute 'structure' and 'meaning'. These interpretations may be appropriate to the language scholar, but as has been discussed earlier, the word sign has many senses. Similarly the word text is considered 'awkward' for representing pictures (Elkins, 1999: 83), not least because the graphic designer will more readily understand it as 'copy', or words that make sentences and paragraphs that require designing.

In summary, the outcomes of graphic design result in many different kinds of 'text' that can be categorised in distinctive and related ways, in situated contexts: such as traffic road signs; shop fascia displays; hand-written text on a market stall; or media type; to name a few. Alternatively, one might consider the audience perspective in terms of their ability to read certain kinds of text, for example the use of foreign language on signs, or cultural values associated with certain style of imagery. These are summarised by Crystal as identity and

interpretation. His model refers to a 'sign' as a form of visual language, using the example of sign language for deaf people, but perhaps the most significant use of terminology is that of 'signing system' in relation to 'structure'. This translates to a multiple use of visual language that requires a basic set of common design elements that can be applied to different and changing contexts. Pedestrian signs, or traffic signals are good examples of this. However, it is the two central concerns of Graphology: 'the visual segments of the written language ... certain typographical features ... and the various patterns of graphic design' that locate graphic design as an essential and embedded aspect of language study at its core. Such visual segments are referred to here as 'vowels, consonants, punctuation marks' but these are also realised in many different types of physical and virtual media.

Phonology, lexical studies and grammar are perhaps less relevant, but no less important. Phonology is important in that in multi-sensory environments an awareness of the wider communication possibilities available to reinforce a message can insure that communication objectives are achieved. A vivid example of this is on the London Underground when 'mind the gap' appears in both written and audio form at the point where a passenger embarks on a train. Lexical studies offer the potential to appeal to both objective and subjective uses of language that attempt to inform or affect the actions of an individual. Two examples might be the difference between a pedestrian sign and a billboard advertisement. One presents information less persuasive and ambiguous, whereas an advertising copy line (such as those popularised in *The Economist* advertisements of the 1990s) is often dependent on a sophisticated knowledge of vocabulary.

One of Crystal's primary concerns is the difference between spoken language and graphic expression, and how one represents the other. He uses the example of the difference that emerges when a message conveyed in the 'graphic form' of a typed letter is compared to the dictation of that letter, suggesting that there is no correspondence between the two. He goes on to say that in general

people have only fragmentary skills in producing and interpreting the range of forms which are available for linguistic expression – something they discover to their cost, when they are faced with such tasks as preparing posters or handouts for general use, and find they are unable to convey the effect they require. (2003: 182)

This gap is filled by the practice of graphic design in everyday life. It suggests there is a particular kind of knowledge, perhaps graphic design knowledge, not yet fully understood. Research into graphic design aspires to reveal what this knowledge base is for the benefit of those contexts it is part of. The urban environment is one of these. One might therefore consider how the urban environment functions in relation to graphic design.

Jon Lang has suggested that categorising the functions of a city is difficult. Although he does believe that the ‘essence of [a] settlements’ existence’, or the ‘fundamental functions’ are possible to identify. He explores in detail the *communications* function, the *economic* function, the *cognitive* function, and the function of cities as *displays* – suggesting that the first of these might be *the* fundamental function (1994: 169–176). He also argues that participants in behaviour settings determine function, and these dictate the character of any settlement. These ‘behaviour settings’ have ‘manifest’ and ‘latent’ functions whereby there is a perceived primary function and a single or number of other beneficial reasons for a place to exist that is often psychological.

Function is a useful focal point for understanding visual communication in the built environment, and graphic design as urban design. It is helpful because function has also been used as an approach to understanding what Malcolm Barnard explores in his book *Graphic design as communication* (2005). Therefore, if communication is a function of the built environment, and graphic design is also communication, then it appears there is at least a link through the communication function. ‘The functions of graphic design may be approached from two directions. There are social, cultural and economic functions of graphic design “as a whole” ... [a]nd there are functions of individual examples of graphic design’ (Barnard, 2005: 13).

Clearly, graphic design functions as social, cultural and economic communication, and this might be called the wider environmental context for graphic design. This has been explored by the Researcher as part of a process that attempted to explain a transition from traditional definitions of graphic design to contemporary ways of thinking about relationships in graphic design that link practice, research and theory (Harland, 2007, Harland 2009). See Figure 4-26 for

an example of how traditional (left) and contemporary (right) models of graphic design have been portrayed, showing how the social, cultural, industrial and commercial contexts shape ideas about communication through graphic design that acknowledge the close relationship between ‘word’ and ‘image’ and ‘media’.

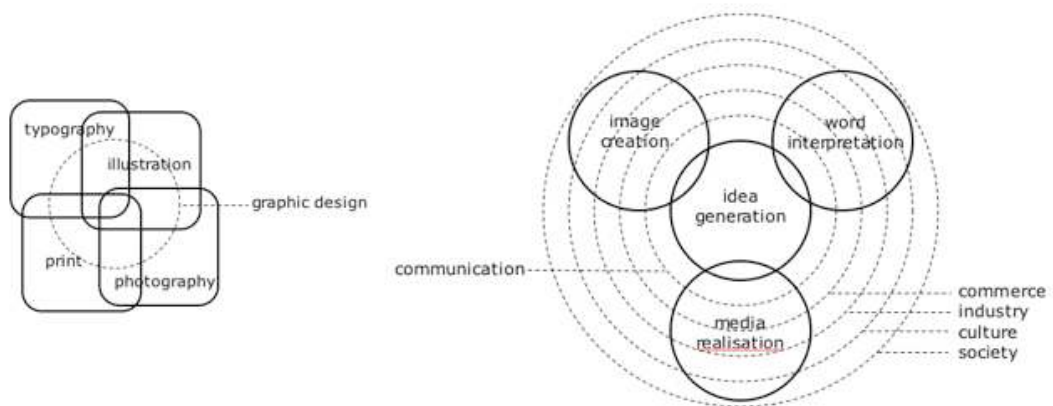


Figure 4-26 Traditional and contemporary model of graphic design

Source: Harland, 2009

In terms of the function of individual examples of graphic design, Barnard reviews the work of Richard Hollis (1994), Jacques Aumont (1997), (and the unpublished ideas of Richard Tyler at Leeds Polytechnic in the mid-1980s), to determine four main functions – information, persuasion, decoration, and magic – as well as the metalinguistic and the phatic. In the context of Barnard’s work, these are also communication functions. What is therefore helpful about this is the potential for linking this function to that associated with the design of urban environments, as pointed out by Lang. Taking the four recognised by Lang – communications, economic, cognitive and display – and considering the function of individual pieces of graphic design can usefully lead to the basis of a framework for analysing graphic design as urban design, through communication. Assuming that these functions of graphic design are communicative functions, as says Barnard, and communication is a function of the built environment, as says Lang, soon this dissertation will discuss the relationship of this research to communication, with an emphasis on visual communication. Before that, the idea of function will be briefly clarified.

Function is a word used in everyday speech. It is generally understood as a noun to mean some sort of activity relating to a person or thing, as in ‘*bridges perform the function of providing access across water*’ or ‘*bodily functions*’. It is also a

practical matter, say in design, or something carried out by a computer. It is a mathematical term for ‘relation or ‘expression’ or as in Chemistry whereby one might identify a *‘functional group’*. It links two things such as something being the function of something else. Or it might simply be a gathering of some sort, as in a private function. As a verb, it is a matter of work, as in *‘her liver is functioning normally’* or it is about fulfilment, for instance, how something expects to operate. It derives from the Latin to ‘perform’. (Soanes and Stevenson, 2005).

In a review of the use of the word function in the design literature, Nathan Crilly (2010) selects twelve definitions of function. He discovers that function is an ‘action’, ‘element’, ‘effect’, ‘intention’, ‘duty’, ‘connection’, ‘transformation’, ‘statement’, ‘disposition’, and most apparently a ‘relation’ (2010: 314). Despite its often sole use, meaning the ‘physical’, ‘practical’ or ‘technical’, he argues that in design and philosophy it is used in the physical and non-physical sense. ‘[T]here are classes of function that explicitly account for the non-technical’ (2010: 330) and this is how Barnard and Lang use the term in the context of graphic design and urban design. One might say that function is multi-functional. This research is concerned with the broad definition of function in terms of how graphic design as urban design facilitates the functioning of the built environment as a representation of the relationships that reside within the built environment. These are relationships between people, between objects, and between people and objects, as shown earlier in Figure 2-23.

4.5 Located in Visual Communication

Visual communication has already been introduced in this dissertation, in the earlier discussion about establishing the research question in section 2.3. Locating the research topic in visual communication is reasonable as it will be revealed that some visual communication scholars see ‘graphic design/aesthetics’ as a key visual communication ‘node’ (Smith et al., 2005: xx). Before exploring this in more detail, the ‘communication’ in visual communication must be considered. Earlier discussion spoke of the ‘visual’ in visual culture. Although the fields of visual communication and visual culture might argue for their respective distinctiveness, communication and culture are undoubtedly closely associated. Further discussion beyond what has already been written about the visual will therefore be left aside here.

The key ideas in communication are extensive and widespread, and cannot be done justice here. Nevertheless, an attempt to identify some topics in communication relevant to this research will be explored, before a closer look at the scope of the field of visual communication. A basic attempt to define the concept of communication has been available for some time.

There are broadly two types of definition of communication. The first sees it as a process by which A sends a message to B upon whom it has an effect. The second sees it as a negotiation and exchange of meaning, in which messages, people-in-cultures and 'reality' interact so as to enable meaning to be produced or understanding to occur. (O'Sullivan et al., 1983: 42–44)

These two approaches conform with what has been called 'message as intended' or 'message as interpreted' and many communication models attempt to explain this throughout the literature (Crilly, 2008: 430). Such models will not be shown and examined here. According to O'Sullivan et al the first of the two definitions mentioned above appears to focus on the 'process' of communication, whereas the second is more 'relationship' focused, or 'structuralist' in approach (1983: 42). Within this second approach can be found familiar terms mentioned elsewhere in this thesis, and deriving from the study of **semiotics**. For example the structuralist approach is concerned with the following:

1. the **text**, its **signs** and **codes**;
 2. the people who read the text, the cultural and social experience that has formed both them and the signs/codes they use; and
 3. the awareness of an '*external reality*' to which both text and people refer.
- (O'Sullivan et al., 1983: 42, original bold and italic)

John Fiske (1990) has modelled the two approaches into a triangular structure, as shown in Figure 4-27. This incorporates the *message as intended* into the *message as interpreted* approach, whereby the producer (A) and reader (B) of the message occupy the same territory. In this relationship the producer and the reader are recognised as being affected by an external reference point, whereas meaning is placed at the centre of the relationship between the message/text, producer/reader and referent.

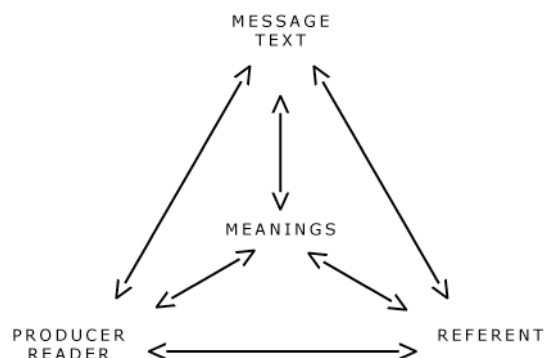


Figure 4-27 Messages and meanings

Source: Fiske, 1990: 4

As already stated, much has been said about communication theory and its models and there are many books available about communication studies so this will not be dealt with here. What is noteworthy is that the many artifacts used by Fiske (1990) in his book *Introduction to communication studies* to illuminate his argument can be described as the products of graphic design. Aside from the many schematic diagrams he uses to explain various models, he uses an image of the UK tabloid newspaper *Daily Mirror* to explain the concept of *entropy* and *redundancy*; a UK traffic sign for ‘Cross roads’ to demonstrate the relationship between icon–index–symbol; a *Benson and Hedges* cigarette advertisement to explain ‘conventionalization’; an advertisement for *Cossack Vodka* to help explain metaphors and paradigms; and the use of visual metaphor to sell *Record* pasta, and more.

These examples are of their time, before the widespread use of the computer and the world-wide-web. Despite the passage of time, the relevance of the issues they help to explain remains for contemporary communication scholars interested in issues of meaning. For example, rather than make media specific references that are determined by the technologies of the day, Klaus Krippendorf, a Professor for Cybernetics, Language, and Culture speaks of the ‘cultural’ rather than ‘technological’ artifacts when he discusses the communication interface between humans and technology (2009: 191). What is more, he embraces an idea such as metaphor – primarily a linguistic concept – and suggests it is of little interest to Semioticians (2009: 184). Indeed, he sees metaphor at the beginning of a departure point from the ‘objectivist path of mainstream semiotics’ towards ‘understanding and acting knowledgeably’ (2009: 180).

Furthermore, it seems that contemporary analysis of 'media texts' has a preoccupation with what might be called the *graphic object*, be it a television programme, film, newspaper or other. For instance, the toilet symbols for *men* and *women*, as shown in Figure 4-18, and the *Quayside or river bank ahead* sign in Figure 4-22, are used as examples of schematic drawings that offer a visual explanation of 'conventional' representations or signs that are 'motivated', meaning the signifier relates to the signified. (Gripsrud et al., 2006: 15)

For an extensive discussion about *Graphic design as communication* one can consult Malcolm Barnard's (2005) book of the same name. Looking at 'graphic design and communication' he too takes an interest in 'communication theory' and 'semiology', as well as 'meaning: words and images', 'social, cultural and economic functions', 'audiences and markets', 'modernism', 'postmodernism and globalisation' and 'graphic design and art'. Most of his pictorial examples fit with those found in much communication studies literature. He features posters, newspaper pages, printed advertisements and layouts in magazines, but he also considers booklets, book covers packaging, comics, cartoons, illustration, and typefaces. Add the inclusion of photographic images within many of his examples, and these represent many conventional contexts and properties of graphic design.

In this same sense, communication has often been discussed using examples of *visual communication*. This should not be surprising given that the medium within which much of the discussion has taken place to date has been the printed page. If examples are required, as appears more often than not the case to assist knowledge and understanding, one might assume a truly extensive study of communication is limited by the medium of print. It must reasonably include all sensory experience.

In graphic design as urban design, the medium is visual, if at times assisted by other sensory experiences. Perhaps sound is the most common (as in the earlier example of the 'mind the gap' communication on a train platform). With this in mind, attention is now turned towards visual communication as a location for this inquiry.

One approach to categorising graphic design as a practical and academic subject, and favoured by some academics, has been to place it within a wider field called visual communication. This is a contentious issue, because it is generally not agreeable to many members of the graphic design community who express concerns about the pedagogic implications of this, and whether programmes of study in visual communication truly reflect the nature of the subject they name. Consequently, debates about defining and naming the activity traditionally associated with graphic design since the mid-twentieth century is hotly contested and ongoing.

This was evident at the *New Views 2* symposium, London, 2008. This two-day event carried the subtitle *Conversations and Dialogues in Graphic Design* and followed an unconventional conference format by grouping delegates into workshop clusters that met five times over the two-day period in order to facilitate conversation and dialogue between group members. The themes for these group discussions, called ‘conversation clusters’, were created in response to abstract submissions, published in the symposium booklet, and called:

- Design writing/criticism: repositioning the debate;
- Graphic design: interdisciplinarity;
- Graphic design: practice and methods;
- Research/innovation: new critical thinking;
- Responsive curricula: shifting paradigms;
- Graphic Design: changing the ‘real world’.

Abstracts from the symposium evidence a number of claims about the changing graphic design landscape, particularly from the perspective of naming the field. Dr Laurene Vaughan, a co-organiser and moderator of the event pondered ‘what are the implications of the shift from graphic to communication design?’ She suggested that some graphic design programmes have changed their name to communication design but without a clear understanding of what this means with regard to sensorial differences between the two. She argued that ‘communication’ rather than simply ‘graphic’ includes ‘sound, visual, smell, touch or motion ... is visual, textual, aural and ephemeral ... two-way’. Asking the question ‘is communication design just another name for graphic design?’ she suggests the former opens up bigger questions, possibilities and challenges, and in doing so threatens the identity of the graphic designer (though it is not made clear how). (2008: 6)

In the same conference booklet, Hoi Yan Patrick Cheung reinforces a perceived need to think beyond the visual aspects of graphic design in his research entitled *A new Creative Process: fusing sound and vision in graphic design*. He asks the question ‘how may designers extract new principles from visual-aural synchronisation to offer a new creative guideline with more design control?’ (ibid: 23). This question is contextualised by the claim that a new generation of designers are working ‘beyond the visual realm on web design, interactive design, or movie title sequences’. As an aside, and on a cautionary note, although this may be true it is not a new phenomenon. Since the popularisation of film and video media in the twentieth century – approximately over the same period of time as graphic design – graphic designers have integrated sound and vision in designed outcomes such as film title sequences. Saul Bass and Robert Brownjohn are two graphic designers who serve as good examples of this.

Linda Fu is the most direct about the graphic design visual communication debate with the title of her paper submission for *New Views 2*. This reads ‘Graphic Design ≠ Visual Communication’ and she contests the international ‘re-branding’ of graphic design schools and faculties, and many graphic design practitioners, with the term visual communication (ibid: 31). She goes as far to say this is largely a switch in name only, without any real implication about what this might mean in terms of difference, or the ‘gap’ between the terms, that needs to be ‘debated, realised and bridged’. She goes on to say:

... the simplistic graphic design-visual communication equation is problematic to the appreciation and progression of our [graphic design] profession, because it can cloud our vision, mission and judgement. By its very nature, visual communication involves a wider territory (both theoretically and disciplinary) and therefore represents greater challenges to the traditional boundary of graphic design.
(2008: 31, *New Views 2* abstracts booklet)

Quantifying and qualifying research about this ‘re-branding’ is difficult to do with respect to the number and location of such name changes, and reasons for these changes beyond personal preference or institutional politics and organisation are likely to be difficult to identify. It is reasonable to assume that institutional organisation and management structures and the subsequent impact on management responsibilities, plays a significant part. For example, one participant biography in the *New Views 2* abstracts booklet, for Piers Carey (ibid: 45), states how the merger of the department of graphic design with photography

at *Durban University* formed the Department of Visual Communication Design. This suggests that the issue of naming, in part, is driven as much by institutional management as subject, field or disciplinary thinking. (The personal experience of the Researcher, and testimony's from colleagues across the sector, will confirm this). Vaughan and Fu speak from an Australian perspective, both being associated with *RMIT University* in Melbourne. Carey is based in South Africa. However, R. Hakan Ertap also speaks about the graphic design/visual communication debate from the perspective an academic working in the Faculty of Fine Arts and Design at *Izmir University of Economics* in Turkey (ibid: 47). He expresses a concern that new departments that are termed 'visual communication design' or 'communication design' are being alienated from their fine arts and graphics origin and often lack staff members who are educated in the field of design.

Positioning graphic design within a visual communication context is clearly resulting in an expression of concern from the graphic design community, and this appears to be most evident in the balance between practice and theory. Such a state of affairs can be seen in the work of academics and practitioners who wish to promote an agenda that perhaps runs contrary to disciplinary debate. For example, in their book *Visual Communication: from theory to practice*, Jonathan Baldwin and Lucienne Roberts attempt to bridge a perceived gap between theory and practice by 'making abstract concepts of visual communication relevant to the practice of commercial art' (according to the cover notes about the content of the book) (2006). One of the central tenets of the book is to provoke designers, particularly graphic designers, to engage more deeply with the context for their work, especially the political, environmental, social and technological. Central to their argument is that 'all design is political' in the broadest sense of the word, stating that 'fashion, graphics, products, packaging – all types of design have an impact on the world no matter how insignificant...' (2006: 12). This is summarised in one of the aims of the book: 'To provoke you [students] into thinking and talking about design rather than just 'doing' it' (ibid: 13). The 'you' in this case is primarily the undergraduate design student, and the book aspires to demonstrate that 'design is a form of communication and communication is the basis of our relationship and our understanding of the world' (ibid: 12). Their intention is to politically motivate the undergraduate student, but clearly assumes graphic design is something 'done' without

meaningful dialogue, suggesting visual communication is achieved with meaningful dialogue within a wider communication context. This positions graphic design within visual communication, within communication, and others do the same, as shall become apparent. The products of graphic design feature significantly throughout the book. However, there is confusion in that the authors feel the need to state that the book uses the term ‘visual communication’ and ‘design’ interchangeably by suggesting this might well include illustration, television or film (2006: 13). As such, in arguing the case for visual communication, there is also a confusion about the distinction between visual communication and graphic design, in part because much of the time design refers to graphic design as well as visual communication.

Nevertheless, in reference to visual material appearing in the book, (and therefore of relevance to this thesis), Figure 4-28 features examples used by Baldwin and Roberts of ‘unprofessional’ ‘design’, in the form of hand written notices that appear in shop windows, and on the street in general. These are used to demonstrate how ‘visual communication is something in which many of us can actively participate’. This is true. Yet, to label examples such as these with a broad term does not necessarily help the student of graphic design understand the scope of visual communication by comparison to graphic design, nor its theoretical underpinning.



Figure 4-28 Amateur ‘graphic design’ on the street

Source: Baldwin and Roberts, 2003: 146-147

It is argued that these are ‘political’ designs, or ‘visual communication’, that ‘threaten’ the output of the professional designer who produces ‘good design’. Yet, the difference between good and bad, professional and unprofessional, is not

made clear (ibid: 146). It is more likely that commerce rather than politics is the primary influence and motivation in these sort of outputs, and the claim that these threaten the work of the professional designer is unsubstantiated. The examples are distinctly self-made, but there is nothing to suggest that there is no desire, or budget, to employ the service of a professional designer. Nor is it possible to fathom if the creators of this work might have employed a professional, had they the opportunity. It is simply 'do-it-yourself' graphic design that utilises the inherited design of the alphabet, visualised through readily accessible mark making techniques. Although undoubtedly an aspect of visual communication, it is perhaps better described as graphic design, no matter how unprofessional its appearance. It is worth returning to Fu's comment about the theoretical and disciplinary 'wider territory' that is visual communication, in order to position some of these concerns and confusions in a wider academic context beyond the tensions that arise between terms.

Perhaps on a more academic footing, visual communication is a field described by Smith, Moriarty, Barbatsis and Kenney (2005: ix) as rapidly developing in the early part of the twenty first century, though it seems not through a traditional 'tree of knowledge' model. An alternative metaphor has been suggested that more suitably describes it as 'rhizomatic' (Moriarty and Barnbatsis, 2005: xi-xxii). This is a structure more horizontal than vertical, from which shoots ascend and roots descend as part of a decentralised system, more a 'bamboo' than 'oak tree'. The ascending shoots, described as 'molar disciplines' or 'nodes of discourse', are suggested as Social Science, Humanities and Natural Science, from which a range of amalgamated theories and methods are identified in Table 4-12. These disciplines (depicted in an upright position) stem from the horizontal lines that are hidden underground, are 'molecular' and represent fields of study that propound visual communication theory. These fields are generally thought to be referential and emergent, and come from both traditional disciplines and professional fields, such as Semiotics or Critical/cultural studies, or alternatively Business or Architecture. See Table 4-13.

Table 4-12 Traditional molar disciplines

Source: Moriarty & Barbatsis: 2005: xvi

	<i>Unifying theories</i>	<i>Unifying methods</i>
Social Sciences		
Psychology	theories of the individual	experimental
Sociology	theories of social systems	survey / case study / ethnography
Anthropology	theories of culture	ethnography
Political Science	theories of political behaviour	survey
Speech/Comm Rhetoric	theories of the human interaction	rhetorical analysis, criticism, content analysis
Linguistics	theories of language	study of pronunciation, grammar, and syntax
Humanities		
Philosophy	theories of knowledge	analytic, theory building
a. Epistemology		
b. Aesthetics		
c. Ethics		
Art	theories of aesthetics	historical, performance, criticism
Literature	theories of text and reader	historical, performance, criticism, textual analysis, reader response
History	theories of the past	historical method, interviews
Natural Science		
Biology / Physiology	theories of living organisms	experimental
Physics	theories of matter and energy	experimental
Geology / Geography	theories of the earth	time series

Table 4-13 Emerging molecular fields

Source: Moriarty & Barbatsis: 2005: xvi

<i>Field of Study</i>	<i>Referent Points and/or Focus</i>
Relevant offshoot fields	Referent Points and/or Focus
Semiotics	epistemology, linguistics, and sign systems
Critical / cultural studies	literature, cultural studies
Neuroscience	biology, perceptual psychology
Information systems	engineering, computer science, and technology
Professional fields	
Mass communication	media and human interaction
Business	commerce and exchange
Law	regulation and policy
Architecture	design of space
Archaeology	prehistory structures, artefacts, and art

The theme of this research topic links to most of the traditional molar disciplines, and unifying theories in social science and humanities are all applicable. Those associated with the natural sciences, with the exception of geography, are much less so, if at all. However, it can be argued that there is a high degree of relevance in the emerging molecular fields for graphic design as urban design, and this can be the focal point for both the 'offshoot' and 'professional' fields listed. As a reference point, it is reasonable to assume that 'design of space' suggests that urban design is represented in this categorisation through architecture, whereas graphic design does not emerge in this taxonomy until Moriarty and Barbatsis draw up a taxonomy of visual communication. They do this through linking

categories identified in the molar disciplines and molecular fields, with previous work done by them in the mid-1990s establishing a bibliography for visual communication. Merging these approaches pinpoint intersections where theory and research in come into view. The result of this is shown in Table 4-14.

Table 4-14 Taxonomy of visual communication

Source: Moriarty & Barbatsis: 2005: xvi

<i>VisCom Area</i>	<i>Referent Points</i>	
Art and Design		13 total
Aesthetics, composition	Aes, Art, Psy	
Graphic Design	Aes, Art, Mass Comm	
Art History	Aes, Art, Hist	
Creativity, imagination	Psy, Art, Edu, Mus	
Communication		12 total
Rhetoric, myth, persuasion	Comm, Mass Comm	
Nonverbal, gestural	Comm, Anthro	
Literary / literature	Lit, Crit Stu	
Signs and symbols	Sem, Comm, Mass Comm, Ling	
Attitudes, beliefs	Psy	
Arousal, emotion	Psy	
Psychology		12 total
Perception	Psy, Phy, Bio	
Cognition, visual intelligence	Psy, Bio, Neu Sci, Epis	
Multiple coding	Psy, Comm, Sem	
Psychology of Art	Psy, Art	
Cultural and critical studies		12 total
Sociology, anthropology	Soc, Anth	
Linguistics	Ling	
Cultural studies	Cult Stu, Eth, Pol Sci, Econ, Soc	
Critical Studies	Crit Stu, Lit, Art, Aes	
Vis Com Theory		10 total
Representation	Ethics, Crit Stud	
Mental imagery, visualization	Psy, Edu, Art	
Philosophy, epistemology	Epist, Psy	
Language metaphor	Comm, Lang, Lit	
Education		8 total
Learning	Edu, Psy	
Visual Literacy	Edu, Mass Comm, Comm	
Teaching of visual communication	Edu, Mass Comm, Comm	
History		6 total
Law and Ethics		4 total
Physical Sciences		3 total
Vision, physiology, optics	Bio, Phy	
Neural processing	Neu Sci	
Professional Areas		27 total
TV / Film Studies	FS, Bio, Lit, Hist, Mus, Aes	
Photography	Photo, Aes, Bio	
Journalism	Mass Comm, Lit, Cult St, Crit St	
PR and advertising	Mass Comm, Pers, Lit, Cult Stu, Criti St	
Architecture	Archi, Aes, Art, Hist	
Archaeology	Arche, Hist, Geo, Bio, Phy	

Moriarty and Barbatsis identify graphic design specifically within the area of art & design with close reference points to aesthetics, art, and mass communication. Other related topics such as rhetoric, signs and symbols are listed in communication. Graphic design in art and design will soon be discussed in more detail, but what now begins to emerge is some explanation about why it has been suggested that programmes in graphic design have changed their name to visual communication (though relating to the examples earlier, it is not clear if in the case of academic management this relationship is grounded in disciplinary knowledge, or supposition). What is significant is that graphic design is directly linked to aesthetics, art and mass communication, and architecture is precisely linked to aesthetics, art, and history. Given that architecture gives access to domain of urban design, the common link between graphic design and urban design in visual communication theory and research, is aesthetics and art, with mass communication and history respectively giving an additional perspective. This is made explicit in Figure 4-42, a rhizomatic map of visual communication that shows ‘molar’, ‘molecular’ categories in visual communication, and various ‘intersections’ that brings different areas of knowledge together.

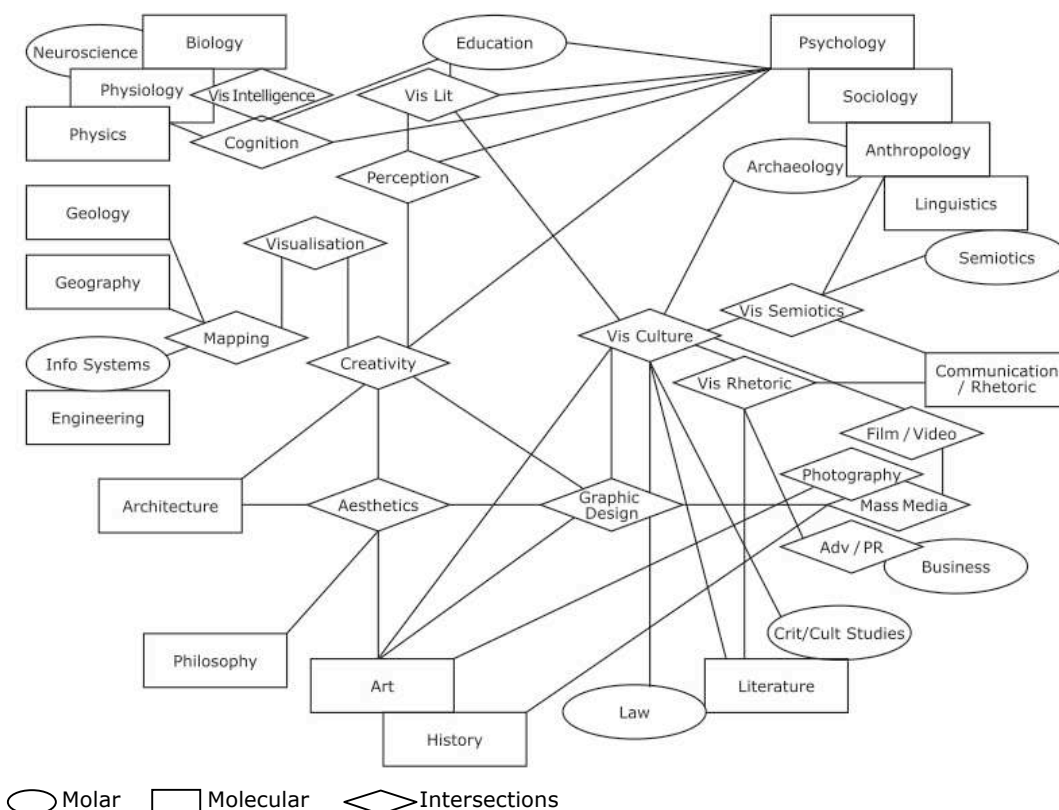


Figure 4-29 Rhizomatic map of visual communication

Source: Moriarty & Barbatsis: 2005: xx (redrawn)

This suggests that graphic design is a meeting place for other topics.

Graphic design is described as an intersection, as is advertising and public relations, aesthetics, creativity, cognition, film and video, mass media, mapping, perception, photography, visual culture, visual intelligence, visualisation, visual literacy, visual rhetoric, and visual semiotics. Through the links that are made and depicted by the rhizomatic map, graphic design is clearly linked to a wide ranging set of academic disciplines, subjects, fields and professions, most of which can probably prejudice research into graphic design as urban design to a greater or lesser extent.

Visual rhetoric, for example, is the bias in Marja Seliger's (2008) research into outdoor advertisements in urban environments. She examines advertisements as 'exhibits' through the construction and cogency of visual arguments and her analysis of research utilises the knowledge and methods of graphic design practice. In doing so she refers to Richard Hollis' definition of graphic design as 'the business of making marks and arranging them on a surface in order to convey an idea' (2001: 7). This is coupled with theory about the functions of communication by Roman Jakobson, and drawn from communication studies and semiotics, revealing three types of visual rhetoric as brand, personalized and poetic. These have apparently been distilled from Jacobsen's work on verbal communication, which constitute six factors in the function of language: referential (or denotative); emotive; connotative; phatic; metalingual; and poetic. Closely linked to this is the position taken by Scollon and Wong Scollon from the perspective of visual semiotics. They take an approach that situates the 'physical/material characteristics of language' in the built environment and utilise the phrase is 'geosemiotics' to capture 'the study of the social meaning of the material placement of signs and discourses and of our actions in the material world' (Scollon and Wong Scollon, 2003: 2). Within their work on theory in place semiotics can be found reference to a term introduced much earlier in this thesis: *inscription*. To them, **inscription** covers

all of the meaning systems that are based on the physical materiality of language (but also other code systems) in the world. This would include the meanings associated with the difference between a boardwalk, a gravel path, and a concrete sidewalk, between jeans and a silk suit, between a leather-bound book and a paperback, glossy paper and newsprint. (Scollon and Wong Scollon, 2003: 129–130)

Within this, and of particular interest in supporting their arguments about places semiotics, they focus on four meaning systems called 'fonts', 'material', 'layering', and 'state changes', explained as follows:

fonts (or letterforms) – any way in which letters or other written symbols are produced from handwriting and calligraphy through to word processing fonts and professional typefaces including size and shape or colour

material – the physical substance on which the inscription is made, from granite monuments to sand writing at the beach

layering – add-ons/extensions of an inscription on another usually more permanent inscription such as 'on sale today' or 'limited time only'

state changes – current meaning given through flashing neon lights to a lighted 'open' sign.

(Scollon and Wong Scollon, 2003: 130)

As a system, or part of a larger system, these form part of a basis for understanding of importance of inscription in place semiotics. Combined, they provide a basis for semiotic analysis of graphic object. One can reasonably call this process of combining text, material, layering and state changes part of a design process.

Moriarty and Barbatsis emphasise the importance of graphic design in a landscape characterized by their analysis of clustering, and the formation of primary node points, where interests converge. These nodes are described as 'the primary components of the emerging visual communication field' (op cit, 2005: xx):

Visual Communication Nodes

- Visual intelligence / Cognition / Perception
- Visual literacy
- Graphic design
- Visualisation / Creativity
- Visual culture / Visual rhetoric / Visual semiotics
- Professional performance: Photography / Film / Video / Internet / Mass media / Advertising / PR

It can be inferred from this that graphic design is a distinct and substantial element of visual communication, and, as well as being strongly linked to other clearly defined subjects such as visual rhetoric or semiotics it is significant enough to be

identified as a visual communication node in its own right. However, it is perhaps misleading to suggest that graphic design *is* visual communication. Moreover, such a distinction suggests that graphic design is something that has its own defining characteristics, aspects of which also link the other nodes. One might therefore ask the following questions. *What is the knowledge base for graphic design? What do graphic designers know? What is distinctive about this area of knowledge?* To paraphrase Nigel Cross, *What is a graphic 'designerly way of knowing'?* This last question appears to have remained largely overlooked since Waller identified in 1979, suggesting that the very nature of studying 'graphic communication itself' is vulnerable to being subsumed in other specialist subject – as mentioned earlier in this thesis. These questions will now be explored by looking at the historical and contemporary context for graphic design in higher education.

4.6 Located in Art and Design

To consider the idea of graphic design as urban design, especially from the urban design perspective, some understanding of the historical and contemporary context for graphic design as a discipline, field and subject in higher education is necessary. The reason for this is two-fold. On the one hand, graphic design is an established professional practice and its practitioners will be found in most capitals of the developed world. It is not a practice dependent on a formal education in graphic design. Many artifacts that have been identified with the subject were designed by people without any formal training in the subject. Harry Beck, the designer of the London Underground map mentioned earlier, is one of these. That said, as this chapter of the thesis is concerned with areas of knowledge, and this is primarily an academic concern, the following discussion will focus on the nature and development of graphic design in formal education rather than an investigation into professional practice. For practical reasons, this is limited mainly to United Kingdom (UK).

According to Maureen Wayman and Bruce Brown (ADM-HEA and NESTA, 2007: 7) the idea of a formal art education in UK emerged in 1823 in Manchester, when Benjamin Robert Haydon lobbied for a funded art education. It took a further fourteen years for the first school of design to open in London in the autumn of 1837, and this resulted in other schools then opening across the UK. For example, the *Nottingham Government School of Design* soon followed, establishing itself

in 1843 as one of the first (Jones, 1993: 14). In 1896 the initial school of design in London eventually became known as *The Royal College of Art* (RCA) and it has been suggested that this laid the foundations for some of the most significant developments in art and design education in Europe and America throughout the twentieth century (Frayling and Catterall, Undated). In the preface to the College's centenary publication *Design of the times: One hundred years of the Royal College of Art*, Frayling and Catterall argue that the reforms that resulted in the formation of the RCA are the 'direct ancestors' of the Bauhaus, and 'Basic Design' (nd: 6–7).

Wayman and Brown explain that these new schools fostered a highly distinctive educational process that contributed to establishing the UK as a world-leader in innovation and creativity. Art and design education in this form remained independent, as regional 'art colleges' until the late 1960s and early 1970s when most were amalgamated with the new polytechnics. These institutions, in turn, became 'new universities' in 1992, thus bringing the full breadth of formal art and design education in the UK into an expanded university sector for the first time, and thus a different funding regime that included the research assessment exercise (RAE).

By comparison, architecture had been present in the UK university system since the early 1840s, when the *Bartlett School of Architecture* at *University College London* was established in 1841. Architecture education then further expanded through the formation of architecture departments at newly established universities since the beginning of the twentieth century. (Rust et al., 2007: 15)

Although many art schools became part of the Polytechnic system in the 1970s and developed CNAAs degrees, most other disciplines in the Polytechnics already had one foot in the university sector and for them, arguably, the shift to university status in 1992 was not a fundamental challenge to the way that academics worked or perceived their roles. For Art and Design the period following 1992 has brought some dramatic changes and in many ways Art and Design can still be seen as emergent academic disciplines despite their long history. This is less true for Architecture but it shares a number of problems and issues with Art and Design. (Rust et al., 2007: 14)

Yet, despite entering the university sector late, and with a distinct culture that had developed through the previous century and a half, art and design is relatively unique in the higher education sector. Its credentials have been

established on a firm foundation as old, if not older, than many contemporary academic subjects. It is from this historical educational context, particularly the formation of the RCA at the end of the nineteenth century, that we find the origins of what became, by the middle of the twentieth century, a formalised education in graphic design. This is because coincidentally, at the RCA ‘the organising concept of design education was to become architecture – its theory and practice; and, for image-makers, calligraphy’ (Frayling and Catterall, Undated: 10). At the newly established RCA calligraphy was taught by Edward Johnston in the first year. This is significant because he came to be considered a pioneer of modern graphic design, having designed the *Railway Type* (not to be confused with the earlier discussed *Rail Alphabet* by Kinneir and Calvert) for London Underground. This, as is now established, was used on all signage at the entrances to stations, platforms, timetables, ticket machines and directional signs, and the front of trains and buses, featuring in the familiar ‘circle and bar symbol’ (Aynsley, 2001: 130). The basis of this design scheme is still in use today. See Figure 4-30.



Figure 4-30 London Underground symbol

Source: Robert Harland 2010

However, it was not until the 1950s and the rejection of the *Arts and Crafts* philosophy that had prevailed in favour of ‘ideas and education’, that graphic design emerged as a new name on the art and design educational landscape in the UK. **Graphic design** surfaced as a new design specialism alongside ‘industrial design’, ‘communications design’ and ‘fashion design’ at the RCA (Frayling and Catterall, Undated: 11). In other schools, gradually, it came to replace activities such as signwriting and decorating. Shown in Figure 4-31 are students rendering letterforms that closely resemble Johnson’s *Railway Type*. (Judging by the

specimen alphabet on the wall in the top left side of the image, the lettering in the foreground of the image more likely resembles the typestyle *Gill Sans*, by Eric Gill, a former pupil of Johnston. *Gill Sans* is a direct descendent of Johnston's *Railway Type*).

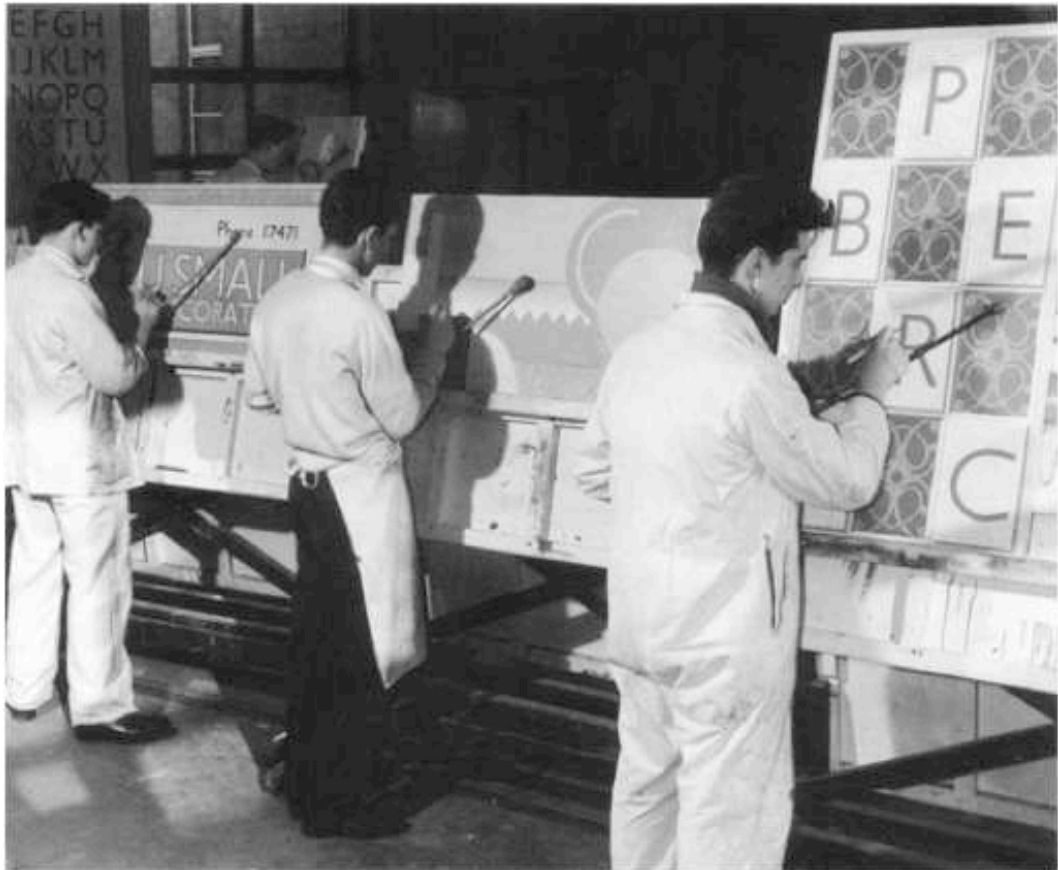


Figure 4-31 Signwriting and decorating at Nottingham 1952

Source: Jones, 1993: 84

In places such as Nottingham, change responded to the earlier recognition in the 1930s that 'commercial art was tremendously important' and extended to other fields such as 'consumer psychology, sociology and cultural theory' (Jones, 1993: 65). This had been happening in European professional practice, where organisations such as the *Association of Swiss Graphic Designers* had been established since the late 1930s (Müller, 1995: 12). Use of terminology during this period, and since, to describe the same or similar activities, has been confusing, especially for activities variously described as commercial art or graphic design.

In his summary of the promotion, profession and management of design, Jonathan Woodham suggests

[t]he widely-felt uncertainty of the connotations of terms commonly used in the interwar years such as ‘commercial art’ or ‘graphic design’, ‘industrial art’ or ‘industrial design’ reflected the inability of designers to establish a clear cut professional identity or status. (1997: 167)

Ambiguities persist. Inconsistency is also accentuated in contemporary reporting of art and design pedagogy and research in the UK. For instance, Table 4-15 reveals a comparison of student numbers in art and design education over the period of nearly four decades from the late 1960s to the middle of the first decade of the twenty first century. In 1969, graphic design is noted as one of four key subjects in art and design, at the time when most formal education in art and design higher education moved over from a diploma in art and design (DipAD) qualification to a Bachelor of Arts (BA) qualification. This is considered a ‘pivotal moment in the development of the higher education sector in the UK’ (Frankell et al., 2008: 45–46). At the time graphic design is second to fine art, and one of only four subjects that include three dimensional design, and textiles and fashion, making up the different kinds of topic art and design students studied. By 2005 it is not identifiable as an independent subject. This is due mainly to expansion in the sector and massive diversification of programmes since the early 1990s that contain ‘graphic’ as a distinctive word in the programme title. In fact a total of 610 different kinds of undergraduate programme were listed on the UCAS website (www.ucas.ac.uk) for the academic year 2009-2010. Similarly, neither three dimensional design nor textiles and fashion can now claim to be sole descriptors for these subject areas. These three subjects have been subsumed within the wider descriptions of design studies, crafts, and others in the creative arts.

Table 4-15 Art and design student numbers 1969 and 2005

Source: Franckell et al: 2008: 45–46

1969		2005	
Fine Art	2,987	Fine Art	18,015
Graphic Design	1,578	Design Studies	55,625
Three Dimensional Design	1,293	Crafts	1,635
Textiles and Fashion	1,014	Others in the creative arts	5,965
Total	6,872	Total	81,240

Furthermore, a recent study into the research culture in art and design uses nomenclature that favours the term visual communication to describe research activity most likely to include graphic design research (Fisher and Mottram, 2006: 4). Whereas, a review into practice-led research in art, design and architecture, art and design is divided into the three fundamental subjects of fine art, crafts and design (Rust et al., 2007: 31). From examples discussed here, Table 4-16 lists the different sets of nomenclature used across the art and design sector.

Table 4-16 Naming parts of art and design

Source: Frankell et al 2008; Fisher & Mottram, 2006; Rust, Mottram & Till, 2007.

1969	2005	2006	2007
Fine Art	Fine Art	Fine Art	Fine Art
Graphic Design	Design Studies	Design subjects	Crafts
Three Dimensional Design	Crafts	Photo/film	Design
Textiles and Fashion	Others	Textiles/fashion	
		Visual Communication	
		Others	

In order to identify the potential for a research culture in graphic design, we must therefore first consider the state of research in art & design, and be more specific about the nature of the subject when described in academic terms as being part of visual communication. This is important for two reasons. How, and where, can we identify and locate the kind of knowledge that might be described as graphic design knowledge? The answer to both of these questions will help provide the platform to further examine the potential for graphic design as urban design in higher education. However, before attempting to construct such a platform, the historical context for art and design research will be further examined from a UK perspective, with some minor observations from the US.

As an emergent 'academic' discipline at the beginning of the twenty-first century, it is no surprise that art and design does not have a long-standing academic research culture in higher education in the UK, though that is not to say that academic research has not, or does not, take place in the art and design community. One measure of academic research is the level of postgraduate research activity taking place within any given subject. If we consider this for art and design in the pre- and post-1992 period (when art and design entered the university sector), we can see that there has been some progress towards building a foundation for academic research in art and design, and funding support is available from research bodies such as the Arts and Humanities Research Council

(AHRC) in the UK. From the aforementioned Fisher and Mottram research into the research culture in art and design (funded by AHRC) a statistical analysis of registered PhD theses in architecture, art and design is shown in Table 4-17. We can see from this that there is a small but developing amount of research activity in the sector with significant growth coming in the post-1992 period. By contrast, architecture (a subject often independent of art and design in departmental organisation) has remained static over the twenty-year period from 1985–2005, being overtaken by fine art as the most popular subject for art and design research.

Table 4-17 Architecture, art and design PhDs by subject 1976–2005

Source: Fisher and Mottram, 2006: 3-9

	Architecture	Craft	Other creative art and design	Design subjects	Fine art	Photography/film	Textiles/fashion	Visual Communication	Total
1976–1985	44	-	3	22	21	1	3	6	100
1986–1995	81	8	-	33	40	3	11	5	181
1996–2005	81	16	21	67	148	21	32	20	406
Total	206	24	24	122	209	25	46	31	687

Between the first ten years and the last ten years, we can see a quadruple rise in art and design students completing a PhD and the growth in the post-1992 period is encouraging if not surprising. Following 1992, awareness of doctoral study became widespread in art and design, when the former polytechnics, home to most art and design schools, became part of the new University system and were given the power to award their own research degrees. For most university and polytechnic disciplines outside art and design, the research degree had already become the generic terminal degree associated with entry into academia. (Mottram et al., 2008: 103)

Comparing the 406 PhD completions between 1996–2005 with the 81,240 undergraduate students in 2005 for the same year, the proportion of research students is miniscule by comparison. On this evidence, the research community in art and design is very small and could not claim to be a dominant force in higher education teaching, as may be the case in science disciplines. ‘While

research practice is growing, there are still areas where we are not in control of our own definitions and have not established consensus on the important questions for the field' (Mottram et al., 2008: 118). This directly applies to graphic design and is a fundamental issue for the subject. One assumption has clearly been to place graphic design, or work that relates to graphic design, in 'design subjects'. This would be a reasonable assumption given the inclusion of design in the respective titles. But it is also very likely to be associated with visual communication, as has been discussed. This, in name at least, poses more difficulty for visual communication than graphic design.

It is acknowledged by Fisher and Mottram that coding data of this kind is complex. They refer, for the most part, to *The UK Joint Academic Classification System* (JACS) from the Higher Education Statistics Agency (HESA) (www.hesa.ac.uk), but it remains unclear from their analysis where graphic design resides in the classification. Consequently, it is difficult to determine an accurate picture of graphic design research activity over this period of time. A closer look at the JACS classification system adds to the earlier discussion about areas of knowledge. Graphic design is located in relation to design studies and visual communication. Table 4-18 lists *Creative Arts and Design* as one of nineteen subject groups, and within this is a list of principal subjects. One of these is *Design Studies*, encapsulating both *Graphic Design* and *Visual Communication*.

Table 4-18 The Joint Academic Classification System (JACS)

Source: www.hesa.ac.uk, 2009**Subject Groups**

- A** Medicine and Dentistry
- B** Subjects allied to Medicine
- C** Biological Sciences
- D** Veterinary Sciences, Agriculture and related subjects
- F** Physical Sciences
- G** Mathematical and Computer Sciences
- H** Engineering
- J** Technologies
- K** Architecture, Building and Planning
- L** Social studies
- M** Law
- N** Business and Administrative studies
- P** Mass Communications and Documentation
- Q** Linguistics, Classics and related subjects
- R** European Languages, Literature and related subjects
- T** Eastern, Asiatic, African, American and Australasian Languages, Literature and related subjects
- V** Historical and Philosophical studies
- W** Creative Arts and Design
- X** Education

Principal Subjects in Creative Arts and Design

W100 Fine Art		W200 Design studies
W200 Design studies	➤	W210 Graphic Design
W300 Music		W211 Typography
W400 Drama		W212 Multimedia Design
W500 Dance		W213 Visual Communication
W600 Cinematics and Photography		W220 Illustration
W700 Crafts		W230 Clothing/Fashion Design
W800 Imaginative Writing		W231 Textile Design
W900 Others in Creative Arts and Design		W240 Industrial/Product Design
		W250 Interior Design

From this we can determine that graphic design is a discrete subject, despite its relative large size in terms of student numbers, apparently overlapping with other subjects within the design studies grouping. JACS provide a very brief description of design studies, graphic design, and visual communication:

Design studies – the study of design for everyday objects, taking into account technology and commerce as well as appearance and current art thinking. May involve the use of computers as design tools;

Graphic design – the study of/training in the use of artistic techniques effectively to communicate ideas and information to business and consumer audiences via forms of printed media;

Visual communication – the study of/training in the use of artistic techniques in design to impart information.

As a generic title, and group of subjects studied in higher education, design studies encompasses both theoretical and practical aspects, though the practical

is more explicit in graphic design and visual communication in the sense that there is a 'training' element in the use of 'artistic techniques'. This identifies a dominant making element to both graphic design and visual communication, as opposed to the objective to simply 'study'. Both are about 'thinking' and 'doing' but there is little distinction between the two, except for the perceived bias of graphic design as design for print for business and consumer audiences. Visual communication is less media specific. Many of the activities in this subject group are therefore closely aligned with context, or media specific differences. For example, the description for *Illustration* has a strong resemblance to graphic design except for 'printed media' being substituted for 'drawn and painted images'. *Typography* is more succinct, reading '[t]he study of/training in the use of artistic techniques in the design and production of printed matter', clearly borrowing from graphic design. Consequently, as far as JACS is concerned graphic design research may well reside in design studies, as an everyday object, or visual communication as something that can 'impart information'.

Art and design, and graphic design, appears to have struggled with notions of traditional research since art and design became part of the wider University community in 1992, and that struggle is rooted in art and design's close association with a learning process that is 'experiential' and 'practice' based (Gray and Malins, 2004: 1). Artists and designers, through their training, usually, but not always, identify practice to mean the creation and making of artifacts, rather than the generation of theory. Consequently the nature of research, the practitioners of research, the description of research degrees and art and design research activity has spawned additional and new designations. The range of inflections includes: 'practice-led'; 'practice based'; 'arts-based'; 'art-informed'; 'artists-as-researchers'; 'creative researchers'; 'artistic PhD'; 'practiced-based PhD'; arts-based PhD'; 'practice through research'; 'practice as research' (Biggs and Buchler, 2008: 5). This is a confusing array of ways to describe research in art and design, and perhaps symptomatic of an immature research discipline.

It is appropriate at this point to return to the Royal College of Art, and the thoughts of Christopher Frayling outlined in what appears to be an often cited paper. In 1993, soon after the change in status of polytechnics into new universities, Frayling examined the notion of research in art and design. He began by stating that art, craft and design is concerned with the new, and

consequently, the implication in research that it must build on existing knowledge by reviewing what has gone before, runs contrary to this (Frayling, 1993/4: 1). Words used by Frayling to describe the condition of art production include 'expressive', 'autobiographical', 'ambiguous', are phrases that do not necessarily fit with the tradition of research. However, he argues that some art has come out of cognitive endeavours, and can be thought of as research. Specifically relating to design, he states

the concept of design as research – either applied research, where the resulting knowledge is used for a particular application, or action research, where the action is calculated to generate and validate new knowledge or understanding, or even (but very rarely) fundamental research – is so well established...(Frayling, 1993/4: 4).

Furthering the comparison, he concludes that science is similar to design in the way it is carried out, and drawing on the ideas of Herbert Read, Frayling outlines three distinct ways to describe the relationship between research and art and design:

- Research into art and design
- Research through art and design
- Research for art and design.

Research 'into' can be 'historical', 'aesthetic or perceptual' or 'theoretical'. 'Through' art and design can include 'materials' research, 'development work' or 'action research'. 'Into' and 'through' are thus considered significant research activity, whereas research for art and design is thought of as much less significant, involving the gathering of materials for the production of art (ibid: 5).

These definitions for research in art and design, whether describing the nature of research, as noted by Biggs and Buchler, or the intention of the research, as emphasised by Frayling, present a scenario that continues to be contested and refined. Birger Sevaldson believes the descriptions promoted by Frayling as 'too coarse, general and imprecise to be useful for a discussion about the detailed theoretical and methodological implications these types of research may have' (2010: 12). From his following list of explanations, he favours *Research by Design* as having the most potential for exploiting design knowledge.

General definitions for practice-related research

Practice Research: A global definition that includes all different modes of research involving all kinds of practices. The term is not well defined but from the denotation of the term I derive the definition as a global term embracing all practice related research.

Practice-based research: Used in clinical research (American Academy of Family Physicians, 2009). Probably used as a quite wide definition where different relations between research and practice are played out. Frequently used in design discourse.

Practice-as-research: Used in the arts, mainly to define the generative and explorative aspects of the art practice. Practice-as-research claims that certain practices are research by them selves, without the requirement of a verbally expressed reflection, while others claim that you need an additional externalised format (text, scientific publication) to define these practices as research.

Research-based practice: Practice strongly related to a research field where the practice seeks to implement the research findings. An example in the design field is InformeDesign [sic] (2009). This is a collaboration between the University of Minnesota and the American Association of Interior Designers (ASID) (Guerin & Dohr, 2009; InformDesign). The term is also used in other fields, e.g. education.

Practice through research: A form of practice that connects to research, e.g. in design one can imagine designers being part of research and development groups. Results in new practices. Gets commissions from research and development. The phrase is most often used as a way to describe improvement of practice through research (Kottke, 2008). In this interpretation it is very similar to research-based practice.

Practice-led research: Definition from AHRC Research Review, Practice-Led report: "Research in which the professional and/or creative practices of art, design or architecture play an instrumental part in an inquiry" (Rust et al., 2007: 11). As mentioned, this definition is somewhat unsatisfying because one could think of other practices than art, design and architecture applying the same or similar perspectives, approaches and methods. It also can apply to many different modes so it is synonymous with Practice Research.

Definitions specific for the field of design

Design Research: Global definition of all design related research. This includes both theoretical and practice related studies plus general design studies.

Research INTO Design: Inquiry that looks at design from a distant perspective. Part of Frayling's concepts Research INTO, FOR and THROUGH design discussed later. Also called Research ABOUT Design.

Research FOR Design: Research that serves design and is subservient to design.

Research THROUGH Design: Any research where [sic] the design practice is central in generating knowledge. Can also address external tasks given by others.

Research by Design: A special research mode where the explorative, generative and innovative aspects of design are engaged and aligned in a systematic research inquiry. The definition distinguishes Design practices in research from other practices. It implies that the design practices by themselves have an inherent element of investigation, innovation and knowledge generation, as opposed to e.g. nursing practices. But it also indicates that these practices need to be complemented with a special dimension of reflection to qualify as research. Addresses mostly internal aims emerging from within design practice. Unfortunately, the term has been taken by some management and strategy consultancies, as www.researchbydesign.com.au (Research by design, 2009) and www.researchbydesign.co.uk (Research by design Ltd., 2009). But an increasing number of design and architectural schools are using the term. Design research institutions should actively claim it and use it instead of using less precise terms like practice-led research. To my mind, this is the most appropriate term to describe the most central mode of research in the design fields (Free University of Bozen-Bolzano, 2007, Sint-Lucas School of Architecture, 2009).

Design-oriented research and research-oriented design: This is a distinction suggested by Daniel Fallman. (See immediately below).

Design-oriented research: “Research is the area and design the means... ... seeks to produce new knowledge by involving typical design activities in the research process” (Fallmann, 2007: 197).

Research-oriented Design: “Design is the area and research the means... ...the creation of new products and in that process, answering to the problems and real- world obstacles that are faced in that process, is the primary objective” (Fallmann, 2007: 198).

(Sevaldson, 2010: 10–12)

Of these many inflections each attempts to determine the relationship between practice, research, design and to some extent, art. Between them, and combined in various ways, there are wide and narrow approaches. For instance, practice is used in a generalist sense, as in *practice research*, and specialist sense such as the creative activity of an artist, designer or architect, as in *practice-led research*.

By comparison to a subject that also utilises the word ‘practice’, such as sociological practice, these subtleties appear less clearly stated, but nevertheless are used. In *Sociological practice: linking theory and social research* (1998)a

distinction is made by Derek Layder in what is referred to ‘orienting concepts’ (1998: 101–102). Orienting concepts refer to an objective and subjective ‘two sided’ condition of social life. These might evolve from ‘particular substantive or empirical areas of social analysis’ that are conceived as ‘practitioner defined’ or ‘sociologically defined’. Whichever definition is preferred, there appears to be a desire to link the practical and theoretical in research, and this is desirable from both perspectives.

Art and design is clearly at an important juncture in its long history, and as Frayling pointed out, the fact that it has not been part of the university sector since the 1840s, is not necessarily an indication that it does not function on formal knowledge as well as tacit knowledge (op cit: 4). It consists of doing and thinking, just as one might describe the practice of science. As part of this tradition, graphic design, has, to a greater or lesser extent, contributed to this tradition. Given the history of art and design, and its establishment in the UK at a time before many now familiar university subjects (and institutions), the roots of graphic design education are closely aligned to the long standing making tradition of art and design, which is, perhaps why it is claimed by emerging contemporary academic subjects, such as visual communication.

4.7 Located in Urban Design

A number of perspectives have been explored from which the principle topic of this thesis can be investigated. This began by considering where to locate the kind of knowledge associated with graphic design as urban design, in a traditional and contemporary sense. It has been established that as well as traditional and established areas of knowledge such as rhetoric, geography and language, which have relatively long academic research traditions, graphic design belongs to the area of art and design – arguably an emerging discipline. However, art and design has a very young research culture, and graphic design even less so. Therefore, the perspective of urban design is now considered as a context for researching graphic design as urban design. If a case is to be made for considering graphic design as urban design, the idea that graphic objects can be thought of as urban objects, and thus graphic design as urban design, will benefit from access to the methods for researching and studying urban design.

The city as an object to study and research is of interest to many disciplines, the traditional and the contemporary, from philosophy to film making (for example see Lefebvre's *Writings on cities* (1996) or the edited works of Schiel and Fitzmaurice's *Screening the city* (2003)). There are many perspectives that are too numerous to mention.

Design is one of them, and the following discussion acts as a 'bridge' between the previous focus on art and design and the current concern with urban design. Design is the most obvious link between graphic design and urban design, and **design research** is therefore one way to understand graphic design as urban design. Design research was earlier recognised to be an all-encompassing term for all design related research that included the specific and the general (Sevaldson, 2010: 10–12). Specialised approaches to design research have and continue to evolve, as can be seen in the design journals and design conferences that have gradually developed since the early 1960s. This is when the so-called 'design methods movement' began with a conference in London in 1962 (Margolin, 2010). Early examples of journals include *Design Studies* (1979), *Design Issues* (1984), *Journal of Design History* (1988), *Research in Engineering Design* (1989) *Languages of Design* (1992) (Cross, 1999: 5). This foundation has arguably seen the maturing of a research discipline that in the early part of this century also claims many more quality journals and bi-annual international conferences organised by *Design Research Society*, and *International Association of Societies for Design Research*, conforming to the conventions of academic research.

A leading figure in design research since the 1960s is someone already mentioned briefly in this thesis: Bruce Archer. His work is important to this research in terms of understanding the scope of the term design research, especially the distinction between the context of general and higher education. As a founder of the Design Research Society, his must be considered as one of the foundation stones for the contemporary design research, recognised primarily for his work on design in general education (Cross, 2006: v). He is noted earlier in this thesis for promoting the idea of a third area, or culture, in general education in addition to the science and humanities. He argued that the area of Design (spelt with a capital D) extends beyond the 'day-to-day meaning which architects, engineers and other professional designers' assign to the word. Design, in a general

educational sense by comparison to science and humanities is ‘the area of human experience, skill and understanding that reflects man’s concern with the appreciation and adaptation of his surroundings in the light of his material and spiritual needs’ (Archer, 1976: 11). This is a helpful definition to this inquiry in that it is distinctly linked to earlier discussions about the mental/internal and material/external duality that emerged from the discussion about representation. Archer summarised his thoughts on Design as a third culture in an accompanying diagram, shown here in Figure 4-32, and redrawn by the Researcher. In this he proposed that each culture had its own essential language.

The essential language of Science is notation, especially mathematical notation. The essential language of the Humanities is natural language, especially written language. The essential language of Design is modelling. A model is a representation of something. (Archer, 1976: 12)

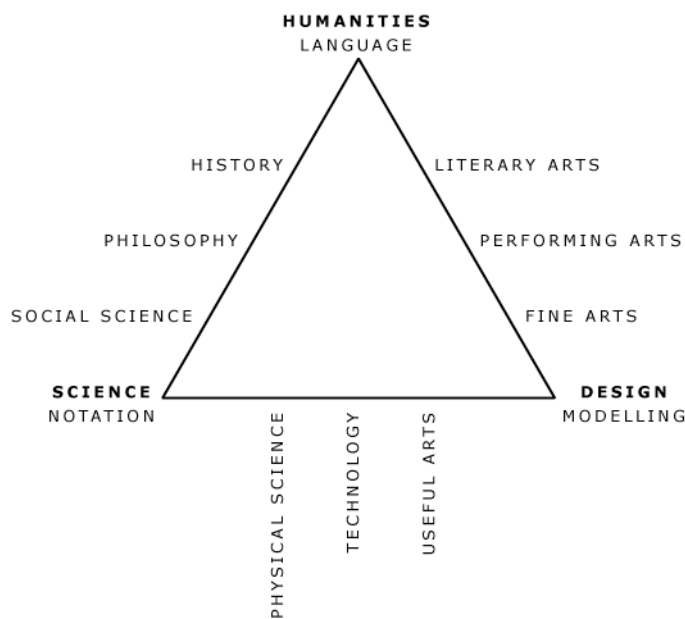


Figure 4-32 Bruce Archer's three cultures relationship

Source: Archer, 1976: 11 (redrawn)

Cross-referencing this with the earlier discussion about representation and the work of Hall (1997: 17), it is clear that the term language itself must be contextualised. Archer claims modelling to be a language. When he uses the term representation, he is referring to the second process, or system, of representation, discussed earlier in the work of Hall. This dealt with language as a written, spoken and visual form of material exchange. The term language, therefore, possesses an abstract and ambiguous quality in the context of Archer’s work, by

comparison to Hall's work on representation. Language also appears to have a mental and material dimension, appearing to connect the internal with the external, and the individual to their environment. Where some of this confusion lies is in the claim that the primary language of humanities is written language. And yet written language must have a material form by definition. Clearly, these domains must be explained as interrelated (or sub-cultures), as humanities uses modelling in the form of written language, as does science in its use of what Elkins also names notation. Notably, Elkins referred to writing and notation as falling within the domain of images. The theoretical implications of this will soon be further explained, but in the meantime Archer's thoughts on Design as an area of knowledge must be further emphasised.

Archer highlighted the fact that it was not design professionals, but teachers of art, craft and technical studies, amongst others, who argued that there were many contemporary problems of mankind being neglected by a traditional 'two cultures' approach to education that centred on the science and humanities. These were problems of 'quality of life, the urban environment, the use of physical resources and so on' (Archer, 1976: 13). Clearly, within this short list, urban design has an important responsibility at all levels of education. His ideas about Design knowledge through the scope of his research and that of colleagues, were described by him as follows:

Design technology:

The study of the phenomena to be taken into account within a given area of application;

Design praxiology:

The study of the design techniques, skills and judgement applied in a given area;

Design language (modelling):

The study of vocabulary, syntax and media for recording, devising, assessing and expressing design ideas in a given area;

Design taxonomy:

The study of the classification of design phenomena;

Design metrology:

The study of the measurement of design phenomena, with special emphasis on the means for ordering or comparing non-quantifiable phenomena;

Design philosophy:

The study of the language of discourse on moral principles in design;

Design epistemology:

The study of the nature and validity of ways of knowing, believing and feeling in design;

Design history:

The study of what is the case, and how things came to be the way they are, in the design area;

Design pedagogy:

The study of the principles and practice of education in the design area.

(Archer, 1976: 13–14).

This taxonomy is broad, but offers a view that is less about how individuals might contest their relationship between practice, research, and design, and more about categories of design research, or ways to study and research in design. Some believe the value of Archer's work in linking the 'material and spiritual' has faded and should be reclaimed. For example, Victor Margolin has suggested of Archer's taxonomy that 'it may not be the one we would adopt today but the sense of wholeness that it represented is something that we need to recapture' (2010). This sense of wholeness and Archer's acknowledgement of the neglect of the urban environment, make his work attractive to the concerns of this inquiry.

Archer's concern for the urban environment, and how design can address such matters, might be understood as a direct response to what Henri Lefebvre (1996: 121–132) expresses in his concerns for the problems of the city in the twentieth century. He has argued that the problematic of the city is traced to a *critical point* in the sixteenth century, and the expansion of the city causing the double process of 'industrialization/urbanization' leading to the double movement of 'explosion–implosion, condensation–dispersion' (ibid: 123). He traces the development of the city from zero, from agrarian life through to full urbanization. See Figure 4-33. This moves through the early political city, through to the commercial city and the retreat of agriculture, and the successive development of the industrial city towards an 'explosion' of form in the 'practico-material morphology'. He suggests that each stage of transition includes its own critical point.

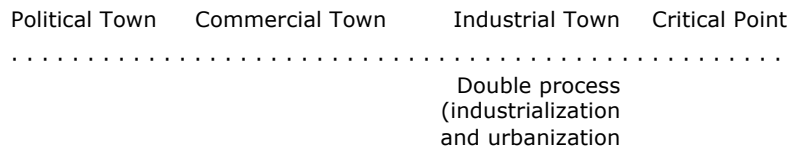


Figure 4-33 From zero to urbanization and Lefebvre's critical point

Source: Lefebvre, 1996: 123 (redrawn)

His is a concern for the break-up of the city on three levels:

1. global processes of industrialization and urbanization;
2. urban society, the specific scale of the city;
3. ways of living and conditions of daily life in the urban (1996: 126).

From the point of view of housing, the ordering and arrangement of daily life, the massive use of the car ('private' means of transport), mobility (besides contained and insufficient), and the influence of the mass media, have detached from site and territory individuals and groups (families, organized bodies). Neighbourhood and district fade and crumble away: the people (the 'inhabitants') move about in a space which tends towards geometric isotopy, full of instructions and signals, where qualitative differences of places and moments no longer matter. Certainly these are inevitable processes of dissolution of ancient forms, but which produce contempt, mental and social misery. There is a poverty of daily life as soon as nothing has replaced the symbols, the appropriations, the styles, the monuments, the times and rhythms, the different and qualified spaces of the traditional city. (Lefebvre, 1996: 127–128)

This comment by Lefebvre provokes the central concern in this inquiry, to examine the scope and function of the city's 'instructions and signals' in the 'places and moments' of the urban environment. This must be understood in relation to the replaced 'symbols' that, as noted earlier, Buchanan has suggested is a first order priority for design, and the direct concern of graphic design (see Table 4-9). Lefebvre's closing remarks in his chapter *Around the critical point* is telling in terms of how he locates the possible solution to the problem. This presents an opportunity to consider how one might then interpret Design, with its dual mental and material capacity, as prominent in the challenges that lie ahead.

Only the practical capacity of realization has the right to collect the theoretical elements of synthesis, by doing it. ...The urban can only be confined to a strategy prioritizing the urban problematic, the intensification of urban life, the effective realization of urban society (that is, its morphological, material and practico-material base). (Lefebvre, 1996: 132)

The present and future state of the city, at its most complex in terms of scale and quality of life, presents massive challenges for mankind. For example, with regards to the current group of megacities, one can ask the question: how does the megacity function? What new systems will be needed to create and maintain a manageable and sustainable existence for urban populations, and in turn, rural communities. These are relatively new challenges not known until the latter half of the twentieth century – before no cities exceeded fifteen million people, as seen in Table 2-2. *Who will write the ‘rules’ for the functioning of such an environment? What is known about graphic communication in this context?* These questions are hypothetical, but must be real concerns for humankind. The following attempts to identify how one might understand the role of graphic design as urban design in such a challenging context. The urban design context is the focus for this.

Perhaps the most comprehensive compilation of research approaches relating to the design of cities is *Ways to study and research urban, architectural and technical design* (de Jong and van der Voort, 2005b). In the preface to the book, Jacob Fokkema begins with the following declaration:

Within the range of a technical university the object of design – in terms of (urban) architecture and technique – is the design subject that is amongst all others most sensitive to context. The programme of requirements is not only derived from an economical and technical context, but also from contexts hailing from political, cultural, ecological en [sic] spatial considerations; on many levels of scale. (Fokkema in de Jong and van der Voort, 2005b: 7).

Graphic design as urban design is not exempt from this statement. Design is central in the book and its compendium of methodologies and methods. These provide the opportunity to research graphic design as urban design. Fokkema justifies the ambition to identify suitable methods and methodologies for researching urban, architectural and technical design because ‘one single, unequivocal method is not available’ (de Jong and van der Voort, 2005b: 7). The resulting outcome is eight distinctive ‘sections of scholarly methods’, or ‘forms of study’ (ibid: 11), for education and study purposes. These are listed as:

Naming and describing
 Design research and typology
 Evaluating
 Modelling
 Programming and optimising
 Technical study
 Design study
 Study by design

The ambition for the book as a reference tool aspires to make the ‘methodical founding of new study projects operational, transparent and accessible’ as an ‘encyclopaedia for design related study in the field of architectural, urban and technical design’ (ibid).

In the chapter *Criteria for scientific study and design*, a distinction is drawn between scientific working and scientific reporting, specifically relating to ‘a design’ and the community of practitioners who produce research ‘into’, ‘through’ and ‘for’ design (de Jong and van der Voort, 2005a: 19–35). (Here we see the influence of Frayling’s work cited earlier). What it means to ‘study’ and ‘research’ is explained as activities all of us undertake if we wish to give rise to new knowledge. Other notable terms include ‘inquiry’, ‘survey’, ‘investigation’ and ‘examination’. It is also noted that ‘research’ is a relatively new term dating back little more than a hundred years, and it has the same meaning as study, but perhaps with less ambiguity attached (a ‘study’ also referring to a room in a house). ‘Design related study’ is therefore taken to mean design related research, or *design research*. De Jong and van der Voort argue that unlike the outcomes of scientific research, whereby predictability allows for repeatability from basic assumptions, design contains elements of the unexpected and unpredictable, often revealed through an engagement with the ‘total context’. In contrast to the ‘probability’ of scientific research, the ‘possibilities’ in design emerge from the ‘context of invention’ (location, market and designer) as well as ‘present and future managerial, cultural, economical, technical, ecological, and mass-space-time context and perspective of the object’ (ibid: 20). As a consequence of this, the authors suggest design research is often context specific, favouring a case study approach, but limited in the ability to generalise for the benefit of other design activity. They propose a matrix of four distinct design-related study approaches, shown here in Table 4-19.

Table 4-19 Types of design-related study
 Source: De Jong and van der Voort, 2005: 20

		O B J E C T	
		<i>Determined</i>	<i>Variable</i>
C O N T E X T	<i>Determined</i>	Design research	Design study
	<i>Variable</i>	Typological research	Study by design

Design research is explained as ‘evaluating study ex post’ (ibid: 20–21) and is descriptive and analytical of existing designs in context. It incorporates the design ‘function ... form, structure,’ and making process ‘proper’. Typological research involves identical ‘form, structure, technique, function or concept’ in different contexts, but in the singular, the type is considered a design tool, rather than a model. Design study is about the making process itself, and the various stages and contexts within which this takes place. Should more than one designer be involved, particularly in such situations where design teams are working together, this can be termed ‘study for designing’ or ‘research driven design’. Study by design is the knowledge and understanding gained by varying design solutions and contexts. Of these four approaches, it is said that design research is the only one to depend purely on empirical research whereby the recreation of the designed object or process is the focus of attention. The other three must also emphasise the act of designing itself. Figure 4-34 is an attempt by Van der Voort to depict designing and studying in independent domains that also overlap, suggesting that design can happen independent of study, and vice versa.

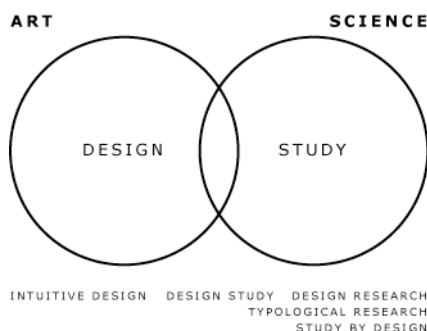


Figure 4-34 Domains according to Van der Voort
 Source: De Jong and van der Voort, 2005: 21 (redrawn)

This is notable for its suggestion that design falls within the realm of art, whereas studying is primarily a scientific pursuit, and research belongs primarily to the

realm of science. If this is the case, the suggestion by Archer that design is a neglected area of human activity appears to be substantiated, and this has been hindered in the UK by the fact that formal art and design education has been outside of academia for most of its one hundred and fifty year existence. That said, efforts have been made to discuss the wider design context that will include graphic design as urban design in the built environment literature, particularly the work of Gordon Cullen (1971) in the 1960s, Theo Crosby (1973) in the 1970s, and in the 1990s a group of researchers – Ian Borden, Joe Kerr, Alicia Pivaro and Jane Rendell – associated with the *Strangely familiar: narratives of architecture in the city* (Borden et al., 1996). All appear to have the idea of *relationship* at the core of their interest in the public realm.

Significant here is the work of Cullen, who appears to be one of the earliest to include graphic objects in his urban sphere of interest. This can be traced to his work at the Central Office of Information (formerly Ministry of Information) in the UK, said to be an early model for graphic design practice in the post-second world war years (Stiff, 2009a: 9).

In the context of urban settlement, the importance of **relationship** is explained by Cullen when he suggests that just as there is an ‘art of architecture’, there is an ‘art of relationship’ (1971: 7). Graphic design as urban design is at the core of this idea but more in the sense that Guy Debord states as the ‘social relation between people that is mediated by images’ (2000: 7). This study brings architecture and social science together through graphic design as urban design, allied to the less established discipline of design studies.

In his book *Placing words: symbols, space, and the city*, Mitchell spoke of inscribing physical objects with text in the creation of an ‘urban information overlay’. Despite the wider semiotics perspective on inscription, as discussed earlier (Scollon and Wong Scollon, 2003), inscription is a thing inscribed, or the action of inscribing something (Soanes and Stevenson, 2005). In Mitchell’s terms the thing is the city, and ‘...in a modern city, almost anything that you encounter, from underwear to skyscrapers, is inscribed with a name, identification number, brand, descriptive label, warning or instruction for use (Mitchell, 2005: 10). Inscription is referred to as text, forming part of wider

‘intertextual’ relationships, but it has been suggested that text is inappropriate in design research because of its strong associations with typographic design.

In the circumstance of the city as an artefact, and to extend the use of Mitchell’s terminology, graphic design as urban design must be concerned with what is inscribed, how it is inscribed, and to a lesser extent why it is inscribed: that is more a question for those interested in meaning and less in materialism.

The initial research question has been explained earlier as a hypothetical scenario in which a city has particular communication needs, or as phrased in the initial research question, a visual communication need. *What is the visual communication requirement of a city?* To require something suggests an absence of something. *How therefore, might a city function without this need? Can it function? Would it cease to exist?* One interpretation of need is as requirement, but this is not necessarily about action. For need to be satisfied, action is required between people that are connected. This second interpretation defines the idea of relationship (Soanes and Stevenson, 2005). Nevertheless, the concept of a city that does not have a visual communication requirement is interesting to ponder. *What does a mute city look like?*

The scenario of the *mute city* is hypothetical. Imagining what it might look like is portrayed in Gregor Graf’s Hidden Town project (2006). In a series of twelve photographic quality images that take as their starting point scenes from the cities of London, Linz, and Warszawa, all traces of publicity, lettering, route signs and inscriptions (as well as graffiti and informal unauthorised public statements) are removed from the streetscape to reveal the ‘real city’. The project is a visual response to the Graf’s questions: *How is a city without signs, without visual regulations, without guiding graphics, perceived? How do we move through this urban construct? Do we still recognize these (non) places?* See Figure 4-35.



Figure 4-35 Hidden City, Linz (situation 2)

Source: www.gregorgraf.net

Other such projects exist. For example *Delete: delettering the public space* project in Vienna's 7th district, by Christoph Steinbrener and Rainer Dempf (2005), shown in Figure 4-36. In this public art project all signs except those needed for safety were covered with yellow material, exhibiting a visual pattern that is not necessarily anticipated by the architects and urban planners.



Figure 4-36 'Delettering' project in Vienna

Source: Christoph Steinbrener & Rainer Dempf

mocoloco.com/art/archives/001138.php Accessed 28.11.08

Ironically, depicting the impact of visual clutter in this way, by removing it with clever image retouching techniques, dates back to the early 1970s. Then, the sign industry in America campaigned to disassociate itself with unprofessionally produced signage for fear of being held in disrepute. One of the techniques used to promote good quality graphics was to show environmental scenarios, such as a petrol station, with the graphics removed (Clause and Claus, 1971: 64). See Figure 4-37. The irony is that the techniques used by Graf to attract attention are the same methods in principle used by professional sign manufacturers decades earlier to enhance the environment! The images by Graf (also without people) give credence to what was said about Main Street, Las Vegas, in the 1970s: 'If you take the signs away, there is no place' (Venturi et al., 1977: 18).



Figure 4-37 Visual clutter removed

Source: Claus & Claus, 1971: 63.

Reflecting on these stark examples of mute places, these images demonstrate an absence of graphic objects that mediate human relationships. These graphic objects facilitate interaction between humans and the urban context. *How can such objects be defined in the wider context of urban space?* Some answers to this question can be found in the work of Cullen, Crosby and others, who are primarily concerned with the urban environment.

In the middle part of the Twentieth Century, Gordon Cullen brought to attention his views on the benefits of town formation. These benefits were initially expressed in pure and simple terms, as a 'collective amenity', made possible by the shared benefit of a theatre, a library, a bank, temple or church, among the residential dwelling of the home. He attempted to move beyond a notion of architecture as relating to the design of a building in the singular, distinguishing that 'one building standing alone in the countryside is experienced as architecture, but bring half a dozen buildings together and an art other than architecture is made possible' (Cullen, 1971: 11). This comment is, perhaps, one of the best brief explanations of what urban design has come to be. Not least, because human communication, and how it happens, is subject to increasing complexity through a change of scale, but not in such an overwhelming way that is associated with the scale of a city itself.

Cullen places importance on the space created between buildings, hence his interest in the art of relationship. This, he says, is something different to the art of architecture. In the built environment the art of relationship it is about the connection between 'buildings, trees, nature, water, traffic, advertisements and so on' (ibid: 8). The association between these elements is understood through what Cullen calls our '*faculty of sight*' and can be divided into the three concerns of 'optics', 'place' and 'content'.

Optics is concerned with the sudden disclosure of the unfamiliar scene, and as these scenes accumulate as we walk through a town, an accrued 'serial vision' develops. This sense of movement and time, or 'kinaesthetic experience' (Carmona et al., 2003: 134–138), Cullen believes is enhanced by the potential 'drama' and 'juxtaposition' of elements that seek to bring our experiences to life through contrast and enhancement of our emotional experience. We experience this in what he describes as '*the existing view* and the *emerging view*' (Cullen,

1971: 9). Whereas *place* is concerned with the relation between our physical self and the environment – the emotion that is stirred by the drama of a particular situation, such as the view from a tall building, or the anxiety that might be felt in a crowded lift. We enter, occupy and leave these situations, moving between *here* and *there*. Cullen further explains *content* is about ‘the fabric of towns: colour, texture, scale, style, character, personality and uniqueness’ and the disorderliness and non-conformity of places. (ibid: 11)

Cullen’s approach, or ‘method’, to describe the urban environment employs his own written text, photography and illustrations. The illustrations, created using media including pencil, ink and mechanical devices such as *Letratone*, as well as collaged elements, vary from being very loose and sketchy, such as an image of a church demonstrating the idea of ‘punctuation’ (ibid: 45), to very detailed such as the depiction of the quayside in Looe, UK (ibid: 118).

Cullen’s approach has been described as conversational and impressionistic, in contrast to more formal and precise interpretations (Jarvis, 1980: 26–27). That said his work is worth closer inspection because of the inclusion, and therefore elevation in status, of mundane objects such as street signs, lettering, road signs, and outdoor publicity. The drawings and photographs that feature in his book, many created by him, contain words and ‘graphic devices’ typically seen in any developed western urban townscapes. Furthermore, a feature of his approach to image making is his willingness to feature ‘inscription’, as in the names of public houses (‘THE ANGEL INN’, or ‘TALBOT HOTEL’); proprietors of business (‘HOCKEY & SO[N]’ or ‘BUCKLEY & BEACH METAL WORKS’); hotels (‘OBAN HOTEL’); instructions to motorists (‘NO PARKING’ or ‘TO CAR PARK’ or ‘KEEP LEFT’); names of streets (‘SANS STREET’); warning notices (‘CAUTION. MEN WORKING OVERHEAD’); outdoor publicity in the side of buildings (‘Bronco TOILET PAPER’); invitations and propositions (‘COME TO CHURCH’ or ‘Have a Guinness when your tired’); random text on ‘billstickers’ (‘WED THURS FRI’); and some part words cut off by the framing of a photograph, or a particular view taken when Cullen composes a sketch.

Cullen uses photography to show the ‘vulgarity’ and ‘vitality’ of advertising in Times Square, Broadway, (ibid: 151) featuring well-known consumer product

names ('CHEVROLET', Pepsodent, Coca-Cola) as well as the more functional presence of a clock face, see Figure 4-38.



Figure 4-38 The vulgarity and vitality of Broadway, New York
Source: Cullen, 1971: 151 (attributed to Black Star)

Some of Cullen's more detailed drawings show the extent to which publicity images adorn buildings. These are every bit as overpowering and intricate as the photograph of Broadway seen above, if on a smaller scale and confined to just one façade. Figure 4-39 shows a variety of typestyles used to fill all available spaces on a rebuilt exterior at the end of what appears to be a row of terrace houses. Within this image is the incorporation of 'graphic devices' such as a star, a scroll, and eyes. As one scans down the building, the shapes in the window of what appears to be a shop entrance suggest more detailed notices about the shop content, to be read at a closer distance. Additionally, a sign protrudes from the building containing a circle with text placed in front of it, the content hard to determine. However, in big bold letters at the top of the fascia the name JOHN BULL is rendered in bold condensed sans serif capitals, making no mistake as to what the most important information is in this highly congested space.

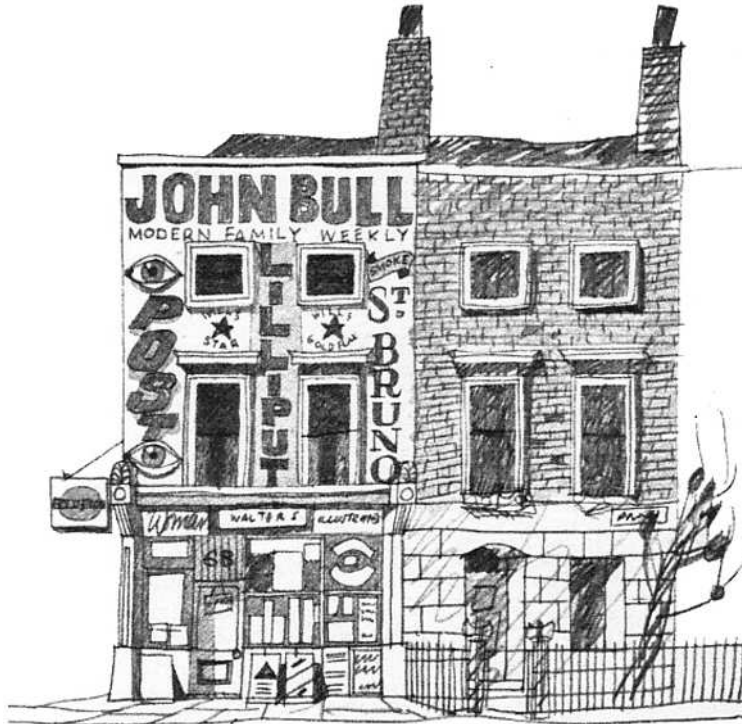


Figure 4-39 Illustrative and written publicity on buildings

Source: Cullen, 1971: 152

A much less detailed sketch by Cullen, attempts to illustrate his idea of 'punctuation'. Punctuation represents the idea of a panorama as a complete sentence. As such, various subjects can interrupt the narrative of the panorama, or street. The point is illustrated in Figure 4-40 whereby a church acts as a 'physical signal' interfering with the alignment of the street, performing the role of a pause, a full stop or even exclamation mark. This will be apparent to anyone travelling through the panorama, by car, by bicycle or on foot, and each kind of traveller will have a particular cultural response to this interruption. In some cases the interruption or punctuation will be significant and others less so. For example, it is suggested by Cullen that the tourist may welcome the opportunity to enjoy the history and architecture they meet. By contrast the motorist is forced to stop for different reasons and curtail their journey, though not necessarily because of the church forcing them to do so. Unacknowledged is the signpost on the left side of the illustration that signifies 'no entry'. This too must be considered a form of punctuation, more so in the narrative of the motorist than the pedestrian, or tourist.

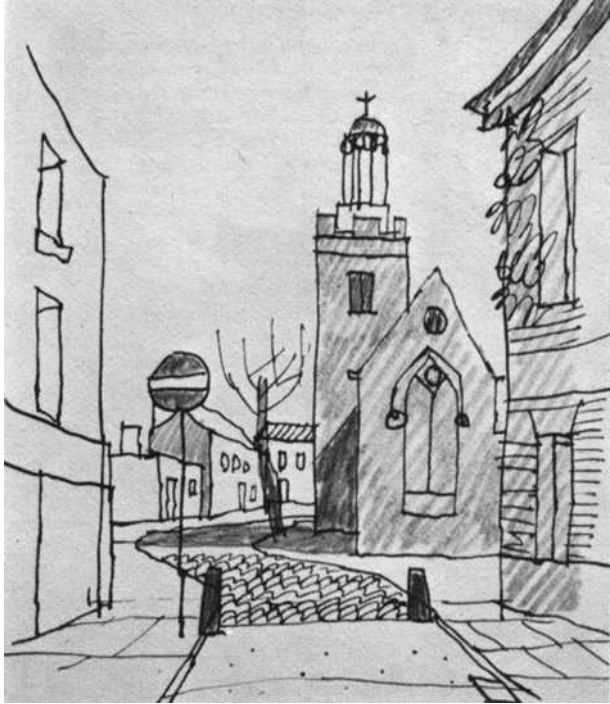


Figure 4-40 'Punctuation'

Source: Cullen, 1971: 45

These three images, taken from many featured in Cullen's book *The Concise Townscape*, show the presence of graphic objects that contributes to the formation and function of the urban environment. In particular, the three images demonstrate the dramatic change of scale in which these objects exist and perform. These invoke, to some extent, all of Buchanan's four orders of design as symbol, thing, action and thought (2001: 12), as graphic, industrial, interaction, and environmental design respectively.

Already mentioned have been the detailed notices in Figure 4-39 that are only hinted at in sketch form. These details cannot be seen unless at close range, and at that point they arguable cease to be part of a wider built environment design framework. Cullen asks that readers 'see in detail' the life that exists in such comparative trivia and speculate about the interest and quality within (op cit: 63). Some of this interest and quality is to be found in what Cullen calls *propriety*, and a shop fascia sign displays that explains what takes place on premises. For example, the fanciful metal sign for 'Buckley & Beach Metal Works' (ibid: 65).

Cullen argues that propriety, and the vitality of *publicity* in the urban scene, is an alarming concern for the world of planning (ibid: 85) but he is also of the opinion that the ‘house of lettering’ (as seen in Figure 4-39) has a charm of its own. This charm is evident through the quantity and variety of *lettering* styles that reside in the different forms of graphic communication that feature in his overview: ‘house-name, placard, road sign, fascia board, advertising hoarding, bus-route sign or road name’ (ibid: 93). The photographs used throughout demonstrate some of these objects, showing a mixture of serif and sans serif lettering styles varying in degrees of ‘function’, ‘feeling’, ‘character’, ‘robustness’ and ‘debilitation’ (ibid: 94). On a larger and more visible scale are the signs he features found on the road. The road signs, bollards, traffic signs, and lamp-posts of the period are explained as making a satisfactory set of messages that derive their black and white appearance from a maritime vernacular (ibid: 96).

In the early 1960s when the first edition of the *The Concise Townscape* first appeared Cullen argued that street publicity was mainly ignored by town planners, and general advertising did not appear in new town perspectives. Objections were based on four key points:

1. Advertisements are incongruous and therefore injurious to amenity.
2. They exploit the public highway and the public has no choice but to take notice of them.
3. They vulgarize public environment and degrade public taste.
4. They distract the attention of motorists and road users.

(ibid: 152)

Cullen attacks these objections, point by point, suggesting that rather than being discordant with the environment, advertisements ‘give point’ to it through people’s desire to ‘buy and sell, to proclaim and to notice’ (ibid: 152–153), claiming it to be part of our civilisation. Exploitation, he argues, is a necessary part of this in the absence of a more suitable location. (This is a defence made less important by the multiple channels through which advertising permeates our lives in the twenty first century). On matters of taste, he insists that vulgarity is already present in public taste, and at least represents vitality, something useful if such a form of expression possesses any educational potential leading to an

improvement of taste. Finally, although distraction is dangerous, he concedes it should not be exaggerated.

This selective review of Cullen's work from half a century ago represents an important prior benchmark for this inquiry. Shown in his work is an early appearance of the term 'visual pollution' (ibid: 193) and he is positive in declaring that 'of all things, [publicity] is the most characteristic, and, potentially, the most valuable, contribution of the twentieth century to urban scenery' (ibid: 151). The imposing nature of these forms of visual communication on the built environment is demonstrated when Cullen elucidates:

A view of Leicester Square in the eighteenth century would be virtually impossible to reconcile with its present condition, a boisterous jungle of traffic, changing signs, vivid lettering and garish posters. (ibid: 100).

In the art of putting the environment together, or as Cullen summarised in his introduction, 'the Art of Playing [the game]' (ibid: 12), he called for the field of activity to be defined, and using a musical analogy, suggested the need to define notes and establish a musical grammar in order to play a tune. He also argues that the environment is put together in two ways: objectively and subjectively. First, using common sense and logic. Second, by drawing on the values of those who live in the environment. Some now call this urban design, and the examples discussed above from Cullen's work can be described as graphic design as urban design in the sense of putting a particular aspect of the environment together.

Some of Cullen's ideas about the public realm embracing publicity were recognised in the early 1970s by Theo Crosby, and featured in the exhibition and book *How to play the environment game* (Crosby, 1973). In the book the lucrative activity of 'property speculation' is consciously depicted using a drawing of a modern architectural development in what appears to be Piccadilly Circus. Shown by Crosby are large scale ideas for advertisements that occupy the whole façade of a building (ibid: 84) uninterrupted by windows. In Figure 4-41 Crosby depicts a deliberate attempt to assimilate the design of architecture and the design of publicity in a neatly drawn image that is a fully integrated design. These publicity images appear on at least five different picture planes, carefully showing in detail a combination of letterforms combined with pictorial representation of products such as cars and liquid refreshment. Across the bottom of the drawing,

running left to right the full width of the building within the picture frame, is a long fascia containing the script letters of a cigarette advertisement. All of this creates a backdrop to what appears to be the statue of Eros in Piccadilly Circus.



Figure 4-41 Integrating architecture and publicity

Source: Crosby, 1973: 84

Referring to this as an ‘enviable environment’, Michael Carder speaks to the integration of publicity images with architecture as making the point that advertising images ‘exalting us to consume’ have simply replaced ‘the heroes and heroines which adorned our buildings in the past, evoking in the onlooker lofty ideas of courage, or piety, reason or love’ (ibid: 218). As suggested by Cullen, Crosby brings attention to the way advertising hoardings, and the large-scale graphic images they carry, change our perception of scale and space, reality and unreality. These also appear as messages on the move, such as when a bus transports publicity as well as the passengers, as seen in Figure 4-42. Such a spectacle does so with the application of large-scale images designed to fit the

spaces in between the windows of the bus, between the bottom and top deck. The bus animates the narrative of the vista bringing a new interpretation to Cullen's idea of serial vision. (In the case of advertisements that move parallel to the route of a bus, the pedestrian may be the static participant in the relationship, lessening the physical kinaesthetic experience discussed by Carmona et al (2003: 134–138) but enhancing the metaphysical encounter experienced by the onlooker).



Figure 4-42 Moving messages in the urban environment

Source: Crosby, 1973: 221

Crosby extends an understanding of the intimacy of experience in the built environment, adding further to Cullen's attempt to foreground the mundane and comparatively miniature aspects of simple lettering on the street, for example that found in the form of a street nameplate. Crosby does this by showing photographs of 'the army of flyposter stickers [that] change your world everyday' (ibid: 221), as seen in Figure 4-43. He goes on to say:

Some graphics are large and tasteful, expensively produced by big advertising agents for even bigger clients. The fly poster by comparison is small, noisy, and irreverent. It is cheaply produced and even more cheaply stuck to the wall over yesterdays [sic] news. ... The urgent and anarchic jostle for our attention with the artful and carefully contrived. (ibid: 222–223)



Figure 4-43 Large and tasteful, small and irreverent graphics
Source: Crosby, 1973: 221

Publicity is not only featured by Crosby in printed form, but also other media more suited to the time of day, and night. Messages are communicated through neon, argon and xenon tubes to present an electric eclectic mix of advertising images that seek to attract attention. This is said to be at its most powerful in dense public spaces such as Piccadilly Circus. See Figure 4-44. Such facades have been transformed from 'pure' architectural form to the flat surfaces that carry two-dimensional 'messages', and again to the starkness of the 'graphic form' given by the pattern of light at night. This distinct form is not always exclusively word or picture based, but more often in combination, attention seeking to publicise products. In keeping with the earlier examples of architecture without and with publicity shown in Figure 4-35, Figure 4-36, and Figure 4-37, Crosby shows what the façades of Piccadilly Circus are like with and without the intrusion of the advertising hoarding, as shown in Figure 4-45.

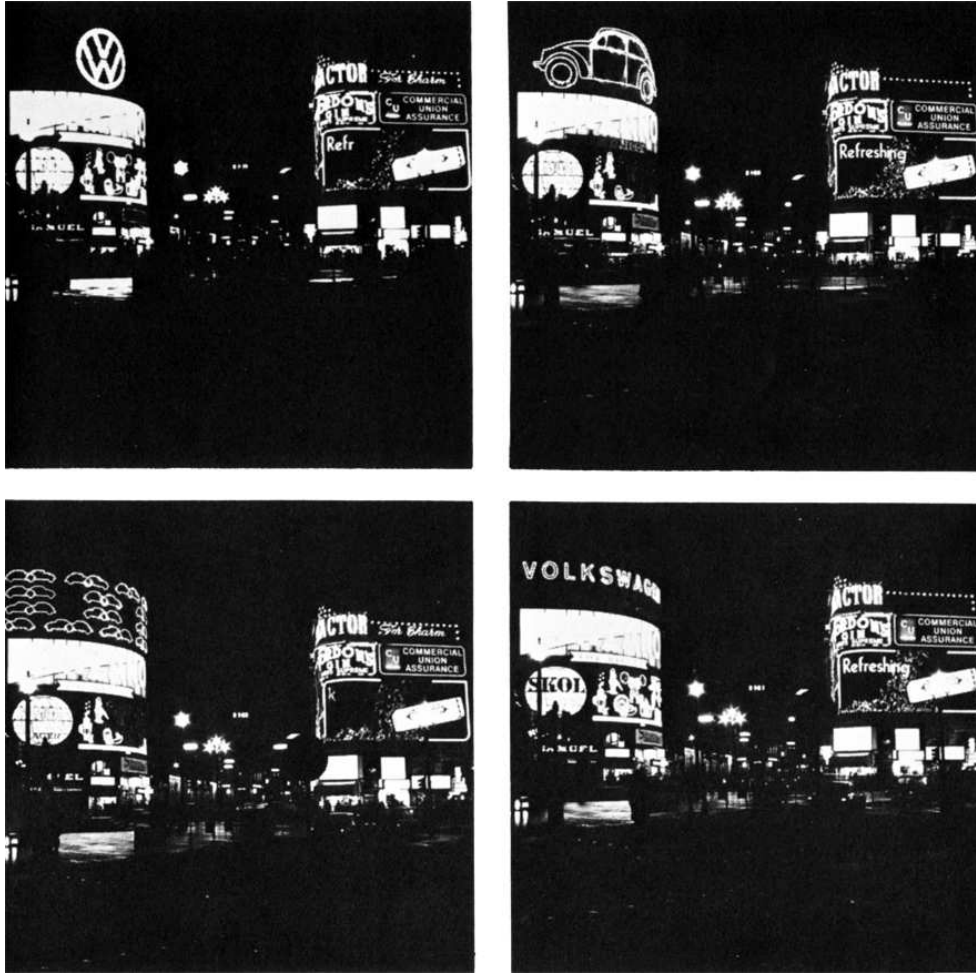


Figure 4-44 Piccadilly Circus at night
 Source: Crosby, 1973: 225



Figure 4-45 Piccadilly Circus with and without outdoor publicity
 Source: Crosby, 1973: 226–227

These examples situate graphic design as urban design at a time when urban design made its formative transition from what was then known as *civic design*.

The work of Cullen attempted to extend the concerns of traditional built environmental professionals to consider the built environment as an art of relationships. The examples he chose to illustrate and photograph attempted to deal with visual cohesion and organisation of buildings, streets and spaces, and focussed on the relationship between physical objects. This extended to include a limited selection of urban products of graphic communication at a basic level. Crosby extended this to some extent, but not far enough to offer a comprehensive understanding of the topic of this thesis. With this in mind, the discussion moves on to the more recent work of Borden, Rendell, Kerr and Pivaro. This is now reviewed and considered in the context of architecture and social space.

In the *The Unknown City* (2002), Borden, Rendell, Kerr and Pivaro explore the transformation from a stasis of 'pure' architectural object, into an urban environment that displays and represents a wider scope of symbols, things, actions and thoughts not usually associated with the architectural profession. In discussing a 'move from things to flows, from filters to tactics', they claim:

...architecture is no object. At an interdisciplinary nexus, as an intrinsic element of everyday life, architecture is not composed of isolated and monumental objects. Architecture is ambient and atmospheric, and architecture allows us to tell stories—it is both backdrop to and inspiration for theoretical and poetic musings of all kinds, from love to philosophy, theology to Marxism (Borden et al., 2002: 3).

Substantiating this view, the various chapters included in this edited book feature photographic references that are not typical of the kind of images usually found in books about architecture. Instead, *The Unknown City* introduces the 'microscopic gaze' at 'architecture' favoured by Walter Benjamin, and his means of 'spacialising the world', or as the editors put it the 'spatiality of the city' (ibid).

Borden et al display a more recent view than that of Cullen or Crosby about how the presence of publicity continues to grow in dominance, and yet is increasingly subtle, often simplified and more readily displayed. Most images in *The Unknown City* feature the kind of symbols, things, actions and thoughts created by non-architects. Like Cullen and Crosby, *The Unknown City* includes examples of publicity images (hand-drawn and photographic) adorning buildings such as those typically found in a modern day Times Square in New York. A more diverse range of graphic communication is shown: logotypes; electronic displays; free-standing sign boards; memorial plaques; street furniture carrying advertising;

road-signs and their accompanying 'graphic' devices; decorative elements; murals; architectural fascia lettering; motorway signs; window displays; and temporary handwritten notices. These display a wide array of formal and informal lettering styles and graphic devices that have their origin in hi- and lo-tech production processes. The images reveal more scope and diversity in the application of graphic devices than that shown by Cullen or Crosby.

In the photographs is seen the application of new kinds of formal and informal artefacts that influence actions and experiences in the urban environment. However, these graphic representations are rarely discussed in the text. Take, for example, one of the photographs accompanying Iain Borden's essay *Another Pavement, Another Beach: Skateboarding and the Performative Critique of Architecture* (op cit: 178–199). He writes about skateboarding as a 'particular urban practice' that searches for the unknown in diverse situations such as the university campus, urban square, streets, sidewalks and car-parks, or left-over spaces, to name a few. One such space is that featured in Figure 4-46. The image shows a skateboarder in full flight traversing a small traffic roundabout in Oxford. The roundabout, appearing to be 6–7 metres in diameter, is a self-contained road sign, surfaced in two kinds of paving block. Around the circumference, eleven rows of black and white blocks are laid to the shape of chevrons pointing to the left. In the centre of the roundabout a one-way traffic bollard reinforces the decision-making action normally required by the motorist.



Figure 4-46 Between Towns Road, Oxford

Source: Andy Horsley in Borden, Kerr, Rendell and Pivaro, 2002: 183

A second image extracted from *The Unknown City* by the artist Richard Wentworth is one of fifteen pictures (from numerous taken over a twenty five year period) accompanying an interview between Wentworth and Joe Kerr. The interview, entitled “*The Accident of Where I live*” — *Journeys on the Caledonian Road* (op cit: 386–405) attempts to capture how Wentworth’s artistic practice is informed by observation and experience in the urban environment, and all its ordinariness. Kerr described it as a ‘close textural and textual study of the physical fabric’ that corroborates the connection between people and architecture. Expanding on this Wentworth says:

I am intrigued by all those practices which are actually world forming, and which in turn we respond to ... all those kinds of essential urban conversations between people and objects (ibid: 389).

The nature of some of these ‘conversations’ is formed by mediation between people, utilising objects that synthesise language and form in ways that are representational on many levels. In Wentworth’s photograph *The Caf*, see Figure 4-47, different forms of representation (and misrepresentation) are present, determined by both formal design attributes and decay, displaying order and disorder. It is orderly on a basic level in that the tradition of using alphabetic characters to make up words, establish meaning that is clearly recognisable. It is disorderly in that through the decay of fixings, the intended words are no longer complete, resulting in an appearance of untidiness. As Wentworth points out ‘having gone to some considerable effort to have proper signs put up, the E falls off and the U falls off, and have been off now for six months’ (Wentworth: 403). Wentworth finds the appearance of ‘CAF RESTA RANT’ rather charming’. Nevertheless, with the exception of RANT, these words have no meaning in written English. People are dependent on a familiarity with the words café and restaurant to enable the filling in of gaps to properly determine this place identity.



Figure 4-47 The Caf

Source: Richard Wentworth in Borden, Kerr, Rendell and Pivaro, 2002: 402

Less formal but with no less impact, Figure 4-48 displays the same economy of words, with the addition of an arrow device. Hand rendered alphabet characters state the helpful message MOVED ← 5 DOORS. By comparison with the graphic device used in the image of the skateboarder in Figure 4-46, the execution is informal and has the appearance of being hand painted. The inclusion of a single arrow, in full and not just as a chevron, is integral to the message and enables more economic and immediate communication to happen. These are local examples that convey relatively clear unambiguous messages. Stated in words, they represent an instruction to ‘drive around the roundabout in a clockwise direction’. ‘Eat here’. ‘I have relocated’. These individual statements are single narratives in spaces where there might also be many others. For example, contrast these situations with a much busier urban space such as Piccadilly Circus in London, or Times Square in New York. Their display a significantly more complex array of message requirements, and more intensely exemplify the relationship that is present in graphic design as urban design. The scale of urban design constitutes that there are many complex message requirements that will compete in the same environmental space.



Figure 4-48 Hand-lettering on Caledonian Road, London

Source: Richard Wentworth in Borden, Kerr, Rendell and Pivaro, 2002: 404

The complexity of graphic design as urban design is manifold and manifest in a central place such as Times Square, a place occupied by a vast and diverse range of public spaces and public types. In *The Unknown City*, M. Christine Boyer (2002) lists the many uses and users of Times Square/42nd Street in her chapter *Twice-told stories: the double erasure of Times Square*:

a retro-theatre district, a media centre, a Disneyland, a suburban style shopping mall, an advertising zone, a corporate office park, a movie but also a song, a novel, a play, a street and a way of life—a place where prostitutes, pimps, hucksters, or teenagers rub shoulders with out-of-town conventioners, theatre audiences, corporate executive secretaries, tourists, and families. (Boyer 2002: 33)

Her concern is for how the visual spectacle of ‘America’s image-saturated commercial landscape’ of ‘signs, video screens, painted billboards, theatre marquees, faded murals from the past, LED strips, holograms’ has undermined the traditional role of architecture in the city (2002: 49–50). She selects images that show what Triggs has deemed stacked ‘vertical information facades’ (2009: 243) that occupy the tip of the triangle blocks that dominate the north and south view of Times Square. These are possibly the most photographed aspects of Times Square and instantly recognisable to those familiar with the space. Also featured by Boyer are photographs of the ‘Triple Zipper’ *Luts* (light units in Times Square) on the Morgan Stanley building, a fascia of a porn shop, and a collage of advertising hoardings that completely obliterate the original building façade on the corner of a junction. Advertising (or what Cullen called publicity) and

commerce is at the core of this visual spectacle, in what Triggs calls ‘the world’s most famous information environment’ (ibid: 243) that is also considered an ‘iconic place of popular culture’ (Boyer 2002: 31). Nevertheless not all visual messages found in Times Square fulfil only an economic function. Many are there to fulfil more an information and educational function. However, these may be overlooked by the planner or architect because of the scale of concerns they have. Studying Times Square at closer proximity, with an interest in the graphic image, reveals a complex web of economic, social and cultural functions on display and at play.

Triggs is correct in saying that information in this postmodern context is ‘multilayered and often illegible’, but her meaning of illegibility also includes the technological landscape of ‘mediated spaces’ with regard to access gained via live webcam or Google Earth (op cit, 2009: 245). Whilst legibility is considered by the architect or town planner as being about city form in a communication context the cultural perspective of the person reading the city must also be considered. For example, in graphic communication, when speaking about legibility from a typographic design perspective: *how many people will see an apostrophe missing from a pedestrian sign? How many people look that close?* Are such omissions important in the overall context of urban design? It appears so. This short anecdote reported on 23 August 2008 during the 8.00am news on the UK radio station *BBC Radio Five Live*, testifies that two men in California had been banned from national parks for defacing signs by repositioning a misplaced apostrophe. They used correction fluid and marker pens. Legibility, if considered from a communication perspective, is as much about the cultural perspective of the audience as it is the designer.

Analysing a space such as Times Square from the perspective of graphic communication can be done from many perspectives. The human geographer will undoubtedly be concerned with how people interact with environments, and it has been discussed earlier the human geographer has many different perspectives to draw from for their analysis. Local-global, image-reality, emotional geography, settlement patterns, representation, colonialism, name a few approaches that have been mentioned in this theses. Linguists, such as David Crystal (discussed earlier) will take an interest those issues that relate directly to their study of language, and everything is thought of as language (one assumes the positioning

of an apostrophe a critical concern). Their concerns, amongst others, include the development and conventions of writing systems, represented as graphic expression and studied as a 'graphetic science'. More specific is their interest in matters such as toponymy, or visual rhetoric, as it is captured in material form. However, with the exception of Crystal and a few others, linguists have ignored typography (van Leeuwen, 2005: 138), a fundamental aspect of graphic design. Semioticians, such as Scollon and Wong Scollon, include it in their exploration of 'place semiotics' but see this as part of a much wider interpretation of inscription that is useful to this inquiry (2003: 129–131). Much can be utilised from these areas of knowledge and understanding when considering the question: what is graphic design as urban design? However, the graphic designer's concern, from an academic perspective, has little to draw on from their own field of art and design other than their understanding of the intuitive processes attached to their training. This is because of the relatively immature status, and in the UK at least, has existed outside of the university sector for a long period of time.

That said, architecture and urban design appears more closely aligned with the efforts of design researchers in the latter half of the twentieth century. In addition to this is a vibrant interest in the built environment, and informal and formal studies of urban space make available concepts and ideas about how to think about the design of urban space. Cullen's starting point was his editorial work at *The Architectural Review*; Crosby took his perspective from his practice as a partner in the multi-disciplinary design firm Pentagram, whereas contributors to *The Unknown City* take an academic perspective as three of the four editors are employed in the University sector. These approaches fit comfortably with ideas about design research, which 'describes and analyses existing designs with a known context, often in the form of a comparative study' (de Jong and van der Voort, 2005a: 20).

Within the context of design study, as shown in van der Voordt's 'domains of design study' model (see Figure 4-34), graphic design as urban design is within **typological research**. De Jong and van der Voordt explain this:

[w]henver the identical architectural form, structure, technique, function or concept is recognised in different context the notion of 'type' is involved. A type only becomes a consistent model if it has been elaborated for evaluation by design in context. A type is a design tool, not yet a

model. The study of such types, their use in the making of designs (a special kind of model) is called typological research.
(de Jong and van der Voort, 2005a: 20)

Graphic design is a ‘type’ of urban design. If this is an agreeable scenario, it might also be thought of *tool* for urban design. Its properties and overall characteristics are evident in the built environment and can be utilised at different scales in the urban design context. In terms of scale, the question arises: *what is the range of graphic design as urban design?* To analyse this a return to the earlier mentioned concept of the local (*micro*), intermediate (*meso*), and global (*macro*) levels is helpful.

The **micro**, **meso**, and **macro** scale of analysis, also referred to as the ‘macro–micro dualism’ (Layder, 1994: 2), is an approach used in many academic subjects. Earlier this research referred to its use in geography but it will be found in other disciplines such as biology or economics. It is one of three key dualisms in sociology, as well as agency/structure and individual/society (Layder, 1994: 3).

Few examples of the macro-micro dualism can be found in art and design. The earliest located by this Researcher is Michael Twyman’s reference to ‘the micro level (in relation to inter-character spacing, inter-word spacing or position of sub and superscripts) and also at the macro level in relation to the spacing of larger units of text’ (1982: 11). He is speaking of typographic expression. Consequently this might be appropriately called micro- and macro-typography. Other references can be found to the macro-micro. For example, John A. Walker describes the London Underground map as a ‘microcosmic model’ that represents the ‘macrocosmic system’ of the railway network (1995: 87). Perhaps the most extensive use of the scale in art and design is Harmut Stöckl’s toolkit for textual analysis:

Microtypography	refers to fonts and individual letters;
Mesotypography	concerns the configuration of typographic signs in lines and text blocks;
Macrotypography	deals with the graphic structure of the overall document;
Paratypography	is devoted to typographic media.

(Stöckl, 2005: 209)

Table 4-20 explains how Stöckl's proposal seeks to establish 'typographic building blocks' and 'typographic properties'. This names considerations for the typographic designer, and strays into the wider context for typographic design, such as the integration with 'graphics', 'image-caption-relations', 'graphing', 'paper' and 'signing'. However, it is not clear what some of these terms mean. He refers to 'graphics' as both 'pictorial graphic sign' and 'verbal graphic sign' (Stöckl, 2005: 208–209), suggesting the earlier cited duality of writing and pictures by James Elkins. He also mentions the German '*Schriftbild* (writing+picture)' which overlooks the symbolic nature of typography and is distinct from 'a layout of graphic elements in the space of a page'. (This inadvertently justifies Kevin Lynch's analogy about 'a related pattern of recognisable symbols' on the legible printed page, being a metaphor for a legible city (Lynch, 1960: 3)).

The close relationship between typography and graphic design leads Stöckl to occasionally use the hyphenated '(typo)-graphic', and he further proposes that 'typography already starts assuming pictorial dimensions once recipients notice certain graphic qualities (font type, size, weight, contrast, tension, ending, colour, direction, position, etc.). Contrast this with a definition of typography that is 'the mechanical notation and arrangement of language', meaning physical and digital automated writing systems, the Latin alphabet, and spoken and written codes (Baines and Haslam, 2005: 7). This definition will suffice for the purpose here but 'typography' has different meanings (McLean, 2000: 8). Typography is about designing with the letters of the alphabet. At its core is the relationship between the alphabetic character, word, sentence, paragraph and confines of a space (physical or virtual). Beyond that and design decisions become generalised, such as the use of colour.

Table 4-20 Typographic 'grammar' – a toolkit for analysis

Source: Stöckl, 2005: 210

	<i>Typographic building blocks</i>	<i>Typographic properties</i>
Microtypography relates to the design of fonts and individual graphic signs	<ul style="list-style-type: none"> ■ type face ■ type size ■ type style ■ colour of type 	<ul style="list-style-type: none"> ■ Garamond, Verdana etc ■ point size ■ 'graph', 'style', 'mode' ■ black vs inverted or coloured, etc
Mesotypography relates to the configuration of graphic signs in lines and text blocks	<ul style="list-style-type: none"> ■ letter fit ■ word spacing ■ line spacing (leading) ■ amount of print on page ■ alignment of type (type composition) ■ position/direction of lines ■ mixing of fonts 	<ul style="list-style-type: none"> ■ standard, spaced, reduced, etc. ■ narrow, wide, etc. ■ double spacing, single spacing ■ signs/print per page ■ left-/right-aligned/centred ■ horizontal, vertical, diagonal, circular, etc ■ hand lettering plus type
Macrotypography relates to the graphic structure of the overall document	<ul style="list-style-type: none"> ■ indentations and paragraphing ■ caps and initials ■ typographic emphasis ■ ornamentation devices ■ assembling text and graphics (image) 	<ul style="list-style-type: none"> ■ size of text blocks, distance between blocks ■ ornamental/coloured ■ underlined, italic etc ■ headline hierarchies, enumerations, tables, charts, indices, footnotes, marginalia, etc. ■ image-caption-relations, figurative letters. 'typopictoriality [sic]
Paratypography relates to materials, instruments and techniques of graphic sign-making	<ul style="list-style-type: none"> ■ material quality of medium (paper quality) ■ practices of signing 	<ul style="list-style-type: none"> ■ thickness, format, surface, etc. ■ graphing, characting [sic], composing, moulding

Typography can be defined in these terms, but in the scope of this structure, there is also a pictorial element. Therefore, at some point it is more appropriate to analyse artefacts in terms of the **micrographic**, **mesographic** and the **macrographic**. This is appropriate when an analysis needs to consider a wider sphere than typography, recognising the importance of graphic elements more than typographic elements. *When might this be?*

Consider the way one interacts with an underground railway diagram (mentioned earlier as a microcosmic model). At the smallest scale of graphic detail, the arrangement of graphic elements is a micrographic representation. At a larger different scale of graphic detail, one can consider the road markings found in any

modern city. The pedestrian, motorcyclist and motorist interact with macrographic representation to inform their behaviour. Figure 4-49 depicts both scenarios in micrographic and macrographic urban contexts.



Figure 4-49 Micrographic and macrographic behaviour settings

Source: Robert Harland, 2009, Seoul, South Korea

Micro, meso and macro analysis of graphic objects (incorporating the typographic) also relates to the urban environment by analysing the point at which graphic objects move from a position of invisibility or visible, and therefore illegible or legible, to humans. Contemplate the experience of approaching a pedestrian sign on the opposite side of the road. At a distance, one might recognise it as a shape, or property, within a wider configuration of urban objects. As it comes closer into view, graphic properties become more visible and meaningful. Phrases, words, and arrows assist in understanding the intention behind the graphic signs. Closer again and certain properties may be viewed more selectively. Perhaps some not seen at all. See Figure 4-50. This is an analysis that moves from the macrographic to the micrographic urban context. The signboard is part of the urban setting – an urban object equal to the railings upon which it is placed, or the traffic signals between which it is positioned. It is recognisable at a macrographic level. Yet the sign may or not be visible or legible. At the mesographic scale, the content assumes more importance than the surroundings,

beyond the boundary of the sign. The content is visible and legible. At this point, the properties are interrelated and probably interdependent. However, at the micrographic scale, details are generally overlooked, invisible and therefore illegible. Few people will study the apostrophe in 'The Queen's House', its shape or relationship to the n and s that sit either side of it.



read left to right, top to bottom

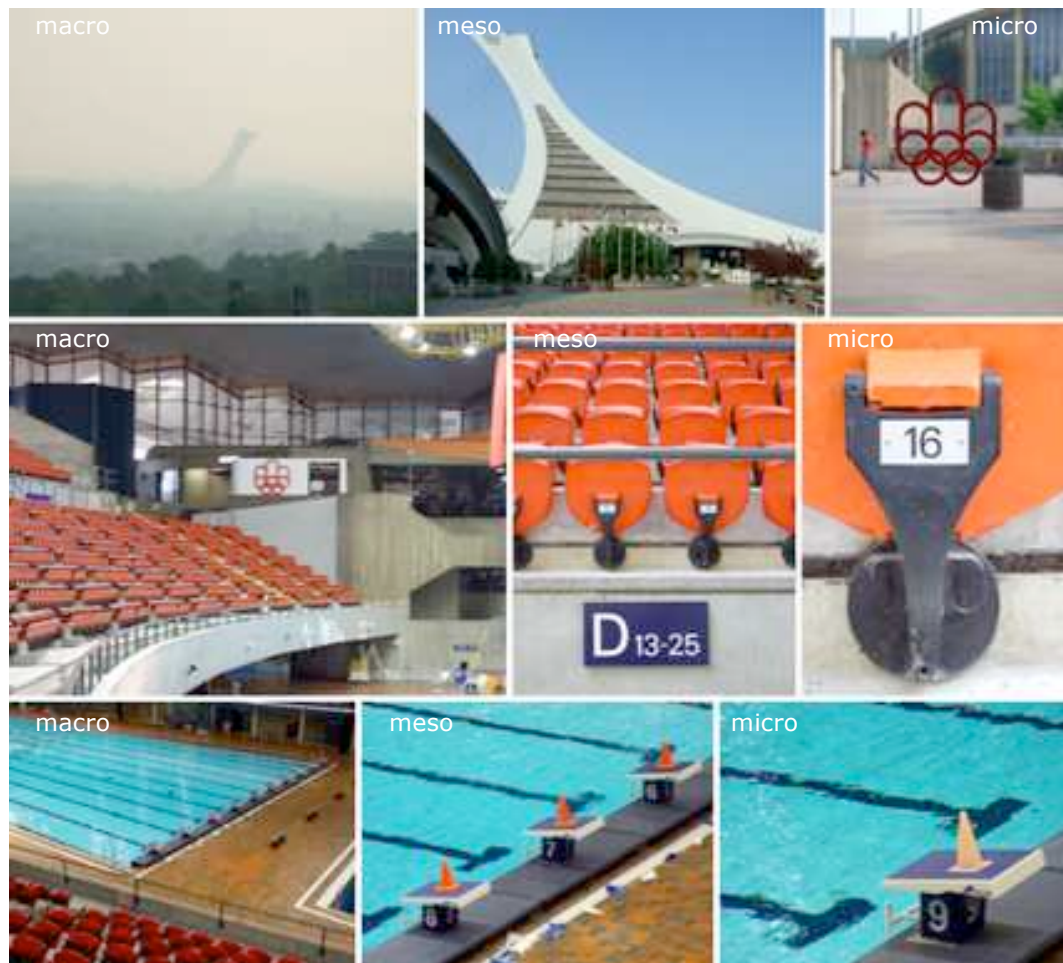
Figure 4-50 Macro, meso and micro-graphic signs

Source: Robert Harland, 2005, Greenwich, London

As well as crossing the road, this analysis can also apply to a journey across a city. A landmark in the distance might be described as having a graphic quality in that it is recognisable because of its distinctive shape, and therefore legible. The Eiffel Tower in Paris is such a building, however journeying towards the landmark may not maintain a view of it. When it comes into closer view it is perhaps better explained as architecture, or a statue, within an urban context. Accessing the object, say a building, could depend on the use of graphic symbols, or a word such as *entrance*.

Envisage the scenario of visiting the Olympic Stadium in Montreal, to watch a swimming event – perhaps on the occasion of the Olympic Games in 1976. The stadium is now recognisable from architectural images typically seen in a tourist information guide. Its silhouette is visible on the horizon as a macrographic

shape. This image is shown in Figure 4-51 as part of a composite sequence of macrographic, mesographic and micrographic scenarios.



read left to right, top to bottom

Figure 4-51 Macro, meso, micro-graphic urban design

Source: Robert Harland, 2010, Montreal, Canada

As the building comes into close proximity the 1976 Olympic symbol comes into view. This is a mesographic detail and an instantly recognisable endorsement for the occasion in 1976. Then, and now, it represented the sense of occasion to the visitor, and was shown in broadcasts on television to an international audience. However, once inside the swimming arena, a seat must be located and it must correspond to an entry ticket that has a seat number printed on it. Recognising that seat number, having navigated through an array of seating, requires the recognition of a micrographic object: in the case shown below, a number sixteen in black sans serif lettering positioned centred on a metal plaque. Then, one zooms out to view what might be called the mesographic qualities of the

swimming pool: the edge of the pool; the colour of the water in the pool, lines that divide lanes and stop short of the edge with a 'T-junction' shape. One might then focus on the starting blocks in the penultimate image as a mesographic set of location markers, before focusing on a favoured competitor (who might be in lane 9), at a micrographic level of analysing the image. At this level, the scale is relatively small and intimate consisting of a 'graphic minimalism' that contributes to an understanding of 'micrographic' (Marx et al., 2007: 49–50).

Micro ways to explain design considerations have already been introduced in relation to typography, or micro typography. The discussion has since developed towards a wider appreciation for the *micrographic*, *mesographic* and *macrographic*. This combination of terms to describe levels of analysis, does not appear to be used in academic research.

However, the 'micrographic' is not a new concept. *Chambers 20th Century Dictionary* (Kirkpatrick, 1983) relates *micrographic* to the word *microgram*. This is a 'photograph or drawing of an object under the microscope'. There is also something called 'micrography'. This can be traced to 1665, and Robert Hooke's book *Micrographia*, about physiological descriptions of minute bodies (such as a flea, or fish scales) made possible to see by the magnifying glasses. It is considered to have dramatically changed the art of scientific investigation. In this thesis, micrographic is used proportionally in relation to the city. The principal of revealing graphic objects in the city that might otherwise be undetected or overlooked is consistent with the idea of microscopic analysis.

4.8 Summary

This chapter began by considering the different ways to study and research graphic design as urban design. This focused on classifications of knowledge that have been developed by individuals and institutions. Geography and language studies have been shown to have a direct concern with graphic design as urban design, and more themes emerged during this discussion, such as representation and rhetoric. Graphic design was then centrally situated in visual communication, and art and design.

Within the context of urban design, observations made by Cullen, and the subsequent development of ideas about outdoor publicity in the work of Crosby,

began to identify the way graphic elements can be integrated into the built environment with sensitivity. This extended to recognise different kinds of graphic elements, such as light displays at night, or chevrons used on a roundabout feature, as well as the unique nature of decaying shop fascias or temporary hand-written notices. Finally, an analytical framework has been introduced as an approach for recognising the scale and impact of graphic images in the built environment.

In part, chapter four explained how inanimate objects, such as cobbled surfaces of roads and pathways, present one of many images of a city as objects of representation. Drawing primarily from the work of Hall (1997) and Kant (2007 [1781]) sensibility and sensation were accentuated as important aspects of the outer and inner body experience of representation as image. It has been shown that the graphic image, as categorised by Mitchell (1986), is central to the idea of image. It will also be clear from what has been said so far, but nevertheless worth repeating, that the disciplinary perspective in this thesis is that of one associated more with art, and architecture, than literary criticism, physiology, psychology, or even philosophy.

This raises the question about how a city is known by its graphic images as empirically external objects of representation, and to what extent a city is identified by such objects. It has been suggested earlier that a country may be in part identified through the design of its signing system for roads. The United Kingdom is one example, and an obvious comparison with France demonstrates this. At a local level the same might be said of similar objects in a city or town. London, and its many boroughs will testify to this, as will a visit to many cities in the United Kingdom.

One way to analyse this is to adopt the earlier discussed approach from cognitive science, and in particular the work of Pylyshyn (2007). Then, it was established that things and objects have defining properties. For example, orientation, colour, shape are held in a configurational pattern. It is worth repeating that a large number of 'the things we do can be explained only if we refer to how we represent the world, what we see it as, what beliefs and goals we have' (Pylyshyn, 2007: 4). How one represents the world has been the focus in this thesis. The idea of defining properties and configurational patterns relates also to the scale of

experience. It is proposed that macrographic, mesographic and micrographic analysis will enable better understanding of properties and configurational patterns in graphic design as urban design.

5 Conclusion

5.1 Review

This research set out to answer the question: *What are the visual communication requirements of a built environment?* It soon emerged that this question is too wide-ranging. It can be answered from many disciplinary perspectives as the diagram in Figure 4-29 suggests. Answers will be provided from disciplines in science, humanities, and design to what is essentially a social phenomenon. One perspective to examine this is graphic design and this is central to the ontology, epistemology, and methodology of this research. Through the perspective of graphic design, this study incorporates the idea of design, as the most important disciplinary perspective. Design has influenced the framework of ideas, development of research questions, and utilisation of research methods that traverse professional design practice and academic research most vividly in the incorporation of extant and research-driven visual data.

The initial focus of the research recognised a key dual objective to identify *the products of graphic design and the nature of urban design*, an approach adapted from Jon Lang's (2005) book *Urban design: a typology of procedures and products*. This research complements Lang's approach in that although his concern is more for the products of architecture, landscape architecture and city planning, adopting the same sentiment has led to the more succinct and fundamental research question:

What is graphic design as urban design?

A short answer to this question – benefitting from cognitive science and visual culture – is that *graphic design as urban design* facilitates one way the mind connects with the world, in what might be referred to as *plural visibility*. This involves all 'senses and modes of psychology', or 'sensory data' within the 'modulating frames of psychology' (Mirzoeff, 2009: 3–4). This research has concentrated on how the relationship between graphic properties and configurational patterns in micro-macro urban contexts is made and understood. That is, not only how it is conceived, but also perceived and interpreted.

Graphic properties and patterns make up the vast array of artefacts invariably listed in at the beginning of section 2.2 as maps, street numbers, bus placards, outdoor publicity, lettering, fly posters, traffic signs, direction signs, banners, screens, lighting, manholes, timetables and others. These are also collectively known as architectural communication, commercial vernacular, large-scale graphic images, street furniture, urban objects, inscription, outdoor information media, and environmental information systems. This research also recognises that the silhouette of a building, uniforms, statues, bollards, graffiti, walkways, doors, gravestones, hazard warning tape, even confetti, and more, must be added to this list to gain a fuller understanding of what the graphic object as urban object might be. Some of these are shown in appendix 6.10.

A complex answer to the research question must incorporate many more disciplinary perspectives than will reside within typical definitions of graphic design. Exceptions to such definitions are found in Moles' (1989) theory of how the research topic relates to psychology, or Buchanan's (2001) argument that graphic design is the first of four orders of design, and primarily about the creation of symbols, as suggested in the diagram on page 192. However, in the wider context of visual communication, graphic design connects to almost forty other academic disciplines (Moriarty and Barnbatsis, 2005: xx). Some of these connections have been further examined in depth in chapter four, which locates ways to study graphic design as urban design in geography, language, visual communication, art and design, and urban design. From these subject specific perspectives theory has emerged about how graphic design as urban design is experienced, and may be used in future research. This has been introduced as a micro-meso-macrographic way to think about and act on the built environment.

This approach, depicted in Figure 5-1 below, utilises micro-macro distinctions borrowed from geography and sociology. This supports analysis of defining properties and configurational patterns in graphic objects, as small as the spacing between letter shapes (Twyman, 1982: 11), or as large as the skyline of the City of London. The former has been discussed in section 4.7 as part of a larger taxonomy of micro considerations based on the work of Harmut Stöckl (2005). Regarding the latter, examples shown on pages 267–269 display how a pedestrian crossing, location of a sign, or building silhouette, respectively perform the role of the macrographic object.

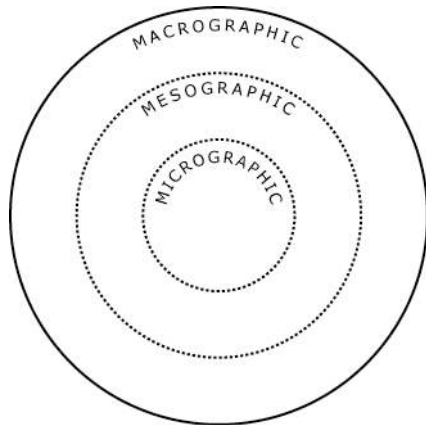


Figure 5-1 Micro-meso-macrographic object

This model for analysis complements the ‘visual dimension’ (Carmona et al., 2010: 169–200) of urban design, which does not delve deep enough to reveal the detailed concerns identified in this study. Furthermore, the model may be applied to the ‘temporal dimension’ (ibid: 241–266) of urban design. This is relevant in the way that architectural objects also have ‘symbolic’ presence, evidenced in the value associated to the view of St Paul’s Cathedral in London – a view that is protected because of the value the building has to the city’s ‘history and permanence’ (Carmona et al., 2003: 200). See Figure 5-2 below. These same visual and temporal functions are present in the examples of ‘vibrant street floor pattern’ in Lisbon and São Paulo, shown on pages 174–175 respectively, and further exhibited as far away as another former Portuguese colony, Macau (ibid: 160). These brief examples, relevant to theories of colonialism in geography, rhetoric in language, representation in visual culture, legibility in psychology, or symbols in graphic design, illuminate the research topic in ways that make it multi-dimensional and epistemologically indiscriminating. Consequently, this research benefits from many disciplinary perspectives, though few possess direct access to the kind of professional knowledge recognised in graphic design. This has been documented in chapter two, based in part on the personal experience of the Researcher.



Figure 5-2 Macrographic symbolism of St Paul's Cathedral, London

Source: Robert Harland, 2009

Chapter two recognised the role graphic design plays in determining the presence of graphic objects in the urban environment. The example of the Land Rover corporate identity, seen on page 22, showed how the basic elements of name, lettering, alphabetic symbols, colour, shape, typestyle, combine with product design, interior design and architecture to present a cohesive retail identity. *Graphic elements* benefit from *design planning and organisation* to satisfy the scale of a global marketing initiative. The micrographic design components integrate to support macrographic universality in ways that a previous incarnation of the Land Rover logotype was unable to because of poor legibility and the limited scope of application. Present in this design process is the critical analysis of how objects perform in relation to their context, further seen in the example of typeface selection for the Greenwich pedestrian signing system, or the general poor quality equivalent in Derby, both discussed in section 2.4.

However, critical analysis of this kind extends beyond the control of the 'graphic designer' and the objects of that activity, to the wider environmental context that also imposes restraints on design decision-making. This is the case in the

example of the McDonald's restriction from using red on the fascia panel of their restaurant in Piazza di Spagna, Rome, shown on page 44. Thus, the graphic object as visual culture is available to hermeneutic and structural analysis, as suggested by the diagram on page 126. These examples recounted here are made possible largely because of the Researcher's professional background. Moreover, this is relevant because Schön (1991) has suggested the 'practical competence and professional artistry' located in 'professional knowledge' usually resides outside of the '*particular* epistemology' encouraged in universities (ibid: vii, original italics).

This predicated a fuller examination of the pedagogic context for graphic design in chapter four. The consequence of the absence of art and design from the academy, especially in the UK, cannot be overestimated. It has been excluded from the academic development of research since the late nineteenth century, yet it has a formal pedagogic tradition dating back to the 1840s, older than many university disciplines and universities. The implications for this are that many practices that have emerged from art and design resemble those in other academic fields that are 'research-led', yet there is a disconnection. Consequently, this thesis includes a lengthy appraisal of research strategy, design and method, in chapter three, to identify where similarities reside between approaches used in professional design practice and those used in established research practice.

Chapter three reviewed ideas associated with the practice of research in order to ascertain how ontological, epistemological and methodological ideas that have developed through research might align with frameworks associated with professional knowledge in graphic design practice. The most obvious outcome of this has been the discovery that some research practices, such as grounded theory, closely resemble the actions of professional design practitioners. As a consequence of this, the methodology associated with this research is described in 'hybrid' terms that link sociological perspectives with art historical problems of classification, specifically relating to non-art objects classified as graphic images by WJT Mitchell (1986) in Figure 4-6. Chapter three follows the inductive logic of qualitative research to determine the way that the approach in this inquiry to research strategy, design and methods has been defined. On this basis, there is sufficient evidence to suggest that practice associated with graphic design in a professional design context closely aligns with some research practices. As such

graphic design can claim to be a form of research practice. Perhaps even a research method. This idea will be further explored beyond this thesis.

The possibility for micro-meso-macrographic analysis has therefore been arrived at through a review of broad epistemological frameworks and disciplinary discourse to 'reveal' what Michael Foucault ([1969] 1989) calls the 'conditions of formation' of a 'specific domain' and 'object of analysis' (ibid: 229). The *graphic object as urban object* is formed by a wide-ranging set of factors drawn from many disciplinary perspectives. Six of these will be summarised here as important facets that have emerged through this inquiry, comprising; research methods, educational diversity, critical analysis, theoretical insight, historical influence and craft ability. These are now discussed using specific examples taken from the thesis.

Given the relatively immature state of design research (and graphic design as an academic discipline), throughout the thesis there has been on-going reference to more established approaches to research strategy, design and method, from across the research literature. This has considered many fields, subjects and disciplines. The social science research literature provided a valuable resource and has been highly influential, leading to Derek Layder's work in sociological practice, and his theoretical framework for adaptive theory. Also, research from the humanities, specifically that of James Elkins in art history, theory and criticism, emphasised the use of images as a form of rational inquiry. This complemented the recognition of extant and research-driven visual images in sociology (which seemingly focus more on 'lens-based' resources). Consequently, an emphasis on the use of photographic images and diagrams is present throughout this thesis, and has more often stimulated inquiry in the way Elkins suggests. From the lesser established discipline of design research, Bruce Archer's work highlighted on page 235 provided a framework for distinguishing the general concerns of design compared to science and humanities. His work is also cited in emerging research that attempts to establish 'methodological matters' for researching urban, architectural and technical design (de Jong and van der Voort, 2005b: 7).

The ontological and epistemological considerations that emerge from the discussion in chapter two reveal how ideas and questions specifically associated

with graphic design generally differ from those that are usually the concern of the built environment researcher and practicing professional, or the wider academic research community. This has been shown to be most evident at the level of detail associated with core issues in graphic design, such as the intricacies of typeface design, the inherent relationships in typographic design, or the systematic application of corporate identity worldwide. In areas such as these, the act of graphic design demonstrates a particular kind of critical awareness expected of any specialist professional field of activity. Add to this other considerations about the wider urban context within which graphic elements are found, and the importance of design at all levels is accentuated as the key idea linking the graphic to the urban. The continuum between the two is supported by some ideas that are shared between the two disciplines. One of these has been discussed as legibility, which also extends to other fields such as psychology. The poor example of pedestrian signs in Derby (see pages 38–39) demonstrate how the continuum linking poor quality design contributes to an illegible sense of place, incorporating an inadequate use of symbols, things, actions, and thoughts, as identified in Buchanan's four orders of design.

The theory of legibility is given prominence in Kevin Lynch's (1960) book *The image of the city*, where he directly relates the reading of a city to the reading of a book. However, the specific link between graphic design and legible environments has been attributed to Abraham Moles (1989) in his essay *The legibility of the world: a project of graphic design*. Moles wrote from a psychologist's perspective with an interest in *micropsychology* (ibid: 119, original italics), referring to the 'micro-scenarios of behaviour in the face of an object or a product, and consequently the very basis of the act of design' (ibid: 129). His definition of graphic design reads as '*generally speaking, the science and the technique of establishing a functional equivalency between a message and its purpose*' (ibid: 122, original italics). Within this he includes making use of 'arrows, rectangles, frames and lines, angles and circles, as raw materials of a symbolism that remains the intellectual emanation of the icon of what the symbols represent' (ibid: 124). Clearly this differs from other definitions, such as the CNAA version, or that provided by Livingstone and Livingstone, both cited chapter one. Moles work enables the recognition of how the simplest of graphic devices, a line, exercises control beyond its means, as seen on page 74.

This thesis extends Moles' theories to consider diversity and scale, showing how micro and macro scenarios are linked through and to urban design and the activities associated with it. It is argued here that these scenarios depend on the design of micrographic, mesographic and macrographic objects that link together visual experience to inform and affect the collective understanding of micro-macro scenarios in urban environments. Hence, micro-meso-macrographic ways of thinking and acting on the urban environment is the contribution to theory building made by this research.

It will be clear by now that of vital importance to understanding how this works as an analytical framework is in what Pylyshyn referred to as defining properties and configurational patterns. These may be original or repeatable graphic elements, depending on variable communication contexts. For example, the mass implementation of a company logotype, symbol or traffic sign – Land Rover, McDonald's, STOP – contribute to the ubiquitous nature of universal communications. Yet, at a fundamental level, the idea of a line, be it on a road, at a sports stadium such as an Olympic venue, or something simply drawn in sand, has equal significance. The raw materials of symbolism have also been shown to represent economic, social, and cultural relations between nations as a valid indication of history. The influence of European colonialism has been highlighted as an example of this, but the same may be said of how language is represented in terms of its structure and use, as discussed in section 4.4. The example of French Street, provided by David Crystal on page 200, is an obvious one. This introduces a dimension not conceived of by Moles, and establishes further links to cultural geography and language studies.

It is suggested here that these examples of representation are the outcomes of graphic thoughts and deeds. Often they go unnoticed and attract attention only when noticed as 'wrong' or carelessly crafted, as seen on page 73. In such cases there appears to be an absence of graphic thought, or what might be called the 'objective standards' (Sennett, 2009: 9) associated with craft. At the other extreme, well-crafted solutions go unnoticed, and can directly connect to the physiological abilities of humans, as shown in the brief discussion about street name plates in Cambridge on page 80

A further extension of Moles' work is the idea that making use of graphic properties should not be restricted to inanimate, independent objects, but might also include those closely associated with human performance, or what Moles called actions. The example provided in Figure 2-36 is that of a person who helps people cross the road, whilst wearing brightly coloured fluorescent clothing and carrying a similarly coloured STOP sign. This graphic thing combined graphic product with graphic action. This challenges perceptions about what a graphic object might be. In this example, it is a collective association of graphic elements that integrate and provide an animated performance determined by human behaviour.

The sixth and final facet recognised as being significant in this research is that of education. This can be interpreted in different ways, but if the intention of this research is to better understand the phenomena in question, education serves a dual purpose satisfying the needs of the Researcher, and what others may learn from the reporting and dissemination of the research findings. The pedagogic implications are relevant in the practice and learning of skills; the meaningful use of language to understand concepts applied to phenomena; principles for understanding; the ordering and dissemination of facts based on interpretation of experience; and the formal and informal discourse that supports vocational and academic pursuit to make up the whole experience (Peters, 1973: 14–22).

These six key facets, as depicted in Figure 5-3, have been significant in 'shaping' this study of the graphic object as urban object. The graphic object may scale up or down within the context of the urban object, depending on the micro-meso-macro dimensions of the communication requirement. At times it may engulf the urban object, or be a very minor of it. The facets both shape and are shaped by relationships between humans and their environment. It is proposed here that these facets, and the people who align themselves with them, constitute the core of what Etienne Wenger (1998) calls the 'communities of practice', determining graphic design as urban design in the context of a 'social practice' (ibid: 47–49) through the impact of mass media and communications. These six facets have also been depicted as part of a wider network of actors, functions and contexts relating to graphic design (Harland, 2011, see also appendix 6.6).

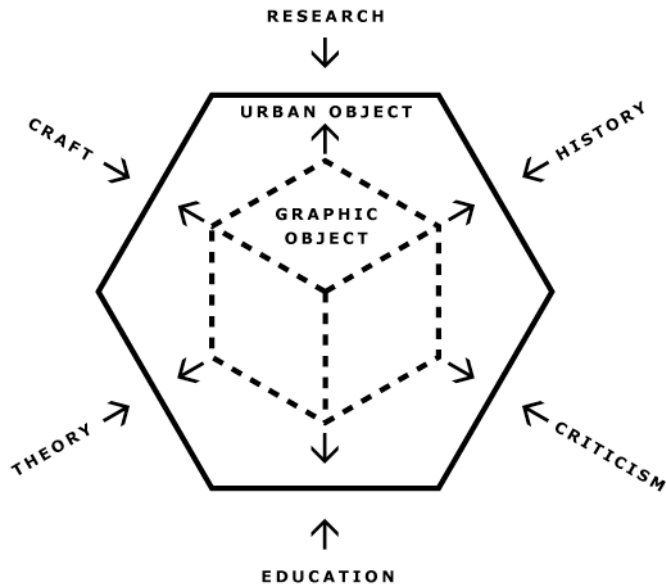


Figure 5-3 Six facets of the graphic object as urban object

For the purpose of this research being located in design studies, the domain of design is where these six key facets must first reside. But in graphic design some facets are more established than others. For example, graphic design history is more established than research or theory in the field. However, research and theory are well established in science and humanities subjects. The wider territory for the graphic object as urban object, as a social phenomenon, must therefore also recognise close associations between disciplinary cultures, and the ideas that link together science, humanities and design, irrespective of 'symbolic boundaries' created by 'social systems' (Alexander, 2003: 225). Legibility has been suggested as one such example.

In section 3.6, it was argued that graphic science, graphic art and graphic design serve different purposes and different communities. This is consistent with ideas expressed by Archer about how the relationship between the three cultures of science humanities, and design might be portrayed, see page 235. Cross-reference this with the many dualities discussed in the objective-subjective paradigms of research strategy, design and methods literature (summarised in Table 3-6 on page 107), and it is possible to identify a central shared domain of ideas incorporates how thoughts, feelings and concepts contribute to the formation of the graphic object as urban object. This central position locates the internal mental domain of the individual's processing of ideas, concepts, thoughts and

feelings, represented in the outside material world as object, language, sign and image, as shown on page 168. These objects of representation incorporate four key functions as well two further ones recognisable in the study of linguistics.

The formation of the graphic object as urban object has near and far spheres of influence. In the broadest terms, the values of science, humanities and design can each be recognised in the functions of graphic design as urban design. To some extent, the first two of these determine perhaps the most obvious functions of the graphic object, regarding the effective objective imparting of information or the affective subjective intension of persuasion associated with the rhetorical image. A third key function, decoration, something Barnard (2005) suggests as ‘aesthetic ... fun ... entertaining ... ornamental ... enjoyment ... pleasure’ (ibid: 15), was introduced in the early part of this thesis as also performing an important unifying role between two otherwise separate entities. The fourth function, magic, also discussed by Barnard, provides a ‘sacred’ role and is transformative in a similar way that Simon (1981) is often quoted: ‘Everyone designs who devises courses of action aimed at changing existing situations into preferred ones’ (ibid: 129). Furthermore, the discussion in chapter four locating the research in language is further reinforced by what Barnard highlights metalinguistic and phatic functions of graphic design. By this he means graphic representation of what is often said in conversation but may be unnecessary, such as ‘Hi there’ or ‘I see’ (op cit: 16). For example, ‘arrows’, ‘frames’, and ‘lines’ (also spoken of by Moles) provide a phatic function in the way that Barnard refers to the work of Clive Ashwin. ‘Arrows, changes of viewpoint or of perspective and moving from close-up to landscape are also phatic. The framing, or the move from close-up to landscape, may have nothing to do with the narrative, but it keeps the story going, it tells the reader where to look next’ (op cit). A metalinguistic function might be the use of an apostrophe before a letter s to denote ownership, as in the ‘East Londoner’s cockney accent’. It performs the role of a code representing one form of communication with another (op cit: 17). Metalinguistic and phatic functions are recognisable in road markings.

Considered as a whole, the findings of this research can be depicted as six defining domains that influence the graphic object as urban object. These range from the three cultures of science, humanities and design, and a fourth domain being the urban object in the external material world. This is connected to the a

fifth central internal mental domain of the self, within which ideas, concepts, thoughts and feelings are processed. The final domain is that of the graphic object within the urban object conceptualised from ideas humans have that may derive from their result of thoughts and feelings. This 'landscape' is shown in Figure 5-4 below, utilising Nigel Cross' (2006) explanation of the study, methods and values associated with the cultures of science, humanities and design (ibid: 2).

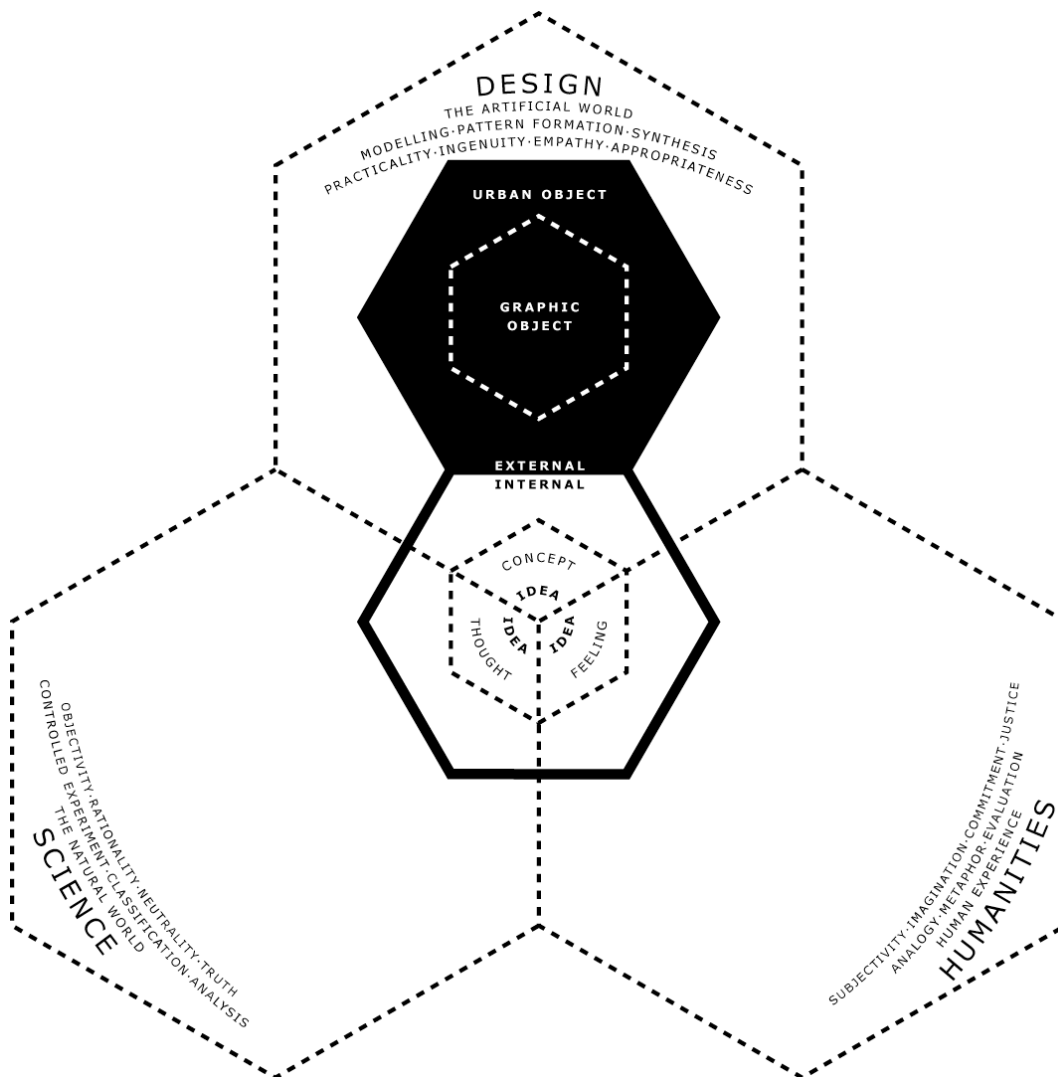


Figure 5-4 Six defining domains of the graphic object as urban object

(1) the graphic object; (2) the urban object; (3) the internal processes of ideas, thoughts, feelings and concepts; (4) design studies; (5) science; and (6) humanities.

5.2 Concluding remarks

Criticism of this thesis might argue that the extensive discussion in chapter one, two and three are unnecessary. If the research had been undertaken in an

established academic discipline, extending a narrow field of exploration steeped in research tradition, this might constitute a fair criticism. However, this is not the case and hopefully, the above review refutes this. The research has been undertaken from the perspective of an academic tradition that has very little theory, research and criticism directly attributed to it. The discipline of design has been argued as emerging in this sense, and claims to have evolved over the last forty years or so (Stolterman, 2011). Graphic design is less so, and it has been noted that the exception is historical work in the field since 1980. There are other notable exceptions, but these are ‘dwarfed’ by what has been described by Karel van der Waarde (2009) as a ‘plethora’ of books and magazines that serve the professional field, but generally demonstrate a ‘lack of theory, research and criticism’ (ibid: 7–10).

This research has reported on an investigation into a multifaceted category of objects in the urban environment that first appeared difficult to name collectively. The social science aspect of this research led to a declaration of professional bias by the Researcher, and this has raised further questions about the potential for *narratology* as a valuable research method for in art and design that enables those educated in that tradition to make their relationship to their research more explicit. This process of self-declaration also revealed that professional design practice, as experienced by the Researcher, is often driven by the identification and asking of questions. This has confirmed that design and research have similarities acknowledged by others. In disciplinary terms used by the Researcher, the relationship between type design, typographic design, graphic design and art and design have been depicted as representing the Researcher’s particular viewpoint, as seen on page 35. Defining properties and configurational patterns has provided one way to understand how the concerns and properties of type design, extend into typographic design and become part of the configurational pattern of typographic design. In turn, typographic design is regarded here as a property of graphic design, contributing to the configurational pattern of graphic design. Graphic design is, then, a property of urban design, contributing to the configurational pattern of urban design. These relationships are shown below in Figure 5-5.

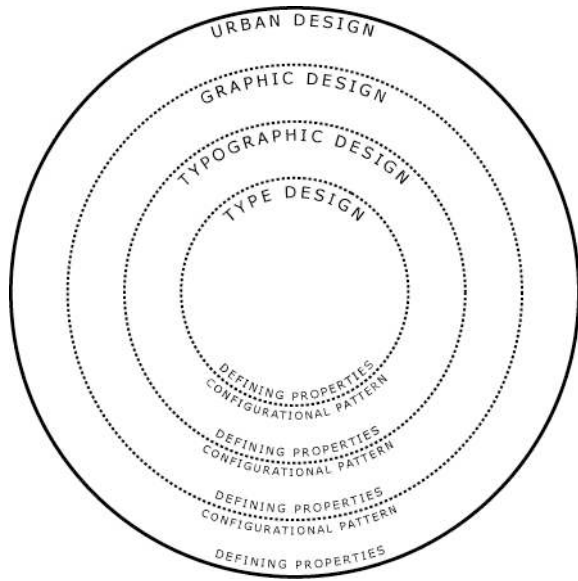


Figure 5-5 Defining properties and configurational patterns

However, moving between the micro and macro when analysing an artefact is difficult to explain, and this has been known for some time. For example, Kenneth Clark is said to have found it impossible to retain two visions of the same Valázquez painting as he stepped back and forward between the detail of brush strokes and overall composition of the painting (Gombrich, 1977: 5). It seems therefore that in practice, understanding the relationships between human-object-environment is dependent on a unifying cognitive ability, because two states of vision are difficult to reconcile.

The idea of relation appears to be one of the key concepts in the human-object-environment interface and is perhaps one of the most important aspects for understanding graphic design as urban design. The psychology of relation is linked through the idea of legibility, and it has been shown here that understanding legibility benefits from the relationship between micro-meso-macrographic components of urban design. As Andrew Blauvelt has commented, '[d]esign, because of its functional intentions, has always had a relational dimension' (2008).

The examples of graphic objects featured throughout this dissertation have attempted to extend and refine the range of urban objects typically known to urban designers. The examples have been chosen to support the issues that have

arisen in the text. At times the discussion and supporting images have focused on concerns that often appear to be overlooked by the urban design literature. Some were mentioned above, others include: the ‘cut’ of a typeface that determines x-height of the lettershape; the fundamental similarity between a road sign and a clock face; a remembrance cross in a field of remembrance crosses; an Olympic symbol adorning an Olympic stadium; the lanes of a swimming pool. These examples further the understanding of the role graphic objects play in the urban environment and constitute the manifold and manifest relationships that constitute graphic design as urban design.

This study is important because at a time when there has been unprecedented levels of growth in urban population since the mid twentieth century, especially in developing nations, the need to better understand the phenomena of the graphic object is part of the need to utilise urban design as an effective tool for managing future urban environments vulnerable to continuing population growth. If this is to happen with any fluency, language to describe object categories is likely to be important when disciplinary specific jargon is problematic.

Design is recognised by most people as a useful word that applies to everyday life for most people. Graphic design has therefore been examined as an extension to this and as a phrase that is increasingly known and understood. It produces graphic objects. This research argues that graphic design produces the graphic object as a subset of the urban object, in the urban environment. These are witnessed as simple and complicated forms at variable scale. They are analogue or digital, two-, three- and four-dimensional, and derive from both objective and subjective responses to the environment, in appropriate ways.

The importance of the *graphic* is reinforced by Don Norman’s (2004) view, noted in section 2.5 of this thesis, that for design to be effective on a visceral level there must be present an understanding of graphic art (even extending to the plumage on a male bird!) (ibid: 65–66). The same ‘art’ is also recognised by Roland Barthes ([1970] 1982) when he describes how the Japanese dinner tray benefits from the ‘manner of the (specifically Japanese) graphic artist’ (ibid: 11). These are two specific examples of language use that serve to emphasise the importance Bruce Archer gave to *design language*, *design epistemology* and *design*

pedagogy, noted discussed in section 4.7. The latter two provide the basis for the key recommendations to emerge from this research.

5.3 Recommendations

If, as is suggested by Archer (1976), design epistemology is about ‘the study of the nature and validity of ways of knowing, believing and feeling in design’ (ibid: 13–14), then evidence suggests there must be a graphic way of knowing, believing and feeling. This is yet to be characterised by a particular set of ‘unities, totalities, series, relations’ (Foucault, [1969] 1989: 6–12), but this research has laid a foundation to further explore how this may be achieved. Embarking on such a task will benefit from an understanding of practice that Wenger (1998) describes as explicit and tacit in a ‘historical and social context that gives structure and meaning to what we do’ (ibid: 47). Humans *do* graphics in and for urban environments. However, if the phenomenon of the graphic object as urban object is to be fully understood, the practice associated with it will need to reject the view of ‘*practice*’ that is what Wenger suggests an ‘antonym for theory, ideas, ideals, or talk’, and synthesise the ‘practical and the theoretical, ideals and reality, or talking and doing’ (ibid: 48). The latter has been adopted in this thesis and forms the basis of a transdisciplinary approach.

Design pedagogy is said by Archer (op cit) to encompass the ‘study of the principles and practice of education in the design area’. In part, this dissertation reports on this undertaking as a study in design pedagogy within design studies. Specifically, section 4.6 addresses the situation of graphic design education in the UK. However, it is clear that graphics education is not the exclusive domain of art and design, but is also prevalent across science, humanities and design disciplines, as well as social science. This suggests there is much opportunity for interdisciplinary research that benefits from the different contexts within which graphic objects are produced and used. The most immediate benefit from this research into the graphic object as urban object is the realm of urban design pedagogy and its relationship to the built environment professionals.

The scope of this research has been wide, and as a qualitative study much data has been omitted due to space and time. As an exercise in research training, the practice of research and the practice of design have converged. There is much scope for articulating the nature of graphic design within the context of art and design, and other academic disciplines. Architecture, geography, english,

information science, and others, name a few. It is argued by Bruce Brown that the ‘disciplines of art, design and media embody some of the most innovative and effective teaching and learning practices in the sector that are still in the process of articulation’ (Drew et al., 2008: 8). Further research is needed to articulate, as visual method, some approaches used in core art and design subjects. Graphic design is one of them. More can be done to consider how the basic properties of ‘graphic messages – words, pictures and diagrams’ (Stiff, 2009a: 4) are synthesised, and offer further potential for visual research, or what in 1900 was referred to as ‘pictorial method’ (Elkins, 1999: 39, citing Cambrosio, Jacobi, and Keating). One approach to this might consider how the formation of meaning (Crow, 2003: 48–49) is affected by micro-meso-macrographic analysis, in relation to micro-meso-macrographic meaning. For example, Figure 5-6 below shows a graphic specification for the construction of chevrons on roundabouts in the UK (The traffic signs regulations and general directions, 1994: 45), and as seen earlier on page 258.

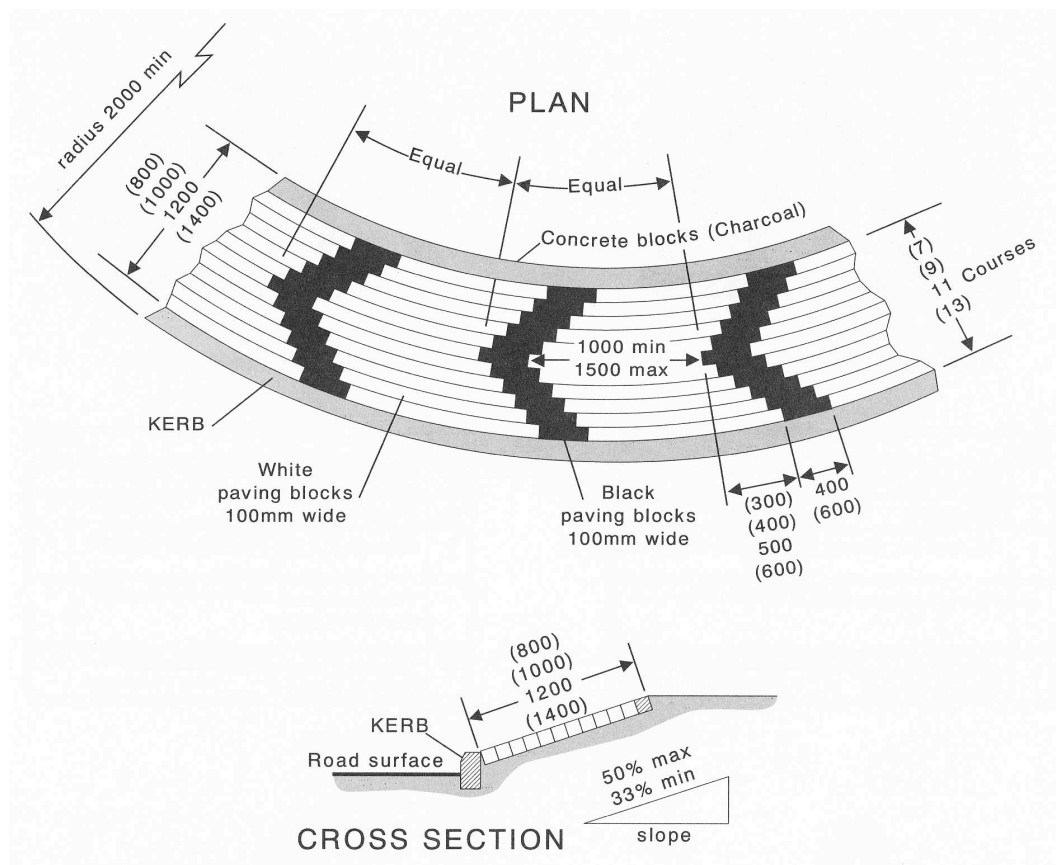


Figure 5-6 'Chevron' warning sign specification

Source: The traffic signs regulations and general directions 1994: 45

As an urban object, the roundabout is a familiar traffic-controlling device used on UK roads. A property of the roundabout is the chevron pattern that guides the motorist in a clockwise direction. This is a macrographic object. Closer analysis reveals the black and white paving block pattern that forms the chevrons, as a mesographic object. At this level the direction component is still visible but the sense of the roundabout is lost. Closer still, the micrographic object of the paving block, rectangular in shape and black or white in appearance, is seen but not consciously valued. Between these three states, the scale moves between the micro-meso-macrographic analysis to reveal descending levels of visibility and invisibility.



Figure 5-7 Micro-meso-macrographic analysis of a chevron

Source: Robert Harland, 2011

Further research and analysis of this kind across the full range of scenarios that constitute graphic design as urban design will contribute to better understanding the urban realm. Micro-meso-macrographic analysis provides a framework for others to use in this quest.

6 Appendices

6.1 Greenwich Development Agency presentation

Presentation boards to Greenwich Development Agency, Harland Design, 1998

GREENWICH PEDESTRIAN SIGNAGE SYSTEM

Which message?

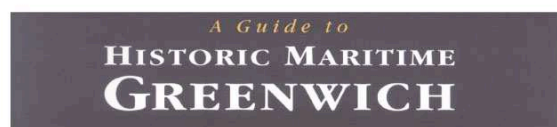
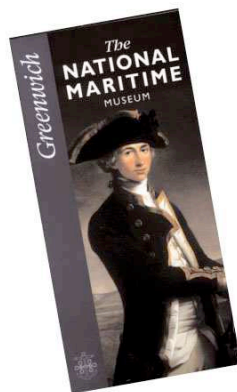


GREENWICH PEDESTRIAN SIGNAGE SYSTEM

Which Greenwich?



HISTORIC MARITIME GREENWICH



[Whose authority?]

GREENWICH PEDESTRIAN SIGNAGE SYSTEM

Who's authority?



GREENWICH PEDESTRIAN SIGNAGE SYSTEM

Which type of information?



6.2 Design practice-based visual research

Visual research in Canterbury, Whitstable and Herne Bay undertaken by Harland Design

Sample of visual research for Canterbury



Sample of visual research for Whitstable (top) and Herne Bay (bottom).



6.3 Canterbury City Council signing strategy proposal

Canterbury, Whitstable and Herne Bay Signing Strategy Design Report.

Design references

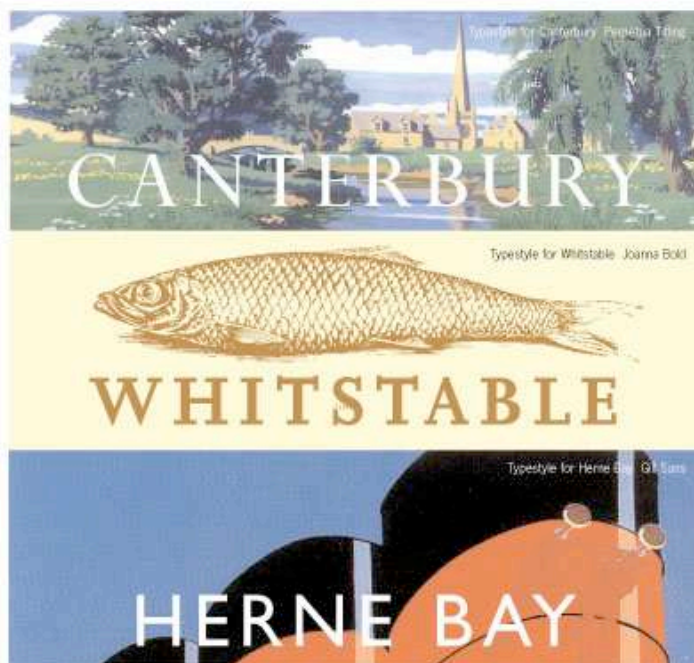
Part of the design process has been to fully explore the nature of the three places and what has contributed to making them unique. In doing so certain objects and experiences have informed the design process and acted as a

source of inspiration. The structure and illustrative quality of illuminated manuscripts, the use of materials and textures and the inspiration of more recent artifacts have all been fundamental to the process.



Basic Graphic Elements

Typeface and illustration



The illustrations used are to give an impression of style only.

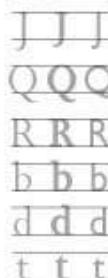
A clear set of graphic design principles has been established to create a distinct identity for each location, but at the same time unite the collective visitor experience of all three areas. This is achieved by using three typefaces by Eric Gill and the illustration / wood engraving style of artist Andrew Davidson, which reflect different impressions for each area.

The design of the signs can also incorporate the work of local artists and craftspeople.



Eric Gill

Eric Gill's greater fame derived usually from his sculpture, although he was also the foremost inscriptional letter cutter of his time. His designs for Perpetua, Gill Sans and Joanna are internationally renowned.



In his design of the three typefaces selected for Canterbury, Whitstable and Herne Bay, there are distinct similarities in the way certain letterforms have been drawn – particularly evident in the letters J, Q and R and lowercase b and t.

It is intended that type size will conform to DETR recommendations

Cathedral

Canterbury

Cushing's View

Whitstable

Clocktower

Herne Bay

Primary nodes

The cornerstone of the design scheme, primary node points for each area are placed strategically to inform on a variety of levels including interpretive, directional information and maps. The use of material and colour has been selected to complement each environment.

Canterbury St George's Tower

Painted steel and stone



Herne Bay Neptune's Arm

Painted steel



Whitstable The Harbour

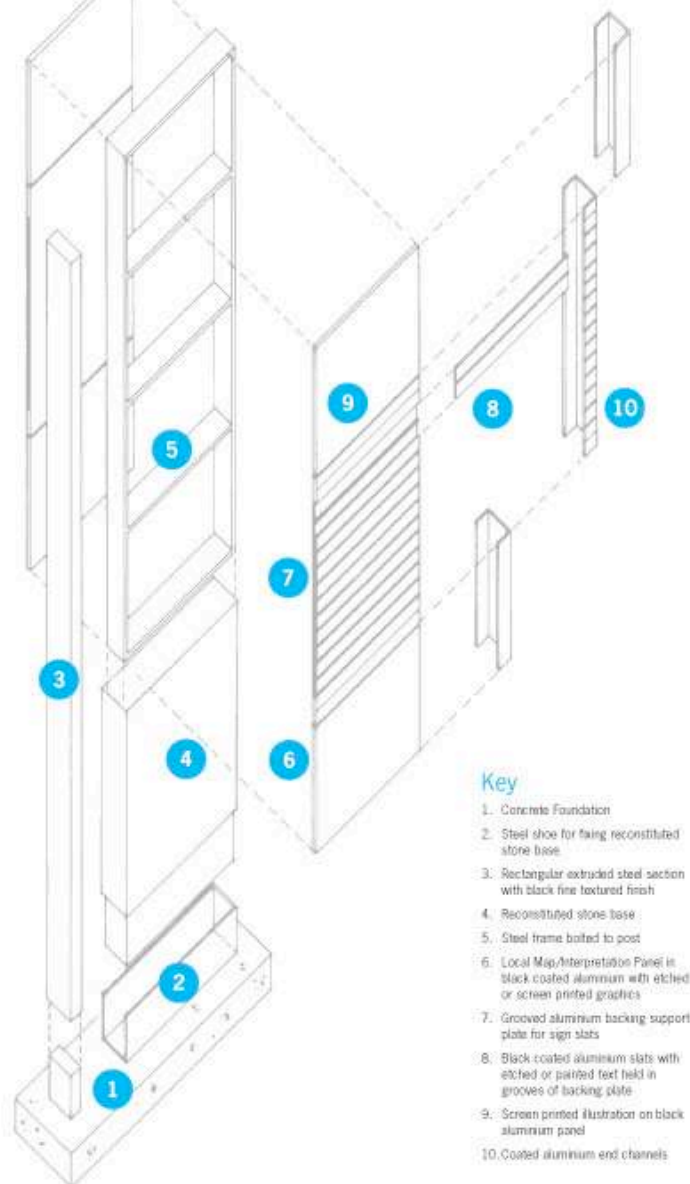
Timber and painted steel



Basic structure and materials

All of the signs are designed to be robust, as vandal proof as possible, and employ the latest production techniques for street furniture. Slats are updateable and can slide

in and out when they need to be changed and locked in position on a more permanent basis. Images are likely to be enamelled metal signs



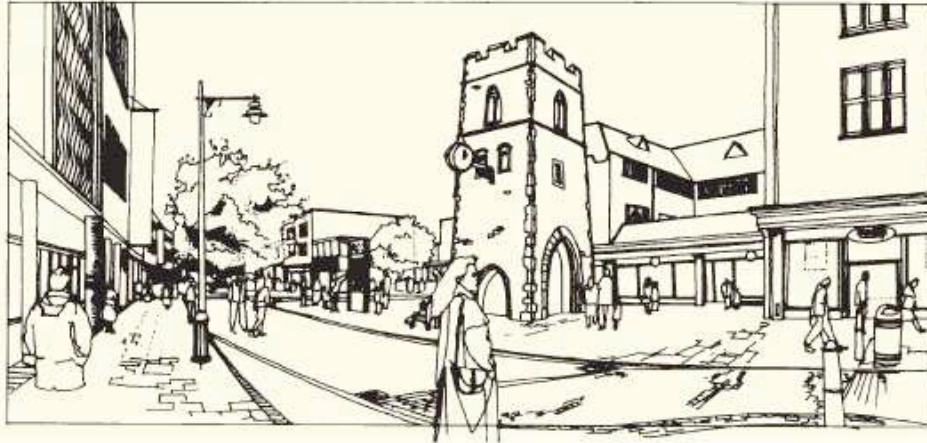
Key

1. Concrete Foundation
2. Steel shoe for facing reconstituted stone base
3. Rectangular extruded steel section with black fine textured finish
4. Reconstituted stone base
5. Steel frame bolted to post
6. Local Map/Interpretation Panel in black coated aluminium with etched or screen printed graphics
7. Grooved aluminium backing support plate for sign slats
8. Black coated aluminium slats with etched or printed text held in grooves of backing plate
9. Screen printed illustration on black aluminium panel
10. Coated aluminium end channels



Family of signs

A family of signs has been created for the three locations and we have featured the scheme in Canterbury as this is the most complex urban space.



Primary Node St George's Tower

The image displays a family of signs for Canterbury. On the left, a vertical sign for 'ST GEORGE'S TOWER' is shown, featuring a list of points of interest and a map. Below it is a 'Primary Node Point' sign. In the center, a 'Secondary Node Point' sign is shown, also with a list and map. To the right, a vertical sign for 'NORTHGATE' is shown, along with a 'Queen Bertha's Walk' sign. Below these are several informational panels, including one with a map and text, and another with a blue background and text. A small sign for 'Heritage Trail' is also shown.

The basic structure and shapes will be used in all three locations with different colours, materials and graphics, as shown on the Primary Node board.

Flour & wall-mounted interpretation panels and 400000 marker between urban centres

Signs have been designed to encourage walking between urban centres

Heritage Trail face marker

Family of signs Poster & banner

Due to the extensive need to display posters in all three locations, an integrated poster site is recommended that can be easily adapted for differing needs throughout the year.

The structure and materials will be similar to the rest of the sign family.



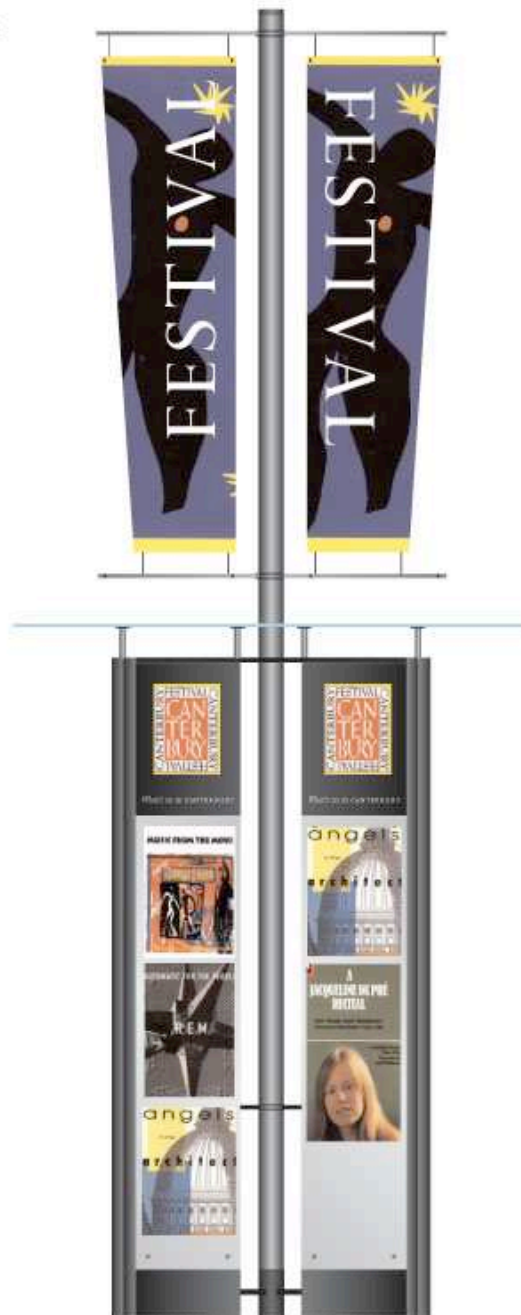
Poster site all year round



Banner site only



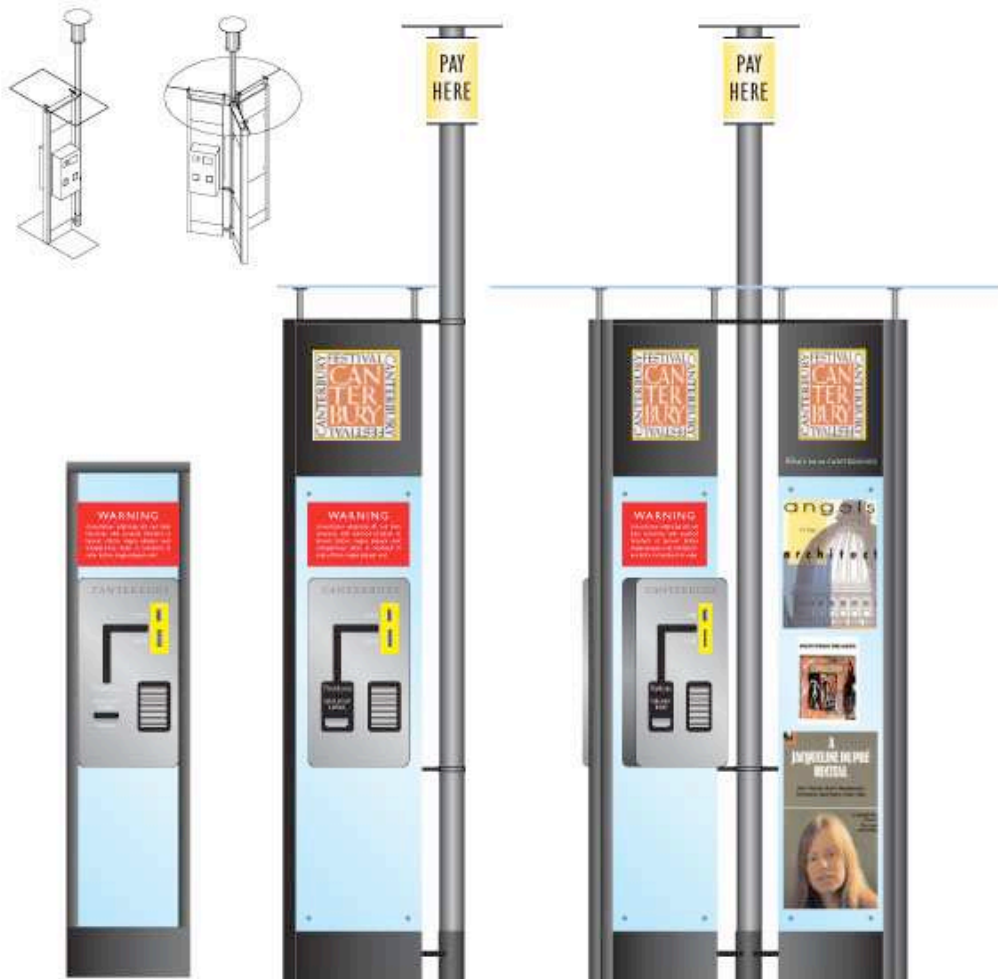
Poster and banner combined during festival time



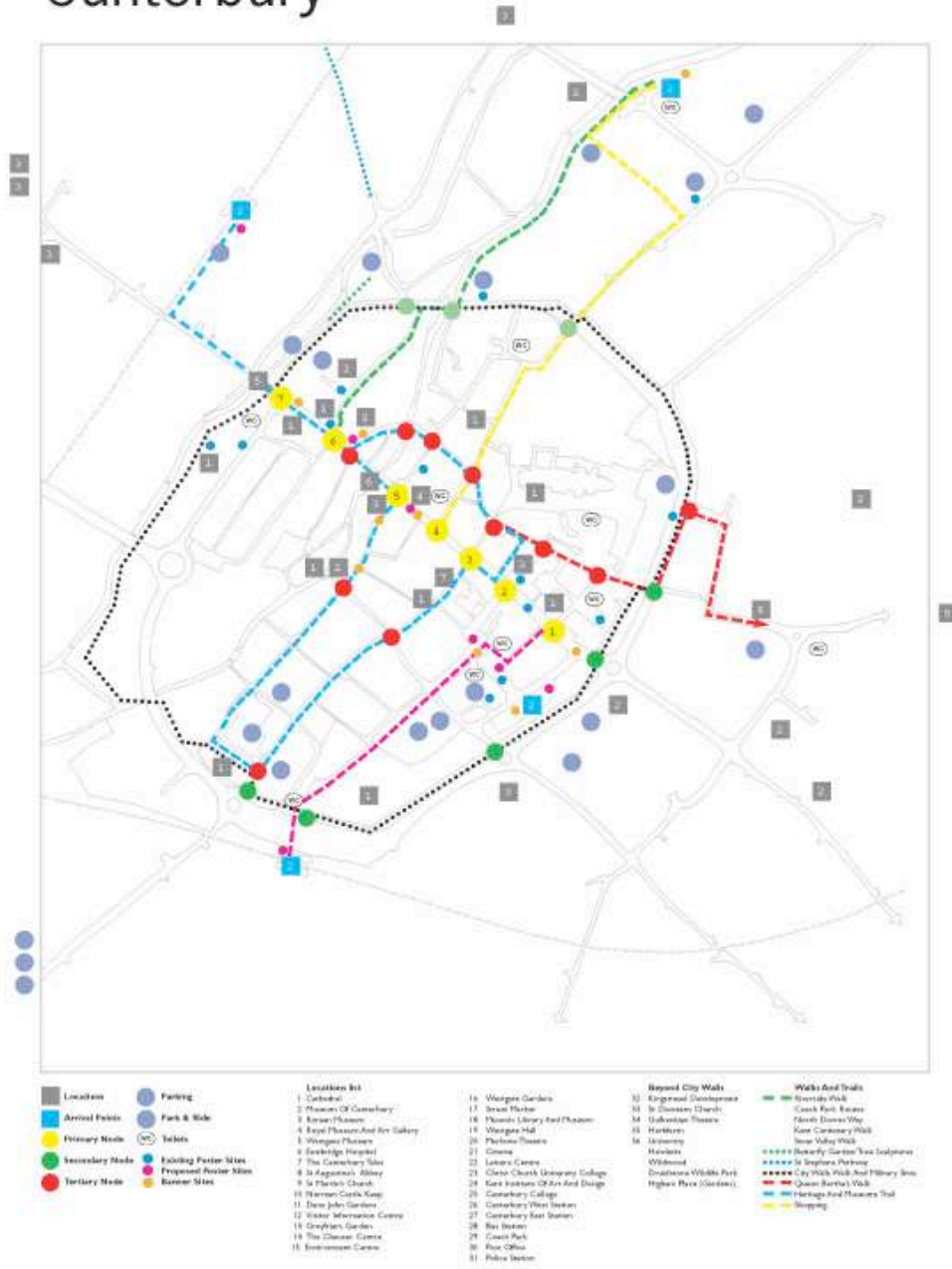
Family of signs

Car park welcome point

A design has been developed for use in car parks to incorporate ticket dispensers, poster cases and map information, welcoming visitors to Canterbury and helping to clean up the existing car park sites. The design provides protection from rain by incorporating a glass canopy, similar to that used on the design for poster sites. The design provides a number of options including wall mounted, two sided panel, and six sided panels with two ticket dispensers.



Wayfinding Strategy Canterbury



Canterbury City Council Signage Strategy | Trippon Marley in association with Hatfield Design

Wayfinding Strategy Whitstable and Herne Bay

- Locations
- Arrival Points
- Primary Node
- Secondary Node
- Parking
- Park & Ride
- Taxis
- Existing Paster Sites
- Proposed Paster Sites
- Banner Sites



- Locations List**
- 1 Harbour
 - 2 Visitor Information Centre
 - 3 Oyster Experiences
 - 4 Royal Naval Oyster Stores & Canteen
 - 5 Playhouse Theatre
 - 6 Pleasure and Gallery
 - 7 Swimming Pool
 - 8 Bowling
 - 9 Bowling Green
 - 10 Hospitality Centre
 - 11 Civic Centre
 - 12 The Playhouse
 - 13 Clocking Tower
 - 14 Tollemere Square
 - 15 Library
 - 16 Railway Station
 - 17 Post Office
 - 18 Police Station
 - 19 Coach Park
- Outside Whitstable**
- Beach
 - Sports Centre
 - Elizabethan Walls Park
- Walks and Trails**
- Seaside Walk
 - Seaside to Harbour



- Locations List**
- 1 Visitor Information Centre
 - 2 Pleasure Centre
 - 3 Clocktower
 - 4 Central Bandstand
 - 5 Pier Sports Centre
 - 6 Playhouse Theatre
 - 7 The Kings Hall
 - 8 Herne Bay Library
 - 9 The Cinema
 - 10 Herne Bay Park
 - 11 The Little Theatre
 - 12 Market (Sea)
 - 13 Library
 - 14 Railway Station
 - 15 Bus Station
 - 16 Post Office
 - 17 Coach Park
 - 18 Coach and Drive
- Outside Herne Bay**
- The Grove
 - Herne Hill
 - Herne Bay
 - Whitstable
- Walks and Trails**
- Seaside Walk
 - Seaside to Harbour
 - Shopping
 - Seaside to Harbour

List of locations Canterbury

Primary nodes

- 1 **ST GEORGE'S TOWER**
Cathedral
City Centre
Visitor Information Centre
Marlowe Theatre
St Augustine's Abbey
Dane John Gardens
Canterbury East Station
Bus Station
City Walls Walk
Queen Bertha's Walk
Heritage and Museums Trail
Toilets
Post Office
- 2 **LONGMARKET**
Cathedral
Visitor Information Centre
Westgate
Dane John Gardens
Canterbury East Station
Queen Bertha's Walk
Bus Station
Toilets
- 3 **ST MARGARET'S STREET**
Cathedral
Visitor Information Centre
Westgate
Royal Museum and Art Gallery
Queen Bertha's Walk
Heritage and Museums Trail
Whitewars
The Canterbury Tales
Toilets
- 4 **HIGH STREET**
Cathedral
Visitor Information Centre
The Canterbury Tales
Northgate
Westgate
Whitewars
Environment Centre
Greyfriars Garden
Toilets
- 5 **KINGS BRIDGE**
Cathedral
Visitor Information Centre
The Canterbury Tales
Westgate
Whitewars
Royal Museum and Art Gallery
Toilets
Museum of Canterbury
Greyfriars Garden
Norman Castle Keep
Heritage and Museums Trail
- 6 **ST PETERS STREET / ST PETERS LANE**
Cathedral
Visitor Information Centre
Marlowe Theatre
Westgate Museum
Canterbury West Station
Whitewars
Coach Park
Lecture Centre
Toilets
- 7 **WESTGATE**
Cathedral
City Centre
Canterbury West Station
Marlowe Theatre
Westgate Gardens
Masonic Library and Museum
City Walls Walk
Riverside Walk
Toilets

Secondary nodes

- 1 **CAUSEWAY / POUND LANE / ST PETERS LANE**
City centre
Northgate
Westgate
City Walls Walk
Harbarn
City Centre
Coach Park
Lecture Centre
Toilets
- 2 **ST AUGUSTINE'S / CATHEDRAL**
Coach Park
Lecture Centre
Toilets
City Centre
Visitor Information Centre
Northgate
Westgate
City Walls Walk
- 3 **NORTHGATE / SOROUGH**
Cathedral
City Centre
Coach Park
Lecture Centre
Toilets
City Walls Walk
Westgate
- 4 **BURGATE**
Cathedral
St Augustine's Abbey
St Martin's Church
City Walls Walk
Queen Bertha's Walk
Christ Church University College
- 5 **ST GEORGE'S STREET**
Cathedral
City Centre
City Walls Walk
Canterbury East Station
Dane John Gardens
Kent Institute of Art & Design
Canterbury College
- 6 **WATLING STREET**
Interpretation panel only
- 7 **DANE JOHN GARDENS**
Cathedral
City Centre
Norman Castle Keep
City Walls Walk
- 8 **WORTHGATE**
City Centre
Visitor Information Centre
Canterbury East Station
Dane John Gardens

Tertiary nodes

- 1 **CASTLE STREET/REER CART LANE**
Heritage and Museum Trail
Visitor Information Centre
Museum of Canterbury
Greyfriars Garden
Bus station
- 2 **STOUR STREET / WATER LANE**
Museum of Canterbury
Norman Castle Keep
Heritage and Museum Trail
Greyfriars Garden
- 3 **THE FRARS / RIVER STOUR**
Dominican Friary
The Friars
- 4 **THE FRARS / RIVER STOUR**
Heritage and Museum Trail
- 5 **Heritage and Museum Trail**
Toilets
- 6 **BUTTERMARKET**
Visitor Information Centre
St Augustine's Abbey
St Martin's Church
Roman Museum
Norman Castle Keep
Northgate
Toilets
- 7 **BURGATE / LONGMARKET / BUTCHERY LANE**
Visitor Information Centre
Canterbury East Station
St Augustine's Abbey
Roman Museum
Heritage and Museum Trail
Toilets
- 8 **BURGATE/CANTERBURY LANE**
Cathedral
St Augustine's Abbey
Queen Bertha's Walk
Toilets
- 8a **QUEEN BERTHA'S WALK**
Queen Bertha's Walk
St Augustine's Abbey
St Martin's Church
Christ Church University College
- 9 **CASTLE STREET**
Norman Castle Keep
Dane John Gardens
- 10 **ST PETERS STREET / THE FRARS**
Marlowe Theatre
Heritage and Museum Trail
Environment Centre

List of locations

Herne Bay

Primary nodes

- 1 RAILWAY STATION
Town Centre
Seahfront
Memorial Park
- 2 HIGH STREET / RICHMOND STREET
Clocktower and Seahfront
Visitor Information Centre
Memorial Park
Pier Sports Centre
Cinema
Library
Post Office
Toilets
- 3 CENTRAL PARADE / RICHMOND STREET
Pier Sports Centre
Visitor Information Centre
Clocktower
Neptune's Arm
Kings Hall
Toilets
Memorial Park
Herons Leisure Centre
Bus Station
Railway Station
- 4 CENTRAL PARADE / STATION ROAD
Visitor Information Centre
Clocktower
Neptune's Arm
Kings Hall
Toilets
Town Centre
Memorial Park
Railway Station
Post Office
- 5 CENTRAL PARADE / WILLIAM STREET
Pier Sports Centre
Clocktower
Central Bandstand
Kings Hall
Recliner
Visitor Information Centre
Herne Bay Museum and Gallery
Memorial Park
Herons Leisure Centre
Cinema
Railway Station
Coach Park
- 6 HIGH STREET / WILLIAM STREET
Visitor Information Centre
Clocktower and Seahfront
Herne Bay Museum and Gallery
Memorial Park
Herons Leisure Centre
Cinema
Bus Station
Library
Post Office

Secondary node

- 1 STATION ROAD / MEMORIAL PARK
Town Centre
Clocktower and Seahfront
- 2 MEMORIAL PARK
Visitor Information Centre
Clocktower and Seahfront
Pier Sports Centre
Herne Bay Museum Centre
Cinema
Herons Leisure Centre
- 3 RICHMOND STREET / MEMORIAL PARK
Seahfront
Visitor Information Centre
Herons Leisure Centre
Cinema
Market (Sat)
Railway Station
- 4 HIGH STREET / BEACH STREET
Visitor Information Centre
Bus Station
Library
Post Office
Market (Sat)
Coach Park
- 5 WILLIAM STREET / MORTIMER STREET
Seahfront
Visitor Information Centre
Shopping
Toilets
- 6 MORTIMER STREET / NORTH STREET
Town Centre
Seahfront
Kings Hall
- 7 VISITOR INFORMATION CENTRE
Pier Sports Centre
Central Bandstand
Railway Station
Hampton
- 8 Town Centre
Clocktower
Kings Hall

Whitstable

Primary nodes

- 1 Railway Station
Town Centre
Harbour
Visitor Information Centre
- 2 CROMWELL ROAD / OXFORD STREET
Town Centre
Harbour
Visitor Information Centre
Library
Railway Station
- 3 OXFORD STREET / ST MARY'S PARISH HALL
(opposite VIC)
Harbour
Oyster Experience
Royal Native Oyster Stores and Cinema
Playhouse Theatre
Railway Station
Library
Toilets
- 4 HIGH STREET / HORSEBRIDGE
Harbour
Visitor Information Centre
Oyster Experience
Royal Native Oyster Stores and Cinema
Playhouse Theatre
Swimming Pool
Bowling
Horsebridge Centre
Castle Gardens
Custard's View
The Favourite
Toilets
- 5 HARBOUR STREET / WOODLAWN STREET
Town Centre
Harbour
Visitor Information Centre
Oyster Experience
Royal Native Oyster Stores and Cinema
Playhouse Theatre
Swimming Pool
Bowling
Horsebridge Centre
Castle Gardens
Police Station
Toilets
- 6 COACH PARK
Town Centre
Harbour
Visitor Information Centre
Royal Native Oyster Stores and Cinema
Swimming Pool
Bowling
Castle Gardens
Tankerton Slopes
Saxon Shore Way
Railway Station

Secondary nodes

- 1 CROMWELL ROAD / RAILWAY AVENUE
Town Centre
Harbour
Visitor Information Centre
Railway Station
- 2 HIGH STREET / MIDDLE WALL
Harbour
Visitor Information Centre
Playhouse Theatre
Museum and Gallery
Library
Post Office
Toilets
- 3 HIGH STREET / GLADSTONE ROAD
Harbour
Visitor Information Centre
Playhouse Theatre
Post Office
Toilets
- 4 HORSEBRIDGE / SEA STREET
Harbour
Visitor Information Centre
Oyster Experience
Playhouse Theatre
Castle Gardens
- 5 MIDDLE WALL / TERRY'S LANE
Town Centre
Harbour
Royal Native Oyster Stores and Cinema
Custard's View
The Favourite
Saxon Shore Way
- 6 HARBOUR STREET / CROMWELL ROAD
Town Centre
Harbour
Oyster Experience
Swimming Pool
Bowling
Castle Gardens
Toilets
- 7 TOWER PARADE / BEACH WALK
Castle Gardens
Bowling
Tankerton Slopes

6.4 DRS conference paper

Paper submitted to *Wonderground: Design Research Society Conference*, 1–4 November, Lisbon, 2006. The paper is presented here with its revised title (as suggested by the peer review process). The published version in conference proceedings is an earlier version with the title *What are the visual communication requirements of a built environment?*

Visual Communication and the Built Environment: an overview and critical digest.

Abstract

This paper aims to explore the role that Visual Communication plays in the urban environment, and the potential for further discussion as a single domain. The scope of enquiry covers aspects of Geography, Urban Design and Graphic Design, exploring briefly the broad contexts for the subject, and the relationship between the emerging disciplines that are playing an increasing and highly visible role in how we use public spaces. It concludes that Graphic Design is playing a significant role in determining the success or failure of the multitude of behaviour settings in the Built Environment, and a closer relationship with Urban Design will create better conditions for design practice.

Key words

Visual Communication, Built Environment, Graphic Design, Urban Design, Interdisciplinary

Introduction

This paper explores an aspect of the Built Environment that is part of our everyday lives, yet often goes unnoticed. It is something that is not far away from any vista. It often appears frivolous, and yet can be a matter of life or death. It is very much a part of how people interact with environments on a local, intermediate and global scale — interaction that requires highly sophisticated, and at times, quite basic design solutions. It is a subject rooted in communication, yet is subjected to the everyday forces faced by the established Built Environment professions. In short Visual Communication in the Built Environment is a complex subject, and attempts to understand it, and about why and how it happens, are fragmented.

Background to the research

The research has been undertaken during the early stages of a research degree at the School of Built Environment, The University of Nottingham. The topic evolved from a number of professional observations and concerns that developed in the late 1990s about the overall impact that Visual Communication, in the form of words and images, had on the Built Environment. Prior to this study, the author worked as a professional Graphic Designer in London between 1986–2001, the latter part of which was spent working on a number of collaborative Graphic Design/Urban Design projects for the design of pedestrian sign schemes in Greenwich, London; the City of Canterbury; the City of Westminster; Walthamstow; and Liverpool. Consequently, there is an underlying interest in the relationship between Graphic Design and Urban Design, and the processes and products of those respective subjects. This features prominently in the following text, the structure of which attempts to follow the four elements of theoretical research: what? how? why? who-where-when?

The initial research question spans a broader set of wide ranging questions that evolved directly from the authors professional practice experience. In no particular order these are characterized as follows:

- What are the essential and non-essential Visual Communication requirements of an urban environment?
- What roles, if any, do the Built Environment professions play in this?
- How do 'signs and symbols' inform, direct and persuade people?
- How is Visual Communication integrated into the physical quality of buildings, streets, and the public realm in general?
- What impact does land-use and population density have?
- What are the requirements of transportation systems?
- Can we determine commercial needs?
- How does Visual Communication contribute to the proliferation of street clutter?
- To what extent should we consider the needs of public utilities?
- What demands are made by tourism, conservation, and regeneration?
- To what extent do we consider the functioning of the Built Environment, and its changing communication requirements, over time?
- Who has control at local, national and international level?
- How can we better relate communication theory, and audience considerations?

These questions are diverse and from the outset it has not been the intention to answer any of them directly, but to formulate a focal point for further enquiry and examine the potential for a closer relationship between Graphic Design and Urban Design. That said it is the holistic view that is the primary motivation, and a desire to explore some key issues where common concerns might offer opportunity for further exploration. With this in mind, the aims of this paper are as follows:

- (i) to briefly contextualise the research topic;
- (ii) to identify the key subject areas that define the topic;
- (iii) to explore the potential for interdisciplinary design practice;
- (iv) to formulate an academic framework that enables further investigation.

What is this paper addressing

As recently as August this year, a national newspaper in the UK featured a whole page dedicated to the proliferation of signs, forty eight in total, found along a single mile of a country road, in an area of outstanding natural beauty. This may not be a surprise to some of you, who may be aware that this has been a concern in the UK for some time, highlighted in the UK by English Heritage and their

Save our Streets campaign, and in the case of this article, the Campaign for the Protection of Rural England feature prominently.

And yet, we can date serious concerns about this back to the mid-1970s, and the *City Signs and Lights* report prepared for the Boston Redevelopment Authority and The U.S. Department of Housing and Urban Development by Stephen Carr and The Architects and Planners, Ashley/Myer/Smith. I will come back to this later.

This is part of a much bigger phenomenon, which I am calling here Visual Communication in the Built Environment. My concerns are similar to those expressed in the *City Signs and Lights* report, (which focused on Environmental Information Systems), but extend beyond transport issues, and may be more appropriately described as an interest in environmental communication systems. These concerns are more holistic in the sense that the Built Environment clearly needs Visual Communication in order to function, but there would seem to be very little research into how and why Visual Communication in the Built Environment happens.

The hypothesis outlined in this paper is that a better understanding of this phenomenon may lie in the relationship between Graphic Design and Urban Design, and initial investigation into these respective fields has informed much of the early research. This is what I wish to discuss here in more detail.

However, that is not to suggest that Graphic Design, and Urban Design, have been neglected as lines of enquiry. Arthur and Passini, in their work on *Wayfinding* (1992), clearly foreground Graphic Design as a critical subject in their work, and Carr's report in 1973 features many Graphic Design problems and solutions, and used Kevin Lynch as their Urban Design consultant. But, Arthur and Passini saw the critical relationship as being between Architecture and Graphic Design. And yet they openly acknowledge that teaching wayfinding to architects is 'virtually impossible' (1992, p. 16).

Consequently, we have to question whether the field of architecture, or planning and engineering, is the right location to deal with important concerns of Visual Communication, and recognise that the field of Graphic Design, and Urban Design, have developed considerably since the time Carr's report was produced — a time when Urban Design was in its infancy. In light of the fact that there is still much criticism, and numerous examples to be found with respect to the quality of Visual Communication in the Built Environment, we must seriously question how Visual Communication in the Built Environment happens, in order to better educate the Built Environment professions, Urban Designers, and Graphic Designers.

How and why can Graphic Design and Urban Design improve Visual Communication in the Built Environment?

To answer this question we must first understand what Graphic Design and Urban Design are. Both could be described as professions on the basis that there is a clearly definable level of professional practice, but as part of the broader field of design, they continue to be emerging disciplines. Nevertheless, they are more widely recognisable now than, say, twenty years ago. Both subjects grew out of the Twentieth Century from much longer standing traditions. We know that Graphic Design evolved from the unification of print, illustration, photography and typography (Livingstone and Livingstone, 2003, p. 90), and that Urban

Design replaced Civic Design, drawing on the traditions of the established Built Environmental professions: architecture, landscape architecture, city planning and civil engineering (Lang, 2005, p. xxi, p. 394).

But, what is Graphic Design? In the *Dictionary of Graphic Design and Designers*, Alan and Isabella Livingstone use straightforward terms to describe Graphic Design as the ‘generic term for the activity of combining typography, illustration, photography and printing for the purposes of persuasion, information and instruction’ (2003, p. 90). Although now outdated, this description encapsulates the subject as it has been most commonly practiced, but the work of the Graphic Designer has not been limited to one medium (print)—their work has extended to exhibitions, signage, motion graphics and more recently the virtual landscape of websites and CD-Rom, to name a few. We also now know that there is more to the purpose of Graphic Design than persuasion, information and instruction and Barnard asks us to reconsider the functions of Graphic Design as information; persuasion; decoration; magic; metalinguistic and phatic (2005, pp. 13–18). Notwithstanding the need for updated definitions of Graphic Design, what is at the heart of Graphic Design practice is an integrative process that brings together a wide range of theory and practice for the purpose of Visual Communication. In his book *Pioneers of Modern Graphic Design*, Jeremy Aynsley attempts to capture this association:

Visual Communication is an inextricable part of human history. It has existed as long as there has been the need to make marks or leave traces, to communicate through signs and symbols rather than the spoken word. In contemporary society the activity of organizing signs and symbols, or words and images, for public exchange is recognized as Graphic Design – a specialist area of the broader field of design’ (2001, p. 6).

Nevertheless, we should be careful to assume that Visual Communication happens only because of Graphic Design (it is as much a term used in Visual Art). In essence, Graphic Design best describes a process that Ellen Lupton suggests is about ‘how things are made’ – not usually covered by Graphic Design scholarship (Heller & Petit, 1998, pp. 117–131).

And, what is Urban Design? There are a number of definitions of Urban Design, varying in size and complexity. An accessible but open explanation is ‘everything you can see out of the window’ (Tibbalds, cited by Carmona, Heath, Oc and Tiesdell, 2003, p. 5). Even shorter, is Cowan’s ‘the art of making places’, cited in *The value of Urban Design* (Commission for Architecture and the Built Environment [CABE] & Department of the Environment, Transport and the Regions [DETR], 2001, p.18). A more comprehensive definition reads ‘the art of relating: STRUCTURES [sic] to one another and to their NATURAL SETTING to serve CONTEMPORARY LIVING’ (Lang, 1994, [citing Clarence Stein writing in 1955], p. ix) [author’s capitalisation]. Furthermore, UK Central Government defines the scope of the subject in its *Planning Policy Guidance Notes* (PPG1), stating:

Urban Design should be taken to mean the relationship between different buildings; the relationship between buildings and the streets, squares, parks and waterways and other spaces which make up the public domain; the nature and quality of the public domain itself; the relationship of one part of a village, town or city with other parts; and the patterns of movement and activity which are thereby established: in short, the

complex relationships between all the elements of built and unbuilt space'. (CABE & DETR, 2001, pp. 18)

Adding to this, in his book *Urban Design: A Typology of Procedures and Products*, Jon Lang brings to our attention what he considers to be one of the finest descriptions by Llewellyn-Davies, which concludes with it being 'about creating vision for the deploying of the skills and resources to realise that vision' (2005, p. 6).

The impact of Visual Communication in the Built Environment is global, and has had a profound effect on several key geographic disciplines: population; settlement; urbanisation; manufacturing industry; service industry; transport and trade; and world development. For example, many settlements, such as Paris in France, or Carlisle in the UK, began as key decision-making points; transport and trade facilitates migration; retail environments inform people about the shopping experience. Any form of Visual Communication, and its function in the Built Environment – directional signs at an airport, road markings and traffic signals at a pedestrian crossing, shop fascias fronting onto a high street, even hand-written notices on market stalls – exists solely as a result of people interacting with environments, one of the fundamental aspects of Geography.

These examples are simplifications of numerous interactions, representing complex human needs facilitated through Visual Communication. In many situations we have become reliant on such facilitation through mediation, and this determines how well or not so well behaviour settings succeed. Indeed, some would cease to function without Visual Communication, and the process of facilitation varies in scope, scale, complexity and spatial-temporal factors.

To illustrate this, in 2005 the BBC televised a programme *How art made the world*, giving considerable emphasis to aspects of the research topic discussed here. The series writer and presenter, Dr Nigel Spivey (a lecturer in Classics at Cambridge University) chose to focus a two-minute sequence at the beginning of the second programme in his series, *The Day Pictures Were Born*, to illustrate what life would be like without Visual Communication in the Built Environment, or more specifically, the consciously designed messages that help us find our way around. He stated that our 'reading' of signs, text, symbols and advertising in the Built Environment is something we 'utterly depend on in our lives' (Spivey, 2005). The sequence gave a startling impression of how the functioning of the Built Environment is dependant on a design discipline not always directly associated with the urban environment: Graphic Design.

Graphic Design and Urban Design both emerged as professions in the twentieth century to describe an integrated and integrative design process. Respectively, we have seen how this drew from highly specialised fields of activity that were limited in their ability to meet the changing needs of industry, commerce, culture and society. Subsequently, Graphic Design grew out of an art and craft tradition to establish itself as a fundamental social and economic force in an industrial age, and Urban Design became the replacement for, and extension to, the more limited remit of Civic Design (Carmona et al, 2003, p. 3), and the limitations of architecture and city planning (Lang, 2005, p. xxi). Nevertheless, Graphic Designers are concerned with a design process that results in Visual Communication. Combine this to a concern about the 'gaps' in the thinking of Built Environment professionals, and the scale and vision of Urban Design

thinking, and it would seem a closer relationship between the two might produce better Visual Communication in the Built Environment.

Furthermore, having briefly looked at some descriptions of graphic design and urban design, the American Graphic Designer, Milton Glaser, (talking after nearly half a century in practice), advises us that ‘it’s very important when you talk about [graphic] design to realise that it is so highly segmented today in terms of objectives and activities that there’s no general definition that applies to the whole field’ (Heller & Petit, 1998, pp. 149–155). This poses difficult questions about the future of the discipline, and Steven Heller outlines the various attempts to make sense of the subject.

In the absence of a critical Graphic Design vocabulary, various models (based on -isms -ologies, and -otics) have been adapted from academia and journalism, running the gamut from scholarly exegesis to investigative profile. This includes commentaries, manifestoes, reviews, editorials, and reportage. Many are highly opinionated, though not all are entirely subjective. Most speak of passions, though some are curiously dispassionate. Some attack, others defend. A few are wise. (Bierut, Drentell, Heller and Holland, 1997, p. 1)

Given this, how does one try and define the subject. Should we even try? How does one teach Graphic Design in the Twenty First century? What are the important and defining topics, and in what proportion? Is typography more, or less, important than illustration? What are the relevant technical skills? It is not helpful to this discussion that similar to other design disciplines that are fundamentally collaborative, Graphic Design suffers from claims that, on one hand, it can be described as everything that is constructed through a process of integrating words and images, but on the other, it can equally be seen as nothing. Abbot Miller demonstrates this when he describes it as ‘a meta-language that can be used to magnify, obscure, dramatize, or re-direct words and images. It’s not inherently anything at all, but pure potential’ (Fiell and Fiell, 2003, p. 404).

At this point it is worth briefly cross-referencing with Urban Design, as there are similarities with respect to attempts at definitions. Carmona et al (2003, p. 5) outline that it is often easier to define Urban Design in terms of what it is not, and that it is both more and less than those subjects that it interfaces with. They go on to say ‘relational definitions (i.e. those that define something in relation to something else)’ can be useful and that Urban Design ‘encompasses and sometimes subsumes a number of disciplines and activities’. Perhaps most significant is their acknowledgement that establishing boundaries for the subject is unhelpful when the ‘identification, clarification and debate of central beliefs and activities’ that encapsulate the ‘heart or core’ is really needed. The same can be said about Graphic Design. It will therefore be useful to consider what the critical domains are that link the past, present and future of Graphic Design, and consider models that are by nature inclusive. Unfortunately there is not sufficient time here to include my research on the matter, though I believe we can model the subject, and will explore this another time.

Historical, cultural, multi- and cross-disciplinary interests

Historically, during the second half of the Twentieth Century, some Graphic Designers took a close interest in Visual Communication in the Built Environment, and how Graphic Design plays its part. In the post-war years British Typographer and Graphic Designer, Herbert Spencer, regularly featured

articles and photographs in his visual arts publication *Typographica* (1949–1967) about seemingly mundane themes like arrows in the road, graffiti, and visual essays, documenting such experiences as a 20 mile journey between Marble Arch in Central London the Heathrow Airport (then London Airport) (Poyner. 2002, pp. 61–98). This publication continues to be a source of inspiration to contemporary writers on Graphic Design, and Graphic Designers. In the early 1990s the design critic Rick Poyner founded *Eye*, the International Review of Graphic Design, using *Typographica* as its main inspiration, which has featured articles about Graphic Design for the national road network signs in the UK, designed by Jock Kinneir and Margaret Calvert, (featured in a *Public Realm* special issue, No. 34, Vol. 9, 1999) and more recently the retracing the footsteps of Nicolette Gray who documented the ‘graphic character of Lisbon’ in the early 1960s (No. 54, Vol. 14, 2004). From a creative perspective, a typeface designed by Jake Tilson in 2003, Nizioleto, based on letterforms used for a system of toponymy in Venice, (hand-painted and stencilled onto white washed rectangles to identify place names and house numbers), would seem to be a directly inspired by some of the articles featured *Typographica*.

Furthermore, in her book *Mixing Messages: Contemporary Graphic Design in America* (published in conjunction with an exhibition at the National Design Museum, New York) Ellen Lupton features a wide-ranging set of formal and informal examples of Visual Communication in the Built Environment, and confirms that ‘urban public space is a stage for viewing the field of Graphic Design in its diversity (1996, pp. 15-27). She suggests ‘the street is a microcosm of what Graphic Design is, a medium that gets mobilized by many different parts of society, from major corporations to activists and local music groups and theatres’ (Heller & Petit, 1998, pp. 117-131).

More specifically, the Twentieth Century saw the development of specialist multidisciplinary design activities such as Sign Design, now an established professional discipline in the developed world, having it’s own societies such as The Sign Design Society in the UK. Sign Design demonstrates the design process as being multi-disciplinary, utilising graphic, product, architectural, and Urban Design skills, as well as the work of engineers, sign manufacturers and occasionally, sculptors. Notably, there is an increasing number of books that offer wide-ranging examples of Sign Design (sometimes called urban graphics, urban identities or a host of other descriptors), and many cities have invested substantially in urban sign systems that include information for maps, mapping strategies, transit systems – even typefaces that are exclusively designed for use in one city and usually named as such (e.g. Bristol Transit, Sheffield Sans).

At the turn of the millennium, interest in Visual Communication in the Built Environment has been emerging through an holistic appreciation of the Built Environment, and as part of much urban regeneration that is taking place. In some cases, the work of Graphic Designers and particularly their expertise in signage has led the regeneration process. Guy Julier brings this to our attention in *The Culture of Design*. ‘In Barcelona from 1980 onwards, the socialist city council set about a radical urban regeneration, first of its metro system but also of its parks and plazas. Signage for its public transportation system installed a greater feeling of order and structure to the city chaos’ (2000, p. 126).

And, since 2000, the UK design newspaper *Design Week* has featured many news articles featuring Graphic Design, ranging from improvements to London’s South-Bank signage; transport signage on the London Underground; space

navigation in London's art galleries; the public art project in Morecambe, *A flock of words*; interactive digital technology in retail and public space signage in Edinburgh; city branding for the London Olympic bid, and the cities of Rotterdam and Leeds; design in NHS hospitals; the colonisation of public space and guerrilla graphics; and integrated street furniture and communication media; to name a few.

There is also an emerging academic interest in cross-disciplinary activity that foregrounds communication issues in the context of the city. For example, in 2003 the Jan van Eyck Academie in the Netherlands attempted to stimulate research into the city as a communication platform through the project 'Authoring the city: urban space as a communication platform and communication device' (www.charlesnypels.nl/authoring.html). They identified a defined set of concerns that aspired to predict city design in the future; communication platforms and devices; use of new technology; information flows; commercial and non-commercial intent; flexibility; amongst other issues. Furthermore, during 2005, they invited submissions for a second multi-disciplinary design project to start in January 2006. *Logo Parc*, is part of a construction project at the Zuidas, Amsterdam that intends to 'unite architecture, communication design and three-dimensional design'.

Similarly, in the UK, The Leeds School of Contemporary Art and Graphic Design at Leeds Metropolitan University hosted 'LSx—Leeds Unknown Symposium' (24–28 October 2005), based around a project which focused on areas where 'urban planning, information and media technologies and Graphic Design overlap.' These projects bring together a diverse set of design activities that impact on the Built Environment from very different perspectives.

Concerns about aspects of Visual Communication in the Built Environment
Possibly the most comprehensive study of Visual Communication in the Built Environment can be found in the report mentioned earlier, Stephen Carr's *City Signs and Lights: A Policy Study* (1973). The report aimed to make recommendations about 'public policy for the design and control of a small but critical set of information sources in the environment: outdoor signs, lights and other information devices' (p. 2), and considers their function, described by the term they authored as 'environmental information systems'. The impetus for the report is clear.

'The streets of any large city relay thousands of conflicting visual messages. Red lights blink to regulate traffic and to attract us to the local bar. Arrows point out routes; they also flash for the nearest hot dog stand. Private messages are stamped on the face of the city with little concern for anything more than competitive advantage. Even street lights add to confusion by their unleashed glare' (p. 2)

This comprehensive study, yet to be fully examined by the author, explains that 'the report deals principally with one-way transmission of messages – from sender to receiver. Signs and lights do not 'communicate' with people in the usual sense of exchange; rather they inform people about rules, activities, and occurrences of various kinds' (p. 3). In considering 'communication' as being too broad a definition, it would seem we are now overrun with 'environmental information systems' in our towns and cities, and rural areas. These systems still prove ineffectual in parts. If newspaper reports in the UK are to be believed, we now seek to replace twenty miles per hour with speed cameras, and more signs

(Webster, 2006, pp. 1–2). It may be that this is as much to do with over-zealous implementation and little concern for the actual Visual Communication needs of individual behaviour settings, and I suspect, the sociology of crime and rule breaking.

As suggested, Visual Communication in the Built Environment has been an interest for Graphic Designers for some time, and although Graphic Designers have made their own significant contribution to the functioning of the Built Environment, in general the role and concerns of the Graphic Designer have been predominantly aesthetic and documentary. Presently, non-Graphic Designers, who have concerns well beyond the historical and aesthetic, are undertaking analysis about the impact Visual Communication is having on the functioning of the Built Environment. Some of these people are Urban Designers, and some are from other disciplines. Moreover, they are engaging in critical debate about the use of Visual Communication in the urban environment. For example, the use of traffic signals, road markings, and signs in general, on and around the carriageway. Writing in *The Guardian* newspaper supplement, G2, the Urban Designer Ben Hamilton-Baillie expressed his frustration and confusion as to ‘... why the endless clutter of traffic signs, signals, road markings, kerbs, bollards and barriers have conspired to make all the varied, distinctive towns and villages across the country look exactly the same’ and that ‘there is precious little research to suggest that such expensive bits of kit give us these assumed benefits’ (p. 7). This concern is shared by others, and English Heritage argue for more public consultation about the process that has led to the cluttering-up of streets, similar to the process through which building proposals are exposed. Much of this is being brought into question based on research in Holland by Hans Monderman, about how the employment of communication devices by traffic engineers is increasing ‘the risk of accidents by absolving drivers from having to use their intelligence and engage with their surroundings’ (Hamilton-Baillie & Jones, 2005, pp. 39–47).

We might conclude that part of the problem is that traffic signs and directional signs (and public art) tend to be grouped together as part of street furniture (Carmona et al, 2003, p. 161.) and is governed by the same principles (Llewelyn-Davies, 2000, pp.102). When signs are singled out, more often than not the focus remains on the physical quality of the structure that supports them, and the setting (Llewelyn-Davies, 2000. pp.104), and not on communication value, or what might be identified as the manifest function. When the manifest function is championed, it is usually part of an already rigid process that requires little communication design thinking, and more about following procedures. This can be seen in the City of Nottingham’s *Streetscape Design Manual* which encourages a limited set of principles relating specifically to statutory signage, recommending five basic questions – the first of which is ‘What message are we trying to convey?’ (p. 32). Perhaps more alarming, is the manual’s boast about the removal of an estimated ten thousand sign plates that simply state ‘No waiting at any time’ (p. 13).

Graphic Design as Urban Design

The physical nature of many forms of Visual Communication in the Built Environment leads us to consider Graphic Design as contributing to the creation of city form, and is very much part of the Built Environment. For example, the report published in 2005 by the New Economic Foundation, entitled *Clone Town Britain* uses, almost entirely, images of the high street featuring branded fascias. Here, it is Graphic Design that is the key representational element in the cloning

argument. Take the fascias away, and would the architecture alone have as much impact on the mind, considering how advertising focuses on reinforcing the graphics across a range of media.

Moreover, in reference to earlier descriptions of Urban Design, and especially that by Jon Lang, if we take it that a structure is a building, or other objects constructed from several parts, then we can determine that a small structure such as a signpost, is an element for consideration by the Urban Designer as much as a building. Equally, if an object is ‘a material thing that can be seen and touched’ (Oxford Compact English Dictionary, 2003) then this must include all material objects that make up the Built Environment, including all physical representations of Graphic Design in the natural setting, serving contemporary living. What could be more representative of an object serving contemporary living than road markings, a shop fascia, or an advertisement, for that matter?

If Carmona et al (2003, pp. 5) are right about identifying the importance of what is at the core of Urban Design, it would be difficult to exclude Visual Communication/Graphic Design from this, in whatever medium, from any of the descriptions of Urban Design mentioned earlier. This suggests that Graphic Design is close to the heart of Urban Design, and arguably places Visual Communication and Graphic Design as a central belief in Urban Design thinking. If Urban Design is to fulfil its intention as being the ‘integrative (i.e. joined-up) and integrating activity’ (Carmona et al, 2003, p. vi.) it aspires to be, it may be that Graphic Design has an important role to play.

Some shared objectives

Urban Design is concerned with a range of ideas, practices and theories that also pre-occupy Built Environment professionals. One of the key ideas to emerge for Built Environment professionals over the last half century is what Kevin Lynch refers to as legibility, or the apparent clarity of the cityscape. Legibility is a familiar term to both the Urban Designer and the Graphic Designer, having the same meaning, but in different contexts. For the Urban Designer, Lynch asserts it is about ‘the ease with which the parts [of a cityscape] can be recognized and can be organized into a coherent pattern’ (1960, pp. 2–3). For the Graphic Designer legibility is also about visual clarity, but usually of text – size, choice of typeface, contrast, and character spacing (Butler, Holden and Lidwell, 2003, p. 124), though the term may also be used in relation to illustration and photography. Although Lynch is concerned primarily with visual form in cities, and our cognitive abilities to map that form, we have seen that Graphic Design now plays in significant role in contributing to that form.

With regard to the design of buildings, there was a time when ‘architecture provided clearly identifiable entries to buildings, often giving them fine and appropriate lettering as well’ (Mijksenaar, 1997, p. 8). It would seem this is not now always the case. An environment that is not legible presents a considerable challenge to the Graphic Designer, in aiding legibility – perhaps an impossible challenge. Similarly, legible environments present a different challenge, and by default could result in less visual clutter created by over-signing. Even so, when Lynch talks about legible environments, such as ‘an image useful for making an exit requires the recognition of a door as a distinct entity, of its spatial relation to the observer, and its meaning as a hole for getting out’ (Lynch, 1960, p. 8), how many of us require an endorsement that the door will lead to where one might want to go (such as in a darkened cinema).

Canterbury city centre might fit the description of legibility well. No matter where you are in the city centre, it doesn't take long to orientate yourself around the spire of the cathedral. Though that is not to say Canterbury does not need pedestrian signs. It does. A metropolitan city such as London is a different matter. Its scale for one thing means it can only ever be considered in parts – some more legible than others, much completely illegible. In either location, people need help identifying where they are, they need information and instruction about how to move from one place to another, and often need persuading that a place is safe to inhabit. It is debateable if this need that people have, is catered for by the various environmental professions.

The legible city is a desirable thought, but is it possible for an environment to be so legible that it has no need for the precarious devices Lynch warns against (1960, pp.11)? The ability to read a city, whereby navigation is one of the principle benefits, might have been enhanced by the quality of civic design in the past, and location of important public buildings such as a cathedral, or city walls. But with the interest in legibility today in cities, this would seem to be exceptional in recent times. However, the objective here is not to create a hierarchy of importance between the design of environments, and how we then inform people about how to use them. One is dependant on the other and might therefore be better seen as a single domain.

The problem exists in the void, or 'gaps' between the 'tight boundaries' that surround a fragmented set of professional disciplines (Carmona et al., 2003, pp. 12–14). The concern for poor quality public realm – recognised in the 1960s as a something that stimulated the birth of Urban Design – has been mirrored by the growth of Graphic Design, as we have come to rely even more on direct and mediated forms of Visual Communication. Furthermore, the wayfinding devices referred to by Lynch, and Arthur and Passini, concentrate primarily on the information function of Graphic Design, and do not consider other functions of Graphic Design, such as persuasion, decoration, magic, metalinguistic and phatic (Barnard, 2005, pp. 14–16).

Summary and conclusions

This research has attempted to highlight some of key theoretical and practical issues that relate to the broad research question 'What are the Visual Communication requirements of a Built Environment?' The approach has been wide-ranging and varied with the intention that a distinctive viewpoint will emerge that might offer some valuable observations alongside those already existing. Though the subject relates to broader Geographic concerns, past and current observations come from many perspectives, including Graphic Design, Urban Design and the Built Environment Professions, Visual Art, Media Studies, Communication Studies, even the Classics. Geography places the research in a global context and has at its heart a concern for 'the character of places' (Waugh, 1995, p. 6) and links directly to more contemporary subjects such as Urban Design through a shared interest, for example, in land-use patterns.

Due to the author's design experience, this study has focused primarily on two design disciplines, Graphic Design and Urban Design. Urban Design is primarily concerned with the creation of urban environments for people to interact with, and we have seen how this interaction, is facilitated by Graphic Design, at the heart of which is communication (Barnard, 2005, p. 5). In contrast to Geography, Urban Design and Graphic Design are emerging disciplines, and are directly linked through newer disciplines such as Wayfinding or more recently,

Wayshowing (Mollerup 2005). It has emerged that poor Urban Design cannot be compensated for by good Graphic Design, and vice-versa, and research work in mainland Europe is revealing that often those responsible for Visual Communication in the Built Environment are often ignorant of the true impact of their work.

This paper demonstrates that a holistic and multi-disciplined approach is needed when considering the question more deeply. It recommends that a closer working relationship between Graphic Design and Urban Design (and not necessarily with the more traditional Built Environment professionals), is preferred. Both share an approach that is integrative, and not bound by any longstanding traditions, and when considering the functions of a Built Environment; communication; economic; cognitive; and display (Lang, 1995, pp. 168–180); alongside those of Graphic Design: information; persuasion; entertainment; magic; metalinguistic and phatic (Barnard, 2005, pp. 13–18), it would seem that as creative disciplines, Graphic Design and Urban Design are well matched.

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The dimensions of graphic design: in theory

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Abstract: Graphic design is more usually discussed through the material outcomes of the process of graphic designing, rather than process itself. This is common in visual studies of material culture, from Art to Architecture. Yet outcomes of graphic design tell us little about the design process that created them, or the relationships that exist in the field. In this paper we look beyond the artefacts and consider how graphic designers have attempted to represent the subject in terms of diagrams that explain complex relationships and ambiguous terminology. Examples are featured that explore ‘intermediate dimensions’ of the subject, examining earlier work by Bruce Brown and Katherine McCoy, as well as a wider framework of design and design education, developed by Bruce Archer in the 1970s. The outcome is a theoretical construct that incorporates common concerns attempting to locate graphic design in relation to design, science and humanities.

Keywords: *Graphic design, theory, diagrams, dimensions, education.*

1. Introduction

It is typical to discuss the nature of graphic design using examples of graphic design—posters, brochures, signs, websites, to name a few outcomes of this ubiquitous design process. This paper avoids this approach. It attempts to present a framework that is free from the subjectivity and ambiguity often associated with outcomes in the field. But, then, how do we depict graphic design? What are the dimensions of the subject? How can the field organise itself, in order to further develop. In the past we have looked to the field’s practitioners, historians, and more recently educators. A future may well see increased prominence of critics, researchers, and theorists. How will these important roles—practitioner, historian, educator, critic, researcher, theorist—be located in relation to each other, and the wider context?

Traditional definitions of the field are now recognised as limited at a time when graphic design must have professional as well as academic kudos. Some practitioners, historians and educators have realigned themselves to new descriptors that have emerged from within, and outside the

subject. These embrace traditional and emerging fields, often referencing old or new technology and terminology. This has resulted in attempts to redraw perceived boundaries of the subject, whilst core values arguably remain the same. In this contested sphere we are confronted with the question of what the future landscape for graphic design will look like?

It has been suggested by Jessica Helfland and William Drentell that to look ahead, we must look back [17]. This paper extends previous work based on this premise. It builds on research that explored how the traditional definitions from which the subject emerged, and has been represented in visual form, can link to the creation of a model that provides an opportunity to guide future progress. This is achieved by considering key spheres of influence in graphic design, recognizing that there are traditional, and emerging influences, that together can be modelled and mapped, helping to shape future planning and integrate practice, history, and education with the development of criticism, research, and theory in the field.

This paper exposes an applied model that is best described as work in progress. It builds on the development of a basic model previously discussed at the International Association of Societies of Design Research conference in Hong Kong, 2007 (IASDR 2007) [13]. The applied model discussed here depicts what is described as the macro and micro dimensions of graphic design: in theory.

2. Using diagrams to depict aspects of graphic design

Examples of diagrams used to depict theory and research relating to graphic design are now more accessible. In Bennett [8], we see the depiction of theory and research focused on methodology, design process, relationships and cognition. These span a range of approaches that include the development of design methodology [4], the usefulness of activity theory [11], IDEO's approach to human centred research methods [12], design process, audience and user research [22], Richard Johnson's circuit of culture [25], and various approaches depicting 'the cognitive process theory of communication' [26]. These examples can be said to depict aspects of theory in graphic design.

However, using diagrams to depict graphic design as a subject in its entirety is unusual, considering the visual nature of the subject. This is evident in Helen Armstrong's edited book *Graphic design theory: readings from the field* [2]. The book, split into three sections that deal with 'creating the field', 'building on success' and 'mapping the future' respectively, in the main follow the model used by design historians of showing examples of graphic design outcomes accompanying written text. Among the variety of outcomes on display – posters, publications, 'logo systems', and screen-based media, – some experimental work and the occasional use of schematic representation support the text. The content spans a century between 1909–2008 made up from contributions by familiar names such as Marinetti, Tschichold, Warde, Bayer, Rand, Weingart, McCoy; Scher, Heller, Helfland, Manovich and Lupton, to randomly select a few.

The third section of the book, *Mapping the future*, features nine contributions that stem mainly from the turn of the millennium, (with the exception of two from the 1990s). The title of this final section indicates a need to think about the future of the field, and ‘map’ it. This sentiment builds on what one of the contributors to the book, Jessica Helfland, had to say at a conference in America. During a joint presentation with William Drentell, they apparently commented that ‘mapping the future of the profession will be difficult without looking back at our history to get a better idea of where we are going’ [17].

In the early part of this millennium, this has been a preoccupation of the author of this paper and is part of a wider research investigation concerned with identifying the ‘dimensions’ of graphic design. Using the term ‘dimension’ developed from the use of metaphor to think about graphic design as some kind of ‘nation state’ [13]. The term is useful for two specific reasons. First, as a useful way to determine what Henwood & Pidgeon [15] describe as ‘intersecting properties of core conceptual categories’. Secondly, it allows the opportunity to consider the idea that different core concerns may occupy similar territory, but differ in scale.

3. Depicting graphic design

As previously stated, there appears to have been few formal attempts to use diagrams to explain, or ‘model’ the field of graphic design, even though there is increasing amounts written about the field. In this paper we consider three attempts that are locatable in the research literature, books about graphic design, and design conference proceedings, that span the last thirty years. First, by Bruce Brown [6], second, Katherine McCoy [20], and more recently by the author of this paper [13].

3.1 The Graphics Triangle

Bruce Brown attempted to explain the three values of persuasion, explanation and identification in model form for the design of communications, referring to it as ‘The Graphics Triangle’. This emerged from a need to discuss the communication values taken up when conveying either ‘messages’ or ‘ideas’. The model demonstrates how three facets of graphic design – explanation, persuasion and identification – form a triangle, see Figure 1.

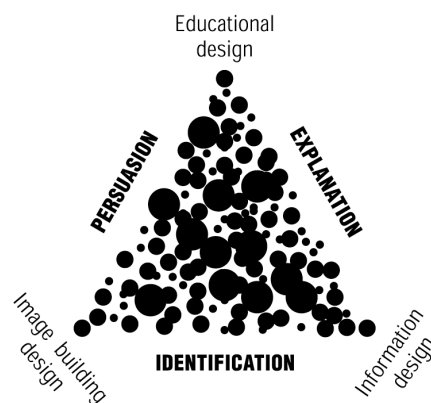


Figure 1: Browns model of values in communication design.
Source: Brown, 1979, pp. 133, (redrawn here).

Brown outlined each of the facets. In his view ‘explanation’ is concerned with health, safety and welfare. It is suggested that the outcome of designs in this category should result in one preferable solution, rather than a variety of possible options. This is the case with the second facet, ‘persuasion’, which is more open to alternative outcomes – seeking recognition is very important and a primary motivation here and the possible results are wide ranging. The third facet is ‘identification’. This involves the need for distinction when anonymity prevails. Examples used by Brown to illustrate the three facets respectively include illustrations of putting on a life jacket, the design of a book cover, and a logotype.

It is argued that the nature of each of these facets is associated with either an active or a passive communication role, depending on the relationship to the audience. Brown argues that explanation and persuasion possess active values in addressing audiences. Consequently, persuasive values are associated more with trade and commerce, due to the potential emotional appeal, whereas explanatory values appeal to our sense of function, the need for rational decision-making and ‘simplification’. However, identification is passive, relying on the audience to search out the communication value.

Brown identifies three further facets that can be described as categories of design. These generic terms, associated with different kinds of material outcome, are labelled educational design, image building design, and information design. In Brown’s model, these additional categories (or what are referred to here as ‘angles’) sit at the three points of the triangle, and emerge from the overlap between the two converging facets. It should be noted that it is not his intention to polarise these values but to acknowledge that the majority of design activity takes place in the space enclosed by these facets and angles.

Identifying these facets and angles, helps us to gain some understanding of some key values in graphic design and communication, and demonstrates equal levels of importance attached to each of them. This is useful, but also restrictive if the aim is to capture a more complete picture of graphic design. The model is limited in its ability cover the full spectrum of graphic design activity and influence, from conception to realisation.

To build his argument, Brown uses many examples of work that derive from the process of graphic design – logotypes, instructional diagrams, advertisements – but these come from what might now be considered a very limited range of two dimensional media, and are very much of their time. Other criticism is that the model does not fully engage with the potential influence and impact of changing technology, and how technology might act as a possible contributor to enhancing values of persuasion, explanation and identification.

3.2 Typography as discourse

The second model we discuss emerged less so from a wider graphic design perspective taken by Brown—his approach did not show favour to any of the traditional activities associated with the subject such as illustration, photography, typography and print, from which graphic design emerged in the early twentieth century.

In the 1980s the phrase ‘typography as discourse’ surfaced from Cranbrook Academy of Art in Michigan to describe a model that had been developed in education by Katherine McCoy. This has been referred to as ‘expressive formalism’ [18]. This model appears to have emerged as a reaction to the rational problem solving approach in graphic design that had developed with the maturing of modernist principles, most revealed through graphic design work for large American corporations. Linguistic theories of semiotics provided the platform for this approach by McCoy that reflected the relationship between text and image with the processes of reading and seeing. See Figure 2. The model is underpinned by a series of dual terms adopted by McCoy from the French philosopher Derrida; art-science, mythology-technology, purist-pluralist, vernacular-classical, [23].

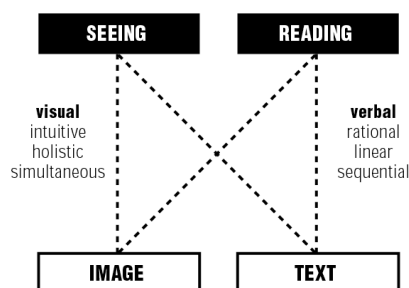


Figure 2: McCoy's model of 'Typography as Discourse'.
Source: Lupton, 1996, p. 51, (redrawn here).

The background to this work, explained by McCoy [20] suggest that the roots of graphic design in America lie in book printing and type-cutting in Europe spanning the period since the early Renaissance. She explains that in the early twentieth century the artists and designers of modern movements such as cubism, futurism, Dada and surrealism, De Stijl, suprematism, constructivism and expressionism, experimented with typographic layout in expressive ways, introducing a visual quality to typographic design that contrasted with classical approaches. The ‘revolutionaries’ associated with these movements used typographic shape and overall layout as interpretation, adding further significance beyond the reliance on the meaning of words alone. McCoy states that ‘Typography finally became an expressive visual language as well as a verbal one’. Furthermore, she notes that ‘Seeing and reading are two modes through which we traditionally think of receiving messages. Image and text are two carriers of those messages.’

We can confirm from McCoy’s explanation is that the classical reliance on the power of the word (seeing and reading) had limitations. These limitations were exposed by more expressive (image and text) approaches to typographic design and layout that enabled the senders of such messages to reach wider audiences through combined artistic (expression) and scientific (legibility) approaches to graphic design.

3.3 A comparison of two models

As is the case with Brown’s model, McCoy’s depiction takes a limited viewpoint that does not demonstrate the breadth of graphic design. Her interpretation accompanies a view expressed under the essay title *American Graphic Design Expression: The Evolution of American Typography*, and she argues that in America graphic design expression is synonymous with the development of typography. This suggests an close relationship between the two, but this is not necessarily an exclusive relationship—we know there are many other equally significant factors that have contributed to the development of graphic design. Illustration and photography are just two. Brown identifies values whereas McCoy deals with the move from objective to subjective approaches to designing, capturing the visual-verbal dichotomy.

Both examples can be described as basic models, but as depictions, neither is extensive enough to capture the complexity of graphic design activity in process, products or personnel. Brown is concerned with the intention of outcomes: image building; information; education. McCoy explains that the combination of image and text is directly linked to seeing and reading. This assumes a sender receiver relationship. Both models consider audience perspective, but represent these in different ways. We might assume in McCoy’s model that the seeing-reading domains represent the action of the audience, or the receiver of the message. The image-text domain is symbolic of the sender of the message. Whereas Brown links intention to outcome in the sense that the intention to persuade, inform or identify leads on to the activities of image building, informing, or educating.

3.4 The dimensions of graphic design

Taking a wider perspective, we now reflect on the development of a model by the author of this paper first discussed at IASDR 2007. The stated intention for this work was to identify core values in graphic design in order to link practice, education and research in the subject around a common set of relationships.

The model proposed four active domains described as Idea Generation, Image Creation, Word Interpretation and Media Realisation. It attempted to demonstrate in visual terms the argument that idea generation is the central concern in graphic design, and this domain acts as a conduit for the creation, interpretation and realisation of graphic design products by utilising images, words and media. This activity is mediated by the communication needs of core contextual domains, listed as; Commerce, Industry, Culture and Society. Industry and Commerce are explicitly identified as important contexts (noteworthy because of the emergence and popularity of the graphic design in the twentieth century). These two contexts are discussed in the graphic design literature under the more generic term of ‘economic’ [3].

This depiction, shown in Figure 3, attempted to visualise relationships often discussed in the literature, but not ever appearing to be visualised in the form of a diagrammatic model. In this sense, the results of the inquiry were explained in visual terms that did not rely on examples of graphic design artefacts. For this reason, this basic model attempted to fill a gap, and serve an educational purpose.

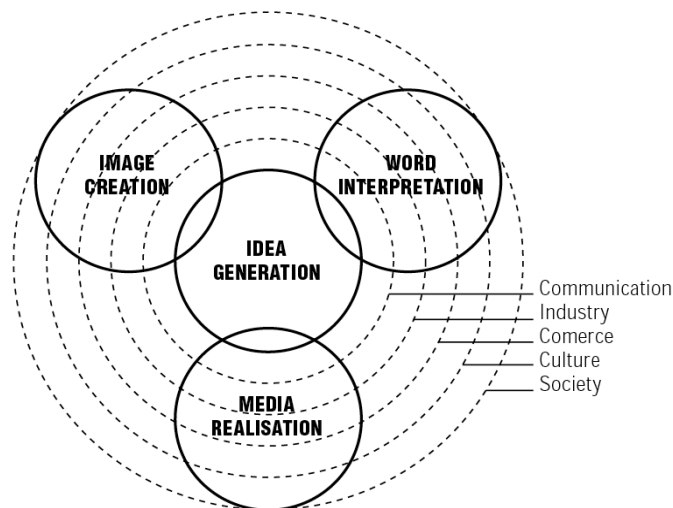


Figure 3: The dimensions of graphic design
Source: Harland, 2007.

Compared with the earlier discussion of models, by Brown and McCoy, this depiction incorporates media as a significant domain in its own right. But in making idea the central concern, we can

discuss idea in relation to both graphic design activity as well as ideas that emerge from the wider context. Singling out idea in this way links the practice of graphic design to the context within which it happens. In this sense the diagram supports the philosophical view expressed by Lefebvre [16] that ‘...the (absolute) Idea produces the world’. This is what Margolin and Buchanan believe when they discuss the idea of Design: ‘the core of design thinking remains the ability to conceive, plan, and present ideas about products’ [19]. In the diagram shown here, it is argued that we can think of this domain in terms of ideas about how we create images, interpret words and realise material objects through media. Generating ideas is therefore closely associated with the Communication domain. Using a metaphor, the Idea dimension performs a ‘respiratory’ function, and facilitates the inhaling and exhaling of issues graphic design is concerned with, or the ‘messages’ and ‘ideas’ that Brown talks about. Communication might be thought of as the motive for converting ‘ideas’ into ‘messages’ and vice-versa.

The intention behind the creation of this model was to identify key practical and theoretical domain. However, on reflection the balance between, and identification of, theory and practice is unclear. Which is which? How do we distinguish between the physical and the metaphysical? What is useful about the model is the opportunity to assign importance to the various domains, depending on personal preferences and abilities. For example, those who view graphic design as part of the wider subject of visual communication are able to highlight the communication domain. Similarly, those who wish to view the more practical concerns of media, (or theoretical issues associated with material culture), might see media representation as the most prominent. Illustrators or photographers might associate more with image creation, or typographers with word interpretation. In this sense the model attempts to identify basic dimensions from where we might begin to extract ‘core values’, ‘spheres of influence’, or what Swanson [27] prefers to refer to as ‘centres of gravity’. Whatever the focus, all of the dimensions are interwoven.

3.5 Reviewing the three models

The models we have discussed are rare attempts to explain aspects of graphic design without the ‘graphic design’. They each take a different view of the field, respectively focusing on distinct values (or facets), discourse, or dimensions. Each results in a different visual manifestation. McCoy specifically deals with visual and verbal language; Brown’s identifies active and passive forces; Harland attempts to scope the field. They also scan a period of time when dramatic technological change and the scope of the graphic designer’s activities appear to have widened. But none of the models demonstrate a direct link with education, even though each of the authors has a direct link with education. Let us now consider the relationship of these models in relation to education and to the culture of science, humanities and design.

4. Art, science and design

McCoy asks ‘...is graphic design an art, science, business, craft, or language?’ Similarly, the question pervades discussion in the closely associated field of typography. The back cover of

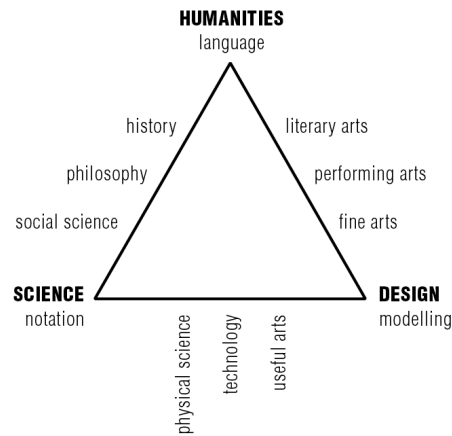
Ruari McLean's [21] book *How Typography Happens* states 'Is typography an art or a science?' It seems that the answer to this question, according to Frascara [4], is to think of graphic design in terms of its 'basic duality', especially relating to the development of skills in an educational context.

Frascara states that 'Graphic Design is both a rational and an artistic activity', suggesting that two key spheres of influence on graphic design is the sciences and the humanities. But rather than assume that graphic design is merely a construct that emerges from an overlap between the two, in the same sense it has been suggested that design bridges a perceived gap between the sciences and the arts, and occupies an 'in-between realm' [5]. Are the material products of graphic design therefore revealed in some kind of space or overlap between the two? Or, do they exist in their own right? One answer to this question resides in the field of design research, where, building on the work of Bruce Archer in the 1970s, it has been argued by Cross [9] that design is a 'third area' or 'third culture'.

4.1 A 'third culture' and the work of Bruce Archer

When proposing an explanation of the relationship in general education between Humanities, Science and Design, Bruce Archer [1] used a triangle metaphor, and he traces the idea of a third domain back to Plato. Archer's depiction of the relationships, shown in Figure 4, positions Design at the bottom right corner of a triangle and Humanities at the top, acknowledging what he believed represented its dominance in general education since the fourteenth century. Science is located bottom left. The diagram attempts to identify as 'Design' the subjects that Science and Humanities 'leaves out', such as performing arts or physical education. Furthermore, Archer argues that the 'doing and making' relating to 'material culture' is not a concern of Science and Humanities, but is a central feature in Design. Describing the 'essential language' of each of these cultures, Archer refers to Science as 'notation', Humanities as 'natural language' and Design as 'modelling'.

Figure 4: Proposed relationship between Humanities, Science and Design
Source: Archer, Baynes and Roberts, (2005), p. 12.



5.0 Synthesising theories of graphic design with design

Comparing Archer's depiction of the Science and Humanities with McCoy's focus of verbal-visual activities, it is possible to superimpose one on another. The 'verbal' qualities of rational, linear and sequential map onto those qualities associated with Science, whereas visual aspects link directly to Humanities. Similarly, Brown's suggestion of explanation and persuasion can be respectively mapped onto Science and Humanities respectively. And the terminology 'word interpretation' and 'image creation' used by Harland can also be aligned.

It's worth mentioning that this use of language is a simplification. The use of 'word' and 'image' when trying to define 'signs' makes use of familiar language to describe important ingredients that graphic designers work with. However, the suitability of 'word' and 'image' as terms of reference has also been noted as being too 'simplistic' [10]. The alternative use of 'alphabetical' and 'pictorial' has been used by Adrian Frutiger [10]. Concern about using the terms word and image, according to James Elkins, cited by Crow [10] suggests opposing and incompatible terms that do not capture the intricacy and sophistication of reading. Nevertheless, Crow uses the terms to represent the left and right side of the brain.

If we consider a reorientation of Archer's triangular model, the left/right, word/image, verbal/visual, explanation/persuasion dualities can be over-layed onto Science and Humanities. This allows the opportunity to align the different approaches taken by McCoy, Brown and Harland, with the work of Archer. In doing so we are able to elevate Design to a position of prominence more in keeping with the notion that Design is a bridge between the Science and the Arts. This reorientation has been described and depicted as Design being at the fulcrum of a pendulum that swings between Science and Art, shown in Figure 5 [14]. This is demonstrated using three hexagons. In constructing the diagram, Science, and its association with left-brain activity [7], is positioned accordingly on the left. Humanities is on the right, with Design helping to form a triangle of 'human knowledge and ability' [9].

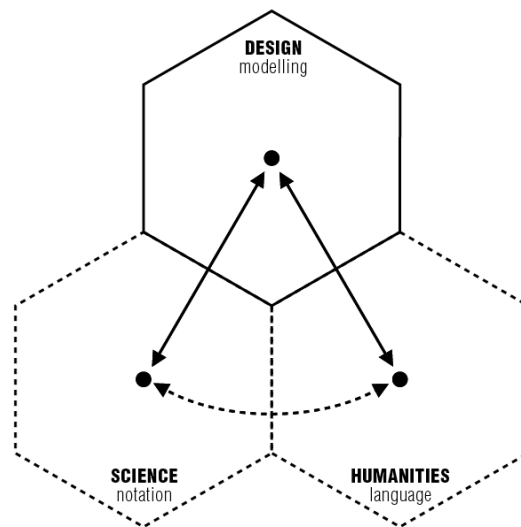


Figure 5: The proposed relationship between design, science and humanities.
Source: Harland, 2009.

Within this visual framework, we can begin locate key domains that make up graphic design. It is logical that the core values associated with the subject should align with human knowledge and ability. We might therefore make the simple assumption that graphic design is located predominantly as part of Design, and the importance attached to the question about whether graphic design is a science or an art is less relevant. This still raises questions relating to the respective influence of the sciences, and the humanities, in graphic design (the same can be said in reverse). Is one or the other more dominant? Or is this now a futile question that is better answered from the perspective of the context within which graphic design is situated.

Graphic design, at times, must draw on the values associated with the sciences, and the humanities. Often both. In this sense, Figure 5 depicts the physical, material culture dimension of design, and graphic design, located at fulcrum of the pendulum that is constantly swinging between the dual metaphysical domains of Science and the Humanities. The characteristics associated with these dimensions – left and right, verbal and visual, explanation and persuasion, objectivity and subjectivity, orderly to disorderly thinking – are important to designing. But it has been argued that at the outset, graphic design does not necessarily assume the values associated with one or the other [14]. Whereas Cross [9] suggests that design is concerned with ‘appropriateness’, the same can be said of graphic design. In this sense, we might place more emphasis on the differences between graphic science, graphic design, and graphic art, but this is not space here to explore this more fully.

6.0 Summary and conclusions

In this paper we have explored three different ways that diagrams have been used to depict graphic design. In doing so, we have attempted to ‘map’ the subject by identifying dimensions on two

levels. On one level, what we will call here the macro level, the dimensions are recognised through the work of Archer as Science, Humanities and Design. Science and Humanities, it has been argued [1], is more concerned with the metaphysical. Design, on the other hand is more concerned with physical, or material, culture. On an intermediate level graphic design can be recognised through terms often used to describe the basic elements that make up the subject. Word and image are frequently used, if recognised as being general. Although, these words are useful and representative of the various academic and practical use of terms to describe polarised aspirations of the subject. These exist as extreme ends of a continuum. If we combine the triangle of human knowledge and ability, with the intermediate dimensions of graphic design developed earlier by Harland, (and aligned with the approaches of Brown and McCoy), we begin to see the emergence of a ‘map’ to guide the future, see Figure 6.

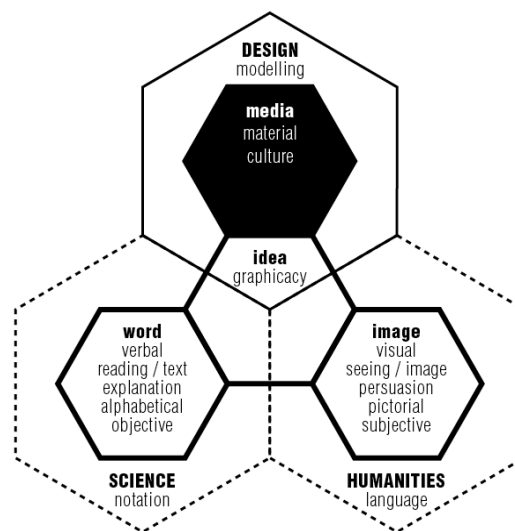


Figure 6. The macro and intermediate dimensions of graphic design.

With regard to using a model to think about the future of graphic design (the starting point for this paper) we can identify the role of individual activities, and occupations, past, present and future. For example, the emergence and recognition of graphic design happened after five hundred years of continuous development in the print trade, starting with the first Guttenberg bible in fifteenth century Germany. According to Nigel Roche, librarian at St Bride’s printing library in London, Guttenberg’s idea was a mixture of scientific knowledge, humanistic faith, and an ability to synthesise a number of social, cultural and economic factors.

This paper has attempted to respond directly to demands that ‘we can no longer chart [graphic design’s]... territories solely by the products of its practice’, as Silas Munro [17] puts it. In doing so, we have attempted to reaffirm the idea that graphic design is first and foremost part of design, something that critic Rick Poyner [24] thought worth reminding graphic designers about when reviewing the New Views 2 conference in London 2008.

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6.6 Design Issues journal paper

The following paper is slightly amended and reformatted, and has been published as in *Design Issues*, 27, (1), 21–34.

The Dimensions of Graphic Design and Its Spheres of Influence

This paper further expands on the concern about how we depict graphic design to explain its relationships (both “internal” and “external”) for the purposes of education, research, and practice. The initial development of this concern led to the identification of what has been described as the critical dimensions of graphic design, and this inquiry has required the analysis and proposed redefinition of the subject’s plural domains. The attempt to depict these critical dimensions, or domains, benefitted from a diagrammatic modeling exercise, discussed formally in 2007¹ after having first been outlined a year earlier.² This exercise demonstrated how the traditional definitions from which the subject emerged and with which it became identified in the first half of the twentieth century could be represented in diagrammatic form, creating a contemporary interpretation of the subject. The present author has used the visual method of diagrams as a form of rational inquiry to illustrate the shift from traditional to contemporary ways of thinking about the graphic design (see Figure 1). The traditional interpretation of graphic design in diagrammatic form by this author, seen on the left, owes much to the way urban design is shown, by Jon Lang in 2005, to have emerged from the overlap between architecture, landscape architecture, city planning and civil engineering.³ Whereas the contemporary model seen on the right evolved from numerous attempts by this present author since 2001 to use diagrams as an effective tool for teaching graphic design to students within and without the subject.

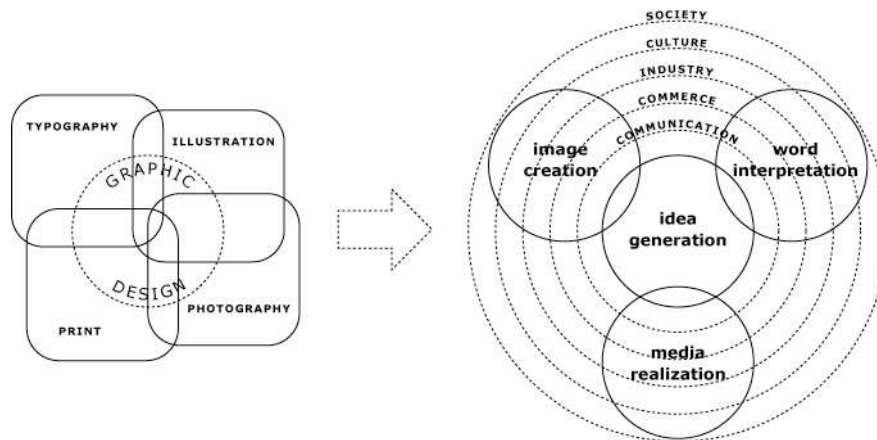


Figure 1. A diagrammatic representation of the traditional domains from which graphic design emerged (left), and an integrated model that links four key dimensions with the wider context. This model recognizes the Idea, in the Platonic sense, as central to an integrated “thinking and doing” process.

1 First discussed formally by the author of this paper in the conference paper, “Redefining the plural domains of graphic design and orientating the subject towards a model that links practice, education, and research.” International Association of Societies of Design Research 2007: Emerging Trends in Design Research, November 12-15, The Hong Kong Polytechnic University.

2 Outlined in a presentation, “On the road to find out” at Finding the question to the answer: a graphic design research symposium, Nottingham Trent University, September 13, 2006.

3 Lang, J. (2005). Urban design: a typology of procedures and products. Oxford: Architectural Press. 394.

From the diagram on the left in Figure 1, we can see the roots of graphic design in four very distinct but related activities: typography, illustration, photography, and print. Each of these activities has its own independent and interdependent history. This interpretation of graphic design, and the traditional definitions drawn from it, remained intact until the early 1990s⁴; but since then, a wider appreciation of the subject's real potential as a profession, field, and discipline has been constrained by it. Consequently, we have seen further proliferation of and numerous alternative descriptions for what is essentially the same process of design. These new descriptions often align themselves with new technologies (e.g., the Web) or new marketing initiatives (e.g., the proliferation of the term "branding"). Not surprisingly, graphic design's light appears to have dimmed during this period, as more specialised subjects such as illustration, and other closely related disciplines such as information design asserted their independence. Such assertions have resulted in some confusion in the graphic design "discipline," and in the wider contexts within which graphic design functions.

To explore the relationships in graphic design, and to demonstrate the critical dimensions of the subject without relying on traditional descriptors, a new diagrammatic model was introduced by the author in 2007 that uses a different set of terms drawn from graphic design writing and other non-design disciplines. These terms focus less on the previously described disciplines from which graphic design emerged, and more on how graphic designers think and act, as interwoven with their many different contexts. In this sense, graphic design has been depicted as a unified thinking and doing activity that involves idea generation, image creation, word interpretation, and media realization, for industry, commerce, culture, and society. Communication, with its theories, models, methods and practices, is also recognised as central to the process of making meaningful representation.

This model was generated as an attempt to create a basic theoretical model for use in an educational context in the United Kingdom. It placed the generation of ideas at the heart of graphic design thinking and practice, thus aligning with philosophical debate from Plato to Kant. It also argued that the traditional domains of typography, illustration, photography, and print, while contributing significantly to graphic design, are inadequate terms for describing what graphic design is, and what graphic designers do. This configuration shows how the concentric circles, representing the contextual domains, orbit the ideas domain, and yet through the communication domain are coded before being expressed as word and image, through media. Or, using the words of Stuart Hall, 'codes which govern the relationships of translation between' the shared 'conceptual maps' and language systems' of a culture.⁵

In this paper I critically examine this contemporary model and consider its usefulness from a historical perspective. Note that, in the study of graphic design history, we have been told that historians have their "preferences" and "prejudices" in their interpretation of history,⁶ and that history in general is

⁴ See Alan and Isabella Livingstone's *Dictionary of Graphic Design and Designers*. (London: Thames and Hudson Ltd., 1992): 90. Surprisingly, this definition remained intact in the second edition issued in 2003.

⁵ Hall, S. (Ed.). (1997). *Representation: cultural representations and signifying practices*. Milton Keynes: The Open University. 21

⁶ Steven Heller, *The Beginning of History*, in *Graphic Design History*, by Steven Heller and Georgette Balance. (New York: Allworth Press, 2001), ix.

“either a moral argument with lessons for the here-and-now or it is merely an accumulation of pointless facts.”⁷ This paper is equally guilty of preferences and prejudices—those of someone who for two decades was concerned with the “making” process in graphic design. This process amounted to the doing and the thinking, or regarding the latter, what has been described in the Platonic sense as a “theoretically distorted” process of idea generation.⁸ It is written from the perspective of a practitioner-turned-educator, whose desire is to further identify core beliefs and activities of graphic design at a time when technological change and political influence too often conspire to bring about the demise of graphic design, rather than enhance its reputation as a force for good.

If there is any truth in the notion that “no practitioner is a good historian” and that the historian’s work “often has little relevance for the practitioner,”⁹ the intent of this paper is theory-building based on a challenge of recent historic perspectives that place graphic design as a declining twentieth century phenomenon in parallel with print media. The issue emerges auspiciously in recent conferences that take the name of graphic design in the United States and the United Kingdom, as designers call for a new subject name that “truly” reflects the graphic designer’s changing role. This expanded role is reflected in the significant increase of undergraduate programs in closely related subject areas, many of which are grounded in graphic design’s thinking about curriculum. Few are yet to emerge as models that demonstrate significantly different approaches to the subject, and many agitators for change fail to recognize that graphic design as an integrated process concerned primarily with relationships is not changing—but its context most certainly is. Victor Papanek¹⁰ criticized this in 1975 as a “relabeling” process; and one might still ask: Beyond the cleverly articulated program validation documentation, what is the difference between graphic design, graphic communication, graphic communication design, and the rest!?! This criticism is vivid and stimulates the belief that there is still much to be known about graphic design as process, as well as product.

This paper considers the usefulness of theoretical modeling in graphic design and seeks to build a closer relationship between the work of educators, researchers, theorists, historians, critics, and practitioners (or crafts people) in a shared territory that is facilitated by the metaphor of a diagrammatic model. It is predominantly a practitioner’s response to a perceived need for this form of diagrammatic representation; it is offered as an aid to identifying the future development of graphic design in an academic context—one that is more integrated with practice, if that integration is desirable.

History has played a part in formulating such a model, consistent with Jessica Helfland and William Drentell’s view that “mapping the future of the profession will be difficult without looking back at our history to get a better idea of where we are going.”¹¹ This paper looks ahead by acknowledging the past. Language use plays a critical role. For example, the use of the term “print” in basic definitions of the subject, as will be seen, is an element of the graphic design making process

7 Andrew Marr in *A History of Modern Britain*. (London: Macmillan, 2007), xxii.

8 Flusser, V. (1999). 'About the word design' in 'The shape of things: a philosophy of design'. London: Reaktion Books.

9 A Danziger Syllabus in *Graphic Design History*, by Steven Heller and Georgette Balance. (New York: Allworth Press, 2001), 333.

10 In Bierut, M., Helfland J., Heller S., Poyner, R. (Eds.), *Looking closer 3: classic writings on graphic design*. New York: Allworth Press. 252

11 Jessica Helfland and William Drentell, *What’s so graphic about graphic design?* March 10-11, 2007. Pasadena. Reviewed in *Eye Magazine*, No 64, Vol. 16, Summer 2007.

that is practical; but in content and context, print is arguably much less important than, for example, choice of typeface. In fact collaborative discussion about content and communication context more often ignores the technical aspects of production.

The Importance of Language

One might ask: Should there be a concern about how language is used to describe what graphic design is? Perhaps there should be if that language limits an understanding about how far a subject can be appreciated and developed.

Dictionaries play an important role in determining the use and understanding of language. Attempts to “stabilize language” in the form of dictionaries have been a preoccupation for 4,000 years, and more recently, “specialized dictionaries” have become a common reference tool in modern life, trying to “make clear the terms and definitions for special subdivisions of knowledge.”¹² Since the early 1990s graphic design has been recognized as its own special subdivision of knowledge with its *Dictionary of Graphic Design and Designers*. Although a second edition appeared in 2003, it retains a traditional, and arguably outdated, definition for graphic design: “Generic term for the activity of combining typography, illustration, photography and printing for the purposes of persuasion, information or instruction.”¹³ This definition is a reasonable attempt to capture the multidisciplinary aspect of the subject and its origin, and it forms the basis for the image shown on the left side in Figure 1. But it is limited when compared to the language used in discussion about graphic design today, (and since the 1980s), for what might be increasingly recognized as a “transdisciplinary”¹⁴ subject, given its tendency for “personal,” “local,” “strategic” and “specialized” outcomes.

However, it is ironic that at the point when educators in graphic design felt confident enough to establish a specialized dictionary in the early 1990s—working to clarify terms and definitions for this special subdomain of knowledge—the ‘making’ activity associated with graphic design was undergoing massive transformation as the advent of new technologies suddenly removed barriers of entry for many potential practitioners. During this period, and since, language to describe graphic design has been unstable, and this lack of stability in itself demands attention if the subject is to develop. Language to describe graphic design therefore must be a contemporary concern, and it needs the urgent attention of those concerned with graphic design.

As a lexicon, language is a method and system of communication, often adopted and adapted by distinct communities in spoken and written forms. More specifically, the function of language is intricate. The *Cambridge Encyclopaedia of Language* tells us that its primary function is the communication of ideas, and in this sense it is “referential,” “propositional,” or “ideational.” But it also functions as emotional expression, social interaction, rhythm and control, and accountability; it is instrumental and an expression of identity.¹⁵ In fact, at times

12 Sharon Poggenpohl, Paima Chayutsahakij, and Chujit Jeamsinkul, Language definition and its role in developing a design discourse. (*Design Studies*, Volume 25, Issue 6, November 2004), 579-605.

13 Alan and Isabella Livingstone, *Dictionary of Graphic Design and Designers*. (London: Thames and Hudson Ltd., 1992): 90. (This definition remained intact in the second edition issued in 2003.)

14 Brown, V. A., Harris, J. A., and Russell, J. Y. (Eds.). (2010). *Tackling wicked problems through the transdisciplinary imagination*. London: Earthscan Ltd. 5.

15 David Crystal, *The Cambridge encyclopedia of language*. (Cambridge University Press, 1987). 10-13.

the communication of ideas is the least important factor, and language frequently functions as emotional expression. For example, swear words or words of amazement do not describe how to fix a leaking tap. In addition to its regulatory function, it has a social function—the simple “hello” or a discussion of the weather. In such cases, language is a form of maintenance; Malinowski, cited by David Crystal in *The Cambridge Encyclopaedia of Language* describes it as having a “phatic” function, or being simply social and signifying, rather than serving as specific communication.

The basic modeling process shown on the right side of Figure 1 tried to focus attention on more appropriate use of language to describe graphic design, and on its historical influences and how they might be reinterpreted through a new use of language derived from subject discourse. This language is integrated with diagrammatic explanations that help to explain the key relationships. The newer model challenged traditional views of the subject and proposed a unified process of idea generation, word interpretation, image creation, and media realization for social, cultural, industrial, and commercial contexts. This diagrammatic representation is a starting point for developing future descriptions of the subject that are not determined and defined by contributing factors but that establish a foundation for a trans-disciplinary rather than multi-disciplinary dialogue.

From Basic to Applied Research

The initial attempt to depict graphic design in diagrammatic form grew out of a desire to identify core beliefs and general principles. Its initial purpose was as a visual teaching aid to help students in higher education identify what shaped their learning in the subject. Higher education in the United Kingdom therefore provides the context for this exercise. In this sense it is best described as a “basic research” modeling exercise that demonstrates, to some extent, the collaborative relationships and processes that are known to exist within the subject of graphic design.¹⁶

This paper reports on an attempt by the author to develop this “basic research” modeling exercise by examining its potential to represent relationships between a wider range of actors, functions, ideologies, and contexts. In this sense the paper moves beyond the use of typography, illustration, photography, print, word interpretation, image creation, idea generation, and media realization. To make this move, the idea of metaphor is used to help frame the complexity that arises once descriptions and explanations become more specialized and more remote from the traditional definition offered by Livingstone and Livingstone in the early 1990s. In their book, *Metaphors We Live By*, George Lakoff and Mark Johnson argue that metaphor dominates our conceptual system for what humans think, experience, and do.¹⁷ With this ubiquity in mind, this discussion borrows a metaphor used by Potter and Sarre to explain the dimensions of society as a continent with a number of countries, each of which has “its own history, way of life, dialect, institutions, literature, and ideology.”¹⁸ This idea can be applied to the origin of graphic design (as well as other subjects, fields, and disciplines that

16 Shaun Cole focuses on the collaborative nature of the subject with a focus on working practices; his approach moves beyond traditional subject coverage, is more inclusive than usual, and emphasizes teamwork. *Dialogue: Relationships in Graphic Design*. (London: V&A Publications, 2005).

17 George Lakoff and Mark Johnson, (1980) *Metaphors we live by*. Chicago: The University of Chicago Press.

18 David Potter and Philip Sarre, *Dimensions of Society*, (London: Hodder and Stroughton, 1974), 3.

have grown from the need for a holistic approach—urban design being one of them). Graphic design emerged from core territories, parts of which are populated by separatists, some countries are claimed by more than one group, and other regions are yet to be explored. If graphic design is a social activity, with relationships at its heart, then this metaphor is appropriate and the question emerges: What might a graphic design nation look like? This inquiry is concerned specifically with the interests, motivations, preoccupations, and intentions of such a population. In this sense, it attempts to move from a state of basic research to applied research, toward a “clinical research” tool for “micro level research.”¹⁹ This approach uses diagrams as a visual method for rational inquiry. James Elkins describes the idea of using diagrams in this way as a “diagrammatic fantasy” that is also a “rational inquiry, because we might learn as much by what the diagrams suggest as by applying pictorial and linguistic evidence.” “Thinking about images means being led into certain thoughts by images.”²⁰

Thinking about the potential application of the diagrammatic models shown in Figure 1 has revealed weaknesses in their scope and diversity as tools for thinking about graphic design beyond a basic level. For example, neither the traditional nor the contemporary diagram incorporate the idea of design in graphic design as a significant domain, while the “graphic” aspect is implicit in typography and illustration (as in the Greek “graphikos”), in photography and printing (as in lithography). What’s more, graphic designers generally have not used their own skills (or “tools of their trade”) as creators of many diagrams to explain what they do, or what their subject is, in diagrammatic form. The exceptions appear to be Katherine McCoy (1990) and Bruce Brown (1979)²¹ and more recently Karel van der Waarde (who emulates the concentric circles as context configuration seen here in the contemporary model in figure 1).²² Historical perspectives about graphic design, from Hollis (2001), Meggs (2006), Jubert (2006), Heller and Balance (2001), and Eskilson (2007), to name a few, do not venture beyond the products of graphic design as visual data.

Toward a Model for Education About Graphic Design

An attempt to model the dimensions of graphic design in visual form might be considered foolish, despite the visual skills associated with the discipline. Heller points out that “various models have been adapted from academia and journalism ... this includes commentaries, manifestoes, reviews, editorials, and reportage,” and they usually are derived from the “-isms, -ologies, and -otics” with which these realms are associated.²³ Few of the models are said to be discerning. With this critique in mind, the author embarked on this current exercise with a degree of skepticism.

Aside from the work of historians, explaining graphic design through “graphic design” appears to involve the production by graphic designers of self-promotional items, or their writing and designing of books. There is little

19 These “basic,” “applied,” and “clinical” descriptors are taken from Ken Friedman’s paper, “Theory construction in design research: criteria, approaches, and methods.” (*Design Studies*, Vol 24, No 6, November 2003), 510-511.

20 Elkins, J. (1999). *The domain of images*. New York: Cornell University Press, p. 87.

21 These examples are discussed in Harland, R.G. (2009). “The Dimensions of Graphic Design: in Theory.” Paper presented at the International Association of Societies of Design Research: Design: Rigour, and Relevance, Coex, Seoul, Korea, October 18–22, 2009

22 van der Waarde, K. (2009). On graphic design: listening to the reader: Avans Hogeschool Research Group Visual Rhetoric AKV | St. Joost. 25.

23 Bierut, M., Drenttel, W., Heller, S., Holland, D.K. (1997). (Eds.) *Looking Closer 2: Critical Writings on Graphic Design*. New York: Allworth Press.

evidence of the use of diagrams in recent critical writing about the subject, although as some green shoots of research and theory have emerged in the subject, we are beginning to see diagrams used to accompany text explanations about design process and research methods.²⁴ And if we return to the earlier use of continent as a metaphor, talk of boundaries and landscapes is not uncommon in graphic design writing.²⁵ There is even a feeling of pointlessness about analyzing graphic design too much, when Newark comments that “dividing up graphic design into categories is essentially a fruitless exercise ... ‘design’ is a portmanteau term: It covers a number of interlaced activities that do not fall into distinct categories.”²⁶

In contrast to this view, those interested in design studies, rather than graphic design, try to explain design using both diagrams and textual matter. In Figure 2, Breen²⁷ suggests that design is the “in-between” realm that bridges the sciences (knowledge) and the arts (expression), and this location does not detract from design’s having its own core values. Design is thought by some to be a “third way,” with certain aspects of its activity incorporating artistic as well as scientific thinking. Considering this view from the perspective of graphic design, those practitioners with artistic inclinations will place a high value on “subjectivity, imagination, commitment, and a concern for “justice,” whereas those motivated by the acquisition of “knowledge” (or a more scientific approach) will seek out “objectivity, rationality, neutrality, and a concern for the ‘truth.’”²⁸ Consequently, graphic designers with an interest in music might wish to design for the music industry, or the cultural sector in general, where self-expression and the needs of the “artist” might be better understood, appreciated, and tolerated. Similarly, an interest in more “scientific” approaches to graphic design might lead a graphic designer toward information design, or a systems approach to their work, such as designing corporate identity.

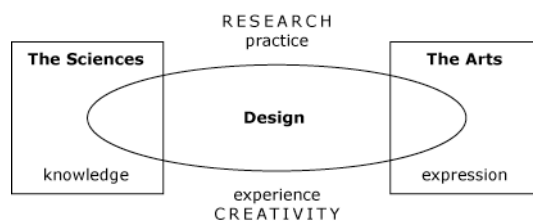


Figure 2. The In-Between Realm of Design.

Diagrams appear to be valuable tools, and they are used for eliciting responses.²⁹ Other design fields use diagrams to accompany explanations about the

24 Audrey Bennett, *Design Studies: Theory and Research in Graphic Design*. (New York: Princeton Architectural Press, 2006). 14.

25 Geoffrey Fried and Douglas Scott state that “For some time now, the landscape and boundaries of graphic design have been shifting.” *The Common Core*, ed. Steven Heller, *The Education of a Graphic Designer*. (New York: Allworth Press, 1998). 171.

26 Newark, Q. (2002). *What Is Graphic Design?* Switzerland: Rotovision SA. isbn 2-88046-539-7. Oxford Illustrated Encyclopedia. (1993). Vol 5. The Arts. Oxford University Press.

27 Jack Breen, “Designerly Enquiry,” in *Ways to study and research urban, architecture and technical design*, T.M De Jong and D.J.M van der Voort, Ed. (Delft, DUP Science, 2005). 97.

28 This draws from Nigel Cross’s discussion about the culture of science, humanities, and design. Cross, N. (2006). *Designerly ways of knowing*. London: Springer-Verlag. 2.

29 Nathan Crilly, Alan F. Blackwell, and P. John Clarkson, “Graphic Elicitation: using diagrams as interview stimuli.” *Qualitative Research*. Vol. 6(3) 341–366. (London: SAGE Publications, 2006).

dimensions of their subject. For example, urban design is partially explained with the use of a diagram to depict contexts, dimensions, and implementation.³⁰ An example of this perspective is shown in Figure 3 (redrawn for the purpose of this paper).

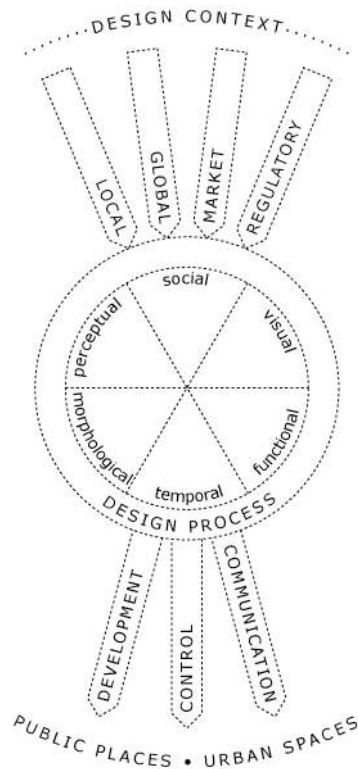


Figure 3. The Urban Design: “Context, Substantive Dimensions, and Implementation”

In acknowledgement of the views expressed by Glaser about segmentation, and contrary to the skepticism of Heller regarding the various attempts to theorize, or model, the subject of graphic design, the question arises: How might the critical dimensions of graphic design be modeled in diagrammatic form? What might such a “scientific” model look like to the graphic design and non-graphic design communities? These questions are worth pondering.

Many academic disciplines are familiar with the use of diagrammatic models, considering them essential to the thinking and teaching of the subject. Waugh states that models “form theoretical frameworks which may be difficult to observe in the real world, but against which reality can be tested,” and in the 1960s Deutsch apparently identified three main advantages to the use of models in the social sciences.³¹ He argued that models have an “organising function”; make complicated or ambiguous information clear so that “it can guide the student or research to key points of a process or system”; and help to formulate hypotheses

30 Mathew Carmona, Tim Heath, Tanner Oc, and Steve Tiesdell. *Public places – urban spaces: the dimensions of urban design*. (Oxford: Architectural Press, 2003). vi.

31 Waugh, D. (2000). *Geography: an integrated approach* (3rd ed.). (Thomas Nelson and Sons Ltd. 1995). 507.

in research and “predict outcomes.” Models may be “structural” (diagrammatic) and “functional” (relational).³² This paper is concerned with the latter type.

Speculating About the Future of Graphic Design

This discussion about the use of diagrammatic models thus far has focused on evaluating the past as an impetus for embracing a future that links practice, education, and research. This particular work began in the early part of the millennium, but now there is a wider acceptance of the need to take a step backward before taking two steps forward. In 2007 Helfland and Drentell were reported to suggest that “mapping the future of the profession will be difficult without looking back at our history to get a better idea of where we are going,”³³ indicating there is clearly a mood for reflection before future projection.

The intention of including the initial basic contemporary model shown in Figure 1 was to present the idea that there are four key “practical” domains and four key contextual domains that are mediated through the domain of communication. This schema presents the notion that idea generation³⁴ (or “ideation”) occupies a central place in graphic design and played a significant role in establishing the subject’s credibility in the twentieth century. From this central point, the contextual domains, with the social domain at the outer limits, give the visual impression that commerce, industry, culture, and society cover the domains of media realization, word interpretation, and image creation. This “transmission” has a “ripple” and “reverse ripple” effect, pushing out as well as drawing in, influencing as well as being influenced by, these “practical” domains. The model also demonstrates that the domains of idea generation, image creation, word interpretation, and media realization are linked to each other through the idea domain. These areas were initially thought of as domains, and the visual appearance suggested boundary lines. This technique is a common one used in modeling, the intricacies of which will not be explored here. This diagrammatic approach, as a visual method, worked well for the purpose of creating a basic research model, but it is limiting in scope because of the suggestion that these domains are fixed surface areas, equal in size, and it is limiting as a device for interpreting complexity. For example, how might this approach incorporate the ideas about design and its relationship to science and humanities?

A return to the metaphor about graphic design as a continent, or nation, is useful to reconsider at this point. An approach to the use of diagrams found in geography helps reconfigure the idea of overlapping circles used in the initial basic model, as dimensions and contexts. More specifically, the diagramming technique used by Walter Christaller to explain “central place theory”—one of a number of theories for measuring settlement patterns and the “spacing and function” of settlements—offers a useful approach. His primary concern was the distribution and location of settlements, and their “sphere of influence” over inhabitants in the surrounding area. He used the term “central place” for each

32 Denis McQuail and Sven Windahl, (1981). *Communication models for the study of mass communication*. (England: Longman Group UK Limited, 1981). 2-3.

33 Jessica Helfland and William Drentell, “What’s so graphic about graphic design?” March 10-11, 2007. Pasadena. Reviewed in *Eye Magazine*, No 64, Vol. 16, Summer 2007.

34 “Idea generation” is a familiar term and recognized as one of the methods used in graphic design education as a means to develop thinking skills. Ann C. Tyler, “Educating Design Citizens: Passing on a Mind, Body, Spirit Practice,” in *Design Studies: Theory and Research in Graphic Design* by Audrey Bennett. (New York: Princeton Architectural Press, 2006). 333.

settlement and depicted them using circles to show the boundary, or sphere of influence, of the central places.³⁵

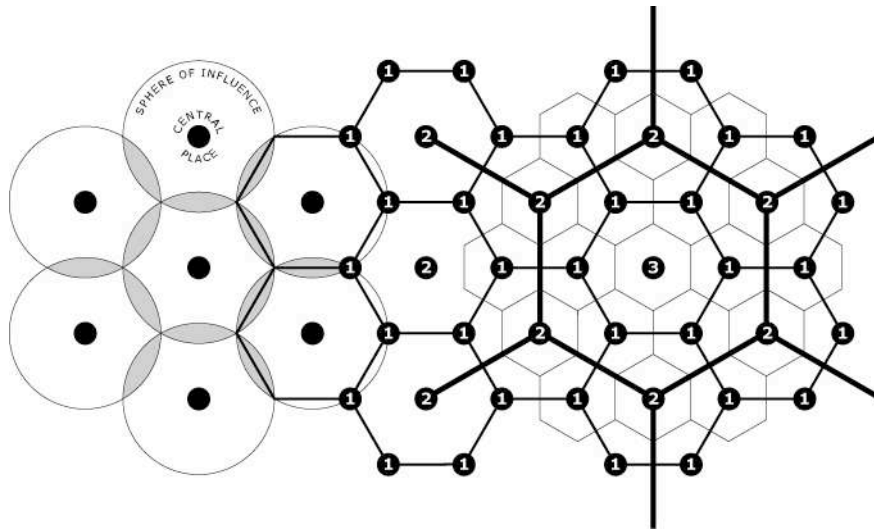


Figure 4. Christaller's Development of First-, Second-, and Third-Order Settlements in a Hexagonal Model That Grew from a Circular Boundary Line Approach.

The diagram in Figure 4 explains the development of Christaller's theory, the stages of which are usually shown as a series of separate images. Reading from left to right, it illustrates how Christaller identified boundaries of trade areas and the resulting spheres of influence. These overlap to identify areas served by more than one central place, overcoming areas that were unserved by any central place when circles simply "touch" rather than overlap. Overlap areas are shaded grey. In these overlap areas, first-order settlements are identified (e.g., as villages). These settlements are located as hexagonal trading areas are established, and then areas emerge as second-order settlements (e.g., a town) and as more prominent. This pattern gains in complexity with the growth of third-order settlements, which have a wider sphere of influence over first- and second-order places. This influence is shown on the right side of the diagram in a hexagonal pattern that takes in three scales of influence. The diagram shows how one third-order settlement serves 6 second-order settlements and 24 first-order settlements. Overall, 31 settlements are ranked in order of their sphere of influence.

This visual representation, and theoretical base, present a useful opportunity to explore the significant influences on graphic design at macro and micro levels. As an organizational device, this approach is helpful for recognizing disciplinary perspective, but it is worth remembering that boundary lines are a modeling technique, and, like a state or county boundary, they do not exist in the physical sense. Boundary lines are not fixed, but permeable, with significant overlap between approaches that might prompt new spheres of influences to emerge, old ones to dissolve, and new ones to be rediscovered.

The consideration of a hexagonal structure can be useful for discussions about "the basic duality of graphic design" as a "rational and an artistic activity"³⁶ and

35 Waugh, D. (2000). *Geography: an integrated approach* (3rd ed.). Thomas Nelson and Sons Ltd. 408.

36 Frascara, J. (1988). "Graphic Design: Fine Art or Social Science?" *Design Issues*, 5, (1), 18–29.

reinforces the earlier idea shown by Breen that design (and graphic design) is determined by both the sciences (science and knowledge) and the arts (humanities and expression). Taken further, this author has configured a diagram that makes explicit the ideas of Bruce Archer³⁷ and Nigel Cross³⁸—that design is considered a “third culture” in addition to science and the humanities. This possibility has been discussed in detail elsewhere using the idea that design is at the fulcrum of the pendulum that swings between science and the humanities.³⁹ This relationship can be seen on the left in Figure 5.

As part of the metaphor of a pendulum, an attempt was made to link a number of terms that appear in debates about duality throughout the literature: word/image, verbal/visual, reading (text)/seeing (image), explanation/persuasion, alphabetic/pictorial, objective/subjective. Frasca's (1988) use of rational/artistic can be added to this. For the purpose of this discussion, the diagram on the right side of Figure 5 emphasizes the basic terms of “writing” and “picture” as appropriate to the “graphic”; these terms are adopted from James Elkins's exploration of the problems with classification in the domain of images.⁴⁰ These are in place of the phrases used earlier: word interpretation and image creation (interpretation and creation having been initially chosen for their respective linguistic and artistic connotations). A more detailed investigation of Elkins's work reveals the use of the “writing” and “picture” classification to be limited in the sense that writing is not exclusively scientific, nor are pictures exclusively the preoccupation of the humanities. He also considers the term “notation” as a third important descriptor before explaining as many as seven categories of images.

The diagram on the right side in Figure 5 conveys the idea that graphic design at a basic level is concerned with ideas about writing systems and pictorial representation, and with their realization in the material form of an artifact. “Artifact” is substituted here for the “media realization” terminology used in Figure 1, and is appropriate because it may refer to either a functional or a decorative object. It is assumed to be a designed object in the physical sense, and the immediate metaphysical terrain that surrounds it might be called the place where design thinking happens.

These new diagrams try to show how we might start to consider the relationships between what might be described as the macro and meso dimensions of graphic design. Trying to look more closely at the micro level requires the complexity of Christaller's first-, second-, and third-order diagrammatic interpretations.

37 Although Archer was primarily concerned with general education, this author believes that any discussion about design in general education should align with discussion about design in higher education. Archer, B. (1976). “The Three Rs.” in B. Archer, K. Baynes, and P. Roberts (Eds.), *A framework for Design and Design Education: A reader containing key papers from the 1970s and 1980s* (pp. 8–15). Wellesbourne: The Design and Technology Association.

38 Cross, N. (2006). *Designerly ways of knowing*. London: Springer-Verlag.

39 Harland, R.G. (2009). “The Dimensions of Graphic Design: in Theory.” Paper presented at the International Association of Societies of Design Research, *Design: Rigour and Relevance*, Coex, Seoul, Korea, October 18–22, 2009.

40 A more comprehensive discussion about duality of terms can be found in Elkins, J. (1999). *The domain of images*. New York: Cornell University Press.

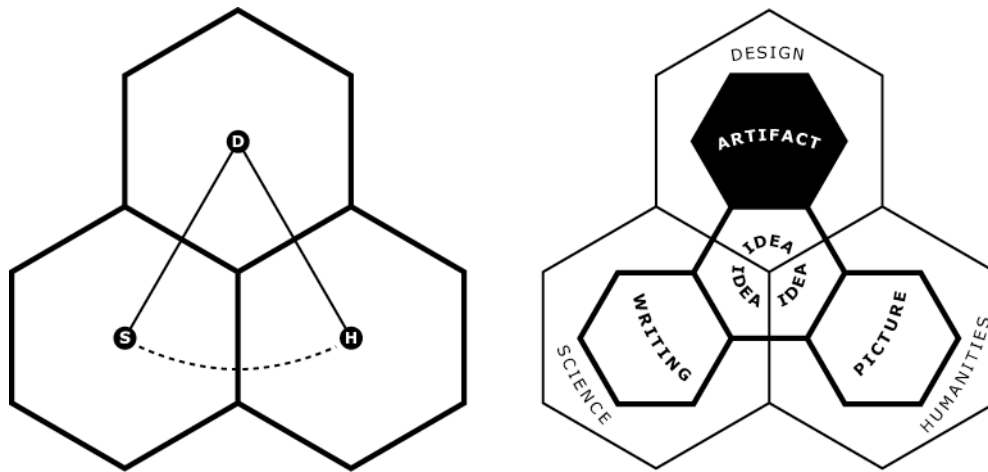


Figure 5: The Macro and Meso Dimensions of Graphic Design

Furthermore, the micro dimensions of graphic design (see Figure 6) and their depiction place greater emphasis on the complex relationships that influence the production of the graphic artifact. Micro is used in this context to suggest many influences that are equally balanced, rather than the perceived dominance in the past of craft. (Craft, be it in the form of typography, or printing, has its own macro and micro concerns.) The influences include human and contextual dimensions, some of the latter being sited at the interface between the artifact and its context. The human dimension might include the activities and ideas of practitioners who are concerned with a multiplicity of related activities: history, theory, criticism, research, education, and craft. These activities and ideas may be preoccupations carried out in the plural, or as an autonomous pursuit. The holistic view of the future of graphic design must see the practice of the craftsperson also as that of a historian, theorist, critic, researcher, and educator, as much as that of the historian is seen as theorist, critic, researcher, educator, and crafts person. What is known about history, theory, criticism, research, education, and craft all contribute to the forming of the artifact. Although other occupations can be added, the ones identified are what this author sees as the most important.

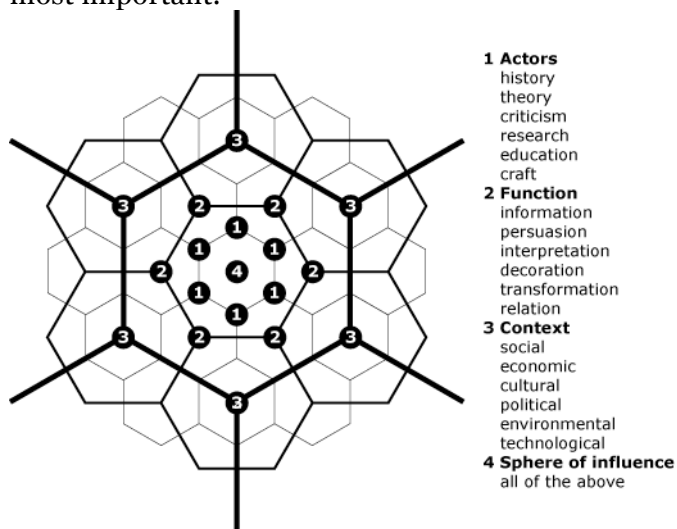


Figure 6: The Complex Spheres of Influence That Contribute to the Micro Dimensions of Graphic Design: Actors, Functions, and Context

The contextual dimension places importance on social, economic, cultural, political, environmental, and technological factors. A multitude of other concerns at a functional level, from both within and outside the graphic design literature, can also be introduced to the model: information, persuasion, interpretation, decoration, transformation, and relation, to name a few. The last of these, for example, is frequently the focus of sociological discussion. Individuals will associate and identify with these terms depending on their own disciplinary perspective, randomly aligning them with the human and contextual dimension.

Summary

This paper has tried to look more closely at the opportunity to depict graphic design in diagrammatic form. Such work appears to have been given little consideration across the near and distant spectrum of literature, despite the perception of diagrams as an integral part of graphic design practice, and the common use of diagrams to explain relationships in other academic subjects. The intention has been educational, as many of the ideas about depiction have been used in a higher education setting, and some of this content has been reported at design research conferences. It would seem that the words of Jorge Frascara in 1988—that graphic design had “developed without much theoretical reflection”—are still true, especially when considering explanations of what the subject is. Historians still report on and feature the objects of graphic design as the primary visual data, whereas criticism and theory have mainly come from a random selection of papers written over the twentieth century, often by those who would not necessarily identify themselves with the term “graphic design.”

With this situation in mind, this author uses a tool of graphic design—diagrams—as a way to explore and envision graphic design. This project is best described as work in progress, and, as is seen in the diagram in Figure 6, many “territories” remain unexplored. This paper is thus, at best, a summary of where the research currently resides. In fact, the diagram in Figure 6 can be presented in a much cleaner way, simply as three contained hexagons (shown in Figure 7 for those less willing to remove the connecting lines). This diagram is offered to support a discussion about aligning actors, functions, and contexts, in the spirit of what might be called artifact alignment, for which there is much to be written. But removing the lines goes against the spirit of recognition that all of the actors, functions, and contexts are visibly connected to each other through their respective spheres of influence. And they are part of a wider world beyond what is considered design. For some, this reality means placing their primary sphere of influence closer to another complimentary sphere—for example, an interest in social transformation through design education, or the relationships between design, craft, and technology.

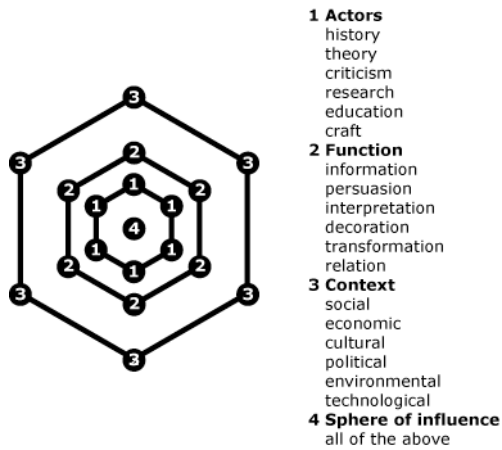


Figure 7: The Alignment of Artifact with Actors, Functions, and Contexts

Language has been discussed as an important part of this process, with the recognition that the traditional terminology developed out of the establishment of graphic design as a craft for commerce, but it must now be equally thought of as a tool for social, cultural and economic development. Transdisciplinary ways of thinking may well offer the impetus to overcome language barriers and unify a subject that sees history, theory, criticism, research, education, and craft occupying a shared territory.

6.7 Research strategies overview

Overview of research strategies based on the work of Martin Denscombe (2007).

Survey*Advantages*

- Data based on real-world observations more so than theory;
- Wide and inclusive;
- Useful for generating large amount of data for quantitative study;
- Flexible for qualitative data analysis
- Relatively inexpensive.

Disadvantages

- Risk of emersion in the data and lack of accountability;
- Quantity of data puts detail and depth at risk;
- Accuracy and honesty vulnerable to oversight;
- Internet survey is limited by accessibility;
- Response rates are unpredictable.

Case study*Advantages*

- Reveals subtleties and intricacies;
- Possible to use a variety of methods;
- Triangulation is implicit when multiple methods are employed;
- Uncontrolled and useful for naturally occurring phenomenon;
- Useful for concentrated small-scale research;
- Theory building and theory testing.

Disadvantages

- Opportunity for Generalisation is limited;
- Vulnerable to accusations of lacking research rigour;
- Boundaries are difficult to define, data sourcing can be indecisive;
- Accessibility issues likely to occur;
- Observation can make natural occurrence unnatural.

Experiments*Advantages*

- the 'spirit of scientific research' that is repeatable by others;
- Precision of measurement;
- Convenient, cost, and time-efficient;
- A 'credible' approach associated with 'hard science'.

Disadvantages

- Potential difficulties with ethical and practical/political issues;
- Unreal world setting leads to artificiality;
- Experimental group and control group matching difficulties;
- Relevant variable control difficult in practice.

Ethnography*Advantages*

- Direct observation;
- Empirical research into people and places;
- Useful for developing and testing theory;
- Intricate, subtle, rich in depth and detail;
- Holistic explanation about processes and relationships;
- Distinctive subject matter;
- Able to access the view held by members of a culture;
- Self awareness regarding researchers role;
- Maintenance of the subject 'natural' setting.

Disadvantages

- Conflict between 'realist' and 'relativist' position;
- Fragmented 'pictures' that can stem from stand-alone descriptions;
- Risk of descriptive rather than analytical, critical or theoretical;
- Ethical issues relating to privacy;
- Access to settings;
- 'Blind spots' inherent in familiarity with subject.

Phenomenology*Advantages*

- Authentic portrayal of complex phenomena;

- About experiences of 'people in the everyday world;'
- Economical to carry out;
- Everyday life leads to interesting narrative for the audience.

Disadvantages

- Limited scientific rigour: subjectivity, description & interpretation;
- Reliance of description can ignore analysis;
- Opportunity for Generalisation is limited;
- Relatively mundane;
- Vulnerable to presuppositions.

Grounded theory

Advantages

- Rigorous credible rationale for qualitative research;
- Adaptable;
- Practical and pragmatic;
- Offers useful analytical tools;
- Makes effective use of computer technology for coding;
- Theoretical outcomes from data
- Grounded in reality rather than speculative abstract theory;
- Flexible, suited to new topics and new ideas.

Disadvantages

- Lacks planning precision and predictive theory sampling;
- Risk of separation from wider contextual factors;
- Prior conceptions of the researchers prior experience
- Data analysis complex;
- 'Not open to alternative interpretation'
- Theory is based on fieldwork data and 'empiricist';

Mixed methods

Advantages

- Multiple perspectives provide an extensive explanation;
- Allows for the use of qualitative and quantitative analysis;
- Triangulation is implicit;
- Problem driven, practical, draws on different research paradigms;

Disadvantages

- Can be time consuming and expensive;
- Demands the acquisition of a wider researcher skillset;
- Complicated when balancing qualitative and quantitative approach;
- Pragmatism can be misconstrued as an 'anything goes' approach;
- Findings from different methods may not coincide.

Action research

Advantages

- Directly addresses issues in practice;
- Suited to practice orientated professional development;
- Workplace focus
- Practitioner research utilising practitioner knowledge

Disadvantages

- Workplace focus limits breadth of generalisation;
- Limited opportunity to impose controls due to practical integration;
- Nature of research constrained by workplace setting;
- Ownership issues;
- Labour intensive in beginning before benefits are revealed;
- Researcher is likely to be attached and partial.

6.8 Cycling case study report

The following report sits outside of the main body of this thesis, but was written by the Researcher (who is named as lead consultant) as a subsidiary project. Verbal comments about early drafts were provided Neil Stacey, Architect, (who is named as co-investigator). All photographs are by Robert Harland, and were taken as part of the ongoing visual research method used throughout this PhD thesis.

New approaches to visual communication
for walking and cycling infrastructure in the UK:
information, persuasion and decoration.

Consultancy report: phase one



Prepared by
Robert Harland and Neil Stacey
Nottingham Trent University
09 July 2007

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Summary

Visual communication in environmental contexts, through the application of signs and symbols, has recently become more of a widespread concern, having been little thought about since the 1970s. But it is increasingly recognised as a fragmented subject with as many different functions as there are message requirements.

Consequently, despite consistency in the application of regulatory sign requirements, the subject is little understood by built environment professionals. They are aware of problems referred to as 'street clutter' but not so much about a further category for concern – visual communication clutter.

There are few opportunities to view this subject holistically and consider the balance between information, persuasion and decoration, in private and public contexts.

This report examines the potential for these issues to be viewed through a single domain and field not usually associated with the built environment. It is focused on the context of the national cycling network in the UK, and outlines some key areas for consideration with respect to the design process that results in visual communication.

Evidence suggests that despite the recognition that good signs enhance network use, too often signs are poorly coordinated, are unhelpful, confusing and potentially hazardous. This report introduces some of the key themes that will contribute to building a better understanding of how to improve this very complicated problem.

1.0 Introduction

1.1 Context

This reports outlines initial findings from phase one of a consultancy project being undertaken by staff at Nottingham Trent University (NTU) for Sustrans, the sustainable transport charity based in Bristol in the UK. Sustrans is responsible for managing the National Cycle Network (NCN) in the UK, and has been in existence for approximately thirty years. As an established authority on cycling, they initiate and develop many projects nationally and internationally, promoting walking and cycling as part of a healthy lifestyle.

1.2 Project origination

During the second half of 2006, the consultancy team identified a number of concerns about the poor quality of some visual communication interventions associated with the NCN. Whilst it is known to Sustrans that the quality and effectiveness of such interventions is variable, this issue stimulated discussion at early meetings between NTU and Sustrans about a wider set of concerns and opportunities, about visual communication in general, and how a better understanding of it might help achieve future objectives regarding sign requirements and links to wider visual communication strategies. This report sets out to define how a better understanding of visual communication, and the process by which it happens—recognised primarily as graphic design (Aynsley, 2001, p.6)—can enhance future decision making on several levels.

1.3 Graphic design and the National Cycling Network

The role that graphic design plays in facilitating the use of the NCN cannot be overstated. To many users and non-users it is the NCN. Take away all of the many, and varied, text and pictographic forms of information, maps or road markings, and to the general public the network would be completely invisible, if non-existent. If all of these were removed tomorrow, although the network as it has been

conceived and planned would remain, it would only be known to those who had established it in the first place, or to others who use it frequently. Any other use would be coincidental and unconscious. If we agree with this basic assumption, we must conclude that graphic design is, to most people, the manifest representation of NCN. And yet the NCN as it has been established by Sustrans and continues to develop, has little or no control over the graphic design that so vividly represents the network.

To the non-cycling enthusiast, the network is invisible in the way that much of the visual communication in the public realm (and much of the public realm itself) just happens to be there. We experience it on unconscious and conscious levels, paying attention mainly when we need to. We allow red, amber and green traffic signals to control our behaviour; yellow lines on the road to determine where we might park; shop fascias to welcome us; advertisements to arrest us; and occasionally we become entranced when a carnival float passes by; or interrupted when protesters hold up placards; or physically hurt when we walk into a pole with a sign on top!

Most discussion about visual communication in association with cycling networks appears to focus on guidance for signing local cycling networks, and the benefits that this brings to informing, and persuading, the public to use the network. This has tended to be led by built environment professionals. This project takes a different viewpoint, that of graphic design, and the wider visual communication context within which it resides. Most of us recognise the term graphic design but how much do we know about it beyond surface representation? In practical terms it is the design process that unifies words and images, for the purpose of visual communication, across different media and environments. In an academic sense, it might be considered a social science. Some of the key dimensions of the subject are discussed in this report and cross-referenced with some current concerns of built environment professionals.

1.4 Project funding

This work is being undertaken as part of a SIS Consultancy Scheme, which is administered by the Knowledge Transfer Team at Nottingham Trent University (NTU). The scheme allocates funding based on an application and interview process, and draws its money from the Higher Education Funding Council (HEFCE). This project attracted a £10,000 award, the maximum amount available, and began at the beginning of 2007 after a series of three meetings that took place during the second half of 2006 between NTU and Sustrans.

1.5 Project phases

The project is presently planned in three phases. The first phase (upon which this paper reports) ran from February to April, and explored some of the key issues relating to early discussions about the project. The second phase will clarify the key aims and objectives, identify realistic targets, and formulate a project development strategy. Possible research methodologies will be developed and discussed with Sustrans in order to reach the targets. The third phase will report the findings, draw conclusions and make recommendations about how Sustrans might better consider the role of visual communication as a strategic tool, for better integrating the different communication needs of cycling networks.

1.6 Initial aims

After early discussion with Sustrans' Chief Executive, John Grimshaw, and Andy Cope, Head of Research and Monitoring, three initial project aims were outlined by NTU for wider discussion with Sustrans at a meeting in November 2007. These aims, listed under the draft title *New approaches to visual communication for walking and cycling infrastructure in the UK: information, persuasion and decoration*.

They were initially stated as:

- (i) to inform users and non-users about the extent of the local network;
- (ii) to persuade non-users about the benefits of using the local network;
- (iii) to use design and create a sense of pride and pleasure in the local network.

It is not yet clear to what extent this project can satisfy these aims. But, during the meeting in November, it was suggested that these aims should underpin everything that Sustrans does in future, with regard to visual communication.

2.0 Observations about visual communication in the built environment

It is important at this point to clarify some issues that arose during earlier discussions that led to the establishment of the project aims. These issues are two-fold; those that form the basis of concerns expressed initially by the authors of this report; and those expressed by Sustrans as additional objectives upon which such concerns might be focused.

2.1 Concern about overuse of signs

For some time now, there has been a developing widespread concern about an overuse of signage in the built environment, especially that which is directed at the motorcar user and the interface with pedestrians. This concern is growing and has recently appeared in national newspapers (Hamilton-Baillie, 2005), popular design trade press (Pearman, 2007, p. 10) and specialist academic journals (Hamilton-Baillie & Jones, 2005, pp. 39–47). In particular the issue is provoking negative public opinion through the national media (Massey, 2006) which has focused on an apparent lack of coordination between the many different types of sign requirements. In the UK it extends beyond the urban environment, including historic and rural locations, and has been a focus for attention by organisations such as English

Heritage, who in 2004 launched their 'Save our Streets' campaign. This offensive is directed at cleaning up street clutter created by over-zealous implementation of street furniture.

This apprehension can be traced back to the United States and what is possibly the most comprehensive study about the use of visual communication in the built environment – Stephen Carr's *City Signs and Lights: A Policy Study* (1973). The study reports on a research project carried out by Ashley/Myer/Smith, Architects and Planners, for the Boston Redevelopment Authority and The U.S. Department of Housing and Urban Development. It aimed to make recommendations about 'public policy for the design and control of a small but critical set of information sources in the environment: outdoor signs, lights and other information devices' (p. 2), and consider their function – described by the term they authored – as 'environmental information systems'.



The lack of coordination, and the potential for sign clutter to damage the visual quality of environments is increasingly recognised by cycling charities in the development of guidance documentation. But, at the same time they also appreciate, value and encourage the 'promotional' function of such signs as a form of network identity. This results in a conflict of interests for those charged with managing local networks. For example, rural signs for the Guthlaxton Trail on the outskirts of Saddington, south of Leicester, demonstrate how a 'bigger the better' mentality impacts significantly on rural settings (see above). Sign clutter is clearly open to interpretation and dependent on local context, but if context is ignored the results could be damaging to rural settings. On a national scale, the possibility of this intensifying is a real possibility if further initiatives for local cycling networks adopt a 'branding' approach to route naming, the intention being to give

pedestrians and cyclists more information in hope of winning their confidence, and encourage cycling activity.



Clockwise from top: 1. cluttered signs featured at Daily Mail online, 12 October 2006
 2. 'Continuity signing' in Bingham, Nottinghamshire. 3. Feature article about the sign clutter, Daily Mail, 12 September 2006

It is now a concern that widespread lack of coordination and proliferation of visual communication clutter is revealing itself to the cyclist and can be found at a number of locations on the NCN. In such cases the results are confusing, unpleasing to the eye and potentially hazardous. And, such concerns attract negative media attention, as

was the case in Bingham, Nottinghamshire in 2006 when the local television news reported on a cycling route with an excessive amount of signs (soon after to be removed).



Clockwise from top left

1. Blue cycling signs, Bingham, Nottinghamshire
2. Confusing markings, Bingham, Nottinghamshire
3. Continuity of signage, or too much information! Bingham, Nottinghamshire
4. Residential/pedestrian markings, Bingham, Nottinghamshire



Mileposts funded by The Royal Bank of Scotland
Market Harborough, Leicestershire

Clockwise from top

1. Direction information
2. Route information & Sponsorship information
3. Sustrans identity and contact details



Mileposts on Brampton Valley Way, Northamptonshire showing poor quality graphics

In contrast to the implementation of standard regulatory signs outlined in The Traffic Signs Regulations and General Directions (1994), when signs are bespoke, graphic elements can be poorly considered and often illegible to the reader (cyclist). The examples featured here (Figure x) make little effort to conform with what might be considered reasonable, or average, levels of visibility for information, let alone standards required by those less able. What is more, the physical appearance of these structures, suggest that more attention has been paid to a desire to create 'public art' rather than conveyors of information. This kind of confusion about the manifest function of such an object is not uncommon, and might be considered wasteful.

These wider concerns are now being acknowledged in part by built environment professionals in their guidance materials. For example, the draft 'Manual for Streets' document by WSP Development and Transportation Ltd, previewed at a series of workshops in the UK in mid-2007, recognised that 'both signing and street furniture may be necessary for the successful operation of any street and may provide amenities to users. These features can however also detract from the visual appearance of a street by introducing clutter' (paragraph 10.5.1). The authors go on to say that 'as well as detracting from the visual quality of a street, [signing and street furniture] can also introduce hazards for blind and partially sighted people' (paragraph 10.5.3).

2.2 Signing success

These concerns are balanced with a view that well signed cycling routes, if carefully planned, promoted and monitored, aid the use of the NCN and act as an indicator of route success. In fact, research by Sustrans suggests that 'comprehensive' signing of cycling routes, and promotional leaflets directed at the local community contribute to the increased use of cycling routes, for example, in Stedfastgate. Such research demonstrates impressive findings:

- 63% increase in cyclists using the route
- 61% increase in pedestrian use
- 14% to 27% increase in route use for shopping trips

(The National Cycle Network Route User Monitoring Report to end of 2005, p. 7.)

Not surprisingly Sustrans favour well signed routes and has used signage as a means to demonstrate additional benefits of using the cycling network. Such benefits include the opportunity to use walking and cycling routes to undertake journeys other than those undertaken by the cycling enthusiast, such as encouraging trips to local amenities such as supermarkets, which can be reached through minor detours from the National Cycling Network. But, such initiatives have proven difficult to implement, and highlight much bigger challenges faced by

Sustrans in changing local perceptions about using walking and cycling routes.

2.3 Changing the mental map

One such challenge has been described by John Grimshaw as the need to change the 'mental map' of the public with respect to their understanding of the environment and the benefits of walking and cycling. This issue is of particular importance in relation to the forthcoming Connect2 Big Lottery Funds Living Landmarks People's Millions bid (totalling £42.9m), for which Sustrans have been short listed as one of six possible recipients with a project that initially aimed to build approximately 50 new landmark connection points linking local communities. Changing local perceptions about how these landmarks can connect people and places is a critical factor in the long-term success of each project. However, mental maps are explored in more detail further on.

3.0 Problem framing

This issues mentioned so far in this report have not been developed in response to a brief as such — more a set of observations, concerns and shared frustration about a subject that does not seem to reside comfortably in the traditional built environment professions. It is therefore necessary to outline the nature of the approach being undertaken. This is considered here briefly by discussing the nature of problem solving and problem types that designers typically confront.

3.1 Ill-defined problems

In fact, the problem that this work sets out to address is ill defined, and this will be evident from the reporting to date. But as previously mentioned, early discussions have identified negative and positive issues associated with approaches to signing the NCN. Added to this are concerns for how the benefits of using the network can be better communicated to a wider audience in hope of changing their

environmental understanding. A significant part of this first work phase has therefore been concerned with 'problem framing'. This involves a process of 'find[ing] and formulat[ing] problems within the broad context of the design brief'. Schön, (cited by Cross, 2006, p. 80), describes this as 'problem setting'. 'Problem setting is the process in which, interactively, we name the things to which we will attend and *frame* the context in which we will attend to them'. This approach is common in the way architects work (Cross, p. 80) as well as having been identified in 'the design behaviour of outstanding, expert engineering designers' (Cross, p. 81). It can also be said for graphic designers. But in order to set out a problem, we must first understand the nature of problems associated with design activity, in order to identify what kind of problems are we dealing with here.

3.2 Wicked problems

Problems of a design, or planning, nature have been described as 'wicked' problems. That is, problems that are never quite 'solved' but only 'resolved' on the basis that a problem is always vulnerable to new factors and influences, and will have a range of different solutions, any of which could result in a different response. Wicked problems contrast to those of the scientist or engineer, which are referred to by Rittel and as 'tame' problems (1972, p. 392). Tame problems can be solved without the need to ask further questions once the parameters of the problem have been outlined. The solution to such problems is the same regardless of who interprets them.

Problem framing is therefore an on-going activity associated with this project, and will continue to be reported on and linked to the each phase of work. Along the way, it is intended that a greater understanding of visual communication problems in relation to the environment will lead to better quality outcomes to such problems. Judging this will be dependent on a greater understanding of such environments, the process by which visual communication facilitates the use of such environments, and the users themselves. Given the

variety of circumstance, the possibility for interpretation, and cultural factors, it is not surprising that this work lends itself more to qualitative rather than quantitative analysis.

4.0 Attending and exploring aspects of the problem

'Designers select features of the problem space to which they choose to attend (naming) and identify areas of the solution space in which they choose to explore (framing)'. (Cross, p. 80).

4.1 Naming the problem

Naming the problem stems from the early suggestions by the consultancy team about the aims of the project (mentioned earlier). The first two of these: informing users and non-users about the local context for the National Cycling Network; and persuading non-users about the benefits of using the local network, might be said to have been objectives of Sustrans since the NCN was first established, though it is not clear how explicit these aims have been. These are clearly communication issues. It is unknown if the third – using design and create a source of pride and pleasure in the local network – has ever been thought of from an integrated visual communication perspective.

Given that there has been such a heavy reliance on the government regulation and local authority implementation of signage on the NCN, it is possible that this aim will not have been fully acknowledged.

However, early discussion with Sustrans has revealed that these aims have never been clearly met (or possibly fully identified) in its thirty-year history. But as mentioned, it has been suggested that these aims should be at the heart of any future thinking about the network. These aims can be met in part with a clear understanding of how visual communication is 'made' and some of the determining factors in its success. This is explored here through a discipline that is not usually

associated with the creation of the NCN – graphic design. Graphic design has clearly identified functions. These functions represent a range of needs that Sustrans and the NCN has in order to fulfil its visual communication objectives.

4.2 Graphic design functions

How can a 'wicked problem' be framed in terms of graphic design? Rather than simply identify products of graphic design that we know to exist (logotypes, symbols, booklets, maps etc), we might look to the functions of graphic design as a potential form of analysis. Barnard (2005, pp. 14–18) identifies these functions as: information; persuasion; decoration; magic; metalinguistic and phatic. As *information* he suggests examples of graphic design as being 'signage, in our towns and cities, on our highways and motorways, along with maps, diagrams, portraits, landscapes and much illustrative work are also providing information'. *Persuasion* is 'to persuade, to convince or merely affect change in thought or behavior'. This is essentially a 'rhetorical function'. With regards to *decoration*, this is intrinsically aesthetic, or 'fun, entertaining, ornamental and the source of enjoyment and pleasure'. The Magic function alludes to the subject's ability to 'turn one thing into another' or the ability to change perceptions. The *metalinguistic* function works in the way that 'a communication ... comments on, explains, clarifies or qualifies another piece of communication'. In written and printed text, this might be a 'quotation mark', or as Ashwin (cited by Barnard) points out, a key on a map. Finally, *phatic* functions 'initiate, continue or conclude' communication, in the way that an arrow supports text, or road markings divide up a road.

Notwithstanding the broader *social*, *cultural* and *economic* functions of graphic design, understanding how to balance these functions is the critical to meeting the visual communication aims of the NCN. In doing so, the ability to affect change in thought or behavior will depend on

an understanding of how people relate to their environment, and what mental pictures they build up of it.

5.0 Key issues

Within the framework of this consultancy award, it has been necessary to identify some key issues that will help build a common understanding between the consultancy team and Sustrans of what is achievable, and to ensure the appropriate knowledge and skills can be put to best use. Additionally, we have attempted to clarify some of the terminology introduced into earlier discussions, such as 'mental maps'.

5.1 What do we mean by 'mental map'

In relation to the environment, the mental map (or cognitive map) is also referred to as a *cognitive map*. In *Wayfinding: People, Signs and Architecture* Arthur and Passini describe the cognitive map as 'an overall mental image or representation of the spaces and the layout of a setting' and cognitive mapping as 'the mental structuring process leading to the creation of a cognitive map' (1994, p. 23). They use this terminology to describe the 'representation people have of their surrounding environment' as the 'psychological concept that underlies the notion of spatial orientation'. They suggest that a cognitive map is based primarily on what can be seen of an environment, rather than what is experienced through a wider range of senses and experiences.

'A cognitive map is a mental construct of an environment which cannot be seen from one single vantage point alone. It has to be composed from a series of individual vistas. Cognitive mapping is therefore a mental structuring process that integrates into a whole what has been perceived as parts' (1994, p. 23).

Even though Arthur and Passini suggest the cognitive map is made up from multiple vantage points, we must also consider cultural factors. Mollerup, in discussing the cognitive map in his book on Wayshowing (a development on from Arthur & Passini work, focusing on the processes and objects that aid wayfinding) suggests that a person's own culture will have a bearing on how wayfinding devices are

understood (2006, p. 41), and this is derived from their own cognitive mapping abilities.

Built environment professionals will associate the cognitive map with Kevin Lynch and his book *The Image of the City* (1960), though Lynch spoke in terms of an 'environmental image' and concentrated on notions of 'legibility'. More recently the subject is explored in detail by Barbara Tversky in her paper *Cognitive Maps, Cognitive Collages, and Spatial Mental Models* (1993), whereby she suggests two alternative metaphors to cognitive maps – the *cognitive collage* and *spatial mental models*. She suggests that the association with maps is 'presumed to be coherent wholes that reflect spatial relations among elements ... like real maps available to real inspection'. She also points out that

'people acquire disparate pieces of knowledge about environments, knowledge that they use when asked to remember an environment, describe a route, sketch a map, or make a judgement about location, direction, or distance. The separate pieces include recollections of journeys, memories of maps, recall verbal (aural or written) directions and facts, and many more. As for any human memory task, it is possible that not all the relevant stored information will be retrieved when needed'. (Pp. 14–15)

This suggests that the public have varying abilities to process communication about an environment, and therefore the ability to recall, remember, and formulate consistent and shared images, or maps, is unpredictable. Strategies to change mental maps may therefore be difficult to create, and will depend on a detailed knowledge of audience abilities to comprehend attempts to do so. Speaking about the drawing of mental maps at the Information Design Conference (Greenwich), Paul Stiff of the University of Reading, suggested that the ability of individuals to actually draw mental maps is variable, and they omit very important information and are prone to distorting details.

Tversky also questions the presumption that *landmarks* and *routes*, unified by *surveying*, are appropriate metaphors in building environmental knowledge.

'Despite its considerable appeal, as traditionally used, the 'cognitive map' metaphor does not reflect the complexity of environmental knowledge. The knowledge comes in a variety of forms, memory snippets of maps we've seen, routes we've taken, areas we've heard or read about, facts and distances or directions. It can also include knowledge of time zones and flying or driving times and climate. Even knowledge of historical conquests and linguistic families can be used to make inferences about spatial proximity ... when we need to remember or to make a judgement, we call on whatever information seems relevant. Because the snippets of information may be incomparable, we may have no way of integrating them. For those situations, *cognitive collage* is a more fitting metaphor for environmental knowledge.' (p. 21)

We can deduce from this that attempting to change a person's environmental knowledge must rely on a clear understanding of wider communication issues that align, or misalign themselves with the individual's ability to absorb and retain information.

5.2 A new theory: wayshowing

If we are to understand when and where signs are needed we must be aware of user perspectives and the strategies about wayfinding. This will enable us to determine such issues as to when it is acceptable not to have a sign, or that signs may simply be unnecessary because the 'sign' is represented by other means. For example, a cyclist, or group of cyclists, could be a representation in its own right that a cycling route exists. Why put a sign up telling others so? In his book *Wayshowing: a guide to environmental signage principles and practices*, Mollerup has analysed in depth the dual concepts of finding the way and showing the way. He identifies nine strategies that most people do unconsciously which rely on 'varying degrees of signage' (p. 43), that we adopt singularly or in combination.

Mollerup's wayfinding strategies

Track following	Following lines, arrows, or other tracks
Route following	Following a plan
Educated seeking	Using syllogisms
Inference	Concluding from sequential designations
Screening	Systematic searching
Aiming	Visual targeting
Map reading	Using portable maps
Compassing	Using compass directions
Social navigation	Learning from others

These are important in that the strategies that require less help from signs and other graphic devices, such as 'educated seeking' or 'social navigation', suggest that we do not always have to fill a space with a sign when other human traits can compensate. These strategies have not been investigated here in detail but merely highlight an opportunity for further consideration of these strategies in relation to cycling networks.

5.3 The potential of Graphicacy

In examining the potential for graphic design to contribute to the debates about visual communication in relation to cycling networks, one starting point is to simply analyse the meaning behind the words that make up the term, or what the graphic in graphic design is.

The graphic in graphic design

Dictionary definitions of the term *graphic* suggest it as 'relating to visual art, especially involving drawing, engraving, or lettering ... giving vividly explicit detail ... of or in the form of a graph' (Compact Oxford English Dictionary). Historically, and in the context of the printing industry, it relates to a time when mechanical artwork was created in black and white from which a printer then produced plates for printing. This required a considerable amount of planning, and design, hence the formation of the term graphic design in the early 1920s, attributed

to the American W.A.Dwiggins. But Barnard (2005, p. 4) recognises that in general, dictionary definitions are not that helpful in truly reflecting the nature of the graphic in graphic design. Even the subjects own attempts to stabilize language about the subject are outdated, describing graphic design as the generic term for the activity of combining typography, illustration, photography and printing for the purpose of persuasion, information or instruction (Livingstone and Livingstone, 2003. p. 90).

From graphic to graphicacy

However, possibly the most relevant use and meaning of the term *graphic* emerged in the 1960s, though in a form that appears relatively unrecognised or unused. In a wider communication context, it is generally accepted that we extend terms such as literate, numerate and articulate, to derive extended descriptors of ability to literacy, numeracy and articulacy. Although no similar derivative appears to be recognised for the word *graphic*, the derivative *graphicacy* surfaced in the 1960s (Poracsky, Young and Patton, 1999. p.103). The recognition of graphicacy emerged as a fourth key communication competency educated people needed to possess. This was as part of a framework developed by Balchin and Coleman that also included literacy, numeracy and articulacy. Poracsky et al suggest that graphicacy has two dimensions: viewing and drawing. This view incorporated a different combination of communication skills, incorporating those identified by Diamond, which included writing, speaking, reading and listening. Nelson (1999) also writes about graphicacy in Geographic communication. Citing Monmonier he describes these communication competencies as:

Articulacy	fluency in oral expression (language and presence)
Literacy	fluency in reading and writing effectively
Numeracy	fluency with the manipulation of numbers
Graphicacy	fluency in the construction and interpretation of graphic modes of communication (graphs, diagrams, illustrations, photographs, sculpture, icons, and maps)

Nelson's description of graphicacy is not as succinct as those for articulacy, literacy or numeracy. It may be better described, or abbreviated as 'fluency in visual communication'. This has the brevity to compliment the other three descriptors, and reinforces a view expressed that graphicacy is not an alternative to articulacy, literacy or numeracy, rather an integrative part of those qualities. This is important if we are to value graphic design as an important factor in the design and implementation of all elements of visual communication used to inform and promote the NCN.

It is notable that Nelson uses the term fluency as the consistent determining factor of the four competencies (p. 6.). This suggests that the degree of fluency might be an important element in determining successful environmental communications within the context of the NCN. But, of utmost importance is the degree of fluency evident in these communication competencies and this must be examined in relation to continuity — a term highly valued by highways engineers. We can add to this the concept of legibility, one of the key contemporary debates in the built environment of the last fifty years. Legibility is a term used by built environment professionals in relation to the apparent clarity of the cityscape (Lynch, p. 2).

5.4 Legibility versus Legibility

Legibility is a familiar term to the built environment professional, as well as the graphic designer — having the same meaning, but in different contexts. For the urban designer, or planner, Lynch asserts it is about 'the ease with which the parts [of a cityscape] can be recognized and can be organized into a coherent pattern' (1960, pp. 2–3). For the graphic designer, legibility is also about visual clarity, but usually of text — size, choice of typeface, contrast, and character spacing (Butler, Holden and Lidwell, 2003, p. 124). Think of how clear in our minds the shape of the WHSmiths shop fascia sign is, or more recently the American coffee shop Starbucks is (surely significant contributions to city form, if by comparison on a micro scale). This is

the same for motorway signs and symbols, even the bicycle icon on the blue background used to denote the NCN. Though the term can also be used in relation to illustrations, diagrams, even photography. Think of Pooh Bear from Winnie the Pooh, or Mickey Mouse. Think of the cover of the Beatles Sergeant Pepper album, and the sequence within which that appears in all the Beatles albums (after Revolver and before The White Album), and in relation to when it appeared by comparison to Pet Sounds by the Beach Boys (I think it was just after!).

Although Lynch was concerned primarily with the visual form of cities, and our cognitive abilities to map that form, we must conclude that graphic design, and graphic designers, play a significant role in contributing to that form. For example, the famous London Underground identity, signage and promotional materials, designed by numerous graphic design pioneers such as Edward Johnston, or the sign system for the road network in the UK designed by Jock Kinneir and Margaret Calvert in the early 1960s. But, architects tend to believe in the power of form, and form alone, to communicate usability. For instance, Lynch asserts 'an image useful for making an exit requires recognition of a door as a distinct entity, of its spatial relation to the observer, and it's meaning as a hole for getting out' (1960, p. 8). On one level this is not contestable with regard to form, how relevant is it to human behaviour and a willingness to enter into an unknown space without the reassurance of a fire exit sign? With regard to the design of buildings, Mijksenaar suggests (1997, p. 8) there was a time when 'architecture provided clearly identifiable entries to buildings, often giving them fine and appropriate lettering as well'. It would seem this is not now always the case. An environment that is not legible presents a considerable challenge to the Graphic Designer in aiding legibility – perhaps an impossible challenge. Similarly, legible environments present a different challenge, and by default could result in less visual clutter created by over-signing.

Consequently, the earlier claim that to many of us graphic design is the NCN, is reinforced by the balance between legibility from an environmental perspective and legibility from a visual communication perspective. It seems that one cannot exist without the other, and assessing the parity between the two, from a number of different perspectives, is the central theme in this project.

6.0 Developing a research methodology

6.1 Developing a graphic design research methodology

An understanding of graphicacy, within the broader context of legibility, and the role that this plays in facilitating use of the NCN, is therefore one of the key issues in this project. Combined with an understanding of design thinking, this offers an approach to problem solving that places the quality of visual communication in past, present and future interventions, at the heart of this work. We might therefore describe this as a graphic design approach to problem solving. This has developed through asking some basic research questions around the traditional research paradigm of what, why, how, when, where? This questioning has been focused on the application of text and images in the built environment. Graphic design is concerned with the unification of words and images in different media contexts, which includes the built environment. This project can therefore be described as a graphic design research project and can be structured in the same way that traditional academic subjects might develop research. In keeping with this, we can use a geographic model to outline a graphic design approach.

6.2 Adopting an approach to research in graphic design

In classifying the various skills that geographers have and use, Nelson (1999, p.4) cites the US National Geography Standards, which identifies five key protocols in the following sequence: asking geographic questions; acquiring geographic information; organising

geographic information; analysing geographic information; answering geographic questions; before repeating the cycle. This process can be adopted for graphic design research, which focuses on the making process that leads to visual communication.

Ask **Acquire** **Organise** **Analyse** **Answer**
 Graphic Design > Graphic Design > Graphic Design > Graphic Design > Graphic Design
 questions information information information questions

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Graphic design questions may focus around the functions of graphic design, and be aligned to the making process involved in visual communication. This must include a clear understanding of graphicacy, mentioned earlier. Asking a graphic design question involves the consideration of both practical and theoretical domains that are synthesized through the process of integration, and result in what might be considered an object/s or artifact/s of graphic design. These domains are physical and cognizant. The physical, or making, domains can be described in terms of word interpretation, image creation and media realization, which can also be simplified and understood as typography, illustration/photography and printing, or reproduction in other media. The critical, or theoretical domains that help shape these are: social; cultural; industrial; commercial; political, environmental and technological. A further theoretical domain, and arguably the most significant, is that of communication, and it is the variable ability to generate and identify ideas that unite these domains that establishes quality thresholds for graphic design as communication.

Acquiring graphic design information, or data, through research, could require an investigation into the circumstances that result in, or have resulted in, graphic design outcomes, through the design process. This may be done in terms of engaging with the graphic design making process, being part of it or observing it, in the sense of an ethnographic research process, using variable methods of inquiry and recording. Similarly, the first hand communication experience of

graphic designed products, through analysis, may be re-enacted, recorded and reported on. Once data is collected it will need to be organised in such a way that enables the initial question to remain visible, which will help for analysis, leading to the emergence of answers, and further questions. This process is guided by a clear understanding of design phenomenon, appropriate methods and values, rather than emphasis more typically associated with research in the *sciences* or *humanities*. This is best illustrated by Nigel Cross (2006, p. 2) who contrasts design with the sciences and humanities by looking at the different phenomena, methods and values of all three (see below). Though, these cannot necessarily be separated.

	The phenomenon of study in each culture is
<i>science</i>	the natural world
<i>humanities</i>	human experience
<i>design</i>	the artificial world
	The appropriate methods in each culture are
<i>science</i>	controlled experiment, classification, analysis;
<i>humanities</i>	analogy, metaphor, evaluation;
<i>design</i>	modelling, pattern-formation, synthesis.
	The values of each culture are
<i>science</i>	objectivity, rationality, neutrality, and a concern for 'truth'
<i>humanities</i>	subjectivity, imagination, commitment, and a concern for 'justice'
<i>design</i>	practicality, ingenuity, empathy, and a concern for appropriateness

(Cross, 2006, p. 2)

Breen suggests that Design is the 'in-between' realm that bridges the Sciences (knowledge) and the Arts (expression) (2005, p. 97), but this does not detract from Design having its own core values. Hence, design can be thought of as a 'third way', with aspects of design activity incorporate artistic thinking, and scientific thinking giving us the two extreme approaches. Graphic designers with artistic inclinations will place a high value on 'subjectivity, imagination, commitment and a concern for "justice"', whereas those motivated by the acquisition of 'knowledge' (or more of a scientific approach), will seek out 'objectivity, rationality, neutrality, and a concern for the "truth"'. Consequently, graphic designers with an interest in music may wish to design for the music industry, or the cultural sector in

general, where self-expression and the needs of the 'artist' might be better understood, appreciated and tolerated. Similarly, an interest in more 'scientific' approaches to graphic design may lead a graphic designer towards information design, or a systems approach to their work, such as corporate identity.

As part of the broader subject area of design, graphic design offers an opportunity to capture the different visual requirements of the NCN within a single domain. This domain has the potential to link the various functions of graphic design in relation to NCN, and enhance the coordination of this necessary activity. It is the lack of coordination, and common understanding that is resulting in unsatisfactory, often random, inconsistent visual communication that apparently places continuity above all other factors, when perhaps untried initiatives based around notions of fluency may be more relevant and important.

7.0 Conclusions and recommendations

7.1 Report focus

This report has attempted to clarify a different viewpoint on visual communication in relation to the National Cycling Network. This viewpoint is focused on the concerns of **graphic design**, as opposed to those of engineering, planning, or architecture, for that matter. Those professions, perhaps by default, perform unconscious graphic design acts that attempt to inform and promote the National Cycling Network, largely through the application of regulatory signs, and bespoke objects that aspire to provide visual communication with varying degrees of success. These acts build on the work of highly

regarded graphic designers who helped put in place, through graphic design, a visual communication system for signage of the road network in the UK. In contrast, outcomes can often be frivolous, confusing in their appearance, lacking in communication value, and poor substitutes for effective information and promotion of cycling networks. The activity of establishing a network of signs often overlooks their manifest function: **visual communication**. This is often in favour of an over-zealous desire to use signs as advertising, and a 'bigger the better' mentality. It would seem that the effort required to build and establish a cycling network, has allowed little time for thought about what actually needs to be said about it, and the care, attention, sensitivity and expertise often required for effective communication. This has resulted in the many inappropriate application of signs, for which the public are demonstrating a concern. But, there are also many examples of getting it right.

This report has suggested that many of the contributing issues can be seen as '**wicked problems**', and as wicked problems they can only be resolved, never solved in the way that 'tame problems' can. This project therefore acknowledges the notion that there have been and will be many solutions to the problems. This work offers the view of the graphic designer, and an understanding of what graphic design can represent. This can be added to the views of more regulated professional activities.

Graphic design offers some shared and specialist viewpoints on these issues. **Legibility** is a common concern. The use of graphic design to correct illegible environments requires a mixture of environmental sensitivity and pragmatism. In keeping with this, but perhaps fortuitously, Lynch uses the analogy of a page of text to describe legibility in comparison to the built environment. This analogy can be extended to a whole book when it comes to cycling networks. A book has a cover; chapters with running headings; and page numbers. This helps us navigate through in linear and non-linear ways, but perhaps

most importantly, there is narrative. This narrative is occasionally illuminated with illustrations or photographs for interpretation. Consequently there is both objective and subjective content, and these are synthesised through a process of design. Cycle routes can be viewed in a similar way.

More specifically, graphicacy, as a communication competency, has at its heart the fluency with which communication happens. **Fluency**, in the sense that there is variable ability to speak another language, might compliment or contrast with the consistency that is often sought in signage projects. A better understanding of fluency in visual communication, and what might be developed as fluency measures, might offer a useful auditing tool in evaluating existing infrastructure, and planning new infrastructure. This can be thought of in the context of wayshowing and an understanding of wayfinding strategies that reveal useful navigation strategies that are not entirely reliant on signs.

It is unlikely that this project can embrace an issue as big as changing a person's **mental map**. This requires a level of complexity for which time does not allow. But, work so far has outlined some recent thinking on this issue, and it is suggested here that the potential to work towards this is a useful guiding light.

With these issues in mind, it is suggested that the next phase of this project investigates the potential for these themes to be developed as important tools for analysis. Fluency factors in particular, is regarded as having much potential for enhancing consistency measures, and dealing with visual communication clutter.

7.1 Some further observations

In seeking to investigate the issues covered in this report, numerous questions have arisen along the way that may have been a distraction at this stage if explored further. Nevertheless, these questions have

stimulated further thought, and suggest frames of reference for graphic design questions. The following represent a few of the more relevant.

The colour blue

Why, when there is a desire to enhance walking and cycling networks, does a tradition persist to use a visual language that is closely associated with the motorist? For example, the blue and white cycling signs that are so often misplaced in semi-rural and rural settings, draw on the same colours initially suggested for use on motorways. A genuine commitment to enhance walking and cycling might begin with attempts to unite these two activities in a design paradigm that disassociates itself with the car.



Above: a design paradigm that aligns itself with the motorist

Visual communication: the making process

How much training are the workers, who paint our roads and paths with white lines and cycling icons, given, with regard to the communicative and aesthetic issues that have a potentially hazardous impact on human safety. Informal conversations with workers suggest very little. How can trail managers engage more with this issue as guardians of visual communication clutter.

Signing back into routes

What measures have been taken to encourage local destinations to sign back into the NCN. Establishing the content for sign schemes usually considers the likelihood of destinations remaining in place over time. But, there is usually a cut-off point whereby some destinations are considered too risky. This can cause serious political issues at a local level and therefore, it may be advisable to place the onus on the destination with a suitably inviting campaign. Such campaigns may be developed around the following themes: by→cycle; cycle&see; communicycle.

8.0 The project team

The originators of the project are both currently employed as Senior Lecturers at NTU, and combine essential skills and knowledge required for a project of this nature in visual communication and the built environment. These skills and knowledge have been gained in direct professional practice experience of two key disciplines — graphic design and architecture. The project team members, role, and experience is therefore:

	ROLE	SPECIALIST AREA	RELEVANT EXPERIENCE
Robert Harland	Lead consultant	Graphic Design	Professional practice in pedestrian wayfinding strategies and signage projects in the public realm
Neil Stacey	Consultant	Architecture	Professional practice as an architect and former employee of Sustrans

These professional disciplines are design-based activities and have been closely linked over the past two decades in specialist environmental design subject areas such as Wayfinding (Arthur and Passini, 1994.). Additionally the consultancy team is familiar with Sustrans strategic goals, values and organisational structure, as one of the project originators spent three years after the turn of the millennium working for Sustrans in Bristol, during which time he was involved in a number of discussions about signage for pedestrians and cyclists. But, it should also be highlighted that the lead consultant knows very little about the cycling domain, its concerns and practices. Consequently this report probably highlights issues that may be taken

for granted by some, and may offer new insights to others. Nevertheless, the project has at its core a concern for how visual communication functions, and happens, in the narrow context of the National Cycling Network, and the wider context of walking, cycling and vehicle visual communication infrastructures across the UK.

8267 words

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6.9 ADGD symposium presentation

The following pages display the integration of images and words that formed the basis of an invited presentation at the *Forms of identity in the designed environment: An architectural design and global difference research symposium*, Monday 17 September 2007, at Nottingham Trent University.

Aims of the presentation

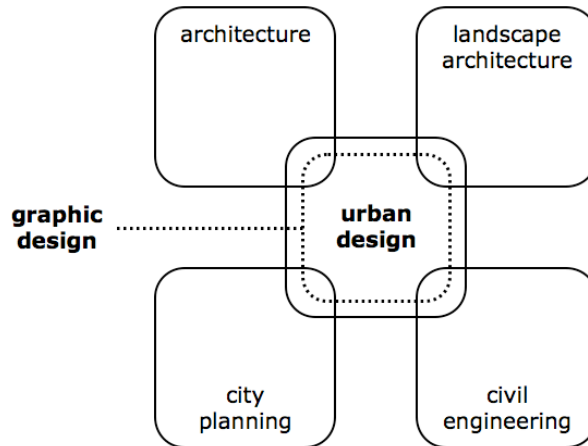
To explain how visual language contributes to identity formation

To illustrate how road signs help construct national identities

To examine the macro-design dimension of visual communication

To place graphic design within an urban design context

Graphic design: a layer of urban design



Source: after Lang, J. (2005). *Urban design: a typology of procedures and products*. Oxford: Architectural Press. p. 394

Some of you have seen me speak recently about the relationship between urban design and graphic design.

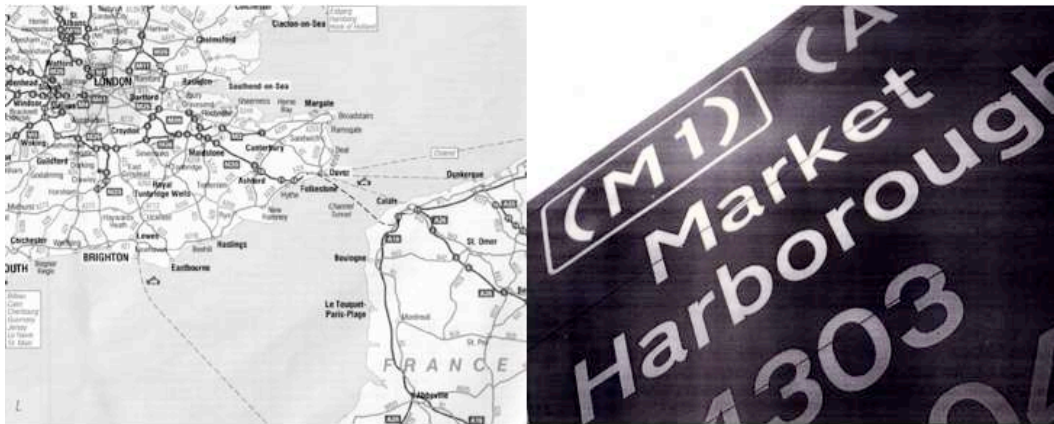
I have argued that, as a layer of urban design, graphic design offers a disciplinary perspective from which to research the problems we seem to be having worldwide of too much sign clutter in urban, peri-urban and rural environments.

This presentation extends this argument focusing on the interaction between graphic design, urban design and civil engineering.

The paper argues that the product of graphic design is a form of identity in the designed environment, reinforcing our sense of national identity.

I have occasionally driven through France via the Dover Sea Port in Kent, United Kingdom, though not for some time now.

Crossing borders



On returning from such a trip, I always found a sense of relief upon exiting Dover to join the A2. At that point, I really knew I had returned home, for two reasons.

Firstly, driving on the 'right', or I should say left side of the road.

Second, the traffic signs are in English, and the design in a very familiar style. They look 'British', as opposed to those in 'France', which look French.

To many people, especially frequent travellers in Europe, this would not be significant at all, merely a representation that one had moved from the macro environment of the European landmass to the relatively micro environment of the British Isles.

The micro design dimension

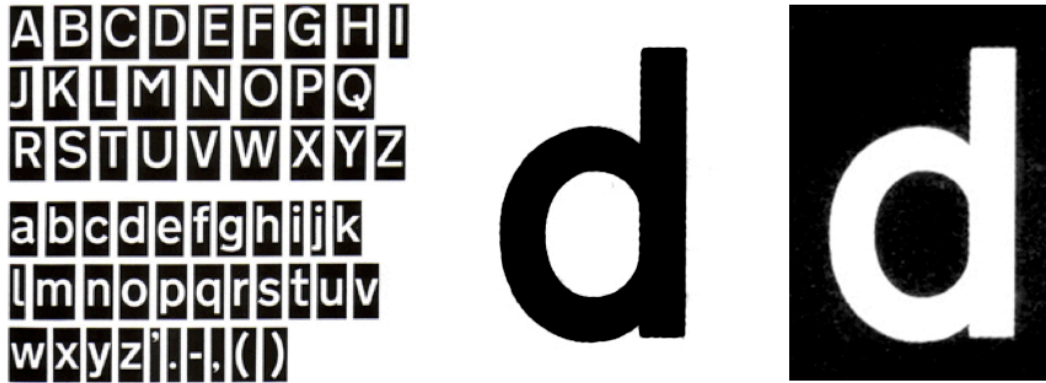


Source: Traffic signs manual. Chapter 7. The Design of Traffic Signs. 1997. Department of the Environment, Transport and the Regions.

The 'Britishness' of the motorway signs in the UK is conveyed in the fine detail of the Sign System designed by Jock Kinneir and Margaret Calvert in the early 1960s.

Displayed here, one can see the careful consideration given to the inter-character spacing of the individual letterforms, and guidance the correct line spacing between two local destinations.

The micro design dimension



Source: Kinneir Associates for the Ministry of Transport. Cited in Myerson, J. Vickers, G (2002). (Ed.) *Rewind: forty years of design & advertising*. London: Phaidon Press Ltd. p. 55



Source: Robert Harland. Sign detail, Isernia, Italy 2007

The design of the typeface 'Transport', also by Kinneir and Calvert, was specially drawn for the UK system, and here we can see the clear space, or 'imaginary tile' as it was called, to ensure correct letter spacing.

This detail is more noticeable by its absence on this sign taken recently in Italy.

Comparison of type designs for the letter 'd'



In comparison to other typefaces used on sign systems in other parts of the world, we can consider the first two letterforms represented here as a lowercase type design for the letter 'd' (Fig 1).

Both can be described as belonging to the sans serif style of typeface classification, or 'pattern', which has its origin in Greek and Roman times (Baines and Haslam, 2003, p. 63). In modern times we probably do not associate these letterforms with Greece or Roman, more contemporary western society and what we know as modernism.

On closer inspection, the letterforms are clearly distinct from each other. One is heavier in weight and has a distinct angle at the top of the ascender (or upright).

Viewed at this scale they both appear equally legible. A third character is once again more distinctive in that there is a slight change in the weight of stroke, and the space in the 'circular' area of the letterform, known as the counter, is more elongated.

Comparison of counter shapes for letter 'd'

Here we can see the counter shapes of the three typefaces. The middle shape is the smallest, and this is significant in contexts that we will return to later.

The design of typefaces is known as typeface design.

When combined with language into the form of words, typeface design forms one of the foundation stones of visual language, the development of which can be traced back to the earliest known pictograms in Syria twelve thousand years ago (Jubert, 2006, p. 19).

Typeface design feeds into the discipline of typographic design, or typography, and this is one of the core subjects that in turn feeds in to graphic design, which is wider in that, at a basic level it also integrates illustration and photography as a part of its practice.

Graphic design developed in the twentieth century, and matured in response to the need for systematic approaches in visual communication.

Collective [id]entity



Source: Robert Harland, 2007, Saddington, Leicestershire

Heskett suggests:

...a system can be regarded as a group of interacting, interrelated or interdependent elements that forms, or can be considered to form, a collective entity

Heskett, J. (2002). *Toothpicks and Logos: Design in everyday life*. Oxford: Oxford University Press. p. 145

He goes on to say motorway signs are a good example of this.

Through the interaction, interrelation and interdependency of language, typography, pictograms, phatic design elements (such as arrows), colour and reflective materials, graphic design unifies the visual language of motorway signs into what Phil Baines describes as a 'house style for Britain' (2002, pp. 26–36, when discussing the British motorway sign system designed by Jock Kinneir and Margaret Calvert.

Expectation and trust

Initially, cars existed in isolation, needing to carry fuel for long journeys and with personal owners responsible for repairs. Outside cities they ran largely on unmade roads. Only later did systematic approach to road construction and maintenance, information systems, and support systems such as those providing repairs, fuel, and refreshment come into being. It took half a century for coherently planned systems of high-speed roads, variously known as autobahns, motorways, or freeways, to become an accepted component of motorists' expectations."

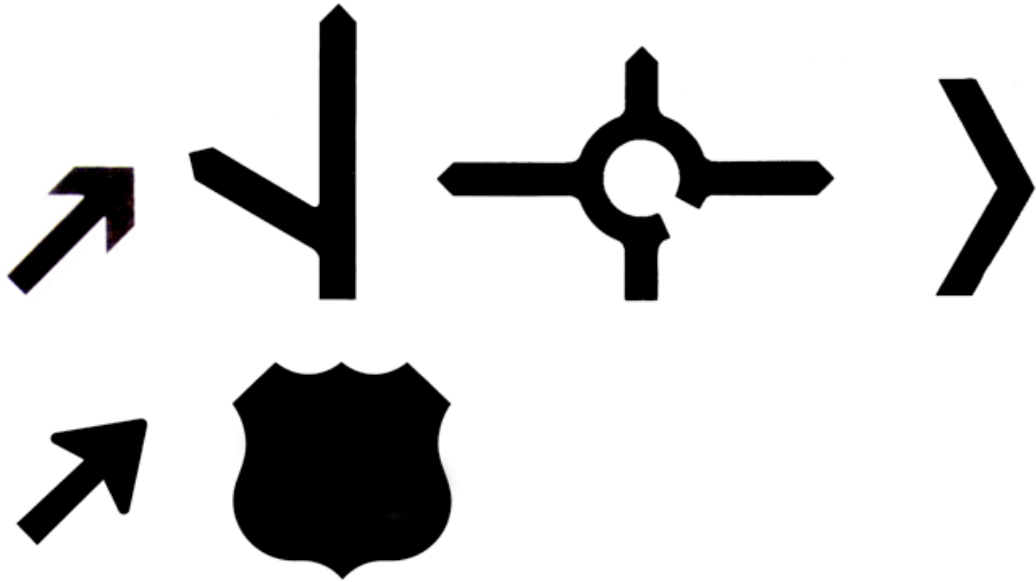
Heskett, J. (2002). *Toothpicks and Logos: Design in everyday life*. Oxford: Oxford University Press. p. 145

Heskett also suggests that it took half a century for 'coherently planned road systems' to develop, and information systems evolved as part of this process.

Information systems are therefore part of how we identify with motoring, and not surprisingly we become concerned when trust is broken and we are misled.

Much like we feel when someone we thought was reliable, with whom we identify, lets us down. A trust is broken.

A brief comparison of design detail



These information systems contribute subliminally to our sense of national identity, most notably in the details of the design. For example, if we take something as simple as the use of an arrow, consider how the design of this device differs considerably in the UK (top) and US (bottom).

The arrow used in the UK conforms to modern geometric principles that conform to international standards. It has characteristic straight lines, 90° and 45° angles and an elongated stem. The arrow used in the US has an in-filled arrowhead that has rounded corners and a shorter stem. One might say that it is a more authentic 'arrow head'.

Phatic devices in the UK system include variations on the use of arrows for different contexts. There are 'branch' arrows denoting exit from the main trunk, similar styled devices indicating exiting a roundabout, with distinctly 'chamfered' arrow heads, and simple angle lines to confirm a direction (often parallel with the edge of the sign).

The US system features other symbols such as the shield device to frame the highway number. No equivalent appears in the UK. These are examples to illustrate a point, and there are many others—these are key elements that assist wayfinding as well as reinforce a sense of place and national identity.

Language and place names



Source: Robert Harland, 2007

I want to dwell briefly to our understanding of language, and the role it plays in determining a place name. At a local level, road names can reflect historical interest about local activities (Gardner Street); commemorate people (Nelson Street); or confirm a direction (Coventry Road). Some of these localised activities may be trade, or commerce related.

Consider the 'Piccadilly' in Piccadilly Circus, supposedly named after 'a form of collar or ruff' called 'pickadillies' sold by the tailor Robert Baker in the sixteenth century (Harris, p. 55). We may still visit the area to buy a 'pickadillo', but most of us probably identify Piccadilly Circus as a stop on the London Underground, which in itself has a fascinating array of place names. Bermondsey, for example, which opened relatively recently in 1999, on the new Jubilee line extension, is derived from a Saxon Lord, Beormund (Harris, p. 9).

Harris, C., M. (2001). *What's in a name?* (4th ed.). London: Capital History.

Visual language and cultural identity



Source: MetaDesign London for Glasgow 1999: UK City of Architecture and Design. Cited in Myerson, J. Vickers, G (2002). (Ed.) *Rewind: forty years of design & advertising*. London: Phaidon Press Ltd. p. 394

However, we cannot and do not only rely on language to identify a location accurately, (though we do individually identify with place names, which carry many personal meanings), and although typography can and does help (think of the association of Arabic script with the Middle East), how we identify with a place is dependent on individual cultural experience.

This experience is the reference point that determines any identity association between ourselves, a place, and mediated forms of communication.

For example, most of us will recognise Glasgow as being in Scotland, and any attempt that a typeface makes to enhance that recognition will draw on certain cultural associations with the city, and these will appeal to a select audience.

In attempting to do this, in the late 1990s Tim Fendley chose to draw inspiration from Glasgow's Art Nouveau heritage, as expressed through the widely acknowledged architecture and design of Charles Rennie Macintosh.

Visual language and cultural identity



dale

Lindale

Geographic, rather than human factors, are also a source of place name. For example, according to the Oxford English Dictionary, a 'dale' is a 'valley, especially in northern England', and we group a number of these to form a generic descriptor such as 'the Dales'.

Place names are derived from this, such as Lindale, to be found in Cumbria in the North of England.

However, if we present the town here in the typestyle used earlier when discussing the letter d, there is little to suggest a place location in Cumbria, or indeed what might be thought of as a valley in Northern England.

Adjectives used to describe the style of lettering shown here might include modern, though not necessarily in the 'modernist' sense of the word by comparison to the sans serif typefaces inspired by modernism, such as Futura designed by Paul Renner, or Univers by Adrian Frutiger.

Others have described it as chubby, idiosyncratic and clumsy (Yaffa, 2007).

Source: Yaffa, J. (2007). The road to clarity. 12 August 2007, from <http://www.nytimes.com/2007/08/12/magazine/12fonts-t.html?th&emc+th>

Visual language and cultural identity

Lindale



Source: Sign image: Burgoyne, P. Clearly better. Creative Review. January 2005. London: Centaur. p. 46–50

Its idiosyncratic appearance is explained by the fact that the design of the typeface is not the work of a professional typeface designer, who perhaps would apply a more consistent logic to the design of the typeface family.

In a recent article for the New York Times, Yaffa (2007) explains that the typeface was quickly 'fashioned' in the mid-1950s by highway engineers, based on font designs Federally approved since the mid-1930s, and these fonts were based on idiosyncratic road sign designs that varied by city and region.

The quirky appeal of imperfection does give Highway Gothic its fans, who share highway lore and trade vintage road signs on the Internet. To highway enthusiasts ... the existing typeface has become evocative of the wonder of the open road ... for some, a sign is just a utilitarian object. "For others, it's a symbol of connectivity" (Yaffa, 2007).

Source: Yaffa, J. (2007). The road to clarity. 12 August 2007, from <http://www.nytimes.com/2007/08/12/magazine/12fonts-t.html?th&emc+th>

It has been in use since then as one of the standard typeface used on Interstate highways in the US, (of which there are 46,871 miles). Additionally, it has also been used in The Netherlands, and influenced the appearance of road signs in Malaysia (Baines and Dixon, 2003 p. 37).

The typeface is referred as Highway Gothic, and despite its subliminal presence, to some it is symbolic of more than just functional necessity. Some refer to this as a 'symbol of connectivity'.

Legibility and identification



Comparison when
seen at distance

Lindale

New US typeface: ClearviewHwy

Lindale

UK typeface: Transport

Lindale

Old US typeface: Highway Gothic

A comparison of the UK and US typestyles, signing the destination Lindale is a good example of an international process of differentiation. It happens between ourselves, between countries, and people in different valleys, and is something that Winston argues is part of human instinct (2002, p. 245). In the example shown here, we can take note of the different character shapes and inter-character spacing that extend the length of the word, (possibly in an attempt by engineers to make it more legible).

Closer inspection reveals a more legible set of letterforms in the UK design, and benefits from better word shape recognition with the tighter character spacing. Apparently, research has revealed that the US design is vulnerable to poor readability, especially when read at night when bright headlights create a phenomenon known as halation, or blurring of the letterforms (Jaffa, 2007). Compare the lowercase 'i' which at a distance can be mistaken for a lowercase 'l', or the 'a' and the 'e'. (Squint your eyes and this gives you a good impression).

Source: Winston, R. (2002). Human Instinct. London: Bantam Press.

Distinction, or lack of...



Source: Sign image: Burgoyne, P. Clearly better. Creative Review. January 2005. London: Centaur. p. 46–50

In fact, recent research in the US has demonstrated that the design is unsafe by comparison to the recently designed alternatives by the environmental graphic designer Don Meeker, and the typeface designer James Montalbano (Jaffa, 2007). The current version is seen here on the left, the new proposal on the right.

It is worth noting here that the UK design – although only slightly younger than its American counterpart – benefited from research into systems that were being used in the US as well as Europe.

Source: Yaffa, J. (2007). The road to clarity. 12 August 2007, from <http://www.nytimes.com/2007/08/12/magazine/12fonts-t.html?th&emc+th>

Comparison of Interstate Gothic & Clearview



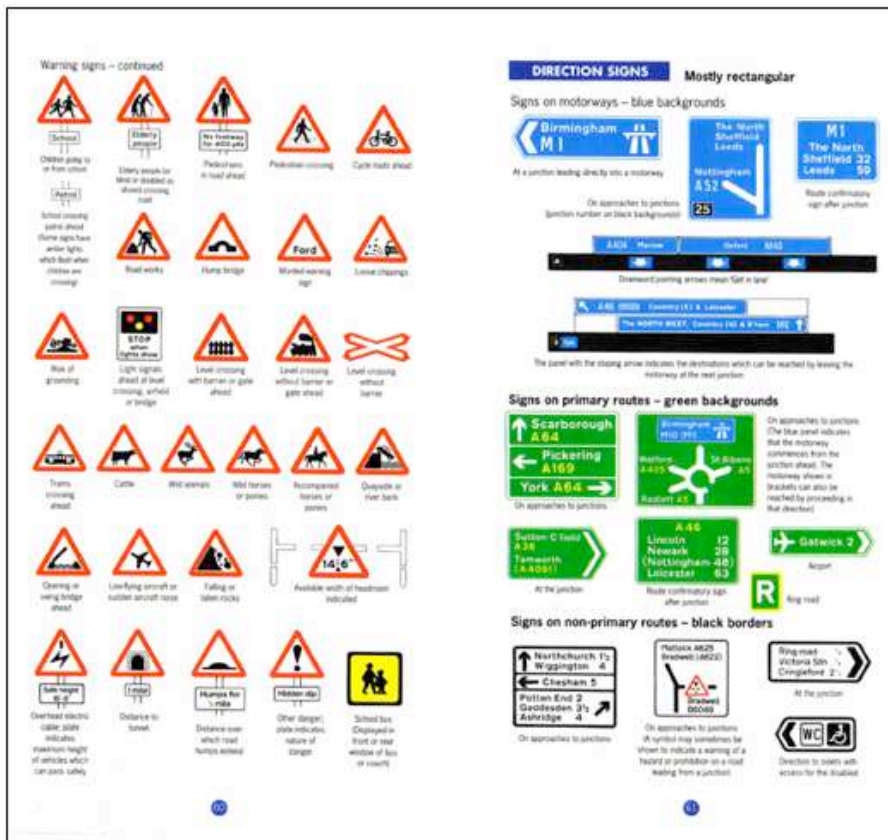
Source: Sign image: Burgoyne, P. Clearly better. Creative Review. January 2005. London: Centaur. p. 46–50

Closer inspection reveals how the creation of a new typeface, though using the same Capital height, features a larger lowercase character set with more distinctive features. Note in particular the 'a' & 'e' & 'g'

These designs demonstrate how little control we often have in constructing our identity, unless we actively take up social concerns. In the US, Meeker sees design as a form of 'social activism' (Jaffa, 2007), and his practise and research, in collaboration with Montalbano is contributing to a continuous process of identity formation on the US interstate system. Their work concerned with developing a new typeface for use in the US 'will save space, and, more importantly, save lives' (Burgoyne, 2005, pp. 46–50).

Also, Meeker's work has integrated professional disciplines such as highways engineers, human psychologists, material technologists, and transportation specialists. This contributed to new design proposals to change the signs on the Interstate Highway in the US, in an on-going programme of research since the early 1990s.

More than typography

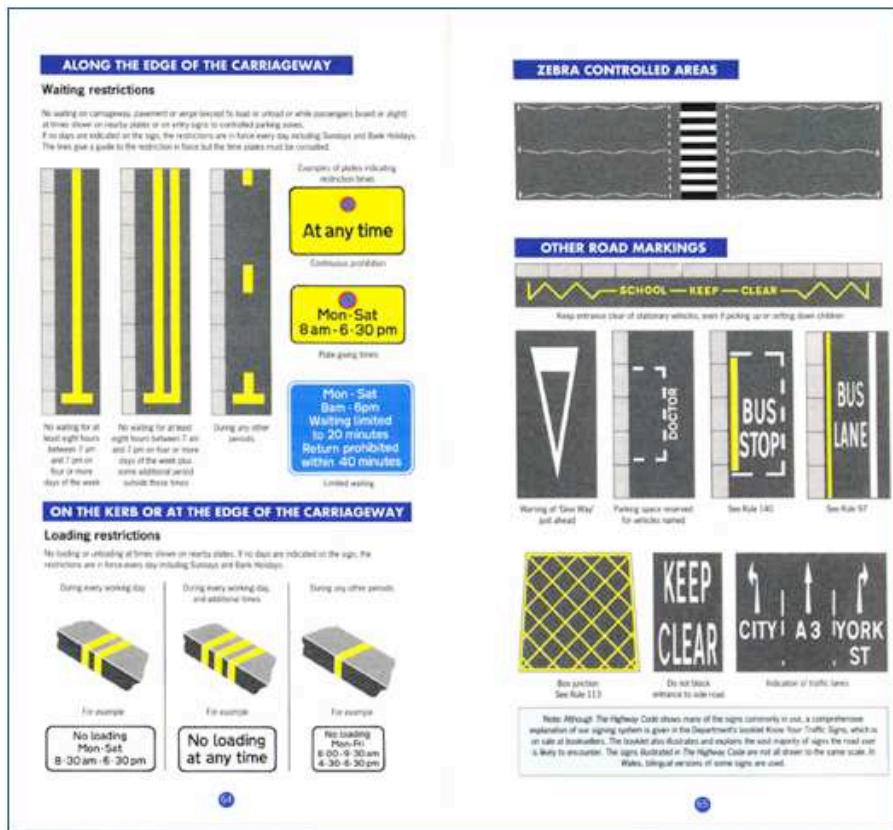


Source: The Highway Code. Department of Transport. 1993. p. 60-61

However, a road sign system requires more than just typeface design abilities. In describing the key people involved in the design of the UK road sign system in the late 1950, Phil Baines mentions the political and administrative skills of key civil servants. Visual design required the communication skills of the lead designer, and the detailed design and observation skills of a design team with the ability to harness the very highest order of thinking that modernism had to offer, especially in type design and illustration, and the on-going support of a design team (1999, p. 32).

In the UK, these visual design skills are defined holistically by Baines (1999, p. 27) when discussing the importance of the design work by Jock Kinneir and Margaret Calvert on the UK road sign system as 'graphic design'. When this graphic design process took place in the UK it resulted in a scheme that is still considered by some to be an exemplar (Baines, p. 26), despite the opinion that they often 'fail in their primary duty of guiding us around the kingdom' due to their function being over politicised (Kinross, pp. 152-157).

More than typography



Source: The Highway Code. Department of Transport. 1993. p. 64–65

Ultimately, these examples demonstrate that as visual culture, identity construction through graphic design is a collaborative process, and graphic design plays a significant role. And, built environment professionals are also engaged in what are perhaps best described as the products of graphic design.

Up the junction



Source: Pass your driving theory test (2005). Feltham, Middlesex: The British School of Motoring Ltd. p. 138

This paper has attempted to outline how the elements of graphic design, especially typeface design, contribute to our sense of identity on a local, national and international scale.

It has shown that both human and scientific factors determine the form that graphic design takes, and that a perceived sense of distinction and idiosyncratic design is sometimes achieved at the cost of lives.

In this sense, one could say that graphic design is a matter of life or death.

It is certainly part of our urban fabric, and thus must be considered an important element when discussing the finer grain issues of urban design.

Some research projects worth looking at...

Recent US-Road-signage research:

<http://www.nytimes.com/2007/08/12/magazine/12fontst.html?th&emc=th>

Research by McDonald's in their search for global symbols:

http://www.translate.com/technology/multilingual_standard/McDonalds_Nutrition_Icons_Case_Study.pdf

Research of the UK Department of Health on the "Consultation on the Introduction of Picture Warnings on Tobacco Packs".

http://www.dh.gov.uk/en/Consultations/Responsestoconsultations/DH_077960

Research of Colette Jeffrey for the signage of UK-NHS hospitals.

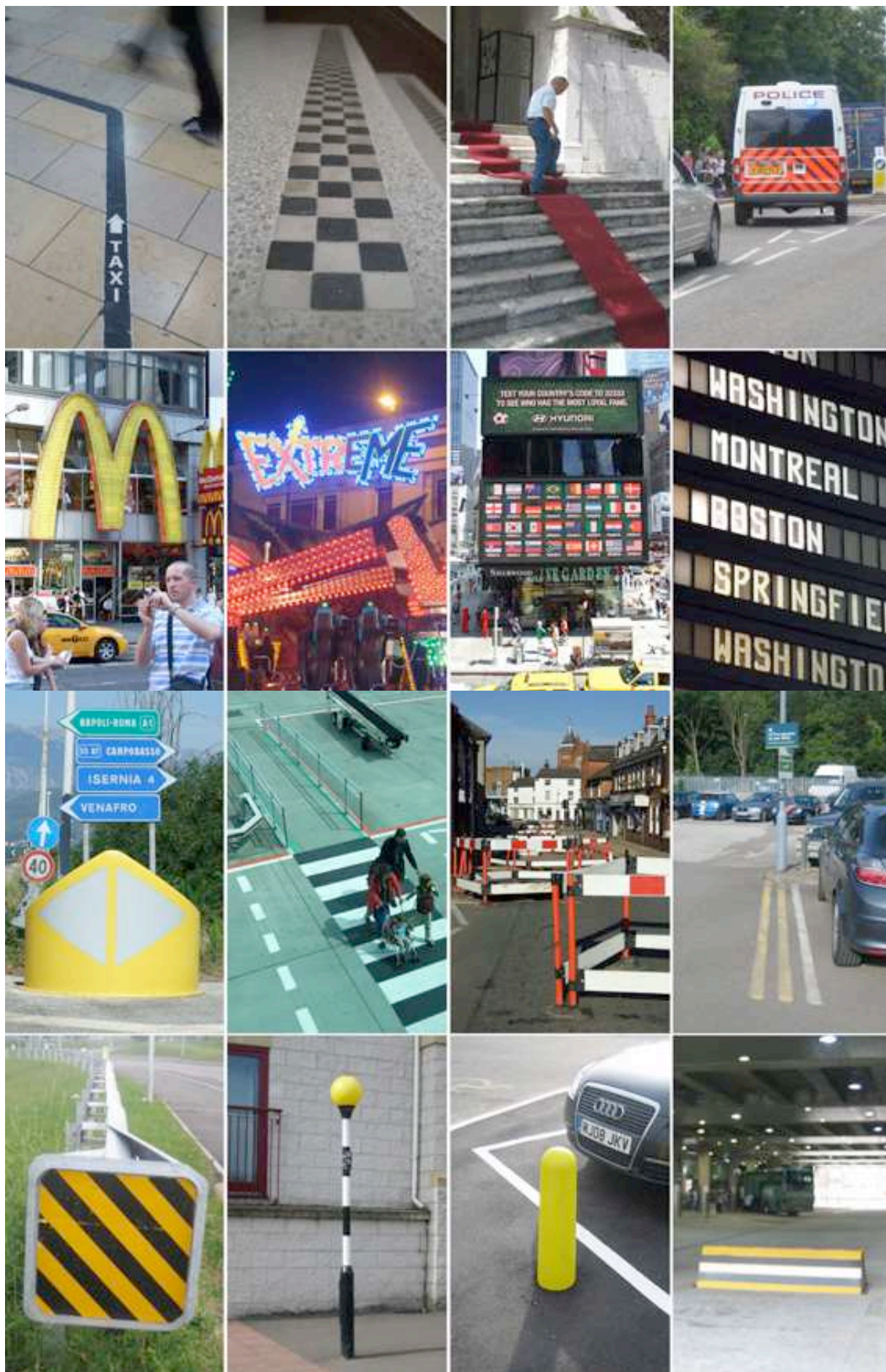
<http://www.nhsidentity.nhs.uk/signage/>

6.10 Research-driven visual data

An edited selection of graphic objects from fieldwork











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The post-colonial graphic object in America (English), Brazil (Portuguese), Canada (French)
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