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Baroque Cities?

The concept of scale in global urban centres, with particular reference to the Xin-Yi Planning District of Taipei

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Declaration page

This should be inserted at the front of the thesis

"I hereby declare that I am the sole author of this thesis; that the following thesis is entirely my own work; and that no part of this thesis has been submitted for another degree or qualification".

Signed ...Shayn Huang... 2015. 06. 08 ....

ABSTRACT

One prominent consequence of globalization has been rapid urbanization and the formation of extremely large cities. In East Asia, such cities are not only large, but have blurred edge conditions and are increasingly difficult to distinguish from their once rural hinterlands, are usually fragmented in form, and simultaneously juxtapose different scales of physical things such as buildings and infrastructures, and economic and social networks that thread through them.

The aim of this thesis is to explore these kinds of globalized cities in East Asia, and focuses on the city of Taipei in particular. The thesis identifies a set of conceptual and methodological limitations in conventional approaches to studying these contemporary urban conditions of such cities. The thesis argues that new ways of thinking through the concept of scale is essential to properly understanding the large, globalized cities of East Asia. The thesis works through the issue of multiple and co-present scales. It suggests that different kinds of 'bigness' and 'smallness' coexist, and that this coexistence is central to the experience of such cities. With a special focus on the city of Taipei, Taiwan's largest city, the thesis indicates that cities that appear to be merely 'big' urban formations disguise many overlooked global 'middling' (Sassen, 2007a) and 'small' conditions that emerge from their struggle with their post-war urban reconstruction and the emergence of globally networked urban logics. The conditions of Taipei register the contextual specificity to the importance of thinking in a multi-scalar way.

The theoretical framework of the thesis is grounded in re-examining the idea of scale within the particular fields of architecture, geography and urban studies. The concept of a hierarchically-nested scale has been a dominant approach to scalar conceptualization in these fields for a number of decades. However, the thesis argues that this linear approach has been weakened by its limited abilities to respond to the more complex and multi-scalar processes that crucially inform the big urban formations in the context of globalization. Drawing from the critiques of The Fold (Deleuze, 1993; Wölfflin, 1986) and the concept of 'flatness' (Latour, 2005; Law, 2004; Marston, 2005), as well as critical work on place significance (Sassen, 2007a), the thesis proposes a 'Baroque' alternative to these conventional theorizations of urban scale.

In order to offer an enabling approach to cities such as Taipei, the thesis argues this

'Baroque', used here in a quite specific sense, as a way of appreciating the multi-scalar nature of such cities, and as a means of developing a methodology by which to better appreciate and understand them. The thesis develops this 'Baroque'-inspired methodology by examining five socio-spatial practices at different scales which have been selected to represent multi-scalar characteristics in the Xin-Yi planning district of central Taipei which is formed by a globally networked urban logic. The thesis concludes by proposing the idea of the 'Baroque City' as a more suggestive, multi-dimensional approach to capturing the richness of the contemporary urban scale of cities. It is intended that this will not only support investigations of East Asian cities, but also enhance architectural engagements with such dynamically complex and multi-scalar conditions of global urban centres.

I dedicate this work
to the Lord of my God,
and my dearest family.

ACKNOWLEDGMENTS

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CHAPTER 1

INTRODUCTION

1.1 Contextualizing Background and Hints

Every time I travel and stay in big cities such as London, New York, Tokyo and Shanghai, it seems not difficult for me to quickly catch the rhythm and roam freely around in the city using advanced technology and infrastructure. This capacity might be attributed to my long-term living experience in the central Taipei metropolis in East Asia.

Walking in the Xin-Yi planning district, the central area of Taipei city proposed as *Taipei Manhattan*, it is impossible to miss a giant architectural structure which overshadows several blocks. This is the Taipei 101 building, the tallest building in the world until 2010, which stands splendidly as a national landmark on Xin-Yi Boulevard. It recalls for me my experience of an architectural field visit to its 89th floor, surrounded by unfinished construction. From that viewpoint, the tremendous city panorama shows the development of urban blocks in this area which have served to link the global economic circuits since the 1980s and are still there in patches, but some public buildings and infrastructure have been established well. Today, eight years later, the district has been dramatically changed by a mass of high-rise buildings as well as advanced infrastructure, and continues to sprawl outwards intensively. Yet, turning round to the opposite site of the Taipei 101 building, there is a forever flat and green block which old Taipei people call *the allotment garden*. It remains there, a living, vigorous place with a number of gardeners and seasonal vegetables, since this area has turned from being full of rice

farmland to become a modern architectural landscape. It is really problematic for me, as a spatial researcher, to navigate where I am and to sense the quality of space in this urban fabric.

Coming closer to the middle area between the Taipei 101 building filled with global financial corporations and a vivid allotment garden with local people and plants, there is the construction of a new city underground line preparing for completion. This city-scale infrastructure physically serves as a bridge to link the building and the garden underneath, and this transportation infrastructure will extend them even more, connecting to the national airport by the one line. It raises a question of how can we understand a city where such extremely big and locally small urban tissues are practised so closely together at the same time. The sense of scale is lost again, not in a monumental building this time but in a vigorous operating urban space of the city.

Such a contesting urban phenomenon brings out a beautiful link with a particular phrase, *From the spoon to the city* (town) (Nathan, 1952). This explains the typical approach of a modern architect, designing a spoon, a chair, and in the same day working on a skyscraper. As an architect, Aldo Rossi's drawing (1993), a tea pot and a theatre, innocently displays different scales of objects on one page. Is there a similar condition in the city where different sizes or scales of urban objects exist and are practised on the same spatial page? (*see* Figure 1.1) The contemporary urban phenomenon which has occurred in Taipei is truly shown on that architect's sketch paper. Yet it raises a series of questions of what the Taipei 101 building and the allotment garden really have to do with the spoon and even relates to globalization. Does this architectural statement in any way help us to understand contemporary cities? More precisely, what is a big city now? The curiosity evoked by my personal urban experience in Taipei and my professional training in architecture provided the motivation for this research study and will be consolidated

next by an explanation of further research questions in greater detail.
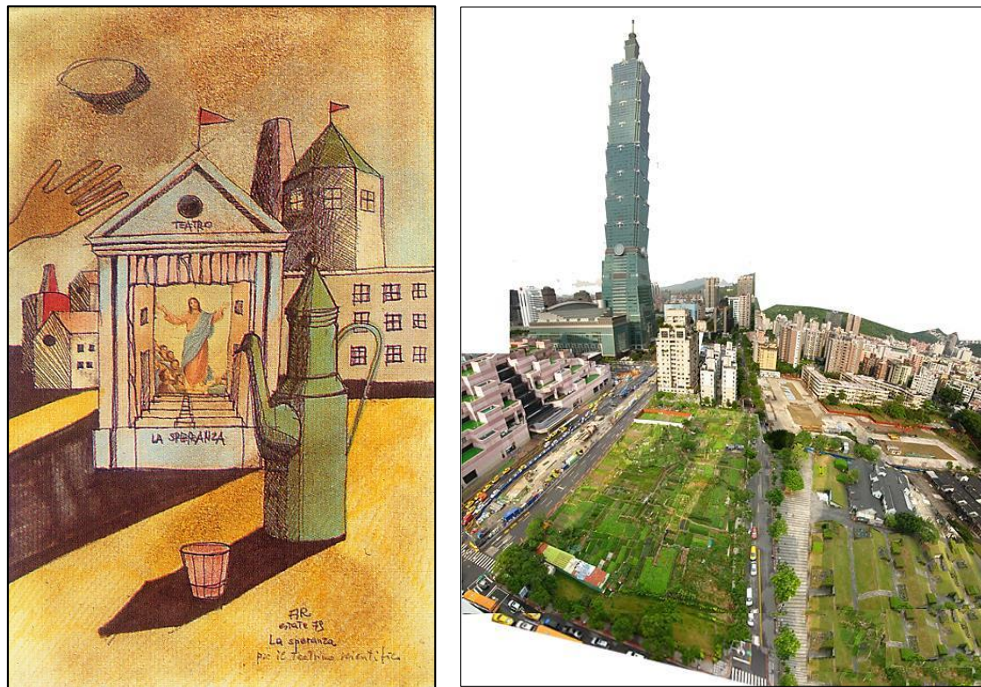
Figure 1.1: Left: Aldo Rossi's drawing (1979), a tea pot and a theatre. These two different scales of objects have co-presented to each other in a one situated condition (Rossi, 1993:99). It echoes a particular urban condition in an East Asian city, Taipei, where the Taipei 101 building standing on the upper-left side and the allotment garden situated on the center coexist (photo by author).

1.2 Problem Statement and Research Questions

According to United Nations World Urbanization Prospects (2012), for the first time in human history, more than half the world's population today lives within cities (Arimah, Maseland, Kassim & Jaidka, 2013). We now live in an urban age. This urbanized situation not only represents a way of modern life, but also reshapes the idea of living and the understanding of the built environment especially in the way that cities have become extremely bigger than ever before in urban history. The formation of large cities,

on the one hand, refers to the extension of geographical size formed by chains of metropolitan areas linked by corridors of communication. On the other hand, the emergence of global urbanization since the late twentieth century has been evolving as a high level of cross-border connections operating different levels of scales. It might be recognized as two folds of bigness (Deleuze 1993, Koolhaas 1996); the world is urbanizing and cities are being globalized (Soja & Kanai, 2007). In this urban circumstance, the traditional sense of a city being merely defined by territorial boundaries and physical connection is challenged. Thus, it raises questions about how we can understand such large and cross-boundary connected cities. It is particularly crucial to disciplines of spatial research to cities as in architecture.

Urban sprawl, particularly in the US, can be recognized as a propeller of the intensive movements of city extension since the 1920s, and especially popular in the 1950-60s. New demands of manufacturing and industry combined with residential shift act as the thrust behind this sprawling urbanism. The penetration of urban functions is associated with the infrastructural linkage far into the peripheral area. The old distinctions between urban, suburban and rural have collapsed; as a result, large city areas occur (Bruegmann 2005). Since the 1980s, the rise of the globalization process which is a product of an extraordinary expansion, diffusion and networking of capitalist industrial production has transformed most European and American metropolises into new urban agglomerations which are no longer rooted exclusively in the original core cities (Isin, 1996:98-99; Soja, 2000; McGrath & Shane, 2012). Accordingly, the urban form of such large cities evolved in the globalization process has become blurred and porous associated with spatial fragments, functional patches and geographical discontinuities. In consequence, cities are not only growing off the map without clear limits, but also create an evolving complex pattern in social, spatial, economic and political circumstances due to the unceasingly work with the disconnected sprawling areas and transnational networks. The traditional

definition of a city and the understanding of what makes a big city have become insufficient to describe such urban conditions of cities in the context of globalization.

This has raised an extraordinary array of novel terminologies and concepts to capture the proliferation of distinctive urban forms that bear witness to these extreme urban transformations since the mid-twentieth century. It is worth examining the particular issues and contexts that each of them reveal in response to distinctive facets of contemporary cities that involve the geographical unboundedness and move towards patchily networked urbanism on a global scale. However, the urban conditions of large cities are now subject to the unbounded reworlding processes without an explicitly territorial domain, and the terms which are set in the traditional idea that is designed to approach centric and bounded cities might be qualitatively and quantitatively insufficient. This might bring about a rethinking of the approach to such cities and reveal the need for new approaches.

The global economic flows which are regarded as the most powerful influence on the contemporary urbanization process are continuing their determined restructuring across much wider scales and regions of the world than ever before. Asian city regions, for instance, have evolved to a much greater extent in terms of the growth of their economies and the numbers of large cities since the beginning of the twenty-first century. This phenomenon might restructure the existing order of the global economy and re-configure its content. Such large and globalized cities in non-Western urbanism experience the challenges of their extreme geographical expansion, the blurred-edge condition and the floating population which have been peripheral for a long time in urban and spatial studies. With a particular focus on East Asian cities, global flows and strong regional networks based on the Japan/Mainland China layer and the South Pacific circuits are interwoven in the same struggle. This result in the specificity and richness of

urban material in this distinctively geographical region. This thesis shows that these urban subjects provide an abundance of unexplored and complex situational materials that might enrich the study of contemporary cities in the context of globalization.

Cities in East Asia, with a particular focus on Taipei which represents what Saskia Sassen (2007) called *the middle* – neither the global north nor south – reveals contesting urban conditions in which extremely big and small scale are actively practised at the same time. The sense of scale which serves to understand the spatial relationship is therefore confused. In addition, this thesis shows how the city of Taipei which appears to be merely 'big' urban formations disguises many overlooked global middling and small conditions that emerge from the struggle with its post-war urban reconstruction and the development of globally networked urban logics. In fact, different kinds of 'bigness' and 'smallness' coexist and dynamically co-present in the global urban centre of Taipei. It cannot therefore be simply seen as an enclosed urban wholeness. The Xin-Yi planning district serving as a global urban centre in Taipei specifically registers the contextual specificity of the importance of re-thinking the city in a multi-scalar way. This thesis argues that new ways of thinking through the concept of scale are essential to appreciate these large, globalized cities of East Asia such as Taipei.

As the sense of scale inherently resides in architectural discipline, it can be tracked back to the tradition of the humanities in the sense of relating to human societies and to the human form which connotes the proportional relationship of a building to its parts. The body, a human scale, as a principle is at the root of architectural history, theory and practice to approach space, the built environment and cities. However, the body scale shows difficult to determine after the movement from modernism to the post-modern era. It is significant to address the difficulty and the inability of this taken-for-granted principle of scale to face the complex urban conditions of large and globalized cities

nowadays. Rem Koolhaas' critical argument of *Bigness* (1996) might reveal some problems about the inadequacy of the theoretical void of renewing the sense of scale from the human body which results in this architectural availability to the contemporary urban world. This insight opens a wider approach of scale to bridge with other disciplines also working on scale to the contemporary cities in the context of globalization.

The spatial disciplines of geography and urban study which have worked on scale and space in the globalization context for a long time provide fresh and abundant amounts of the valuable debates concerning the concept of scale. Geographical scale, to some traditional extent similar to architectural scale, is a fundamental concept for making sense of the world in both theoretical and practical respects. In urban studies, the urban question which had previously centred on the conceptualization of urban spatiality in research on cities has been readdressed and is increasingly being posed in the form of a scale question since the 1990s (Brenner, 2000a). The question of scale becomes a significant theme shared by the spatial debates between urban study and geography. The dominant concept of scale, the idea of a hierarchically-nested logic, depicted as a relationship of 'nesting' in which the small resides within the medium which resides within the large, has pervaded those disciplines for many decades. This conventional concept of scale, argued by critics and commentators (Marston, J, & K, 2005; Law, 2004) has caused difficulty in responding to the phenomena of the contemporary cities which present more complex, multiple and dynamic conditions.

The conventional ideas of scale in those disciplines have confronted essential problems and incapacities to sufficiently depict and comprehend new urban conditions in globalized cities. Therefore, it might be questionable whether there is an alternative approach to re-conceptualising the idea of scale and how the critiques which architecture

and related spatial disciplines have might can contribute to the alternative. This thesis suggests that the comparative understanding of the difference in conceptualizing scale between the architectural field and geographic urban studies might help to develop a wider and deeper framework for conceptualizing scale. Moreover, in the thesis, more attention is paid to whether architecture has particular knowledge and sensitivities, for instance the ability to operate scales and to pay attention to materials, space and users, to offer an alternative approach to scale.

The difficulty of understanding new urban conditions in contemporary big cities refers to the theoretical insufficiency in the concept of scale, as a problematic conceptual framework in architecture and related spatial disciplines, and also reflects on the methodological inadequacy of empirical engagements. The application of a fixed or single method which is often used in architecture and spatial disciplines is a restricted response to such changeable and incoherent urban conditions. Recent empirical work in geography and urban study, moreover, is easily prone to taking perspectives from two extremes of the spectrum as macro or micro approaches to cities. This might become a methodological simplification of the complexity and multiplicity manifested in contemporary East Asia cities. An alternative methodology to capture such cities is required.

1.3 Hypothesis

As we have seen in the discussion above, the process of global urbanization nowadays has promoted an unprecedented urban formation of extremely big cities in which geographical expansion and a globalized urban connection meet. They are underpinned by new technologies, infrastructural linkages and capacities for mobility, including the capacity to transmit knowledge, information and capital digitally. Each brings about complex situations of interconnections that are not necessarily determined by geographical relationships between and amongst cities. Consequently, the fabric of these cities comes to be frayed, fragmented and patchy. From an architectural perspective as the main strand of the thesis, the sense of scale which is radically used to define the spatiality of cities and how to approach them is lost. As commentators such as Anthony Vidler (1990) and Georges Teyssot (1994) have argued, the human-body tradition of architectural scale experiences painful inability to respond to the dynamism and deconstruction in cities. Rem Koolhaas (1996) even indicated the absence of critically theorizing scale in architecture to the emerging situation. The abundant literature concerning debates on scale in the related spatial disciplines of geography and urban study is considered to be a great supplement to the reconceptualization of scale. The dominant concept of hierarchically-nested scale which pervades those disciplines, however, offers restricted approaches to the complex globalized urban conditions suggested to be interpreted as multi-scalar configurations (Brenner, 1998; Sassen, 2007a). Consequently, it is important to have an alternative approach to re-conceptualizing the idea of scale based on interdisciplinary debates to engage with contemporary globalized urban conditions in big cities.

The use of scale in architecture from the past to the present is particularly appropriate as an operational technique for both theoretical and practical materials. For scholars in urban study and particularly in human geography, scale serves as a conceptual framework discursively working with wider issues including politics, economy and socio-cultural matters which might involve the question of scale to understand the contemporary urban world. These interdisciplinary approaches of scale help to set a framework, in the thesis, for proposing a *Baroque alternative* to re-conceptualize the idea of scale. With the proposal that scale is considered as an appropriate conceptual framework and methodology for understanding cities, the term *Baroque* as used in the thesis refers to a philosophical and critical idea rather than a specific architectural style and period of time. It is drawn from two aspects of critical approaches to the hierarchically-nested logic of scale.

Gilles Deleuze's reading of the Baroque, in the form of *The Fold* (1993), inspired by the architectural and art historian Heinrich Wölfflin's critical analysis of Baroque qualities (1986/1915), provides an understanding that one condition can be seen as two folds of scales; the big can be folded to become the small. There is no absolute and no implicitness. The sensibility of Baroque in the fold featured as temporality, a process of continuous movements, and furthermore referred to formations of depth in regions of time (Deleuze, 2005), offers a channel to engage critiques of the complexity and multiplicity of scales in the contemporary world which are also shared with critiques in human geography and urban study to develop further arguments. The critical argument of *The Flatness,* drawn from the works of Bruno Latour (2005) and of Sallie Marston (Marston et al., 2005), as well as of the application of actor network theory (Latham, 2002; Law, 2004; McCann, 2008), directly challenges the inadequacy of the conventional idea of nested and hierarchal scale, and forms the second approach to the concept of the Baroque alternative. Although the term 'Baroque' was not used with its

literal meaning in most of their texts, the quality and sensibility of the Baroque against nested hierarchy, referred to as the scientist's grid epistemology (Dixon & Jones, 1998), are shared and interpreted between them in different theoretical forms. In short, the idea of flatness helps to unpack and free the understanding of scales from a hierarchical and nested order. John Law's critique departed from the Baroque complexity and enabled those free scales to move in more dynamic relationships, which can be empirically and theoretically applied in the fields of urban geography and urban study.

The idea of Baroque is a significant critique of contemporary scalar issues with different forms of interpretation residing in the spatial disciplines of architecture, geography and urban study. So in the thesis, the Baroque alternative is proposed as a critical approach to enable the reconceptualization of scale. The Baroque alternative, taken in the architectural context, needs to be set in a spatial context of material ground rather than an abstraction of intertwined networks only. The idea of place-bound specificity, suggested by Saskia Sassen (2007a, 2007b), and other materialistic critiques provide an appropriate material grounding to the alternative.

Scale, as both a conceptual framework and a methodology, enables the Baroque alternative to be a methodological approach to the new urban conditions in big cities. With a specific stance on architecture, we suggest that the special knowledge of operating different scales at the same in architecture might activate the Baroque conceptual approach into a suggestive methodology for reading and depicting cities. The conventional approach to big cities using single or limited qualitative and quantitative methodologies in architecture, geography and urban study is inadequate to respond to the complex and multi-scalar conditions intensively manifested in contemporary big cites. The suggestive methodology in multi-scale, therefore, intends to reflect the complexity and multiplicity of cities by employing different methods in multiple scales at the same

time, rather than determining precise methods to delineate the implicitness. Moreover, a methodology based on the concept of the Baroque alternative will reveal the quality of the fold; scale is both a state of two-sided folding and the fruit of the flatness; scales are working freely and moving dynamically. In other words, the city is not only composed of multiple scales but is under multi-scaling. Therefore, we suggest a conceptual scalar diagram, rendered as a small/big and local/global coordinate, to visualize the scaling outcome of each selected scalar practice in the particular urban context. This diagrammatical visualization derived from empirical data serves as a vehicle to integrate the theoretical and methodological approach to scale into one performance.

As an increasing concern as described above, the big city in the East Asian region, which has been experiencing intensely complex urban formations since the end of the twentieth century, might provide great amounts of rich material and emerging issues for rethinking scale in contemporary urban research. By using these, the Baroque alternative will be demonstrated through the suggestive methodology in multi-scale in Taipei city, an East Asian metropolis. Instead of reading cities by the single scale of object or subject, five socio-spatial practices have been selected at different scales representing distinct urban characteristics in the Xin-Yi planning district.

Each of these practices will be examined and (re)scaled to manifest the contextual urban conditions of coexistence and co-presenting of multiple scales that structure Taipei. The consequence of rescaling five practices by the approach of the Baroque alternative will suggest that socio-spatial practices in Taipei might be seen as a moving scalar field in which scale constantly folds and moves their positions associated with time scale, and patchily connected or disconnected with each other to form complex and temporary networks. The thesis concludes by proposing the idea of the 'Baroque City' as a more suggestive, multi-dimensional approach to capturing the richness of the contemporary

urban scale of cities. It is intended that this will not only support investigations of East Asian cities, but also enhance architectural engagements with such dynamically complex and multi-scalar conditions of global urban centres.

Aims and Significance

This thesis starts by questioning emerging urban conditions in extremely large cities and the way to re-understand such extreme urban conditions in contemporary globalized cities. However, there is no intention to categorize cities in a new list of bigness nor to redefine the content of big cities and suggest a definite way in which they should be understood. It is more important to reveal the features of the complexity, multiplicity and dynamic implicitness composed of and meanwhile restructuring contemporary cities. Cities, particularly in large-scale urbanism, should be recognized as a continuously reforming urban process rather than an absolute urban wholeness. These new urban phenomena, which have caused a great amount of dilemma and difficulties in theories and practices especially in spatial disciplines, in fact encourage more potential approaches to expand this emerging research terrain. This thesis aims to explore whether architecture, which has been involved in city matters over a long history but has so far been absent in current urban debates on big urbanism, might have particular things to contribute to the wider discussion and be able to offer innovative approaches to these big city phenomena. We argue that scale which resides in the architectural discipline is an appropriate register for proposing critical engagements with contemporary cities.

Reviewing the architectural literature on scale reveals an absence of or difficulty with theorization of scale in contemporary debates and this opens an opportunity to welcome

other spatial disciplines also working deeply on the concept of scale. The interdisciplinary approach to the idea of scale, including the fields of architecture, geography and urban study, is significant to this thesis and sets a conceptual framework which will be applied to the empirical field in Taipei later. In addition, the Baroque alternative for conceptualizing the idea of scale supplemented by philosophical and socio-geographers' critiques suggests an innovatively recombinant body of knowledge on scale which is not restricted to any particular disciplinary tradition. The Baroque alternative of the thesis, more importantly, will not only be an attempt at the reconceptualization of scale, but will also be activated to enable a methodological approach to depicting cities. The special knowledge of operating multiple scales at the same time in the architectural profession serves as a catalyst to empower the multi-scalar methodological approach. This proposed methodology is intended to provide an alternative roadmap which will open up paths for future work on big cities which are full of complex and multi-scalar conditions.

The application of a methodology in multi-scale is adjustable and contextual in response to specific urban conditions in cities where empirical work might take place. In the thesis, the empirical work on Taipei city investigating five socio-spatial practices not only abundantly reveals the characteristics of the complexity, multiplicity and dynamical implicitness which we suppose exist in the contemporary big city, but also reflects the specificity of multi-scalar practice on diverse geo-historical layers, different time scales and transnational social networks. The thesis, significantly, suggests that an alternative proposition for engaging with East Asian cities such as Taipei should be framed with openness and specificity on its own terms.

In short, the Baroque alternative for conceptualizing the idea of scale is intended to support investigations into East Asian cities which have not yet been well-explored and

are well worth more attention in current architectural and urban literature. More importantly, it is intended to enhance architectural engagements with the new urban conditions of globalization.This proposed methodological approach of the Baroque alternative will set a critical framework for architecture to achieve a re-theorization of scale with a wider and deeper approach but a less hierarchically-nested logic to respond to the extremely big, complex and multi-scalar urban conditions of cities required in the decades ahead.

Limitations

It will be helpful at this stage to define some particular limitations of this thesis in terms of the theoretical and empirical framework. As a valuable supplement to the concept of scale, the literature on scale in the disciplines of geography and urban study has been heavily associated with other theoretical domains, in particular in politics, economy, critical social theory and cultural study. In the thesis, however, we shall focus only on specific debates concerning scalar questions on global urbanization and world/global cities. Therefore, only very specific and limited parts of full scalar debates will be introduced in this thesis. Further exploration might be required in future research. The time of the empirical work is framed in the period from 2009 to 2012. There are some limitations to investigating each socio-spatial practice, including time and security issues, the inaccessibility or inability of designated interviewees, the language barrier caused by the local dialect, and commercial policy restrictions. To a certain extent, acquiring empirical data in the light of some interview and policy restrictions is approached in alternative ways or with substitute people as supplements to the thesis.

1.3 Framework of the Study

This research requires an appropriate framework, including a rigorous theoretical foundation, case studies on multi-scalar socio-spatial practices in Taipei city, and a conclusion based on multi-rescaling the city through the Baroque alternative to re-understand contemporary big cities in the globalized urban context. Hence, this thesis will be structured in three parts.

Part 1: The Theorization of Big Urbanism and the Idea of Scale

This initial part will be addressed over Chapters 2, 3, 4 and 5. Chapter 2 will set out some significant new urban forms referring to the specific process of city expansion since the mid-twentieth century. Examining the emergence of new urban terminologies serves to recognize unprecedented urban conditions occurring in extremely big urbanism and to reveal difficulties which conceptually and practically challenge the traditional ways of reading a city. The force of globalization has generated an unsettling context to restricting big urbanism which is not necessarily a geographical connection but a fragmental and cross-boundary interconnection. Depicting the formation of East Asian urbanism might provide a fresh register by which to read such contesting post-metropolitan transitions and set a regional context for empirical work later. In Chapters 3 and 4, we shall focus on reviewing the idea of scale in different spatial disciplines. The literature of architectural scale from the humanities tradition to post-modern difficulties will be articulated in Chapter 3. Chapter 4 will explore the question of scale in geography and urban study. The difference of using scale between architecture and geography and urban study will form a prologue to the conceptualization of the Baroque alternative in Chapter 5. This chapter will help to develop a solid conceptual framework

for re-conceptualizing the idea of scale and will lay the foundation for subsequent discussions and conclusions.

Part 2: Approaches and Case Studies

Chapter 6 will be the hinge that activates the theoretical aspects of the thesis. The development of a methodology in multi-scale supplemented by interdisciplinary approaches to reading cities and their inadequacy to respond to contemporary urban phenomena mainly structures the chapter. Conditions and limitations of the case studies, the justification of the data and the conceptual scalar model which will serve as a supportive diagram for critical analysis in Chapter 9 will be explained in detail here. Then the cases studies (examined in Chapter 7 and 8) will follow. The historical geography of the formation and transformation of Taipei city, and the special urban and social context of the Xin-Yi planning district in central Taipei where the five social-spatial practices take place will be investigated in Chapter 7. Then, the five socio-spatial practices as case studies will be articulated in greater detail in Chapter 8. In this chapter, they will be presented in the form of a spatial story with abundant visual materials and text descriptions of their attributes and the way they practise. This provides the richness of empirical data for critical analysis in the following chapter.

Part 3: Discussions and Conclusions

Based on the descriptions of each socio-spatial practice investigated by multiple methods, Chapter 9 will critically analyse them, first using a conventional approach of scale in hierarchically-nested logic and then rescaling them through an approach of the Baroque alternative. The conceptual scalar model will be illustrated in each socio-spatial

practice to present the difference between the (re)scaling examination. A comparative discussion on the relationships between the five socio-spatial practices will be carefully articulated in the next chapter. Chapter 10 will then discuss the significance of the multi-scalar methodological approach to rescaling the five socio-spatial practices in order to re-understand urban conditions in Taipei. It will then be re-addressed that the Baroque alternative approach to conceptualizing the idea of scale not only provides a fresh proposition for engaging in East Asian cities on its own terms, but also opens an interdisciplinary channel to work on scalar questions in response to contemporary urban conditions. The chapter will conclude with a hypothetical assumption of an innovative term to suggest further research on big urbanism in the globalized urban context in the future.

CHAPTER 2

THE EMERGENCE OF CONTEMPORARY URBAN FORMATIONS

TOWARD GLOBAL CITIES

A city is a complex assemblage involves a multi-dimensional relationship between social activities and their physical surroundings at multiple levels.

> [Cities are] the product of both human agency and environmental or contextual structuring. […]. This infuses all (socially constructed) scales of human spatiality, from the local to the global,…with openness and freedom as well as enclosure and oppression [.]
>
> (Soja, 2000:6-7)

The new industrialization and reconfiguration of regional economies since the 1960s have accelerated a series of urban formations. It began with urban regional sprawl and then moved toward the global structuring, the World/Global city, within just a half a century. These new cities have confronted unprecedented geographical expansion and cross-boundary interconnection that has leaped beyond a city level towards the regional and the global. These formations are underpinned by new technologies, infrastructural linkages and capacities for mobility, including the capacity to transmit knowledge, information and capital digitally. The prominent consequence of this is that these cities have become extremely large in size, fragmental in territory and blurred in boundaries that are used to define the core city and its hinterlands. The traditional distinction between the urban and the suburban as well as the rural is no longer sufficient. A series of new terminologies and literature that attempt to account for these emerging urban

conditions of those primary, large cities have occurred. The process of globalization which occurred most intensively after the mid-1980s has intensified such large but yet discontinuous urban formations in and amongst contemporary cities which are systematized in and reformed according to a globalized urban logic. These debates on current urban conditions concerning large and globalized cities set an adequate framework to explore a particular regional situation in East Asia. The urban conditions of East Asian cities not only provide contextual specificity to the reading of contemporary large and globalized cities, but contain extremely complex and mulitple urban practices in the urban scale. This thesis indicates that the large, globalized cities in East Asia, with a particular focus on Taipei, have worked with different kinds of scale in coexistent and multiple forms on their urban ground. Therefore, it suggests that the concept of scale is essential to capturing the urban conditions of those cities. To serve as a conceptual framework to cities, the idea of scale will be elaborated in the disciplines of architecture (Chapter 3), and geography and urban studies (Chapter 4) in the following chapters.

The first section of this chapter begins by discussing these new types of urban forms outlining the consequences of urban transformation since the 1960s. The different terminologies in response to the particular urban formations help to review the significant forces and context which result in specific city making. The second part of this chapter focuses on the formation of particular urbanized spatiality intensively impacted by the process of globalization since the 1980s. Attention is given to how these forces evolve new forms and ideas of cities, such as the world/global city (Friedmann, 1986; Sassen, 1991) and their positions in the globalized urban logic. The third part, as the empirical anchor of this thesis, will centre on the distinctive East Asian global urban context exemplified by several signature city regions. It offers evidence that the formations of large cities which traditionally have occurred and been examined in Anglo-American urbanism in fact are taking place in the East Asian region at a more dramatic

pace and in a specific way. To contextualize the East Asia urban conditions and their transnational multi-layer networks will help to set the knowledge to engage in a specific global urban centre in Taipei, as an empirical field which will be testified later, in Chapter 7.

2.1 Emerging Urban Transformations in the West since the Mid-Twentieth Century

The trend of urbanization has swept across the whole world over the last four decades. According to a UN-HABITAT global activities report in 2013, the majority of the world's population living in urban areas reached 3.6 billion for the first time in 2011 (Arimah et al., 2013) (*see* Figure 2.1). The urban transformations and conditions which people to a certain extent have become involved in are matters of great importance to both the majority of the population and to researchers, especially those working in the field of spatial study. To retrospect the history of urban formations, there were only two cities, London and Beijing, with more than one million inhabitants in the early nineteenth century. By 1900, London had become the first mega-sized city region with a population reaching the ten million mark. Some ten million-plus cities had arisen, such as New York, Paris, Moscow, Shanghai and Tokyo, by 1985. The number of such super-cities rapidly increased to 438 and the existence of twenty-three mega-sized city regions had been recognized by 2005 (Burdett & Sudjic, 2007).[1] This wave is expected to continue with an estimated 70 million new residents moving to urban areas every year. From a broader spatial perspective, the urbanization of the entire globe and the globalization of

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[1] Statistical data on the world population ranking are included in the Appendix.

urbanism have become a way to define the contemporary world: "as the world urbanizes, cities are being globalized" (Soja & Kanai 2007: 54-5). This extraordinary and unprecedented phenomenon of urbanization has become the mainstream of contemporary urban formations which bring about particular conditions and consequences that crucially challenge our understanding of a city.

Region	Urban population (million)					Percentage urban				
	1950	1975	2000	2011	2050	1950	1975	2000	2011	2050
World	745	1538	2859	3632	6252	29.4	37.7	46.7	52.1	67.2
More developed region	442	718	881	964	1127	54.5	68.7	74.1	77.7	85.9
Less developed region	303	819	1977	2668	5124	17.6	27.0	40.1	46.5	64.1
Africa	33	108	288	413	1264	14.4	25.6	35.6	39.6	57.7
Asia	245	598	1392	1895	3310	17.5	250	37.4	45.0	64.4
Europe	281	444	514	539	591	51.3	65.2	70.8	72.9	82.2
Latin America & the Caribbean	69	196	393	472	650	41.4	60.7	75.5	79.1	86.6
North America	110	179	248	286	396	63.9	73.8	79.1	82.2	88.6
Oceania	8	15	22	26	40	62.4	71.9	70.4	70.7	73.0

Source: United Nations (2012) World Urbanization Prospects: The 2011 Revision

Figure 2.1 *Top*: Global trends of urbanization from 1950 to 2050. The transition period from 1950-2011 witnessed an almost five-fold increase in the global urban population (Arimah et al., 2013). *Bottom*: Locations of the world mega-cities in1950 and 2005. The smallest colour spot indicates one million inhabitants. The biggest colour spot indicates a city with twenty or over twenty million. These two population maps clearly reveal the increasing growth of city population on scale of developmental speed and territorial range within five decades (Burdett & Sudjic, 2007).

One of the most important characteristics of cities is the differentiation between urban and rural, for which the city wall is used to serve as a territorial boundary (Bruegmann 2005: 21). As societies become economically mature and as their populations increase, it is natural for cities to spread outward in official forms or informal ways (McNee, 1966).

Even though the physical city wall has gradually given way, cities are confined by various ranges of territory. This is, on the one hand, associated with external forces such as city security and defence, and, on the other hand, based on the internal pressure imposed by the amount of natural resources and the capacity for infrastructural development which they possess. After the late-nineteenth century, the affordability of widespread public transportation fully unlocked cities (Bruegmann 2005: 23). The proliferation of different models of urban forms bears witness to these dramatic changes.[2] Since the first two decades of the twentieth century, the urban landscape has confronted a sharper shift than had been felt in the previous hundred years. The era of the modern metropolis occurred in the period between the 1920s and the 1970s; the rise of globalization and neo-liberalisation policies during the 1980s accelerated city expansion; by the 1990s, the emergence of new information flows and a transnational global village transformed most European and American metropolises into new urban agglomerations which were no longer rooted exclusively on the original core cities (Isin, 1996: 98-99; McGrath & Shane 2012: 641). The twentieth-century metropolis has become an extreme-sized urban development of networked reconfigurations, and this will be elaborated in section 2.2.

The revolution of this urban landscape has been manifested in diverse ways in different continents. The processes in the United States, as one commentator Joel Garreau (1992: 3) has pointed out, showed that Americans originated the influential changes in the urban landscape over a hundred years in terms of how we build cities. This specific geographical context has drawn most scholars' attention to study the dramatic urban transformations and on-going effects up to the present. With the same attention on this context, the current thesis attempts to sketch the course of city expansion, the movement

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[2] There are great amounts of urban literature and archive supporting this realm of research which are not referenced in this thesis because the search scope of the thesis is more focused on the contemporary formations of big cities in the twenty-first century and its inheritance from the mid-twentieth century.

of sprawl, as an initial move to engage the issue of big cities which are evolving into more and more complex urban patterns and forms that require fresh terminologies to clarify and recognize what is happening. These special terminologies will be examined in greater detail in the following section.

> … our metropolitan regions are getting bigger and more spread out every day, merging into one another, forming areas of urbanization that now stretch across thousands of square miles … a city without limits.
>
> (Gillham 2002: 23)

What the urban planner Oliver Gillham described refers to an urban process generally called 'sprawl' that has been evidenced throughout urban history and still continues in the contemporary world. According to the critic Robert Bruegmann (2005), this expanding urban process can be traced back many centuries to ancient Rome when cities demanded more space and resources for their inhabitants. The new settlements then surrounding the core city emerged. The use of the term 'sprawl' first appeared in English in the nineteenth century and became popular during the 1950s, especially in the United States, for describing the urban growth freely spilling out of cities (Ingersoll, 2006: 3). Although it has existed for a long time, however, ironically there is no clear, succinct and explicit definition of sprawl that is shared in common. The description of sprawl,

	Low-Density Development	Strip Development	Scattered Development	Leapfrog Development
Whyte (1957)			X	X
Clawson (1962)			X	
Lessinger (1962)	X		X	
Harvey and Clark (1965)	X	X	X	X
Bahl (1968)				X
McKee and Smith (1972)	X	X	X	X
Archer (1973)			X	X
RERC (1974)			X	X
Ottensmann (1977)			X	
Popenoe (1979)	X	X	X	
Mills (1981)			X	X
Heikkila and Peiser (1992)	X		X	
Beaumont (1994)	X	X		X

Figure 2.2 Characteristics of sprawl summarized by Reid Ewing. This long list shows that the issue of urban sprawl has raised significant concerns among prominent scholars in urban and city studies for almost two decades (Ewing, 1997).

moreover, has been changed over time by different dictionaries, situations and

commentators. Chronologically speaking, sprawl, in the early twentieth century, was portrayed as a transitional landscape which was a suburban phenomenon, beyond a city's limits, and at the urban periphery. In the mid-twentieth century, it was often used by urban scholars to describe the feature of low-density development, scattered and unplanned in its pattern as well as automobile-dependent, an entirely man-made landscape (Ewing, 1997; Gillham, 2002; Gutfreund, 2004a; Bruegmann, 2005; Ingersoll, 2006). Reid Ewing (1997: 108) in his profound work *Is Los Angeles-style sprawl desirable?*, summarised these situations and proposed four features of sprawl[3] which are now widely accepted and are used to characterize the phenomenon by both anti- and pro-sprawl supporters (*see* Figure 2.2). Although scholars have tried to categorize this movement of city expansion, Richard Ingersoll (2006) and Robert Bruegmann (2005) argued that contemporary sprawl implies a state of being rather than a completed urban status. It is a moving process expressed in diverse forms which makes it difficult to identify exactly its content and tendency.

Regarding the thrust of urban sprawl, the growing number of middle- and working-class families in both west Europe and North America by the 1920s were able to afford the costs of houses and commuting at the urban periphery which had previously been dominated by the wealthy and powerful. The rush of city sprawl then began in earnest. One of the factors that made all of this movement possible was the widespread accessibility of infrastructure, including transportation networks and resource systems. Improvements in private and public transportation started with the introduction of suburban trains and then automobiles, allowing cities to rapidly expand beyond walking distance (Gillham, 2002: 45). Manufacturing and industrial plants could then be

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[3] He posited four basic forms referring to sprawl. They are leapfrog or scattered development; commercial strip development; low density; and large expanses of single-use development (Ewing 1997). Although there are various conditional issues and phenomena which sprawl might refer to, for instance, the matter of displacement of occupation in European post-industrial cities in tandem with changing and improving infrastructure, these four forms which Ewing summarized are more common in debates.

relocated away from the old city centres and toward outlying areas where costs were cheaper and there was more land available. Pervasive electrical power and, later, telecommunication grids assisted in providing a strong framework for the sprawling development, and made urbanization available almost everywhere (Bruegmann, 2005: 32; Gillham, 2002: 45). Economies of scale, communication modes and residential types were transformed. This pattern of extending cities was upgraded to form a cross-boundary city region and then the networking global city which will be explained later.

The urban expansion movement, as Bruegmann (2005) argued, which had been as evident in European cities such as Berlin, Paris and London, rather merely than an exclusive movement in the US. They only individually occurred in different periods of time and socio-cultural context. Even though it was not restricted to specific geographic zones, the most spectacular examples of this sprawling practice could be found in fast-growing American cities such as Detroit, Atlanta and Los Angeles[4] (*see* Figure 2.3). The sprawling development continued to rise at a dramatic pace and scale throughout American cities (Bruegmann, 2005: 12) in a way that made commentators boldly call it a peculiarly American phenomenon. A group of urbanists considered that there were two main causes which accelerated this extraordinary urban transformation in American cities; the growing use of automobiles, and the government's policy of urban planning as well as its encouragement of a consumption economy[5] (Gutfreund, 2004; Hayden, 2004). Other groups of scholars have doubts about these determinative perspectives. However,

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[4] Although Los Angeles is often described as the quintessential example of American sprawl, it tends to keep compact settlements, because of the problems of supplying water, as elsewhere in the American Southwest (Bruegmann 2005: 65; Hise 1997). Unlike LA, the Detroit metro region, including its suburbs, has shrunk in population by 1.2 percent since 1970(source: http://www.detroitchamber.com/economic-development-2/data/msa-data/). When it sprawled, the region was not growing and there were not enough new people moving in. Detroit's urban declines have evolved complex issues that have been discussed in many recent urban literatures.

[5] The growth of using automobiles was caused by advanced technological innovations and matching infrastructure supports, and also by government policies such as single-use zoning or mortgage interest deductions on the federal income tax (Bruegmann, 2005: 17). Dolores Hayden, in her book O*n Sprawl* (2004), pointed out that the Federal programmes, which combined with state and local subsidies to drive development, have led to the current heavily automobile-dependent landscape and way of life. Meanwhile, a capitalist society based on mass-manufactured goods and automobiles facilitates a rapid consumption from resources to the environment.

there is a general agreement that the oil economy and the automobile were the core of the continued success of urban sprawl (Ingersoll, 2006: 5). William H. Whyte (1957: 133-56), in an early observation on American cities, pointed out that they moved forward to a dramatic urban era with rapid horizontal growth but a dispersed and sparsely populated surface of activities. Beyond Whyte's essentially American concerns, these sprawling landscapes made suburbs bigger in geography, population and employment in core cities throughout the world. Gillham (2002) called this spreading pattern 'suburbanization'.

Figure 2.3 *Left*: Los. Angles downtown with transport infrastructure. *Right*: Rancho Cucamonga is a sprawling suburban located in the west of LA (Berger, 2006).

With the penetration of urban functions far into the periphery, the old distinctions between urban, suburban,[6] exurban[7] and rural collapsed (Bruegmann 2005: 52). The relationship between cities and suburbs, instead of being a functional distinction, was restructured into a form of cooperation evolving into a contemporary metropolitan transition (Gillham 2002: 23). Geographically, the process of urban sprawl generated a bigger urban form of a city with territorial multiplicity. An outline of a multi-nucleated

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[6] Sometimes suburbs are fairly compact, composed, for example, of small villas surrounded by gardens in a pattern. In other cases, they are very scattered with imposing houses set on a large acreage, often with a conscious attempt to express a rural appearance (Bruegmann 2005: 21-2).
[7] The term 'exurbia' was coined in the 1950s. According to Bruegmann (2005: 84-5), this kind of urban form was not deeply studied until the late 1970s. Starting in the 1990s, a number of researchers and observers have tried to use the term exurban to describe these places "that are neither suburban nor rural but still connected back to central cities …"

metropolitan model, the right-hand diagram in Figure 2.4, occurred and referred to cities such as LA and Miami, which integrated their sprawling suburban and exurban zones. The two diagrams in Figure 2.4 not only illustrate the different configuration of cities but also more importantly reveal the conceptual approach of cities which conventionally instruct urban study, in particular the nested diagram. This will be examined more deeply and argued theoretically in Chapter 4 and methodologically in Chapter 6. The resulting pattern of sprawl that was much more complex than any of the previous urban models has indicated that it was no longer a suburban phenomenon and even not 'sub' to anything anymore (Garreau 1992; Berger 2006; Bruegmann 2005). Consequently, the outcome of urban sprawl is not only as Garreau (1992) argued growing off the map without clear limits, but is also difficult to explain clearly or even characterize its changes in varying urban contexts.
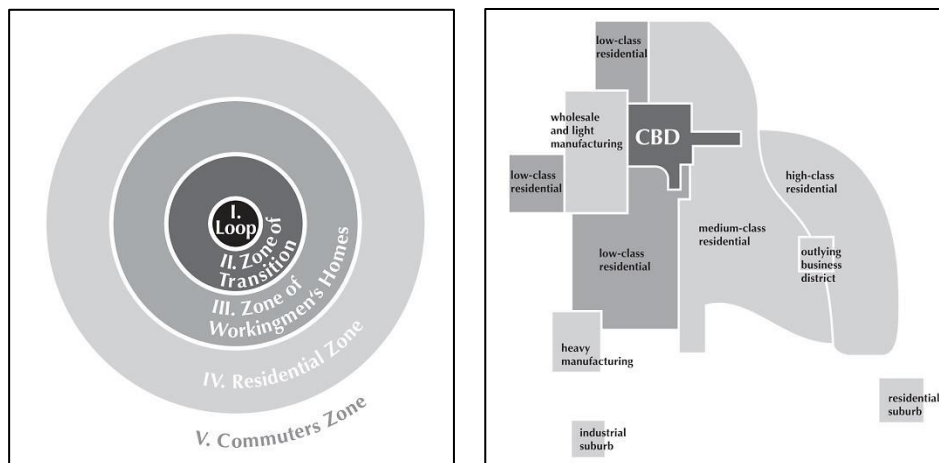
Figure 2.4 *Left*: The ecological model illustrated by sociologists Robert Park and Ernest Burgess (Park, Burgess, & McKenzie, 1925) in the 1920s. This nested diagram assumes each zone in a city as a discrete entity, which is hard to express in the complex relationships in American cities at that time. Even so, it is widely used to depict urban development in the mid-twentieth century. *Right*: The multi-nucleated metropolitan model as portrayed by geographers Chauncey D. Harris and Edward L. Ullman (Harris & Ullman, 1945). They suggested that the nested diagram failed to convey the complexity of American cities which had become multi-nucleated regions (Bruegmann, 2005). This diagram, however, has not been widely used in recent years, in contrast to the nested model on the left.

In addition to the intricacy of geographical identification, sprawling development in particular in American cities often leads to political fragmentation. A sprawling region might fall into different county authorities but the primary instruction is based on

regional cooperative interests (Gillham, 2002: 23). Sprawl undoubtedly is a geographic and morphological phenomenon[8] which physically affects cityscapes. Ingersoll (2006) suggested that it has also triggered anthropological mutations attributed to the emergence of heterogeneous urban regions and novel ways of urban life.

Because of its dramatic effects on extensive aspects from urban pattern to socio-spatial configuration, sprawl has generated intense debates over the last half century and has also led to different reform movements in urban planning[9] (Gottmann & Harper 1966; Garreau, 1992). For Gottmann, the sprawling urban landscape whose growth exceeds boundaries makes a city too big in spatial and social dimensions and results in a highly heterogeneous landscape. In addition, sprawl appears to encourage private and exclusive developments which abandon public infrastructure, deplete natural resources and intensify consumerism to cause environmental damage and socio-spatial separation. More sharply, Dolores Hayden (2004: 7-8), on the basis of her aerial photography, criticized the fact that such large-scale, uncontrolled, real estate development is inevitably economically inefficient, environmentally unsustainable, politically unfair, socially polarized, and even aesthetically ugly. These planners commonly question the problem of the bigness resulting from this urban sprawling movement. Other commentators take less critical perspectives to portray it. Joel Garreau (1992) focused on sprawl cases in the US and considered that it embodies the fundamental value of the American dream[10] in terms of being such a large-scale land adventure toward landscape transformation. Stephen Graham (2001) suggested placing sprawl in a wider social, political, economic and infrastructural context to detect its complex pattern rather than to convict it merely by visible conflicts. Although there are diverging arguments about

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[8] By the late twentieth century, especially in the US, lot sizes were rising much faster than the population in the sprawling regions. Both population and land areas are rising to a bigger scale (Bruegmann, 2005).
[9] Smart Growth is regarded as a major strategy to remedy sprawl. It includes denser urban infill and, where green-field construction is necessary, greater desire for a 'sustainable' environment, less dependence on automobiles, and more harmony with traditional urban patterns (Bruegmann, 2005: 3).
[10] It symbolizes the idea and action to do 'whatever they think best' for pursuing a better way of life, including bigger-sized properties, low density, and fast-speed mobility (Garreau, 1992: xxii).

urban sprawl, the bigness and the complexity of urban forms which it produces are a common agreement amongst those scholars.

Since the late-twentieth century, the sprawling movement which used to be the privilege of developed countries or affluent areas[11] has become a mass phenomenon across the world. [12] However, such city expansions involving unrestricted geographical configuration, political fragmentation and blurred territorial boundaries which have broken the traditional guidance of recognizing a city have made difficulties for the majority of urban scholars to define its urban patterns and name the urban form (Berger, 2006; Ingersoll, 2006). A proliferation of new terms, therefore, has been introduced to capture the contours of these urban processes. A general term, 'Outer City', the opposite of the inner city which was considered as an old city centre and drawn out in emptiness, arose from a process involving the urbanization of the suburbs (Muller, 1976; 1982). The place has its own spatial specificities mostly constituted of automobiles and detached owner-occupied homes.

With a particular focus on the sprawling developments in a context of the US, Garreau (1992) coined the term 'Edge City'[13] to explain the situation[14] in which more and more residential developments in suburbia have appeared along with new shopping centres, business parks and office buildings which are all connected by highways since the 1970s. This evidences what Gillham (2002: 46) claimed, that the landscape of the US has turned

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[11] Suburbia is used to be a field which the dream of bourgeois utopias built up, first by affluent white people and then by middle-class inhabitants (Fishman, 1987).

[12] Sprawl no longer strictly takes place in limited continents such as the U.S and western Europe. Rather it is now more active in Asian and African cities, such as Cairo, Johannesburg, Jakarta and Shanghai.

[13] Garreau (1992: 4) gave the reason for choosing and combining these two words. The word *Cities* refers to a spatial enclosure which contains the functions which a city always has, even in a sprawling form that is hard to recognize for what it is, and the word, *Edge* because they are filled with pioneers and immigrants, rising far from the old downtowns, without any proper villages or city functions, thirty years before. However, Bruegmann (2005: 71-2) argued the term 'edge city' cannot be simply taken literally. First, there is none of the depth that a city should contain, but rather a business centre with some functions of the old downtown. Second, many of them are nowhere near the edge but only built up around old suburbans satellite downtowns.

[14] From the late 1970s through to the mid-1980s, a number of malls incorporating office buildings, theatres, hotels and restaurants became the nuclei for giant suburban centres.

from a city-dwelling condition to an unbounded suburban form. The edge city, according to Garreau, is characterized as residential and commercial zones without government, collective consciousness, community consensus or public places, merely as a private sphere.[15] He highlighted its unplanned conglomerations of commercial and office uses at the emerging urban peripheries on orbital highways.[16] Edge cities began to provide more services, newer infrastructure and even larger job markets than traditional downtowns, which means that the attractive gravity of the traditional inner city has given way to urban sprawl (Berger, 2006: 29). The city centre has been turned inside-out. The socio-spatial forms of urbanism and suburbanism considered as separate and distinct ways of life has begun to disappear (Soja & Kanai, 2007: 67). Garreau's investigation of these confused and inside-out urban conditions provides a situational understanding of forming a new type of modern city.

More recently, Hayden, in her work *A Field Guide to Sprawl* (2004), has portrayed sprawling urbanism in the US by examining many spectacular aerial photographs along with using innovative terms such as 'zoomburb', 'edge nodes' and 'leapfrog' (*see* Figure 2.5). These terms visually and conceptually refer to an extremely big size of urban form expressed in distinct features. Alan Berger (2006), using a similar methodological approach, discovered a huge waste landscape around the peripheries of the cities in monstrous proportions and with startling similarities which transcend geographic difference. He called this 'drosscape',[17] a product of rapid urban sprawl in an extreme size exemplified in Figure 2.6. According to Berger (2006), the *Horizontal City*,

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[15] There are ordered, single-family detached dwellings with a garages and beautiful lawns, as the world famous label of America as the best-housed civilization indicates (Garreau, 1992).

[16] Garreau set up five indicators to constitute an edge city in the US. They are: to have five million or more square feet of leasable office space; to have 600,000 square feet or more of leasable retail space; to have more jobs than bedrooms; and to be perceived by the population as one place; which was nothing like a 'city' as recently as thirty years ago.

[17] He suggested that a drosscape is a new condition which emerges from two major forces. First, such vast wasted land surfaces as a byproduct of rapid urbanization and horizontal growth of sprawling development. Second, these landscapes are attributed to the decline of particular regional economic and production systems (Berger 2006: 236-7).

associated with the emergence of drosscape, is an in-between landscape, with elements of urbanism, city, suburb and sprawl, which requires more attention to understand the reciprocal relationships between the various elements (Bruegmann, 2005). The urban consequence of sprawl has brought about dramatic effects on the urban landscape which is transformed by an unbounded edge. Moreover, attributing the improvements in infrastructure and communication from motor vehicles to aircraft, as has been indicated in the earlier part in the section, has enlarged the formation of city expansion beyond the territorial level.

The new city centres of such edge cities, to certain extent, are provided by jet-ways and freeways rather than by the local movie theatre (Garreau, 1992). Paul Virilio examined a similar condition in his essay *The Overexposed City* (1997), observing that the physical gateway of a city gives access to an airport which regulates exchange and communication in non-place controls (Augé, 1995). The main boulevard leading towards the city centre is redeployed to connect with it. He also emphasized that the geographical boundary of the city becomes blurred because the transport revolutions and the development of telecommunication devices accelerate the permanent merger of the disconnected sprawling areas. Edward Soja (2000: 245), to some extent, considered that the term edge city expresses a metamorphosis of a garden city in that city and countryside are wedded together by the electronic and mobility possibilities. This appears to offer another way of city configuration based on the accessibility, mobility and interconnectivity provided by advanced transportation and telematic technologies. Simon Parker (2004), taking this into account, pointed out that the most crucial point for communities in these cities is the capacity for getting involved in and sharing the same infrastructural network. But it has no permanent and fixed status. The consequence of city expansion through territorial sprawl and infrastructural connection has unpacked the function and boundary of the traditional city. This urban formation of big cities has been

continuously transformed and contextually processed in the contemporary urban world, which has accordingly raised many new terminologies to explore this on-going urban condition.

Figure 2.5 Zoomburb: a place growing even faster than a boomburb. It is kind of a "boomburb on steroids." Sun City, Arizona (Hayden 2004: 118,38,56).

Figure 2.6 *Left*: San Bernardino County, California. This sprawling landscape includes cargo operations, warehousing and manufacturing facilities. *Right*: A car salvage and junkyard near Ayer, Massachusetts. This is a product clearly resulting from the high dependency on mobility (Berger, 2006).

The shifting vocabularies of contemporary urban studies

Since the second half of the twentieth century, the extremely sprawling situation discussed above has been much stirred up by the reconfigurations of capitals and infrastructures and the emergence of advanced technologies. This continuous

urbanization process brings about the intense urban formations of big cities which deeply restructure the physical fabric and socio-spatial context in cities with respect to their boundaries, their ways of operation, and their spatial configuration. Existing knowledge and understanding of the cityscape is no longer sufficient to define the expanding and restructuring territorial region. Therefore, the debates on such new urban conditions and processes have raised an extraordinary array of fresh terms and concepts to capture what is different and complex about cities today. As Brian McGrath and Grahame Shane (2012) have claimed, the terminology for defining the meanings of cities is constantly being readjusted in response to dramatic changes in contemporary geographical landscapes. To a certain extent, most of the new terminologies share the common characterization of cities that are geographically getting bigger, more complex in terms of socio-spatial configuration, and unceasingly changed beyond our sensibility to recognize. Each of them reveals distinctive facets of the emerging urban situations in big cities in order to provide fresh engagement to the existing literature.

'Metropolis' is a long-used terminology with an ancient Greek origin (Barnhart, 1988). It literally means 'mother-city' and mainly refers to a economical or political centre effecting a constellation of different levels of territorial units along with their settled hinterlands (Soja, 2000:12). Inheriting this concept of an ancient metropolis, the notion of an imperial metropolis emerged at the height of the European centralized hierarchical colonial world system. It constructed a powerful and restricted spatial category for its overseas colonies in all dimensions. Under this cross-nation exploration, the metropolitan hybrid model became embedded and then generally evolved throughout various countries. The industrial revolutions which have marked each great socio-economic leap in human history deeply transforming cities and people's lives intensified the formation of the modern metropolis in a world based on coal, steam and labour power. It can be regarded as a primary instrument of modernization and a modernist

product of enlightenment thinking. In terms of urban patterns, a symbolic centre for civic order is well-organized and displayed within it. The old city wall, for instance in Paris and Beijing, is still a conceptually and legally bounded entity, even though they have been moved during the construction of a bigger metropolis.

Geographically speaking, the metropolis is legible, centralized and radiates into the surrounding residential suburbs and agricultural land. It plays a significant role as an economic and political centre to a larger urban agglomeration. Robert McNee (1966) considered that the concept of a metropolis is about a place which has great locational advantages of resource and accessibility. A series of North American modern cities, for instance Boston, New York and Philadelphia, have emerged in this way. They possess the vast material resources of the North American continent and commute frequently with the original centre of urbanization and industrialization, western Europe. Such large cities hold the key to organizing their inner routes and the labour of generations for worldwide trading networks. In consequence, the modern metropolis began to take charge of regional and international communications and exchanges in aspects of materials, their economy, their politics, and even their cultures.

When more and more expansive metropolises occur and the population in each of them grows larger and larger, the urban landscape becomes interconnected and merged. It becomes a constitution of many adjacent cities clustered around a major urban centre. The spectacular metropolitan areas, such as New York City, Los Angles and Tokyo-Yokohama, have sprawled across vast territories with freeways, shopping centres, industrial parks, subdivisions and airports, and link many previously separate urban entities (Bruegmann, 2005: 50). This continuous realignment and sprawl of metropolises on a large scale has undermined the steady social and spatial structure which used to be carefully organized in the metropolis.

When an industrial metropolis built on coal and the railroad has been transformed into an oil-based automobile city, a new form of urbanization emerges (Barker & Sutcliffe, 1993). Highways and high-speed trains intensify the expansion of metropolises outward and this consumes more and more rural spaces following both governmental and individual development.[18] Rapid concentration and intensive exchange of economic, social and cultural activities have been promoted. Such internal and external mutations spur on the emergence of a novel giant city. The limited image and anachronistic idea of the traditional metropolis as a tightly-organized territorial unit has been dismantled. This complicated and constantly shifting metropolitan pattern in the post-war decades was best delineated by a French geographer, Jean Gottmann. He introduced the term 'megalopolis' [19] in his prominent work *Megalopolis: The Urbanized Northeastern Seaboard of the United States* (1961) to describe the unique cluster of metropolitan areas in the specific US context. In the essay *The Challenge of the New Urbanization to Education* (1966), Robert McNee used another term, a 'new-super-city' where traditional urban centres and boundaries are dissolved, paralleling Gottmann's megalopolis. Both of those terms refer to the idea of a nebulous urban form which is an unbounded, multi-nodal network of various sprawling cities. Gottmann (1961) empirically mapped the string of distinctive modern metropolises located on the north-eastern seaboard of the US with their extreme urbanization and trading density. This sprawling urban corridor – BosWash[20] – from Boston, New York and Philadelphia to Washington DC (*see* Figure

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[18] A megalopolis demands much more supplies than were used to maintain the early growth of a metropolis. Statistically, a megalopolis can be ten times larger than metropolises in terms of population, transportation requirement and geographical territories (Bell & Tyrwhitt 1972: 31).

[19] The term is borrowed from Oswald Spengler's book *The Decline of the West* (1926). In the 1960s, the works of earlier researchers such as HG Wells, Patrick Geddes and Lewis Mumford were revisited for studying these extreme urban landscapes. Gottmann's idea had a great influence on them in identifying this phenomenon throughout the world (Bell & Tyrwhitt 1972: 32).

[20] It measured over "a hundred miles across, extending its network of railroads, superhighways, transmission lines, subdivisions, and industrial parks from the dense old neighborhoods of Manhattan, Brooklyn, Newark, and Jersey City out through the subdivisions of sub-urban New Jersey, New York, and Connecticut and on into

2.7) was identified as representing a megalopolis which is a poly-nucleated network rather than a centralized system (McGrath & Shane 2012: 656).
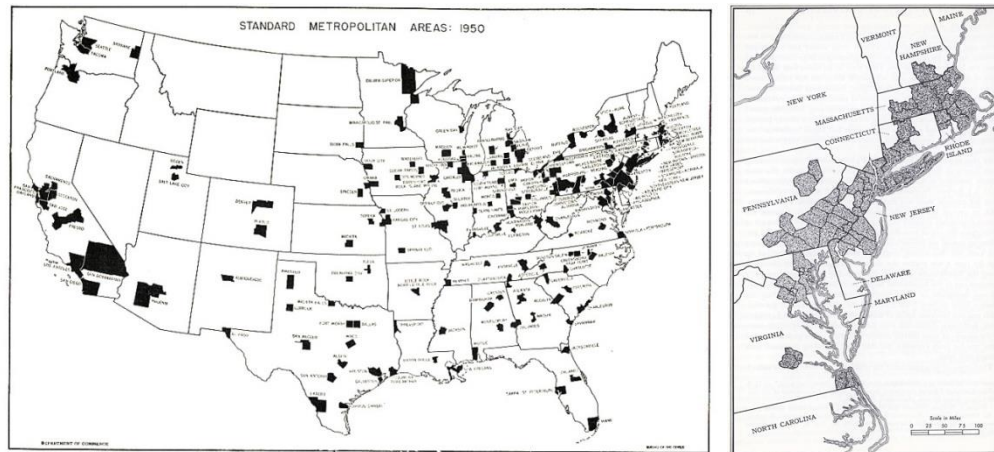
Figure 2.7 The most dense areas of metropolises are located along the north-eastern seaboard of the US. *Right*: the map shows the BosWash region in more detail (Gottmann, 1961).

In addition to the US north-eastern seaboard, there were two other megalopolises with more than 35,000,000 inhabitants in 1966; the Tokyo-Osaka megalopolis in Asia and the Rhine megalopolis[21] in Europe (Bell & Tyrwhitt, 1972: 32). Later, the architectural critic Reyner Banham (1971) regarded Los Angeles (*see* Figure 2.8), stretching across a huge agricultural basin between mountains and seacoast, as another megalopolis example of this geographically open-ended mega-form.

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an exurban fringe that extends in a great arc from the tip of Long Island to the east, across western Connecticut to the northeast, far up the Hudson River to the north, completely across New Jersey and into the Poconos in Pennsylvania to the west, and to Trenton, Philadelphia, and the Pine Barrens to the south" (Bruegmann 2005: 12). According to McNee's description, this northeastern seaboard metropolitan region is "about 600 miles long, running from New Hampshire to Virginia, and between 30 and 100 miles wide, running from the lower borders of Appalachia to the sea" (Gottmann & Harper 1966: 177-78).

[21] The Rhine megalopolis is generally mapped from Paris to Hamburg and from Stuttgart to Rotterdam (Bell & Tyrwhitt 1972: 32). Although the north-eastern seaboard of the United States was the first to be identified and described as a megalopolis, Tokaido, the Tokyo-Osaka megalopolis, is the most enthusiastic adaption of this sprawling megalopolis, with over 50,000,000 people as the largest megalopolis at the time (Gottmann & Harper 1966; Bell & Tyrwhitt 1972).

Figure 2.8 Log Angeles, California, refers to a horizontally-oriented landscape without clear boundaries and direction (Berger, 2006).

A critical geographic location and accessibility to the hinterland and outward to the world is essential to the formation of such a giant city. McNee (1966: 178), with a similar observation to that which Gottmann addressed, emphasized that the megalopolis basically operates between the plentiful material resources of the North American continent and major centres of urbanization and industrialization in western Europe. They developed an intensive cross-nation trading network known as the Atlantic Strip which established a powerful framework which operated as a global circuit later. Even though the early super-metropolitan London was surpassed by its trading partner New York after the First World War, this Atlantic network did not subside (Barker & Sutcliffe, 1993: 8-9). Megalopolises within this network have now been consolidated much more. This refers to McNee's consideration that a megalopolis is both a place and a region.[22] The megalopolis is a dynamic entity playing an articular position between its self-development and its reciprocal urban areas.

The continuous realignment due to commercial advantages and real-estate exploration makes the megalopolis an organic body of urban agglomerations metabolized by capital

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[22] This idea of a region can be read in two ways; as a uniform region and as a functional region (McNee 1966: 175-181).

accumulation, individual mobility and huge ranges of resource exchange (McGrath &
Shane, 2012: 655). The megalopolis manifests this complex rhythm through both a
sprawling urban landscape and a new socio-economic relationship. Consequently, in
Gottmann's description, poly-nuclear, amorphous, diffused and porous are key adjectives
which describe a megalopolis. In other words, it is difficult to map a megalopolis using
conventional tools designed to work with compact and centralized cities[23] and to
comprehend the scale and complexity of such a fragmental extended urban region.

The fragmentation of the metropolitan order and the rise of the massive sprawl and
logistics of the networked megalopolis promoted a new spatial model of the city. An
innovative term 'megacity' arose. It was first used by Janice Perlman (1976) focusing on
self-built, large urban conglomerations, especially in Asia, Africa and Latin America. Its
original sense of imploding growth from rural migrations in the global South has
switched to the explosion of metropolitan sprawl in the global North (McGrath & Shane,
2012). In 1986, the United Nation adopted this term and used it as methodology and
database to monitor any city with over ten million people in the world since 1996
(Perlman, 1988; Anon, 1996). Statistically (*see* Figure 2.9), megacities have grown at
such a speed that there were two of them in the world in 1950 and by 2015 twenty-two
megacities will exist.

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[23] According to Gottmann (1961;Gottmann & Harper 1966), in quantitative terms, the megalopolis is defined as
a place with over 100 people per square mile, and adjacent to existing metropolitan centres of over 1,000,000
inhabitants. In comparison with the clarity of demographic indicators, the question involved in the study of the
megalopolis is the interrelationships between the forces and processes at work within the megalopolitan area.

	1950			1975			2000			2005			2015	
	City	Population (millions)		City	Population (millions)		City	Population (millions)		City	Population (millions)		City	Population (millions)
1	New York-Newark	12.3	1	Tokyo	26.6	1	Tokyo	34.4	1	Tokyo	35.2	1	Tokyo	35.5
2	Tokyo	11.3	2	New York-Newark	15.9	2	Ciudad de México (Mexico City)	18.1	2	Ciudad de México (Mexico City)	19.4	2	Mumbai (Bombay)	21.9
			3	Ciudad de México (Mexico City)	10.7	3	New York-Newark	17.8	3	New York-Newark	18.7	3	Ciudad de México (Mexico City)	21.6
						4	São Paulo	17.1	4	São Paulo	18.3	4	São Paulo	20.5
						5	Mumbai (Bombay)	16.1	5	Mumbai (Bombay)	18.2	5	New York-Newark	19.9
						6	Shanghai	13.2	6	Delhi	15.0	6	Delhi	18.6
						7	Kolkata (Calcutta)	13.1	7	Shanghai	14.5	7	Shanghai	17.2
						8	Delhi	12.4	8	Kolkata (Calcutta)	14.3	8	Kolkata (Calcutta)	17.0
						9	Buenos Aires	11.8	9	Jakarta	13.2	9	Dhaka	16.8
						10	Los Angeles-Long Beach-Santa Ana	11.8	10	Buenos Aires	12.6	10	Jakarta	16.8
			11	Osaka-Kobe	11.2	11	Osaka-Kobe	11.2	11	Dhaka	12.4	11	Lagos	16.1
			12	Jakarta	11.1	12	Jakarta	11.1	12	Los Angeles-Long Beach-Santa Ana	12.3	12	Karachi	15.2
			13	Rio de Janeiro	10.8	13	Karachi	11.6	13	Buenos Aires	13.4
			14	Al-Qahirah (Cairo)	10.4	14	Rio de Janeiro	11.5	14	Al-Qahirah (Cairo)	13.1
			15	Dhaka	10.2	15	Osaka-Kobe	11.3	15	Los Angeles-Long Beach-Santa Ana	13.1
			16	Moskva (Moscow)	10.1	16	Al-Qahirah (Cairo)	11.1	16	Manila	12.9
			17	Karachi	10.0	17	Lagos	10.9	17	Beijing	12.9
			18	Manila	10.0	18	Beijing	10.7	18	Rio de Janeiro	12.8
						19	Manila	10.7	19	Osaka-Kobe	11.3
						20	Moskva (Moscow)	10.7	20	Istanbul	11.2
												21	Moskva (Moscow)	11.0
												22	Guangzhou, Guangdong	10.4

Figure 2.9 There are approaching 22 megacities in the world and most of them are located in Asia and South America (World Urbanization Prospects: The 2005 Revision, working paper No. ESA/P/WP/200. Data source are from the United Nations, Department of Economic and Social Affairs, Population Division (2006)).

In terms of urban form, the megacity is not a geographical sequel to the megalopolis but grows in tandem with it. It unlimitedly mixes urban and rural spaces in archipelagos of patchy clusters through the flow of materials, population and information (McGrath & Shane, 2012: 642). The megacity, in short, refers to the enormous population size of the world's largest urban agglomerations. To extend from a simply quantitative clarification, Manuel Castells (2000: 403-7) suggested that the megacity is regarded as a new urban form[24] with distinctive features of discontinuous constellations of spatial fragments, functional patches, and social segments resulting from the new worldwide economy and the emerging informational society. The megacity, as a form of super-sprawling urbanism, is going to stretch out towards a mega-region; for instance, the megacity-regions of Shanghai, the Pearl River Delta and Tokyo-Yokohama. Regarding the situation in the US, many megacities extend over several states, the New York-Boston

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[24] With a primary focus on the built environment and urban planning, Deyan Sudjic proposed the term '100 Mile' City (1992) to express the expanded scale and galactic proportions of such urban patterns.

region is an example. The population in these areas is floating and the territory is sprawling as a result of accessible communication systems. Such border crossings clearly reveal the inadequacy of conventional census criteria for giving an accurate survey. It is hard both to delineate their outer boundaries and to estimate their population size accurately.

When the boundaries of the city become more porous, it confuses our ability to draw neat lines defining what is inside and what is outside the city; areas of the countryside, suburbia, the non-city; places between one metropolitan city-region and another; and even the natural and the artificial landscape (Soja, 2000: 150). That is why it is more problematic to map the modern sprawling metropolis with clarity and explicitness than it used to be. For the new category of city which does not fit any of the conventional definitions which has evolved, new approaches and fresh terminologies are again urgently required (Soja, 2000: 237). For instance, 'metroplex'[25] signifies a giant merged urban region particularly referring to the Dallas-Fort Worth area in the US. 'Counter-urbanization'[26] specifies the developmental process of un-suburban American suburbia since the 1970s. New conurbations, according to the German urban theorist Thomas Sieverts (2003: 3), appeared in the form of polycentric webs with neither traditional cores nor recognizable peripheries. These descriptions of changing urban forms and patterns imply that city space has become increasingly unbounded, polycentric and unprecedentedly large in size and in its recombination (Shane, 2005). However, the proliferation of these innovative terms only shows the lack of a satisfactory understanding of contemporary cities with any single and absolute term.

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[25] This term was originally used to describe the Dallas-Fort Worth area in North Texas since the two cities with their suburbs merged into one huge metropolis. Residents of the area informally refer to it as The Metroplex (Lang & Nelson, 2007).
[26] It was coined by the geographer, Brian J L Berry of the University of Chicago. See *The counterurbanization process: urban America since 1970* in *Urbanization and counterurbanization* (1976). It was the first to demonstrate clearly a demographic and social process taking place in American suburbia. It refers to the quantitative de-urbanization and the simultaneous qualitative increase in urbanism in physically rural areas.

McGrath and Shane (2012) suggested that three significant urban forms, modern metropolis, megalopolis and megacity, overlap and interact in the modern urban landscape. These three city models have faced a radical reassembling since electronic communications and financial reconfigurations increased considerably in the 1980s. Those urban forms were shattered, dismantled and recombined at that time, and this led to an unprecedented increase in the size and interconnection of urbanization beyond regions. McGrath and Shane conceived a networked multi-form 'metacity' as a synthesis of those three thriving urban models (McGrath & Shane, 2005; 2012). From their point of view, the metacity appears when the situation[27] exists that structural fragmentation and territorial fractality have been sharpened through new close-up and remote technologies, as well as advanced informational devices. That allows concentration and dispersal at the same time; everywhere is both centre and periphery. This not only applies above and beyond the traditionally-sized city but also refers to the dynamics and spatial complexity of its content.

Although this term has been adopted by UN-HABITAT to designate cities with a population over twenty million, the metacity in McGrath's account is more than an extra-large conurbation, it is a distinctively proliferating urban form through the vehicles of mobility and communication (McGrath, Pickett, & Cadenasso, 2013; McGrath & Pickett, 2011). From an architectural perspective, the architect Winy Mass with MVRDV in their exhibition *Meta City/Data Town* (1999) first theorized the idea of a metacity by examining the three-dimensional consequences of urbanization at global, national and hyper-scales. They applied this term to argue that a contemporary city is the accumulation of statistics and data which record hidden patterns inside a huge urban agglomeration, including population shift, demands on natural resources, and socio-

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[27] When concerns about limits in the fuel supply arise and worldwide economic flows speed up, the new information and communication tools and infrastructures assist in a new form of unbounded and sprawling urban landscape, in comparison with the modern metropolis and megalopolis in the mid-twentieth century.

spatial performance. The fractal structure of diverse flows, they claimed, can be more sensibly recognized by the investigation of the metacity and moreover a new urban architecture of flows will evolve (MVRDV, 1999; McGrath & Shane, 2012).

To develop this topic, McGrath (2012; 2013) expressed concern that the greatest significance that a metacity offers to comprehend a city is how to reconfigure the relationship between cities and agencies through new media and how its dynamic nature is empowered by the innovative technologies. In short, the condition of urban bigness might be formed through informational and virtual connection. This consideration of novel forms of a city provides another approach to the issue of the urban bigness which implies the idea of globalized urban networks rather than a merely geographic perspective. This approach will be addressed in greater detail with the term of 'global city' in the following section 2.2.

In order to decipher this massive unbounded urban transition as a geographer and urban planner, Edward Soja, drawing from Iain Chambers (1990), took the perspective of critical urban and cultural studies to propose new horizons for engaging with it. He assumed that this ongoing transition from the modern to the post-modern metropolis might signify the beginnings of another ultimate urban transformation in the contemporary world, something which he suggested calling a 'postmetropolis' (2000: 149). Etymologically, it inherits the post-modernist strand[28] but extends it to refer to a further disconnection from nature, a much large-scale spatial expansion, and more dynamic exchanges in worldwide systems. Soja (2000: 152) emphasized that the postmetropolitan transition is characterized by the astonishingly unlimited cityscape, the restructuring of territorial identity, and the multiple relations between space, technologies

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[28] In postmetropolitan discourses, there are many 'post's packed into them; the first among them is 'postmodern' which is drawn from Chambers's investigation of the postmodern metropolis; others are post-urban, post-industrial, and post-capitalist.

and economic circuits intrinsically differing from the one that dominates modernist urbanism. Functionally speaking, Castells (2001) considered that this emerging metropolitan entity administers other subordinate urban functions and forms adjacent to or far from its geographical location into the distinctive urban assemblage to compete in the worldwide exchange of systems. With respect to the nature of a city, it is an incomplete and on-going metamorphic progress which catalyses the evolution of postmetropolitan urbanism.

In terms of the new patternings and specificities of urban form, the postmetropolitan urbanism in Soja's term is called an 'exopolis'[29]. The prefix *exo-* is a direct reference to the growth of an outer city and suggests an external force shaping city space. It can be understood as a metropolitan transition that the city is being turned inside-out as in the sprawling urbanization of suburbs and the rise of the outer city; meanwhile, the city is turned outside-in as a globalization of the inner city. Sharing a similar notion to that of Castells (1999), the term exopolis contains both implosive and explosive growth, and becomes a replicative hub of fusion and diffusion in the socio-spatial dimension. In other words, the term 'exopolis' manifests a recombinant synthesis and extension of many dual processes from which new urban forms and combinations of social spatiality and territorial identity are derived (Soja, 2000: 250). It refers to the emergence of cities without the traditional traits of cityness which were used to define them in the past.

In order to explore this unique urban formation in the contemporary world, Soja (2000; 1996) outlined six major discourses[30] of which exopolis is one in a study of Los Angles, as a representative of postmetropolitan urbanism. LA is not only regarded as the most

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[29] This can be referred to in more detail in chapter 8 of *Thirdspace: Journeys to Los Angeles and Other Real-and-imagined Places* (Soja, 1996).
[30] They are post-fordist industrial metropolis, cosmopolis, exopolis, fractal city, carceral archipelago, and simcities (Soja, 2000).

sprawling and densely-populated urbanized area in the US,[31] but also represents a unique urban and architectural performance relying on highly mobile dependency and informational infrastructures. This super-city region has become a contested urban laboratory for an emergence of the Los Angeles school of urbanism, which arose during the mid-1980s, to investigate postmetropolitan transition. On the east coast, New York City, which condenses globalization and localization processes synchronously, also offers itself as a highly representative postmetropolis (Soja, 2000: 224). The study of Los Angeles expresses different issues from a school based on the New York[32] context, which reveals the diversity of the postmetropolis itself.

In addition to the new terminologies which have been discussed above, there are still a considerable number of innovative terms used to signify these novel situations, such as 'multi-nucleated metropolitan region', 'polycentric urban region', 'new techno-city' (Fishman, 1987), [33] 'post-suburbia', 'galactic metropolis' (Lewis, 1983), [34] 'new megalopolises' (Florida, 2006),[35] 'cosmopolis',[36] 'postmodern urbanization', and 'the city-state'. These names are characterized by both the continuity and the discontinuity within and among cities which lead toward extremes of unbounded and patchy urbanism in the context of globalization. All of these urban transformations have taken place and

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[31] Although Los Angeles is one of the most sprawling places in the US, it is considerably denser than the New York or Chicago urbanized areas. Except for its extremely large population, the high cost of supplying water, as in many cities in the southern US, makes its development relatively compact (Bruegmann, 2005: 5).

[32] Since the 1990s, Saskia Sassen has become a leading spokesperson of the East school whose study is based in NYC and the North Atlantic. The school's focus on issues in postindustrial society, such as gentrification, the FIRE sectors, labour migration, and the informal or underground economy. Other scholars in the school include Neil Smith, Sharon Zukin, and other Manhattan-focused researchers such as E. Christine Boyer and Susan Fainstein.

[33] It was coined by Robert Fishman who also innovated the term 'techonoburb', which is a very large peripheral zone emerging as viable socio-economic unit and spread out along highway growth corridors. He defined a techno-city as the whole metropolitan region with multicentres, such as the New York City region instead of the city itself, which is attributed to the coming of the techonoburb. More narratives can be seen in *Beyond Suburbia: The Rise of the Technoburb, Bourgeois utopias: the rise and fall of suburbia* (Fishman, 1987).

[34] Peirce Lewis pointed out that "… today's city is so diffuse that it has become a 'galactic metropolis', a city-form resembling a galaxy of starts and planets, with large empty areas in-between, held together with something akin to gravitational attraction". (Lewis, 1983; 1995).

[35] This refers to a region interconnected in huge amorphous fields. Edward Soja and Miguel Kanai (2007) considered that Florida's new megalopolis can be understood as an extended version of Patrick Geddes' conurbation (1915) and Jean Gottmann's megalopolis (1961).

[36] The term was used mostly in the discussion on the globalized and the culturally heterogeneous formation in city regions (Toulmin, 1990; Sandercock, 1998; Isin, 1997;1996, Rocco, 1999;1996). To echo Soja's perspective of postmetropolis, Isin (1996: 123) marked it with the feature of the metropolis unbound that remains a polis, but is a socially fragmented, territorially sprawling, and culturally global one.

are still taking place at an incredibly rapidly pace which we hardly experienced in the past.

2.2 Cities in the era of globalization

> [Contemporary] processes such as urbanization can be more fully understood by beginning to examine the many ways in which they articulate with the broader currents of the world-economy that penetrate spatial barriers, transcend limited time boundaries … at many different levels.
>
> (Timberlake 1985: 3)

Cities have long been at the intersection of multiple forces and circuits of various dimensions, even though these abstract flows are always slow to be manifested in the physical fabric (Burdett & Sudjic, 2007: 280). The globalization process has become an overwhelming power since the mid-twentieth century. The contemporary urban formation following Soja's (2000) term 'the post-metropolitan process' is being consolidated, intensified and accelerated under the conditions of globalization. It has raised a great amount of debate amongst multi-disciplines especially in social science and the fields of urban studies on the content of globalization, but there is still an open discourse to be amplified. Jessop (2000: 81) gave a general assumption that globalization is a rapidly exchanged or transmitted process of capital, labour, goods, communications and culture from one side of the world to another without the limitations of national boundaries. This definition refers to the fact that key debates on globalization are focused on scopes of productive industrial capitalism, restructuring patterns of economic circuits and geopolitical strategies.

After the early 1980s, to extend the scopes, groups of urban scholars in sociology, geography and spatial disciplines started to explore questions about interaction between global forces and their impacts on urban development (Soja, 2000: 190-3). This indicates that the globalization process is a product of an extraordinary expansion, diffusion and networking of capitalist industrial production in the geographical scopes of worldwide urbanism. Contemporary cities are key spatial articulators of such multiple global circuits and their cross-border transactions which accompany the formation of new urban conditions and forms. In other words, these global forces drive what Soja called the post-metropolitan transition, referring to the emergence of the unbounded metropolis in diverse ways. NICs (newly industrialized countries), new industrial space such as the sprawling, outer city, and de-industrialization serve a new and different order of a 'structured global space economy', which coordinates, repositions and manages the increasingly complex, specialized and enormous economic circuits. Cities, then, become strategic in this novel order (Soja, 2000: 190; Sassen, 2007: 280). The globalized metropolis (Magnusson, 1996), therefore, is no longer a geographical issue of city-scape only but relates to a worldwide connecting system serving multiple economic circuits. The understanding of a city in terms of its boundaries, size and contents has been challenged and restructured in both physical fabric and academic debates. This brings new globalized urban formations to take on a significant role in the literature of contemporary urban studies.

The formation of global cities

In the mainstream of the globalization literature and debates, the global process generates and relies on virtual and physical forces to maintain a worldwide capitalist-economic and

political structure. These forces of economic flows and advanced informational technology have become a crucial thrust to drive urban transformation since the mid-twentieth century. According to Stephen Graham (2001; 2002), contemporary cities can be understood as socio-technological constructions supported by unceasing flows, network infrastructure and mobilities in social and spatial dimensions. In other words, as multiple cross-border transactions are central to the restructuring of new urban spatiality, the city is a key spatial articulator of such transactional flows. Castells (2000; 2009), an influential sociologist of globalization in space, proposed the concept of a networked society in which the social and spatial impact of globalization is taking place through intensive but selected economic and technological integration between cities. There are three significant facets of socio-spatial change which occur in this networked urban society. [37] These features of coexistence in urban society can be extended to the discussions on a dual city in the works of Castell (Mollenkopf & Castells, 1991) and Sassen (2000). With regard to the more spatial facet, the change of forms is a result of the tension and interplay between the space of flows and the space of places.[38] The city, as a physical interface for such competing relationships, is more precisely transformed by the combination of networks and places and by the coexistence of electronic communication and physical interaction.

All these capacities of de-territorialized mobilities in transactions, communication and networks which promote the flows and distinguish contemporary cities from the past industrial model are essentially attributable to the power of telematics. This turns a traditional economic structure, *industrialism*, into new worldwide logistics of capitalist production, *informationalism* (Castells, 2000: 211). The new advanced informational

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[37] Three crucial facets of changes in the urban society, according to Castells, are function, meaning and form. Very briefly, function refers to the fact that the networked society is constituted of the opposed notions of the global and the local. In terms of meaning, contemporary society is characterized by the contesting development of individualism and communalism (Castells & Susser, 2001: 296-7).
[38] The space of flows refers to connecting activities and people from different geographic distances by means of an electronically interactive network. The space of places is about displaying experience and activities relying on the physical locality (Castells & Susser, 2001: 297-8).

technologies which have arisen since the 1980s promote unprecedented access to limitless mobilities and virtual systems (Brenner & Keil, 2006; Castells, 2009). The new industrial space and the economic organization can therefore operate around dynamic information-generating units and manage different functions in scattered places in order to assign each task in production so that it can be efficiently performed. A new international division of labour (NIDL) then occurs. Nevertheless, the nodal point of economic circuits in charge of managing NIDLs has become a trans-territorial 'centre' in this global flow (Parker 2004; Soja 2000; Sassen 2002). This leads to what Castells (2001: 294) called the emergence of "a new geography of networks" or what Jessop (2000: 97) called the networked metropolis in the twenty-first century. Castells (1989; Castells & Hall, 1994 2000) has been considered a major contributor to the literature on the information economy and its impacts on the city. The key concern of the 'informational city', according to Castells' perspective, is to maintain the capacity of communicating significant messages using advanced telecommunications, the internet and computerized transportation systems between and within cities, and simultaneously throughout the world. This de-centralized and re-centralized process of economic and informational flows through intensive telematics has deeply challenged the radical point of view of urban structure and of urban experience. As Nigel Thrift observed (1996: 290), there is no longer any need to imagine cities as bounded space-times with their own geographical surroundings.

The telematics and networked spatial mobility which increasingly drive the information-intensive urban economies, societies and lives crucially rely on the development of advanced technological infrastructure (Castells, 1989; 2009; Graham & Marvin, 2001: 14). This advanced infrastructure is constituted by a combination of material constructions and virtual networks, such as water, gas and electricity, telecommunication media and information. It practically makes the perpetual flux of global flows, physical

movements and informational exchange capable of crossing national boundaries and multiple organizational structures. Maria Kaika and Erik Swyngedouw (2000) suggested that this infrastructural connection is a constituent part of the emergence of contemporary cities and urban conditions in the context of globalization. The renewed importance of advanced infrastructure can be understood from two aspects, physical connections and virtual networking. The improvement in industrial and engineering techniques since the mid-twentieth century has opened up a new horizon of infrastructural construction. Graham (2001: 13) indicated that it has provided an essential service for expanding urban areas which demands communication between people and the exchange of goods, raw materials, natural resources, energy and waste within and between cities. It is, on the one hand, to serve the geographic sprawling process by novel scopes of the transportation system, and, on the other hand, to promote the possibility of cross-border transactions at every scale. From this point of view, a city relies on an advanced infrastructure for getting bigger and for connecting with global networks. Sassen (2008: 280), to extend this perspective, considered that the city functions as a critical socio-technical infrastructure for a global economy and dynamic social spaces. Materially speaking, what Castells called the informational city is fully rooted in a technological infrastructure which is operated through interconnecting physical equipment and then is able to generate virtual exchange networks. This virtual networking allows seamless and timeless interconnection with other spaces, and takes place across different poly-nuclear fields of the metropolis reaching out to the wider urbanised world.

Graham and Marvin in *Telecommunications and the City* (1996) and *Splintering Urbanism* (2001) revealed many themes of the impacts of globalisation on urban restructuring and the new communication technologies in social and spatial realms. They pointed out that the networked infrastructure acts as a catalyst for unprecedented urban conditions for which many urban scholars try to find fresh terminologies in order to

recognize and foreground such phenomena of cities and of urban processes.[39] To both a material and a virtual extent, this advanced technological infrastructure underpins the diffusion of global flows and furthermore accelerates the globalized urban logics of the networked metropolis. Major cities in this network are upgraded by technologies and mobilities in different ways, including the new form of telematics and fibre-optic cable networks, and traditional forms of communication systems such as airports, road networks, subways, surface rail and other high-speed inter-hub links (Parker, 2004). In short, these infrastructural linkages and networks are the fundamental components of contemporary unbounded urbanism in globalized transition (Boyer, 1999).

Since cities, extending and becoming bigger and bigger, have become nodal points supported by the advanced technologies and informational infrastructure necessary to the global networked economy, new situations of unconnected urbanism and spatial re-configuration occur. Terminologies in urban literature such as megalopolis and megacity no longer seem sufficient to depict the globally restructured metropolitan region in its qualitative and quantitative aspects. Soja (2000: 218) emphasized that due to the unbounding and *reworlding* of urbanization processes, it is difficult to map formal juridical boundaries and even to define the inner spatiality of contemporary metropolises. This globalized urbanization during the late twentieth and early twenty-first centuries has developed into special forms of large cities, the *world* or *global* city (Parker, 2004, Brenner & Keil, 2006). This type of city is distinguished from the earlier established socio-urban literature on the modern and postmodern metropolis because it is not only a territorial issue of expansion in terms of geographic size, population size and service boundaries, but its significance is about evolving into a complex system with global networks. Therefore, in the early 1980s, groups of socio-urban scholars arose who were

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[39] There are the 'electropolis' of energy and power systems, the 'hydropolis' of water and waste structures, the 'cybercity' (Mitchell,1999, Graham, 2004) of electronic communication, and the 'autocity' of motorized landscapes and associated technologies (Graham & Marvin, 2001: 8).

concerned with the effects of globalization on cityspace and on patterns of new urbanity, and they developed a new body of literature on the world/global city.

World cities, derived from the German term *weltstadt* since the late nineteenth century, are centres of intensive activity and influence that structurally reshape the globe (Barker & Sutcliffe, 1993:2). In modern literature, Peter Hall in his prominent work *The World Cities* (1966: 7) pointed out that the term 'world city' was coined by the Scottish urbanist Patrick Geddes in his book *Cities in Evolution* (1915) which focused on urban growth and conurbations in city-regions outside Great Britain. Hall, however, introduced a new meaning to the term world city as a site of intensive population growth, centralized political power and major economic and transportation functions. His concept was primarily based on cities as nodal points within a national urban system which turned international forces and influences into national interests[40] (Brenner & Keil, 2006: 20). This idea of setting cities in national urban systems inspired by Hall's argument of nodal cities became a paramount research topic in urban studies during the 1960s. When the global circuit began to clearly restructure the older industrialized cityscape, a new wave of world cities research emerged in the early 1980s. It emphasized that cities as sites operating in a system of global circuits and economic space are not necessarily composed of delineated and bounded geographical containers. World city theories, at the time, paid more attention to the inter-urban connections and interdependencies which restructured and redefined territorial borders in complex, networked relationships. They suggested an alternative approach to conceptualizing the emerging economic geographies. The most influential statements were made by John Friedmann, who proposed *The World City Hypothesis* (1986) and set up five paradigms[41] to empirically

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[40] Hall's concept of world cities can be generally understood as operating geopolitical power in cities. More discussion can be seen in (Kim, 2010; P. Taylor, 2013).
[41] First, world cities are the organizing nodes of a global economic system. Second, they have to be qualified as articulating a network of global capitalist space through massive accumulation. Third, the urbanization, dense economies and social interactions are multiply manifested in them. Fourth, they are in a global-urban hierarchy

study this worldwide urbanization situation (1995). This will be discussed in more detail in Chapter 4.

These world cities, in terms of their function, are defined as nodal sites of global economic circuits and inter- and trans-national management, and this is strongly rooted in the urban globalization literature (Hymer, 1972; Cohen, 1981; Friedmann & Wolff, 1982; Friedmann, 1986, 1995; Feagin & Smith, 1987; Brotchie *et al.* 1995; Knox & Taylor, 1995). Inheriting Friedmann's contribution and extending it to wider debates, Sassen proclaimed these urbanization processes of globalization to be a unique type of economic geographical transformation which she named 'the global city' (1991, 2000, 2001). The idea of the global city was popularized in the 1990s and has been used throughout the field of urban studies until the present.

Sassen, in *The Global City* (1991), defined global cities as strategic sites for serving the global economy, concentrating vast resources and managing most advanced financial services and operations which are underpinned by the restructuring of spatial patterns and urban configurations. They are particular points for specific production serving the spatially dispersed network of the financial industry.[42] When cities have been placed in a strategic position for the global economic trend, there are only particular urban areas qualified to connect with the global network. In fact, large portions of these cities are still operated by national geopolitical power. If globalization, as in Sassen's (1996) view, is a process that drives the occurrence of contested spaces, the global city is a representative of this condition characterized by continuous border crossings, socio-spatial differentiation and coexistent heterogeneity. Echoing this reading, Soja (Soja, 2000)

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ranked by the attraction of global investments and economic management. Fifth, the conflict between pre-eminent and subaltern groups intensively occurs in such cities (Friedmann, 1995: 21-6).

[42] In *Global Networks, Linked Cities*, she identified four main features of the global economic system; first, the combination of centralization and dispersal trends; second, the disproportionate concentration of value and transactions in the North Atlantic; third, the appearance in an increasingly digitized global economy, especially the growth of finance and specialized services; and fourth, the impact of the new networking technologies on urban economies (Sassen, 2002: 3).

claimed that such cities can be seen as the materialization of an interactive relationship between the local and the global. In her book *Global Networks, Linked Cities* (2002), Sassen emphasized that the capabilities of geographic mobility, concentrations of resources and infrastructural networking are the main characteristics of the global city. In short, the global city is not only a large urban area with penetrated boundaries, complex functions and mobile populations, but also an economically globalized urban system which interacts between each strategic site within it.

Extending this view, Castells (2001: 397) and Sassen agreed that the notion of the global city does not refer to any particular city, but to the global connection of segmental areas in different cities infrastructurally linked into a network of economic circuits. The global city is an economic-spatial condition, as postmetropolitan urbanism, not an explicitly territorial domain. Therefore, scholars in most literatures and reports only can capture patchy images or pick up some identical landscapes to signify this spatial mosaic. It can never be seen in its entirety. Soja (2000: 153), taking a wider view of this situation, argued that the First-Second-Third World cities will be folded into one metro-network supervised by globalized urbanization processes. The global economic flows and advanced technological infrastructure have promoted such a large urban system beyond all territorial and time limits. Hence, scholars in particular in spatial fields confront extreme difficulties in identifying a networked city through the conventional quantitative and qualitative approaches using its boundaries, populations and even its meaning as well as its functions. The world/global city might be a large territorial aggregation but it certainly is a dynamic globalized urban field operating in a constantly changing worldwide network.

Empirically, most scholars who work in the field of the world/global city have observed specific cities in order to understand the formation of economic networks and

relationships. Some scholars pay more attention to the upper tiers of globalized cities, such as New York, London and Tokyo, across the world's economic topologies which will be articulated in Chapter 4 (Friedmann, 1986; Sassen, 1991; Smith, 2003). Other scholars, however, have paid more interests to the global south and other potential networks (Olds & Yeung, 2004; Robinson, 2002; Smith, 2004; Sassen, 2007b;Taylor *et al*. 2013). Instead of being restricted by the global prototype, some researchers and urban studies literatures provide a wider perspective and comparative analysis to enrich the knowledge of current globalized urban conditions. A geographer, Eugene McCann (2008; McCann *et al*. 2013; McCann & Ward, 2010) believed that the idea of the global city is a new urban object of both theoretical and empirical analysis which cannot be only articulated from one particular angle. This new urban object implies the essential characteristics of contemporary cities, such as mobility, assemblage and relationality. Accordingly, he argued that the material power of representational strategies which typically rely on either quantifiable relative data or qualitative empirically located data can reveal a problematic understanding of the global cities literature which is generally displayed in dualisms. This might offer a fresh critique to the process of globalized urban formations in the contemporary situation.

2.3 The Global Process in the East Asian Urban Context

The East Asian Urban Conditions and Socio-spatial Specificity

Primary cities such as New York, London and Tokyo, where most scholars consider that global processes are principally developed and practised, have become major theoretical

and empirical subjects in the study of global urbanization and city expansion. Cities in the global south and in the mid-range of the global hierarchy have experienced an implosion of uncontrolled urbanization after the Cold War and much of the post-colonial period[43]. Sassen (2002) suggested that these cities and urban regions, in fact, allow the capture of the dynamics of contemporary urban transformations that have not been well established in either theory or practice. In modern times, the urbanization has begun from Anglo-American regions, but it has been proceeding at an accelerated pace especially in other continental regions (Gottmann & Harper, 1990: 5). Figures 2.10 and 2.11 show statistical data which suggest that most rapid urbanization and the formation of megacities in terms of territorial size and population emerge in the region of South America and Asia. With particular focus on Asia, in Figure 2.11, the numbers and the population densities of the metropolitan city regions are growing dramatically and are much larger than the traditional large cities such as New York, Los Angeles, and London in advanced industrialized nations. The extremely large cities in Asia now dominate the urbanized world.

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[43] Post Cold War era was commonly recognized as the time since the collapse of the Soviet Union in 1991. In addition to the diplomatic significance, it was the time that the process of global transaction has deeply disturbed the national economy and urban formations. Most of cities in the global south have been colonized by particular sovereignty at different periods of time. The post-colonial period to each of these cities, therefore, is varied.
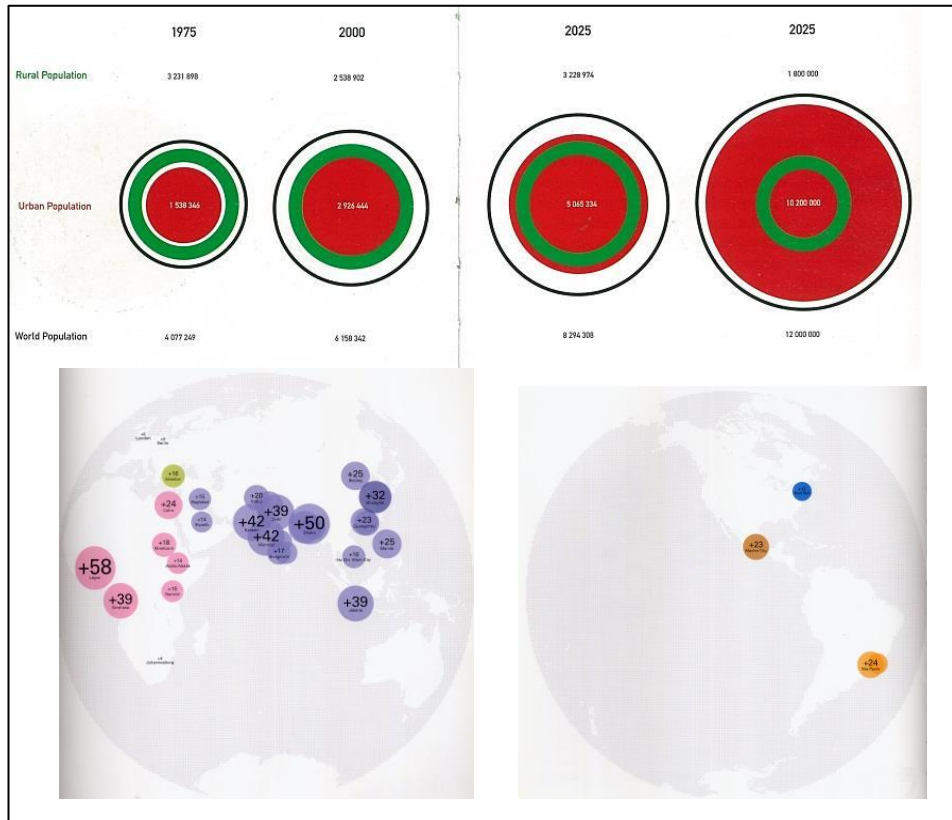
Figure 2.10 This shows the rate of urbanization in the world. The map indicates that by 2015 the fastest-growing cities will be concentrated in India and China (Burdett & Sudjic, 2007).

Megalopolitan City Region	Population in millions
ASIA	
Greater Sapporo	4.6
Greater Tokyo	54.7
Mid-Japan	
Osaka-Nagoya	36.1
Ky-Fuko-Shima	
Fukuoka, Hiroshima, Kitakyushu	20.0
Greater Seoul	
Seoul, Busan, Daegu, Taejon, Gwangju	43.8
Greater Taipei	
Taipei-Chungli, Kaohsiung-Tainan, Taichung	16.7
Greater Beijing	
Beijing, Tianjin, Tangshan	36.5
Shang-King	
Shanghai, Nanjing, Hangzhou	50.5
Hong-Zeng	
Shenzhen, Guangzhou, Hong Kong	40.0
Total	302.9

Rank	Geography	Urban Area	Population Estimate	Year	Base Year Population Estimate	Land Area: Square Miles	Density
1	Japan	Tokyo-Yokohama	37,239,000	2013	36,900,000	3,300	11,300
2	Indonesia	Jakarta (Jabotabek)	26,746,000	2013	24,750,000	1,075	24,900
3	South Korea	Seoul-Incheon	22,868,000	2013	22,500,000	835	27,400
4	India	Delhi, DL-HR-UP	22,826,000	2013	21,622,000	750	30,400
5	China	Shanghai, SHG	21,766,000	2013	20,200,000	1,350	16,100
6	Philippines	Manila	21,241,000	2013	19,850,000	555	38,300
7	Pakistan	Karachi	20,877,000	2013	19,530,000	310	67,300
8	United States	New York, NY-NJ-CT	20,673,000	2013	20,366,000	4,495	4,600
9	Brazil	Sao Paulo	20,568,000	2013	19,900,000	1,225	16,800
10	Mexico	Mexico City	20,032,000	2013	19,250,000	790	25,400
11	China	Beijing, BJ	18,241,000	2013	16,800,000	1,350	13,500
12	China	Guangzhou-Foshan, GD	17,681,000	2013	16,275,000	1,225	14,400
13	India	Mumbai, MAH	17,307,000	2013	16,600,000	211	82,000
14	Japan	Osaka-Kobe-Kyoto	17,175,000	2013	17,000,000	1,240	13,900
15	Russia	Moscow	15,788,000	2013	15,500,000	1,700	9,300
16	Egypt	Cairo	15,071,000	2013	14,500,000	640	23,500
17	United States	Los Angeles, CA	15,067,000	2013	14,667,000	2,432	6,200
18	India	Kolkota, WB	14,630,000	2013	14,113,000	465	31,500
19	Thailand	Bangkok	14,544,000	2013	13,500,000	900	16,200
20	Bangladesh	Dhaka	14,399,000	2013	13,600,000	125	115,200

Figure 2.11 Statistical data show that the most dense populations are mainly located in the Asian region (Burdett & Sudjic, 2007)(World Urban density area report, 2012).

The urbanist Mike Douglas (1995) observed that there is an extreme mega-urban-project boom happening in the Asia Pacific region and that it is restructuring and expanding urban space in unprecedented ways. More precisely, the largest-scale posturban structures which hybridize forms of the urban and the rural have emerged in East Asia (Davis, 2005). This urban corridor runs from Tokaido, along the Korean peninsula to China's Pearl River and Yangtze Deltas, along with eastern coastal areas, toward Bangkok's industrialized eastern seaboard and then to West Java where the fabric of Asian megacities is developing (Davis, 2005: 6; McGrath & Shane, 2012: 652-3). Aiming at international integration no matter whether economically or spatially serves as a propeller of landscape transformation in these urban regions (Evers & Korff, 2000). Speaking of the current situation, the development of prime cities in East Asia is closely associated with the logistics of globalized urbanization. Those urban movements with intense density and cultural-historical dynamism provide a more significant body and socio-spatial specificity which will amplify debates on contemporary urban studies (Soja & Kanai, 2007).

The formation of urban networks in East Asia can be understood in two layers. The Tokyo-Shanghai network appears as a mainstream in the region. It is composed of the more recent emergence of the megacity-regions of Shanghai and the Pearl River Delta, and the long-history urban agglomerations of Tokyo-Yokohama with their highly globalized economy and exploding demography (*see* Figure 2.12). This collaborative Tokyo-Shanghai network is predicted to equal the New York-London axis instructing global flows of capital and information on the other side of the world (Lo & Yeung, 1996: 41).
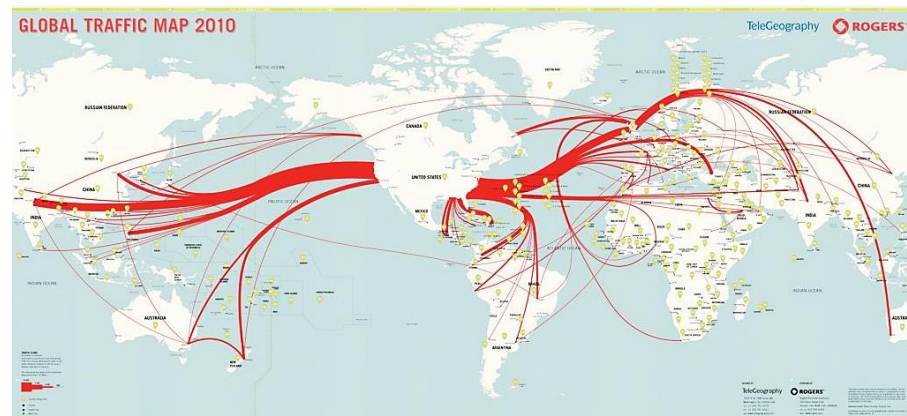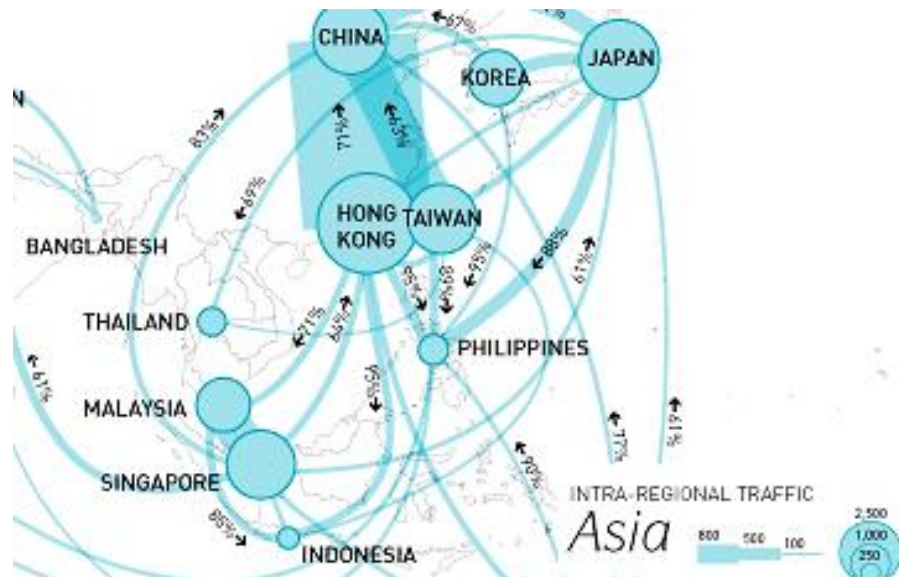
Figure 2.12: *Top*: This Asia telecommunications map of 2012 shows that the densest network is located in the East Asian metropolitan region. The intra-regional traffic map of 2008 highlights the intensity of communication between Japan, China, HK and Taiwan. *Bottom*: It is possible to recognize the traffic tendency and flows on a global scale map 2010 (source: http://www.telegeography.com/telecom-resources/map-gallery/index.html).

In particular, mainland China is not only aggressively maintaining international cooperation to strengthen its position in the global society but has also been in the grip of a relentless process of urbanization development within itself. For instance, the well-known Pearl River (Hong Kong-Guangzhou) Delta, the Yangze River (Shanghai) Delta, the Beijing-Tianjin corridor and other huge numbers of emerging urban-industrial megalopolises have transformed China's urban landscape at a speed and scale that have perhaps been more excessive than that of the sprawl in the US three decades ago (Chung

& Chang, 2001: 27; Davis, 2005). In terms of geopolitical matters, China and Japan are the two countries which have never fully been colonized by other authorities, which is very different from other countries in East and Southeast Asia. With their different kinds of regime, the formation of megacities in each of them occurs in a different period of time and a distinct way for maintaining a prime position in the global circuit.

Super-city regions in mainland China and in Japan set a major framework for reading East Asia's urban networks due to their long-term economic power and cultural influence. There is yet another layer of urban networks in East Asia which reveals an extremely dynamic web which is formed by east-coastal metropolises such as Taiwan, Hong Kong and various south-east big cities such as Singapore. Most of them have experienced different forms of sovereign colonization, in particular by the West, due to their strategic geographical locations for trade and military deployment as well as their many natural resources. These cities subsequently become natural sites for economic aid, political advice and technology transfer from the agencies of the mother country (Cairns & Suryawinata, 2009: 409). However, they still contain their own distinct history of diversity stemming from their positions as nodes in long-distance trading networks and the massive emigration from China.

Hong Kong, for instance, became a global trading city on the basis of the modern developments introduced by British colonists a century ago and then turned into a metropolitan paradigm for other Chinese seaport cities after it was returned to China and named as a Special Economic Zone in 1997. Singapore shares similar colonial experiences but with more racial forces involved. Taiwan, as a military and trading strategic point, experienced Chinese sovereignty, Japanese colonization and US influential aid which created a three-way wrestling match between these three super regimes. Hong Kong, Taiwan, Singapore and South Korea are known as the 'Asian

Tigers' which grew into Newly Industrialized Countries (NICs) serving as crucial hinges to support the global circuit, especially in the Asian region. More importantly, each individual city within this second layer of the regional urban network has multiple relationships with the others. It appears as a competitive, cooperative and interrelated mode in terms of the international division of labour, internal economic demands, and socio-spatial correlation and interchange through spatial practices and informational media. Then informal economic systems, local markets and a hybrid model of the global city have unpredictably emerged in diverse ways in these cities. That is what has formed the complexity and specificity of the East Asian metropolises.

High population has been a central problem over recent decades in most East Asian cities. No matter whether the city has an adequate hinterland, such as Tokyo, or has confined territory, such as Taipei and Hong Kong, they all struggle with a high population density. City expansion is unavoidable. The periphery, however, grows in a form which is neither rural nor urban but a recombination of the two containing a dense web of transactions which ties large urban cores to their surrounding regions (Guldin, 2001: 14-17, cited in Davis, 2005: 9). Even in these sprawling areas, the commercial, industrial and residential functions still retain a compact form. Sprawling landscape here implies not only a horizontal phenomenon but also a packed urban situation of modernity, post-colonialism and globalization. Reading the logistics of global city hierarchy, most of the East Asian metropolises except for Tokyo are positioned at what Sassen (2007) called *the middle* or rather the upper middle, neither global north nor global south. Taking a closer look, a strong national attempt can be seen to compete in the global economy by means of a new international division of labour, and a striving between the occidental modeling force and the traditional urban fabric and ways of life promote these cities to wander over the middle range. They are neither global nor local or national, but integrated into global economic networks, nation states and urban

localities at the same time (Evers & Korff, 2000). Unlike most North American and European cities which are rooted in industrial urbanization and share similar social structures, East Asian metropolises, with their heterogeneous recombination landscapes, reveal more intense conflicts, disorders and chaos in multiple dimensions; Taipei city is an example which will be addressed in detail in Chapter 7.

East Asian cities reflects diverse mixes of urban and rural activities carried out by different urban actors, responding to both local and global conditions, changing quickly and barely well-regulated by the authorities. It is a remarkable site of agency rather than an unresisting receiver of models, aids, systems and technologies (Cairns & Suryawinata, 2009). Therefore, a more complex urban patterning of old and new with continuing trends and new forces is emerging on a rapid and extremely large scale. The metropolises of East Asia, accordingly, are often described as indicators for the distinction of historical fabric and containers of modernity practised in a perturbing and patchy way (Evers & Korff, 2000: 5). The great amount of floating population, including internal and external migrants, as well as temporary labour is another key factor which makes East Asian large cities dynamic and networked. Due to the pressure of maintaining competitiveness on the global circuit and unceasing reconfiguration of international divisions of labour on both a regional and a global scale, the diverse groups of actors, such as immigrants, foreign labour and agency, constantly flow in and out of the cities. These varied groups are articulated in their social, economic and spatial embodiment through clear differentiation or simply through their everyday life within it. In addition, the great number of permanent and temporary migrants enables East Asian cities to have more power of mobility, integration and assimilation within and between cities. The dynamics of these floating actors impel an unfolding urban transformation and a new socio-spatial context in the cities. The unboundedness in East Asian cities implies an explosion of territorial sprawl, global network interconnection, and an implosion of socio-spatial restructuring

through diverse groups of participants and multidimensional intervention.

The processes of urbanization and globalization in East Asian must be understood through interactive complexity and in a context of conflicting historical conditions. However, the urban study of East Asia has for a long time been conceptualized with occidental ideology rather than on its own unique terms. This research terrain lacked adequate engagement or remained imprisoned in a mysterious otherness a decade ago. Jennifer Robinson (2006) argued that the emerging forms of dynamics, complexity and constructive agency in such cities need to be recognized and developed in depth. If we take account that globalization is not a uniform process, westernization or Americanization, but rather a bundle of diverse exchange processes which imply global connections and form global networks, the East Asian metropolis offers a rich contested field and a fresh viewpoint from which to investigate such global matters with alternative contexts and models. It can be understood as a specific register of on-going globalization processes when globalized urbanization has rapidly mushroomed all over the East Asian region since the end of the twentieth century and might go forward at a much more extreme pace and scale in the future. The thesis thus suggests that the concept of scale is essential to appreciating these unceasingly changing and complex urban conditions of East Asian cities where multiple scales co-present and coexist in a complex and dynamic way. In the following chapter, the particular concept of scale in architecture will be elaborated as crucial material to develop the theoretical framework in the thesis later to propose an alternative way to understand the large and globalized cities in East Asia.

THE CONCEPT OF ARCHITECTURAL SCALE

The term 'scale' is a fundamental element and a relational concept particularly in spatial disciplines such as architecture, urban studies and geography to understand cities. Departing from architecture as the main terrain in this thesis, the idea of scale, more than a conceptual instrument, has been operated as a unique professional knowledge and technique in the architectural discipline. The Milanese architect Ernesto Nathan Rogers' famous phrase highlights one disciplinary normative approach to how architects engage in scale.

Architecture is about working '*from the spoon to the city*'.

(Rogers, 1952)

This phrase shows that scale involves an understanding of spatial fields from the interior to exterior of a building, and from its smallest detail to its overall presence (Pollak, 2006), and also the operation between different material objects.

The idea of scale is both a measurement system and a practical skill which serves as a basic guideline for creating appropriate spaces, buildings, and cities. It also relates to other idea for appreciating spaces and buildings such as proportion, fitness and composition. Thus, it is considered as principle knowledge and an operational primitive both in architectural history and in design practice. Architectural historian Frank Orr

(1985: 109) stated that "it is not even going to *be* architecture if it does not also respond to issues of scale". Even so, since the emergence of unprecedented urban conditions, as was discussed in Chapter 2, the tradition of architectural scale which practically and theoretically addressed the issues of the built environment especially in cities has become questionable.

The sprawling (Bruegmann, 2005; Graham & Marvin, 2001), clustered and unbounded urbanism (Burdett & Sudjic, 2007) and networked cities (Latham & McCormack, 2011; Sassen, 2007), for example, reveal one crucial and substantial issue that there is no longer any clear way to define a city by the traditional quality. In architecture, the sense of scale enables the observer to recognize and qualify the space and the built environment. It is rooted in the human body tradition and centric cites which are set in a hierarchical and nested logic of scale. This conventional standard and value of architectural scale and the operation of scaling that is used to approach cities and environments have been profoundly challenged by the blurred, extremely large and globally connected conditions in cities. These conditions result in a series of questions and difficulties on scale in both architectural theory and practice. Some theorists and architects have argued that the weakness of the critical theorization of scale in the discipline has resulted in the inability to properly respond to the contemporary urban conditions in large and globalized cities. The thesis suggests that examining the concept of scale in geography and urban studies, on the one hand, can address the absence of architectural engagement with those extreme urban conditions, and, on the other hand, serves to develop a richer and deeper framework for conceptualising scale in an alternative way for exploring East Asian cities in the second parts of the thesis.

This chapter, therefore, concentrates on a scope of architectural scale to review what role scale plays in architectural discipline and the reflection of the idea and the function of

scale in architectural theory and practice. In the first section, accordingly, it tracks back to its humanist tradition from Vitruvian man in the Renaissance to Le Corbusier's *Modulor* in general terms. The human body not only provides a material standard for scale as measurement, but also conceptually becomes a perfect scalar model by which to project the micro- and macro-worlds. In this tradition, scale is linked to other specific subjects such as proportion, symmetry and harmony which are unique spatial and material qualities to architecture. The second section of the chapter explores scalar questions which have arisen from modernism, post-modern critique and matters of extreme bigness stirred up by globalization. Architectural scale has found problematic about propositioning itself in the unbounded city. Architects and critics have suggested a wider perspective from urban landscape, and geographical fields as a supplement to architectural inadequacy in response to current global-urban conditions. An interdisciplinary approach of the concept of scale in geography and urban studies will be addressed in detail in the next chapter.

3.1 Definitions and Use in the Architectural Tradition

The term 'scale' is derived from the Latin word *scala*, which means a ladder or a flight of stairs, referring to a rhythm with regular intervals along a line, as shown in Figure 3.1. In architecture scale is invariably used to refer to size and signifies a device or system of measurement (Orr, 1985: 7). A verb derived from the term, 'scaling', involves arranging diverse sizes or forms in some order and then comparing them with one another to generate an appropriate relationship. There is always an intent, such as harmony or the power of sovereignty, which is expectedly achieved through this arrangement of and

comparison between sizes and forms. Architectural scale, therefore, contains messages which are revealed by the ordered hierarchy of things.

Figure.3.1 *Scala*, a section of stairs. Scale also has its roots in music (Orr, 1985).
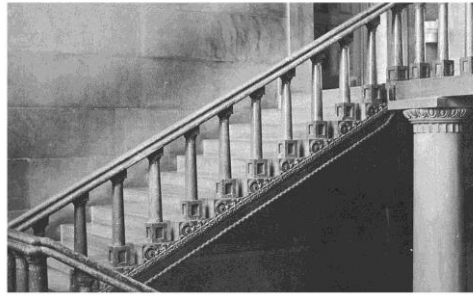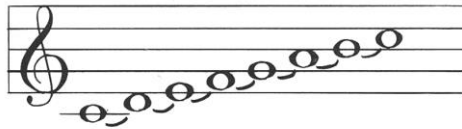
The architect and architectural historian Christian Norberg-Schulz (1965: 18), putting the emphasis on its nature of relationships, argued that "scale is not the same thing as size; scale is relative size" in relation to something else which might be physical or an idea. Charles Moore and Allen Gerald in *Dimensions: space, shape & scale in architecture* (1976) suggested that the meaning of scale comprises three characteristics; standard, relationship and comparison. This supports the idea that scale is a relative matter which can be categorized into relationships to a whole, to other parts in the whole and to things which are like or unlike them.[44] The significance of scale in architecture is about this comparison system;[45] it is not confined to one set of relationships and moreover it is never absolute (Harvey, 2000). This characteristic enables the power of architectural scale in arranging various physical sizes in some order and at the same time. Scale, more importantly, becomes one of the interdependent components which establish the dimensions of architectural perception (Moore & Gerald, 1976). From a practical perspective, scale is an elaborate and complex coding system which offers a measuring instrument that architects operate to produce appropriate drawings of the physical things they represent (Orr, 1985). This system of measurement helps architects to recognize unknown entities in and among space.

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[44] Generally, it refers to comparison between the usual size of objects and the human body size (Moore & Gerald, 1976: 17-19).

[45] In Allen Gerald's reading (Moore & Gerald, 1976), super scale, for example, usually means that something is much bigger than people might have expected. It is said that the comparison process is based on human perception and experience which change over time.

Scale has been considered an intrinsic property both by theorists and by practitioners for the whole of architectural history. There is, however, no entirely clear agreement on what scale really is. The architectural theorist Frank Orr, in his work *Scale in architecture* (1985), concluded that there were two shared concepts of scale among five considerable architectural literatures in modern times (*see* Figure 3.2). The shared concepts are

CONCEPT	BOOK				
	A	B	C	D	E
COMPARISON	X	X	X	X	X
RELATED TO WHOLE		X	X		
RELATED TO PARTS		X	X		X
RELATED TO USUAL SIZE			X	X	X
RELATED TO HUMAN SIZE	X	X	X	X	X
PROPORTIONAL THEORY	X				X
MUSICAL ANALOGY	X				
BALANCE		X			
STRENGTH OF MATERIALS		X			
PSYCHOLOGICAL				X	
PERCEPTION					X

LEGEND
A Steen Eiler Rasmussen, *Experiencing Architecture* (Cambridge: M.I.T. Press, 1959).
B Forrest Wilson, *Architecture: A Book of Projects for Young Adults* (New York: Van Nostrand Reinhold, 1968).
C Charles Moore and Gerald Allen, *Dimensions* (New York: Architectural Record Books, 1976).
D Caudill, Pena, and Kennon, *Architecture and You* (New York: Whitney Library of Design, 1978).
E Francis D. K. Ching, *Architecture: Form, Space, and Order* (New York: Van Nostrand Reinhold, 1979).

Figure 3.2: Analysis of the concept of scale based on five literatures. (Orr, 1985: 25)

comparison in size to something else, and the specific relation to human size. All the categories which Orr listed clearly show that the conceptual definition of scale is closely related to the operation in particular of design practice. This intrinsic value of scale is taken for granted in architecture but in fact is distinctive in its uniqueness from other disciplines of spatial studies. Heath Licklider, in *Architectural Scale* (1965), which was not included in Orr's five references, proposed a similar notion of scale inferring physical, proportional and human concepts. It can be concluded that human size is the only characteristic that has been identified among these significant architectural literatures. Licklider (1965), moreover, suggested that the tradition of aesthetics[46] which implies the cumulative values and perception of human beings has resided in the content of architectural scale over a long history. This leads a crucial point to understanding architectural scale in both theory and practice; that is human size, or more accurately, the

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[46] Scale is considered as the principle of making beautiful architecture. As Leon Battista Alberti (1988) asserted, "[it] is wrong to make either the width or the height of a wall greater or less than reason and scale demand ….". An ideal model is strictly formed by the scale.

human body.

> … Man is the measure … Man's feet are the measure for distance, his hands are the measure for ownership, his body is the measure for all that is lovable and desirable and strong.
>
> (Raskin, 1954: 36, cited in E.M. Forster's *Collected Tales*)

Scale, for Raskin, belonged to a humanist vocabulary which claimed that human size based on the body expresses an interactive platform for human subjects and natural objects (Adler, 2012). It is grounded on a perceptive process by which a human being recognizes and then responds to the existing environment and world. The human body naturally becomes a prime standard for a man to define the sizes of objects and whether they are under or over the limitations of human ability to handle them. Therefore, the human body turns into the primitive benchmark of architectural scale. The application of the human body for this purpose can be traced back to the ancient Greek thinking and belief that the body is an ultimate reference by which to perceive and interpret the cosmos. The ancient Greek philosopher Plato described the body as a significant part of an open and ever-changing cosmic realm that unceasingly redefines itself (D'Angelo, 2008: 7). It indicates a deep relationship between an individual and the world. The human body, accordingly, is praised as a visual realization of purity and is projected as the entity of a universal harmony (Panofsky, 1955: 91). This application was later encapsulated in the humanist views of the Renaissance which were influenced deeply by a Roman architect, Marcus Vitruvius Pollio.

Inheriting the Hellenic, Platonic value of the body, Vitruvius, in his masterpiece *De Architectura (Ten Books on Architecture*, 1692)[47] asserted that one of the most important

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[47] The first Italian version was published in 1521. The first English translation was published in 1692 (McEwen, 2003).

principles of architecture, in particular in public buildings, is the symmetry which derives from man. The notion of the human body has to be translated and projected on to the building which is required to be in proportion and harmonic composition.

> Architects must grasp this principle thoroughly. It is produced from proportion, ... Proportion is the correspondence of members to one another and to the whole, within each work, measured by means of fixed part. That is how symmetries are calculated.
> (Vitruvius, 1692 cited in McEwen, 2003: 195)

How Vitruvius described proportion[48] is a comparing process in order to generate an appropriate composition and order. Its perfect original source comes from the human body which has rationally been notated into knowledge of numbers. Decipherments of bodily mathematics have been applied to re-examine the Greek architectural orders and the proportions of columns and of the whole temple space (*see* Figure 3.3). Although Vitruvius himself did not put any great weight of emphasis on the application of

Figure 3.3: *Top*: A comparison of the Ionic order in the temple space according to Vitruvius with actual examples and with Vignola's order. *Bottom*: Proportion of Ionic, Greek, the Five Orders (McEwen, 2003).

human body, this revival of the human body which is projected on to architecture as a proportional guideline left significant assets and influence to Renaissance scholars and thinkers later on.

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[48] Regarding the notion of scale and proportion, *scale* refers to the size of an object, as a whole, in relationship to another object, another whole. *Proportion* is to do with the relative size of parts within a whole, as different elements within an object. I argue that proportion can be understood as a scaling process which is unique in the architectural discipline.

The new attempts to use the human body as a measurement in the Renaissance were associated with a remark made by Vitruvius and demonstrate both the architectonic symmetry of the body and the anthropomorphic vitality of architecture. The body is taken as a representation of natural harmony between microcosm and macrocosm, and considered, moreover, as the geometric basis of beauty[49] (Panofsky, 1955: 92). In the literature, the most idealised expression of the proportionated body later widely used as the model for human scale is the illustration of Vitruvian Man made by Leonardo da Vinci. Ironically, there is no evidence that Vitruvius himself made a drawing but rather left only a piece of writing to describe his ideal man.[50] This left a void to followers[51] which means that depictions of this perfection of the body vary.
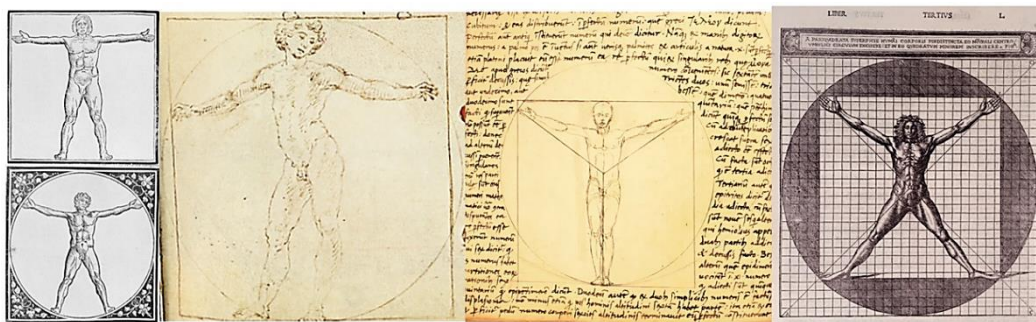
Figure 3.4: Different versions of ideal man which is primarily positioned in a square and a circle referring to the ideal city, Rome, and the universe. *Left*: Cesare Cesariano's version translated the Latin text in a published edition of 1521.

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[49] The human body in medieval times was considered as a technical tool, a practical code, but to do nothing with the arts. In the Renaissance, fusing the meanings of the body in Hellenic times and in the Middle Ages, the symmetry derived from Man through rational analysis is regarded as the fundamental principle of aesthetic perfection (Panofsky, 1955).

[50] Vitruvius 3.1.3: "Likewise in sacred dwellings, the symmetry of the members ought to correspond completely, in every detail and with perfect fitness, to the entire magnitude of the whole. By the same token, the natural centre of the body is the navel, for if a man were placed on his back with his hands and feet outspread and the point of a compass put on his navel, both his fingers and his toes would be touched by the line of the circle going around him. You could also find a squared layout in the body in the same way as you made it produce the circular shape. For if you measured from the bottom of his feet to the top of his head and compared that measurement to his outspread hands, you would find the breadth the same as the height, just as in areas that have been squared with a set square" (cited in McEwen, 2003: 156).

[51] These passages in Vitruvius have been most influential for architecture. They inspired Leonardo da Vinci, whose interpretative drawing is dated between 1476 and 1490, Francesco di Giorgio Martini, whose compelling version came in the 1480s, Fra Giovanni Giocondo (1511) and Cesare Cesariano (1521) (McEwen, 2003: 156).

Leonardo da Vinci's version is one of the most remarkable interpretations and became the classic representation of Vitruvian Man. No matter which version is considered (*see* Figure 3.4), the human body is fitted exactly inside a circle and a square. It is more than a geometric statement but rather a metaphysical proposition. The circle represents the cosmic and the square refers to the earthly. To centralize the human body not only implies that man has governmental power over the world but also that he *is* the world. This is the idea of the microcosmic in the body. The geometry of the circle and the square, moreover, is associated with the symbolization of the city of Rome, which was the centre of the known world at the time (McEwen, 2003: 162). Apart from this common ground, the ideal man has been portrayed in unique ways in each drawing.

Cesariano's version, for instance (*see* Figure 3.4, *right*), imposes a grid measure onto the body, which clearly shows that the body can be evenly subdivided into a mathematical system, and then used as a guide to perfect proportion. In Leonardo's version (*see* Figure 3.5, *top right*), his man has been carefully illustrated with the Golden Ratio. This suggestion that the human body is formed along the lines of rational division urged the formation of Renaissance proportion theories in art as well as in architecture and prompted the rise of the Neo-Classical style later. In addition, Leonardo's drawing is distinguished from other renderings by making the figure adopt two different positions in the frame. It is static in structure but dynamic in its presentation of a moving figure, a living man. The proportionated body regarded as the perfect origin of such a measurement system suggests a comparing process in multiple dimensions. A man with different positions of his body defines particular composition and geometry in spcace. Human body, as a scale, legitimates the qualities of architecture through dynamic proportionating.
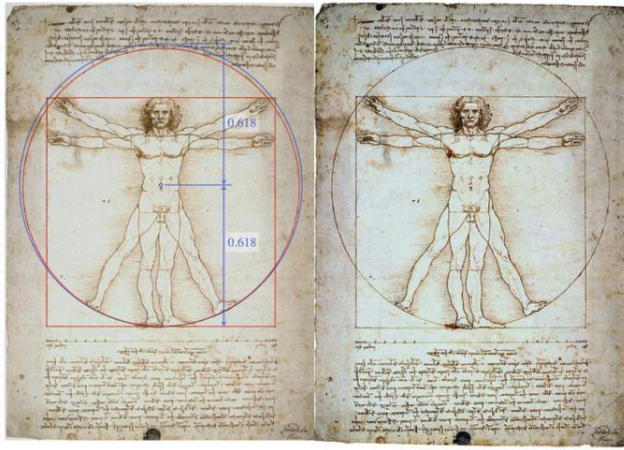
This proportionating process refers to analogizing the body as a complete system to another system of proportion (Agrest, 1988). In conceptual terms, Leon Battista Alberti, for instance, deemed that the building is in its entirety like a body composed of its parts. The relationship of the parts to the whole should achieve a state of harmonic beauty where nothing can be added or taken away without destroying this delicate balance between parts and the whole. The figural expression, in geometry, has been represented into the circle-and-square form which is exemplified in Brunelleschi's St. Maria degli Angeli in Florence (1434) and Alberti's San Sebastiano in Mantua (1460) (*see* Figure 3.6). As well as in architecture, the city plan can also be elaborated in the anthropomorphic form of the ideal body. Francesco di Giorgio, following Alberti and Vitruvius, stated that

Basilicas have the shape and dimension of the human body; similarly the city: 'cities having the qualities, the dimensions and the shape of the human body'.
(Vidler, 1990: 4, based on di Giorgio, 1476-1492).
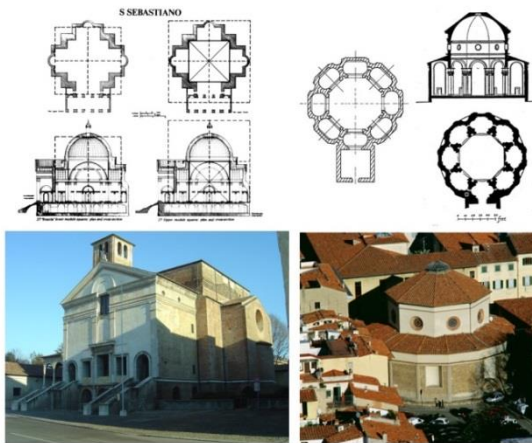
Figure 3.6 *Left*: The San Sebastiano Church in Mantua presents a square form in its plan and elevation.*Right*: St. Maria degli Angeli in Florence exemplifies the circle form in its plan.
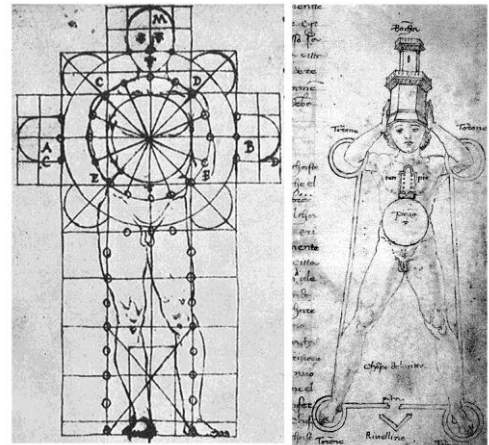
Figure 3.7: *Left*: Francesco di Giorgio's expression of the relation between human body and cathedral. *Right*: The body and the city (McEwen, 2003).

This directly indicates that the city itself can be conceived as a great body. In Francesco's noted drawing (1470–80) (Benevolo, 1978) (*see* Figure 3.7), a human body is superimposed on the plan of a cathedral[52] and that of a city, which shows that the city is suggested in its organization by a principle of the human body. Although each object in this illustration is not depicted in scale, it importantly indicates a proportional correspondence and the relative arrangements among the parts and the whole which are derived from the body. Body, building and city are all representations of each other, and each order follows the same hierarchical plan, with head, body, limbs and
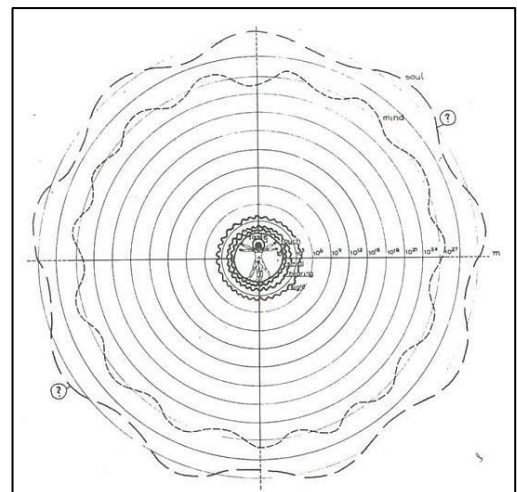
Figure 3.8: Constantinos Doxiadis' Total Man ((Doxiadis, 1972).

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[52] There is a religious origin that Christian churches, including cathedrals, are laid out in a cruciform shape to mirror the body of Christ on the cross. In many, the transept is slightly out of alignment to signify the head falling to one side in death. The application of the body to church architecture not simply directs to Renaissance Humanist. However, this perspective would not be addressed in his thesis which mainly focuses on how the 'human' body has been reinterpreted and taken as primitive source of scale in architecture to approach the space and environment.

so on. There are multiple scales revealed in such a projection, but the human body serves as a central scale. In a more modern and scientific way, Constantinos Doxiadis' Total Man (*see* Figure 3.8) expresses a relationship between human beings and their environmental needs in a nested concept drawing, whereas Leonardo's Vitruvian Man is positioned at the core to radiate all scales (Doxiadis, 1972, cited in Richards, 2012). The human body is the index of the surroundings and the world.

In architectural practice, the human body, for Renaissance scholars who inherited the Vitruvian rational analysis, not only constituted biological and philosophical principles but more importantly was transitioned into a mathematical system, as a logic of measurement and order. It was used to define the scale and proportion of perfection in architecture both spatially and structurally. Therefore, the scale of the body becomes a considerable value and standard to the architectural operation of the ordering, hierarchy and proportional organization from the façade to the city. That is the significance of human scale in the architectural discipline. The conceptualization of human scale is tightly linked with the tradition of pursuing harmony and permanence by means of working between different sizes and their relationships again and again (Scholfield, 2011). This concept resides deeply in the perspectives of architectural theorists and practitioners to engage in both the building and the city where the expression of balance and aesthetic beauty are expected. This ideal principle of human scale which corresponds to the primary mode of bodily projection has had its glory and its steady groups of advocates, even though it has been challenged by the celebration of large-scale monumental architecture since the end of the eighteenth century,[53] leading up to the era of Modernism (Padovan, 1999). Following the advancement of industrial technology and the introduction of new materials in the nineteenth century, the core value of architecture

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[53] The École des Beaux-Arts in Paris has greatly influenced the architecture education that propels this trend in both academia and practice.

practice based on the human body has shifted to an attention on mechanical function in the construction of buildings (Moore & Bloomer, 1977). In this mainstream of Modernism, Le Corbusier opened a new track of reviving human scale masterly integrated with modern industrial production. It derived a modular system which is based on a modern human figure and also associated with the celebration of modernity as well as mass production generally away from the set of a bespoke individual body.

Between 1943 and 1944, Le Corbusier developed a system of measurement, the Modulor,[54]which was a scale of dimensions derived from a six-foot human figure divided by the Golden Ratio (Corbusier, 1954; Padovan, 1999) (*see* Figure 3.9). For Le Corbusier, the purpose of the Modulor was to provide a way in which the world of architectural space and human life could be properly measured and efficiently operated. This innovation appreciated an ancient principle that the origin of measures in the dimensions grew out of the way builders naturally use their own bodies as measures on a building site. The Modular, in short, is a system of proportions which searches for more definite relationships between the parts and between parts and the whole (Licklider, 1965: 151). It therefore provides a precise control of scale which is comfortable and convenient for the human being and meets the urgent requirements of mass production in the modern era (Licklider, 1965; Padovan, 1999: 330-1).

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[54] The Golden Ratio approximates 1.61; the ratio of the total height of the figure to the height to the figure's navel is 1:1.61. The Modulor was developed in 1943 by Le Corbusier, and the first volume of this study was published in 1950.
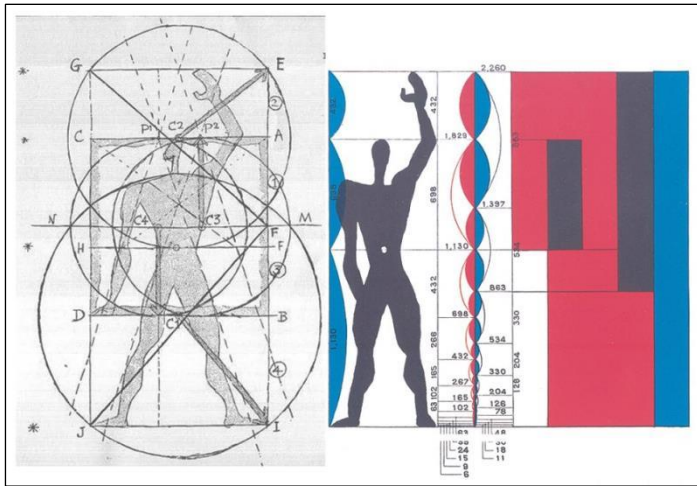
Figure 3.9: Le Courbusier's modular man which is considered as the most notable descendant of the Vitruvian figure and Leonardo's ratio of Viitruvian Man (Corbusier, 1954; Padovan, 1999: 25,35).

In addition, the Modulor demonstrates Le Corbusier's attempt to reconcile mathematics, the human form, beauty and architecture into a single systematic framework which creates a versatility of mature human scale and dynamic variations of scale at every level. Practically speaking, the Modulor can be operated in a single project but also in a large urban development, a building structure, interior design and even the furniture in it. In Marseilles, the *Unité d'Habitation* (1953) by Le Corbusier (*see* Figure 3.10) is a representative of this in which a small modular unit is used for a wide range of elements from a door to the whole building block (Licklider, 1965: 151).
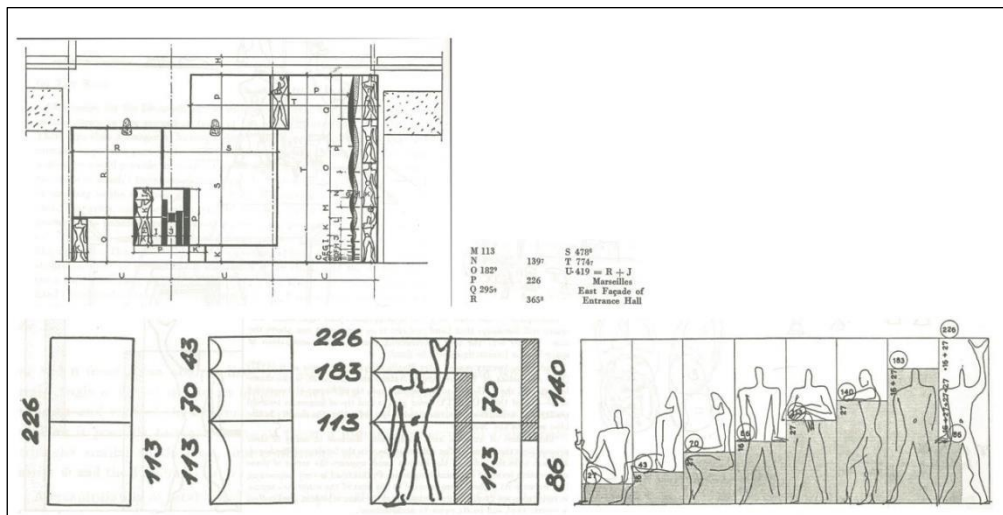
Figure 3.10: Le Corbusier's modular man in the project of the Marseilles *Unité d'Habitation* from the plan to the whole unit.

In this case, multiple units of scales are freely and at the same time systematically arranged by the use of this measuring instrument. Licklider (1965: 156) suggested that the significance of Le Corbusier's modular concept[55] is to help the designer to define spatial relationships precisely and to divide a vast space continuum appropriately with flexibility. This shows how the modular system equips architects with greater power to cope with multiple scales in the material world from a door handle to a façade, and to the city at the same time.

The modular system of Modernism and the aesthetic proportions of the Renaissance both refer to an operable form of architectural scale, the sense of fitness. The meaning of fitness presents the idea of balance, of harmony and of the dynamic symmetry of diverse structural elements as well as a satisfying wholeness (Orr, 1985: 9). This fitting status is not only based on the significant source of the human body, but also addresses the relationship between a material object itself, its environment and its participants. However, this pursuit of harmony in architectural scale rooted in the human body confronted a crisis in the 1960s. That was a time when cities started to expand boldly and the sizes of buildings grew higher and bigger than ever. The importance of fitness of scale and the sense of wholeness faded away in this new turbulent environment.

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[55] Peter H. Scholfield in his work *The theory of proportion in architecture* (2011[1958]) showed a similar ambition with Le Corbusier to pursue a mature proportional system primarily derived from the human scale to meet the demands of aesthetic harmony (Licklider, 1965). In more recent architectural-historical literature, Richard Padovan's *Proportion* (1999) and Robert Tavernor's *Smoot's ear : the measure of humanity* (2007) have provided rich discussions on systems of measurement and the application of scale in architecture.

3.2 Architectural Scale in Pain: from the Human Body to Extreme Bigness since the early twentieth century

Since the early-twentieth century, the power in western society has been transferred from religious authority to the engineers and industrialists who have led the progress of the society by advancing technology and re-structuring all aspects of the economy. In architectural discipline, the effect of industrial production and the application of novel construction materials resulted in new approaches of design practice and conceptual thoughts about the building and the city. Admiration of engineering invention replaced the celebration of nature and the human body to imagine architecture which is captured as a working machine in terms of its form and function in the blossoming era of Modernism. A rational system that suited industrial uniformity and mass production was indispensable. The unit of measurement and construction in architecture which had previously been linked with the capacity of the human body was replaced by the speed and far wider limits of industrial production technology. Constructing giant buildings in turn became much more feasible, faster and easier than ever. With the rise of socio-economic demands, so-called 'inhuman' scaled buildings mushroomed. If scale, as Orr argued (Orr, 1985) makes buildings intelligible to us and gives a sense of relating to the environment, it then gets lost by degrees in the phenomenon that bigger is better in the modern industrialized world (Temporale, 2000).

In addition to the unprecedented sizes of buildings, Licklider (1965) drew attention to another urgent but unheeded problem of Modernism in the built environment which gave rise to the convention of the human body in pain. The development of mega-infrastructures, unbounded urbanization and the sprawl of suburbs that were the consequences of modern industrialization liberated the traditional tenets for planning or

sensing a city. First, when a city's boundaries and its supplying catchment are dissolved, perception of a city scale collapses too. Second, the value of harmony which was the core principle for architects and designers to plan a city loses its legitimacy. In other words, it is difficult to apply a sense of fitness in such open and freely-developed urban conditions. Orr claimed that none of us can ever clarify what out-of-scale means. Human beings start struggling with relating themselves to an unlimited and sprawling environment, and in turn, the sense of architectural scale is lost. The human body scale has been shaken and the idea of a city which is centralized by that has been collapsing. This is truly a scalar issue.

Since the mid-1960s, the study of architectural scale has been welcomed once again in architectural texts by Heath Licklider (1965), Robert Venturi (Venturi *et al*., 1972), Charles Moore (Moore & Gerald, 1976) and other educators. Licklider (1965) stressed the argument that modern architects lack enough theoretical and practical experience to deal with, in particular, larger urban and architectural projects than have ever been confronted before. It results in falling into failure of size and of the relationships between sizes. This reflects a premise that the city is understood with a sense of wholeness and an idea that architectural scale is taken as a critical approach to rethinking the built environment. Orr (1985), with the same view, took the application of scale as a critical analysis of the impact that Modernism brings to architectural literature and practice. Moore re-emphasized the significant position of scale in the discipline of architecture. Those scholars not only reintroduced the discussion on scale into architectural education and practice but, more importantly, took scale as a critical tool to clarify the architectural issues of their epoch.

The application of architectural scale, to some extent, responded to particular social issues and economic demands as well as political effects which to some degree affected

architectural thinking and practice at the time. The expression of human scale in Frank Lloyd Wright's Usonian architecture, for instance, conveys the idea of the individualism of American democracy at a particular time (Sergeant, 1981). There is more to scale than drawing and design. In terms of primitive sources of architectural scale, the rational interpretation of the human body is central to the modernist sensibility which is the consequence of the flourishing development of scientific technology. New explorations of human existence, particularly in cultural studies and philosophy, led to the loss of the body as an authoritative foundation for postmodern architecture. The concept of scale crucially manifests architectural questions from the past to the present, in other words, as a reflection of the *zeitgeist* of the time.

The consequence of modernism in architecture and urban planning which is interested in large-scale development with an idea of rational unity has presented a growing series of challenges to the human body tradition among architects.[56] Since the 1960s, the uncontrolled growth of city expansion with the rise of super-sized buildings resulted in the different types of giant urban forms that were discussed in detail in Chapter 2 and brought about complex socio-spatial problems such as segregation, poverty and crime in the community. When Pruitt-Igoe's urban housing project (1954-1972) was torn down, the crisis of modern architecture and its epilogue were officially announced. Groups of scholars, at the time, proposed the notion of post-modernism to approach a new world of flux, diversity and uncertainty (Hatuka & D'Hooghe, 2007). In addition, typically bounded architectural projects became unsettled; infrastructural, landscape, engineering and urban constructions were arguably conceived of as much as projects of architecture as conventional buildings for human occupation. The question of the design of cities was in flux and was reformulated differently in situational contexts.

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[56] According to Vidler (1990), there are three-stage transformations of conceptualizing the body which are important to contemporary theory in architectural discipline. The body has been extensively reinterpreted from the building to the environment.

The proposal of a new human body, with a focus on architecture, was neither a reversal of the humanist tradition nor a literal separation from classicism, but embraced wider social and critical theory at the time from the 1960s to the 1990s (Vidler, 1990). According to Anthony Vidler (1990), Sigmund Freud's discussion of the uncanny (1919), which revealed the idea of presupposed lost body, and Jean-Paul Sartre's notion of the existential limits (1946), which described the body as a device by which to perceive resistance to the world, both offered important psychological registers to architectural practices. Reference to Lacanian analysis, post-structuralist criticism, and their relation to earlier embodiments from the Renaissance to Modernism, creates a broader theoretical framework for architects to engage in uncertain and diverse situations on contemporary buildings and cities (Vidler, 1990: 3). The traditional idea of the human body and what it signified was deconstructed and reinterpreted with such postmodern critiques.

One central idea of postmodern critiques in architecture is to address questions about the status of the body. The functional analogies of modernism theorizes the building as a machine for living (Le Corbusier, 1946). It implies that a smoothly running machine tailored to the body's needs is modern architects' answer to the proportional and spatial analogies of humanism. Once the building and city had grown into a more complex and uncontrolled situation which is severely mechanized, the rational body collapsed. The body, in architectural thinking, no longer served the idea of stabilization, centre and the symmetrical beauty of a human being. Its power did not lie in a model of unity any more, but in an intimation of the fragmentary and the broken, which embraced the concept of human existence from physical fixedness to the unstable inter-existence position. In response to the new architecture, the body which was taken as a reference to humanist principles was seen as a referent and a generator of design practices. The notion of human scale, accordingly, was unpacked and redefined through a series of experimental

projects and proposals by groups of influential architects.

A group of architects including Coop Himmelblau (Noever, 1993), Bernard Tschumi (Rattenbury, 2012) and Daniel Libeskind (Libeskind, 1983) raised concerns about re-addressing the body in their work. In the late 1960s, Himmelblau published several articles which proclaimed that it was the time for architects to face a fundamental break with the theories of classical humanism which resided in the pursuit of harmony based on body perfection (Vidler, 1990: 3). In their design work, the haunting absence of the body became as much a preoccupation as its physical presence, for example, in the Hot flat, Vienna (1978) and Red Angel Bar, Vienna (1980) (*see* Figure 3.12). The application of scale was not then determined by a stable perception point but through a moving experience in space. In terms of technical performance, the line of a building which is used to define boundaries and proportion in an orthogonal system is slanted. Architectural scale becomes questionable.
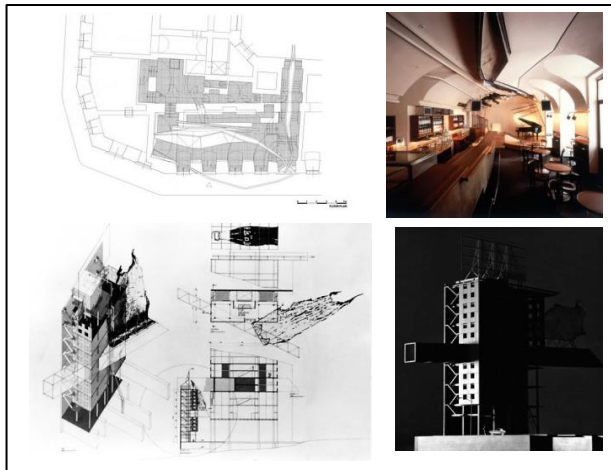
Figure 3.12: *Top*: Angel Bar in Vienna, 1980. *Bottom*: the Hot flat in Vienna, 1978. (source: http://www.coop-himmelblau.at/)
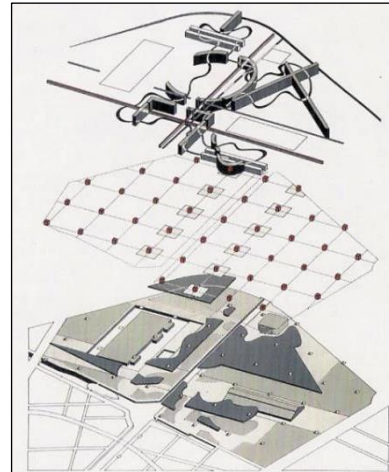
Figure 3.13: A design project, the *Parc de la Villette* in Paris (1982-1998) by Bernard Tschumi

Bernard Tschumi argued against modernists' perspective of rational embodiment and proposed an experience of anti-bodily states which are played out in disharmonious circumstances through one of his key design projects, The *Parc de la Villette* in Paris (1982-1998). Architecture in this project is treated as a body without a centre and performed in a state of self-acknowledged dispersion (*see* Figure 3.13). Architectural structures are complete in themselves. In other words, they are not serving their preset functions, keeping ordinary maintenance and normal bodily response to scale. Each of the structures and components is scaled by the infiltration of other impromptu objects without any hint about fitness or wholeness. In terms of cityscape, Tschumi's approach asserted that an open architectural site in the city needs to be considered as a field of unpredictable events. The spatial site filled with multiple scalar referents is unable to be designed by a single architectural model. This design approach also reflects a notion that the modern city is a collection of events of all scales and not just a fabric of buildings. The scale for designing architecture and planning the city becomes inexplicit; they infiltrate and interpret each other in a diverse and fluxional urban condition. The conceptualization of scale in architectural discourse is no longer merely linked with an operational tool to design and analyse buildings, but serves as a substantial vehicle to communicate between different spatial categories. Following the postmodern stream, Peter Eisenman, Jeffrey Kipnis, Rem Koolhaas and other architects who engaged in the discussion on rethinking scalar issues through their critique and practice[57] welcomed interdisciplinary insight to depict an unbounded and complex urban world.

The emergence of global urbanization since the 1980s has delivered another strong blow to the city-building professions, particularly to architects and designers, in terms of new urban forms and ways of everyday life. The new developments in industrialization and

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[57] Peter Eisenman (1986), Jeffrey Kipnis (1991), Alan Balfour (ed.) (1994), and Michael Hays (ed.) (1998) mainly focused on the application of Jacques Derrida's conceptualization of scaling in Eisenman's architecture landscape projects.

advanced technology services that resulted in re-structuring the world economy propelled unprecedented urban transformations into a new era, so-called globalization. Extremely large sizes of cities such as megacities and city regions continue growing throughout the world. Unbounded global cities at the same time constantly reconnect and network together in an undetectable way. From both the physical and the perceptual dimensions, the city now confronts a scalar issue about getting bigger. The boundary of a city is not only dissolved but its meaning is also redefined according to its position on economic circuits and the infrastructural capacity of mobility. Affordable information devices and a widespread advanced infrastructure essentially prompt such an unbounded reconfiguration and more importantly transform the sense and usage of a city and its fabric. Contemporary urban situations are free from any determination of territorial scale towards a fluxion of connectedness. Regarding urban fabric, a great deal of large-scale construction, some of which refers to the national land development or regional ecological system, and patches of self-organized architecture are simultaneously interlaced in the contemporary city. The city phenomena of fragmental connectedness, patchy correlation and floating diversity then occur. They are more to an out-of-human scale, yet all set scales are nullified. In consequence, this raises a more contested relationship between the human body, architecture and the city in which it is incubated and manifested.

The use of scale, as a conceptual measurement tool and a technique of practice, has been taken for granted in the architectural discipline for as long as it has existed. Although scale has provided as an operational doctrine for the analysis and debate on architectural history and theory, or has been articulated in the literature as one of the principle categories in architecture, it has never left the realm of design practice.[58] Accordingly,

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[58] There are different scales in architecture such as drawing scale, construction scale, physical scale and perception scale that are all relevant to operational process ranging from thinking, conception, application and

the prime resources for that such as the human body deriving series of principles-proportion and harmony for example, and a clear definition between a building, environmental surroundings and a city, are essential requirements. When the city is no longer defined by its territorial boundaries and settled entity, and its bodily base is lost, architectural scale falls into confusion and is beset by problems. Neither in design practice nor in theoretical critique has the question of scale in architecture yet been well explored.[59] There are two major facets responding to this issue; architecture grows in the enormous assemblage regarding construction and function; and the city becomes an unfolded urban ground where multiple networks and global forces engage.

Through a series of contesting projects and deep observation of contemporary phenomena in architecture and urban development, Rem Koolhaas, in his noted work *S,M,L,XL* (1998), raised a concern about the weakness of conceptualizing scale particularly in the fields of the spatial professions. The issue of bigness, he declared, is the crucial gateway to rethinking contemporary architecture discourse. The absence of a theory of bigness, a scalar issue, implies that architecture has lost the ability to create new relationships between human body, building and its built environment at the time (Koolhaas, 1996). He suggested that such extreme architectural phenomena can be understood as ultimate architecture which proposes a new 'programmation' for architectural practice (Koolhaas, 1998: 511). This ultimate architecture not only relates to bigness in volume, momentous buildings, but also refers to the assemblage of diverse professions and functions which work together in a much more complex way than ever before. It is about the interdisciplinary programming which organizes both independent and interdependent activities within a larger scale of assembling projects. Different

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emendation. How scale is used in architectural practice with specific ways and what the importance is of each role it plays in the process will be articulated in detail in section 5.0 of Chapter 5.

[59] The idea of scale had already been discussed as an urban question since the debates of the early 1970s (Brenner, 2000). The meaning of the urban question, as Scott and Moulaert asserted, is that it articulates the specific context of urban society in every generation (Scott & Moulaert, 1997). This means that every generation has its own theoretical issues presented by defining its particular urban question.

spatial disciplines such as structural engineering, and landscape and urban planning, might team up at a specific time for a project with different degrees of engagements. Requirements of cross-disciplinary knowledge in contemporary design projects, in certain extent, reflect the conditions of multiple scales in cities that need to be handled with and responded. Therefore, it is no longer easy to clarify whether a building is growing too big or a partial city is condensed into architecture. The issue of bigness provides an open platform where all scales, not only in architecture but across disciplines, are welcome to dialogize. Architectural scale, conventionally as an operational form, might be developed as a conceptual methodology to face and respond to such multi-scalar situations.

From architects' perspective on a city, the ancient and modern metropolis is considered to be displayed in order and rules which support the development of the ultimate beauty or efficiency of a city. When the proportion of cities both in demographic make-up and territorial extent has exceeded what one is capable of recognizing as a city to become sprawl, those conventional principles of order are subverted (Ingersoll, 2006: 3). The new conditions of the city itself in terms of forms, fabric and socio-spatial configurations, particularly under global flows, bring about another major challenge to the idea of architectural scale. Once global cities, discussed in detail in Chapter 2, became a representative urban form in the 1990s, architects have had to face more complex and mobile urban situations which are assembled by the different requirements of new global circuits and by unique demands for local everyday life.

As Koolhaas has argued, this is the first generation of architects who need to work directly in various different urban systems and multiple socio-spatial infrastructures at the same time (Soja & Kanai, 2007: 69). Koolhaas and other contemporaries (Pollak, 2006; Fraser, 2013) have brought refreshing insights into the theorization of architectural

scale which link with other fields of urban spatial studies in response to the issue of bigness. He has elaborated five arguments[60] about the idea of bigness which involves multiple scales of architectural matters and the urban subject. The most critical argument is to reveal that the city of the bigness considered as an 'accumulation of mysteries' where the composition, scale and proportion start to fade is no longer controlled by a single architectural gesture. A formula proposed by Koolhaas (1998: 515) that bigness equals urbanism vs. architecture refers to the idea that the contemporary city in a condition of bigness is crossing different scales of practices and architectures. It is a multi-scalar assemblage.

Murray Fraser in his work The Scale of Globalisation (2013) proffers the argument that we need new understandings of the complex relationships between architecture, urbanism, and cultural specificity. Such new understandings offer the potential to transform current ways of thinking about global cities. Rethinking conceptions of scale, from the *dimensions* of form and space, to the *dynamics* of form and space, help re-address the discourse of architectural globalisation (Fraser, 2013:384). This critical perspective based on rethinking conceptions of scale also reveals new ways to address architectural design and urbanism. Fraser examines architecture in the Persian Gulf in this light. His argument could offer a means of bridging architectural discourse and other perspectives of landscape urbanism and geography to be discussed later in this thesis.

When new super-urban forms are continuing to emerge in a way in which cities are constantly restructured through patchy connectedness and networked spatial mobility, there is no absolute boundary to define spatial categories such as architecture, landscape

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[60] First, it is no longer controlled by a single architectural gesture. Second, "Issues of composition, scale, proportion, detail are now moot. The 'art' of architecture is useless in 'Bigness'". Third, "Interior and exterior architectures became separate projects", so façade can no longer reveal what happens inside. That means 'Bigness' transforms the city from a summation of certainties into an accumulation of mysteries". Fourth, it is through size alone. Finally, "Bigness is no longer part of any urban tissue" (Koolhaas, 1996: 499-502).

and urban. In other words, the borders between different disciplines which mainly work on distinct scalar matters become vague. Collaboration, or even recombination, between different scales of spatial studies occurs. Linda Pollak (2006) indicated that the emergence of landscape urbanism is a para-discipline that directly responds to unbounded urban conditions. The rise of larger-horizon cities or trans-regional phenomena, for instance, involves more complicate and dynamic relationships between different scalar domains. She argued that,

> Scale is a key to the development of urban representations that celebrate differences of size rather than suppressing them in an effort to maintain human scale, a cultural construction identified exclusively with the measurable and the known.
>
> (Pollak, 2006: 133-4)

The concept of scale plays a key role in her approach to landscape urbanism. This approach manifests what concerns her about contemporary urban conditions where the importance of the multi-scale replaces the perfection of the human scale particularly in architectural discipline. It echoes the formulation of bigness by Koolhaas but with a wider perspective from landscape practice.

Pollak (2006) drew on Henri Lefebvre's (1991) analysis of the space of differences to create a theoretical framework for design practice. Lefebvre's diagram of nested scales (*see* Figure 3.14) highlights that whilst hierarchies of scale exist, they are not fixed or singular (Pollak, 2006: 129-30). This conceptual diagram provides a basis for approaching the dynamic and multidimensional differentiation of urban space where the respective scales of architecture, landscape urbanism and even geography are in negotiation or cooperation. There are some contemporary architects, such as Rem
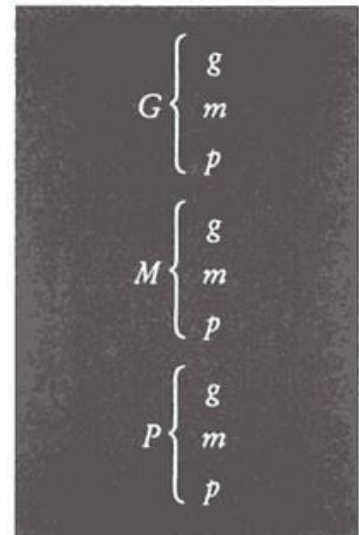
Figure 3.14 Lefebvre's diagram of nested scales. G = Global , M= Transitional, P = Private (Pollak, 2006:145).

Koolhass/OMA, Andreu Arriola, Catherine Mosbach and Alvaro Siza, who reflect this approach in their design projects (Pollak, 2006). The main concept amongst these projects reveals that the site exists at an unlimited number of scales rather than as a fixedly categorized scale. These multiple scales, however, are often invisible at the physical location of the site itself owing to networked connections or fragmental exchange. The process of depicting, reproducing and representing the forces and relationships that exist and have existed at those scales becomes a significant design strategy, even more, the theorization of scalar questions in the field.

Accordingly, the tradition of architectural scale, with its infatuation with human body, not only loses its hegemony but more critically has to enrich itself through embracing differentiated scales to engage the vibrant urban transformations. Scale is a key component for creating a multifaceted relationship between spatial fields of architecture, landscape, urbanism and geography when the globalized urban world has been programmed and composed in a more complex and dynamic way than ever before. The idea of scale, therefore, is more than a design measurement tool. It can be understood as

a conceptual methodology through a wider approach from the disciplines of geography and urban studies to engage networked multi-scalar conditions.

Summary

The human body is considered as the prime source for measuring or perceiving the surroundings. Robert Tavernor (2007: 189) suggested that our bodies need a positive relationship with the natural world, and measuring the world with and through our bodies is essential to civilized – human – existence. This notion of scale, however, has been challenged in the age of modernism and painfully de-constructed by the rise of post-modernist critique. This has revealed struggles of human scale which are deeply influenced by the prevailing trend of philosophical thoughts and social issues at that time during the 1960s. Postmodernists have revealed the struggles between the scale of the human body and new urban conditions. When the built environment and cities grow bigger and more complex without an organizational plan any more, the traditional unit of architectural scale, human scale, is lost. The emergence of the super city development, megalopolis as an example, and colossal buildings, monuments for instance, has directly impacted the concept of scale based on the human body which was lost in these fields.

To operate scale as a conceptual tool in design practices has long been taken for granted in the architectural professions. However, it confronts more difficulties when meeting a more complex urban environment and much bigger architecture in globalization. It is consolidated as normative body-architecture-city fixed relations, which leaves a theoretical blank for responding to and dialogize with such unprecedented phenomena of extreme transformation in cities and all the scales of fabric which they contain.

Architectural scale, therefore, is problematic and in a dilemma about propositioning itself in the unbounded city which is more socio-spatially complex and troubled with defining its geographical and social boundary. With the appearance of such difficulties, theorists and architects have argued that there is a lack of critical narratives to theorize scale in the discipline, as a result of the inability to engage in the contemporary architectural and urban situation.

Rem Koolhass and other architectural critics have suggested a wider perspective from the urban landscape, sociological and geographical fields in response to the current global-urban condition. This approach helpfully bridges the matter of reconceptualising scale from architectural discipline to some other spatial disciplines which illuminate alternative insights and arguments on the idea of scale to current globalized urban conditions. This will be elaborated in the following chapter, Chapter 4, with particular focus on an urban geographical perspective.

QUESTIONS OF SCALE IN GEOGRAPHY AND URBAN STUDIES

The human body scale in architecture is disabled in new urban conditions where the unlimited city expansion and unfolded global-city connection have been prevailing since the mid-twentieth century. A number of architects and urbanists started to explore the issue of re-conceptualizing scale in other spatial terrains due to the absence of theoretical debates on scale in modern literature. The disciplines of geography and urban studies provide an appropriate supplement to it. This chapter explores what the meaning and position of scale offer in these knowledge terrains, and the emerging questions of scale in response to the current globalized urban phenomena.

Scale is the primary concept for architects to define the environment and for urban scholars to recognize the world. Richard Howitt (1998a) declared that scale is one of the foundational concepts in geography because it provides a structured investigation of the theoretical debates concerning the concept of scale and how geographical scales dialogize with other disciplines, such as sociology and urban studies. The application of scale in physical geography is similar to that in architecture – an operational tool. Yet what draws more attention is that various sets of questioning scale have dominated theoretical and methodological debates in the current literature, particularly in human geography and urban sociology. Scalar theorizing is a rich terrain in critical geography primarily associated with a series of contested issues of economy, politics, culture and the environment, and often introduces sociological and philosophical perspectives to its engagement. Although there are divergences of thinking about scalar subjects with regard

to its nature or the role it plays in recognizing the world, the central theorizing structure is rooted in a hierarchical scheme of nested scales, as a grid epistemology to develop the framework. This foundation, as a theoretical subject, has also struggled with new de-territorial and cross-boundary situations effacing all socio-spatial dimensions such as economic restructuring, city transformation, and the flow of information and migration.

There are a considerable number of contesting debates on the concept of scale in order to re-imagine the new world order resulted from globalization since the late-twentieth century. Although, in geography, the fiercest debate is concentrated on the abstraction of the political and economic effects on scale and its reflections, Neil Brenner's proposal of a shift from the urban question (Castells, 1997) to the scale question (Lefebvre, 1976) offers a new window to discuss the matter of scale from a materialist perspective. From this viewpoint, the urban entity has become an increasingly important object of critical inquiry, especially in the globalization context of capitalist urbanization. From the megalopolis to the global city, these urban objects in urban studies have produced a great body of knowledge about 'supra-urban' scale (McCann, 2008; Brenner, 2000, 2009) which stirred up a variety of schools of thought to approach this novel scale production and ordering. The concept of scale is undertaking a journey to be re-formed.

In order to recognize the difference between the idea of architectural scale and its notion in geography and urban studies, the first section of this chapter starts with a consideration of the meaning of scale and its fundamental concept. Hierarchy, nest, and then network are the most basic ideas about the ordering of scale that are commonly illustrated by different metaphors to express the concept. In the second section, a general review of different theoretical approaches to globalization issues on scale will be examined from three major contesting camps: the macro-, micro-logic, and hybrid perspectives. These theoretical debates reflect the difficulty of theoretical paradigms and

methodological applications to contemporary ongoing global-urban formations developing with fluidity, complexity and multiplicity. These problematic issues have attracted the attention of a group of critics and scholars to studying city and urban matters as an embodied field to reflect their scale questions and later proposals. This will be the subject of the third section of the chapter. Through a focus on the spatial and material matters in global-city study, we can bridge the discussion on re-conceptualising scale between urban, geographic and architectural disciplines to examine the different propositions on scale, and then to propose an alternative in the following chapter.

4.1 The Idea of Scale and Different Approaches in Branches of Geography

Scale has long been one of the foundational concepts in geography. Scale, a mixed complexity, is one of the constituent elements of geography referring to an environment, a territory, a space, a place. In the *Dictionary of Human Geography*, scale is defined as a "level of representation" derived from the spatial science pronouncements of the 1960s to 1970s (Johnston *et al*., 1994). Later, the geographer Richard Howitt (1998: 56) suggested that scale needs to be understood as a factor that dynamically constructs geographical totalities, and not merely generates geographical relations. The notion of scale, for him, should be recognized in an interrelated way between size, level and relation. [61] Regarding its operational form, scale, as in the architectural discipline, provides measurement or a level of resolution in physical geography, such as its

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[61] Lefebvre (1991) set up two categories, level and size, to understand the notion of scale. But Richard Howitt (1998) emphasized that three facets need to be read together in order to reveal distinct scale in its natural context.

application to all kinds of data mapping, GIS and remote sensing and also in calibrating findings. Lam and Quattrochi (1992) as well as Quattrochi and Goodchild (1997) are the pre-eminent writers in these practical fields.

No matter whether in a physical application or a theoretical concept, scale is considered as a frame to geographically circumscribe a relatively closed system, as a boundary within which to conduct practical or research projects (Johnston, 1973: 14). The world, for instance, is inherently hierarchically compartmentalized into various natural geographical units such as the regional, the national and the global. Andrew Herod (2011) accordingly argued that scale is a taken-for-granted concept used for dividing the world and imposing organizational order on the world in a logical way. There is, however, no explicit and satisfactory agreement as to what the nature of scale might be and how it is theorized to respond to conditions of the environment at any particular time. Therefore, scale continues to remain at the centre of the research agenda and of approaches of the entire discipline of geography.

Since the mid-1980s, geographers and related scholars have confronted a challenging situation resulting from the impetus of global economic flows and advancements in technology. Following Peter Taylor's (1982b, 1981) and Neil Smith's (1984) prominent works, a group of scholars in economic and political geography welcomed the concept of scale as a critical debate on social and political processes within human geography (Howitt, 2002: 1; 2003a:138; Marston, J. & K. 2005). This approach was primarily rooted in Marxist theory and political economy from a materialist point of view. Both Taylor and Smith[62] focused on the discussion about the nature and the significance of

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[62] The debate between materialists rooted in Marxism, and idealists based on Kantian thought discusses the ontological status of spatial scale; namely, whether scales are real or not. In the idealist approach, scales are not real but simply mental contrivances for circumscribing and ordering processes and practices. In the materialist view, scales exist as substantive social products. More or less, subsequent geographers and related

spatial scale, but with different concerns. For Taylor (1982b, 1981), scale is a pre-existing way in which the spatiality of capitalism is structured. He was concerned about the role of scales within capitalism, but not their origin. Smith (1984) focused on the creation of scales which must be actively brought into and be subject to conflict in their making. Politics leads scalar construction. Both of these scholars indicated three similar principal scales at which spatial negotiations play out under capitalism; the urban, the national and the global scale (Herod, 2011: 7-10). In addition, Anthony Giddens (1984), in his theory of structuration, deemed that geographical scale is produced and reproduced as a result of people's everyday routinized social practices. This approach subsequently became an important element in the ongoing theorization of scale and its nature, and influenced a group of scholars on their critical work (Marston & Smith, 2001; Marston, 2000). The early writings on scale by Taylor, Smith and Giddens, showed the commonality that scale is socially produced and has real consequences for social life.

Drawing from social constructionists' approaches to scale, Henri Lefebvre, in *The Production of Space* (1991/1974), theorized that space is a social product, and this tenet became central to scale debates in urban and social geography for decades. For him, scale is not ontologically given, which means that scaled geography establishes and is established through social interactions (Smith, 1992: 73). Rather than being a rhetorical practice, scale is constructed in particularly tangible ways and has material consequences. Sallie Marston (2000: 221), sharing the same view, asserted that scale is a making process through both everyday life and macro-level social structures. In Lefebvre's assertion of scale, he identified its relevance to the political process in capitalism. Scale is always open to further transformation with multiple parameters.

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scholars have been inclined to either side to develop their research work. Herod, however, argued that both of them, in empirical practice, refer to delimiting areas of research study. This is a methodological issue, but conceptually different (Herod, 2011:13-14).

Following the trend of such approaches, social theorists mainly consider that scale is a stage presenting the conflicts between structural forces and human activities. It reshapes and reconstructs social practices, in which it emerges at different levels. There is a wide consensus amongst human geographers that scale affects cultural and political landscapes. Erik Swyngedouw (1997: 169) noted that scale is the arena through and in which social empowerment and disempowerment are actualized. Katherine Jones (1998) conceptualized scale as not concretely existing but a way of knowing and approaching the abstract and the material worlds. It is a representational trope that frames political spatiality and in turn has material effects.

Following these initial explorations in the mid-1980s, there was a veritable explosion of scalar theorizing in subsequent years. This camp of scholars who inherited Taylor's and Smith's criticism from a materialist point of view shared some commonalities (Smith, 1989, 1993; Swyngedouw, 1996, 1997a, 1997b; Marston, 2000, 2002). First, scale is socially constituted, as a production or a construction process. Second, largely it is understood as geographical boundaries around particular spaces. Third, scale is characterized as fluid. It is changing and changeable, although it is fixed and identified at particular times and places. Finally, scholars examined the relationships between different scales and how they function.

In the late 1990s, another wave of questioning scale arose. The main themes in this trend included three facets; what scales may or may not be; how the relationships work between different scales; and the language surrounding the politics of scale. One of the camps introduced the idea of a network to enlarge the theoretical framework of scale. Kevin Cox (1998b) opened this vision that scale be conceived of as a networked term. He explained that moving from one scale to another is not just as a geographic movement, but a process whereby social actors develop networks of associations which

enable them to shift amongst and between different spaces of engagement (Cox, 1998). Other theorists (Latham, 2002; Conway, 2008; Chapura, 2009) aggressively introduced actor-network theory to conceptualize scales especially through the empirical investigation of socio-spatial actors' practices, which will be explored in detail in the next chapter, Chapter 5.

Meanwhile, there was another set of issues on the theorization of scale; that is, how the language of scale has itself been used. Neil Brenner (2000a; 2001), drawing on the works of the Marxist Henri Lefebvre (1974/1991), concentrated on the politics of scale, a term which was coined by Smith in *Uneven Development*. He distinguished two senses of scale in politics. The first one he called the scale politics of spatiality, in which scale constitutes relatively differentiated and self-enclosed geographical containers. The second one is the politics of scaling, in which scale is understood as a modality of hierarchization and re-hierachization through which the process of socio-spatial differentiation unfolds both materially and discursively. Brenner outlined eleven key points to clarify the debates on scalar structuration which significantly challenged the content of scalar hierarchy which is construed as mosaic and relating to inter-scalar networks. Andrew Herod in current work outlines that the key issue concerning scale in contemporary analysis is what Smith (N. Smith & Dennis, 1987) called the *gestalt* of scale. This is the notion that looking from different perspectives results in different understandings of material reality. In other words, material patterns and activities can be rescaled through an alternative engagement. This approach characterizes a methodological dimension of scale which will be elaborated later in Chapter 6.

Geographers typically imagine the world as inherently hierarchically compartmentalized, with different scales which are regarded as natural spatial boundaries that delimit various particular categories of the landscape, such as regional, national and global (Herod, 2011:

6). Both materialists and idealists in geography, particularly in empirical work, tend to view scales as separate and distinguishable entities within a hierarchy of spatial divisions. Therefore, there are some general metaphors of scale used in the discipline in order to illustrate how the concept of scales and their interrelations have been represented figuratively in the structured world. Two most commonly used to describe scalar hierarchies are the ladder metaphor and the concentric circle metaphor (*see* Figure 4.1). Combining two simple embodiments, and regarded as the most representative, is the metaphor of the Russian Matryoshka (nesting) dolls which express the scalar orders as a tightly-nested hierarchy in three dimensions. This representative diagram of scale in geography recalls the significant reference of architectural scale seen in Leonardo's diagrams of body and their interpretation of the cosmos (*see* Figure 3.5).

In this concept, the scalar *gestalt* (N. Smith & Dennis, 1987) is only complete if and when each doll/scale fits inside the one that is immediately bigger than itself. Each of the spatial containers, as scales, has no chance of achieving juxtaposition or traversing but fits only in one set ordering, as in Figure 4.2. This can be represented diagrammatically as a 'nesting' relationship in which the small resides within the medium, which resides within the large, and so on. It is referred to as a vertical structure which can be applied in urban studies through several terms. For example, the macro, as the global, is uppermost and dominates the medium, as the region, which repeats this pattern to command the micro, as the building, and so on. This fixed order is structured with each level tightly bound to each next contiguous level. As a conceptual structure, this order can be redrawn with different terms for specific discourses such as spatial categories and social levels which have been widely used by human geographers bringing geographical scale within critical social theory.
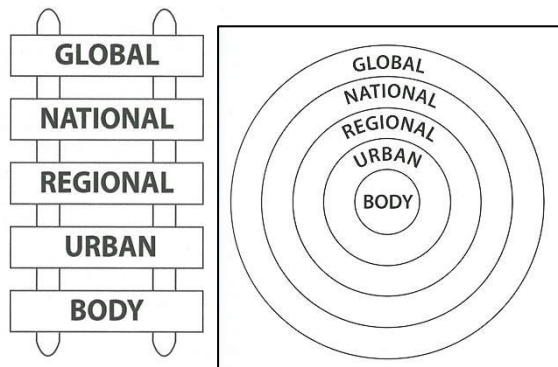
Figure 4.1: The ladder system is a well-defined verticality with above/below relationship. Verticality is equated with a sense of power - higher with more power, as the global. It is a position of looking down from above (Lefebvre 1973/1976: 88). The concentric circle metaphor is defined by a clear distinction between spatial categories, but each scale is a part of a series of circles. The relationships between scales are an enclosed/encompassed, or enclosure/ encompassing representation (Herod, 2011).
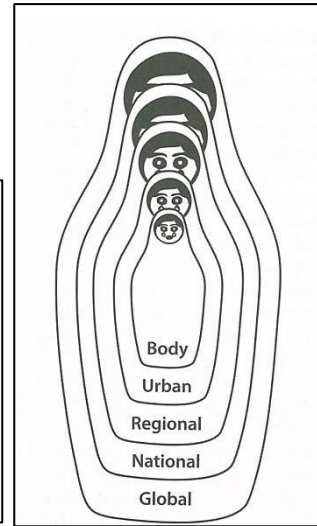
Figure 4.2: Russian dolls have been quite commonly utilized to present the logic of hieratically nested scale in geography and relative spatial disciplines. This convention of conceptualizing scale has been widely applied to form the research framework in both theoretical and empirical approaches (Herod, 2011).

This logic of hierarchically nested scale has dominated early writing on theorizing geographical scales. In their *Political Geography of Scale*, Dalaney and Leitner described, "[scale as]… the nested hierarchy of bounded spaces of differing size, such as the local, regional, national and global […] and periodically transformed and constructed" (1997: 93). This evidenced that the epistemology of nested scale is the intrinsic value in primary theoretical and empirical work. Significantly, it is considered as 'grid epistemology' in contemporary urban and geographic disciplines (Marston, 2005: 422). As a result, scholars have established a priority to obey and then respond to their pre-sorted questions, which have already been fixed into a closed scalar mechanism. The concept of hierarchically nested scale is deeply rooted in the traditional

concept of a rationalistic structure which refers to methods of 'looking up', centralizing models and systematic logic (Kwa, 2002). In other words, size and space in this epistemological model are categorized as a default order with scientific and technical logics to conceptualize the world.

Following this convention in human geography, there are also two main camps interpreting conceptions of hierarchically nested scale; advocates of the hierarchical model and of the network concept. Peter Taylor is one of the most prominent theorists of the hierarchical conceptual model of scale. He uses Immanuel Wallerstein's model of a world-system[63] (1974) as a framework to outline a "socially produced scalar hierarchy" which includes urban, national and global [64] (Taylor, 1982: 26). Significantly, his conceptual model has influenced the perception of scale theorizing for a few decades. This fixed and nested world-system model, as Herod and Wright (2002) pointed out, was then extended through the later work of Amin (2002), Leitner (2004) and Taylor (2004). These different scales that he categorized can be traced by capitalist modes of production. Within the world category, the macro-scale of the global, derived from a materialist position centred on the world economy, is the ultimate scale, the one that really matters.

Neil Smith (1992b, 1996) drew on Taylor's model and then moved it toward the issue of the politics. He assumed that the complex and contesting forces within geopolitical scale can be traced and revealed through 'scale jumping' and 'scale bending'.[65] Although his

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[63] The idea of the world-system model is based on the assumption that the world is structured economically which draws upon neo-Marxist theory. It presents the emergence of capitalism which develops a core and periphery to the world economy that can only be understood by looking from a global perspective, the global scale of analysis.
[64] Based on world-systems theory, Taylor's categories included the global level, the urban scale, and the nation-state scale.
[65] In his work, scale jumping occurs when "political claims and power established at one geographical scale are expanded to another" (Smith, 1992b: 55-81). Scale bending is "what kinds of social activities fit properly at which scales are being systematically challenged and upset" (Smith, 2004: 293).

later work (2004) explored scale as a platform of diverse relationships in social and cultural configurations, the vertical formulation of hierarchical ordering still remains. In addition, Neil Brenner's notion of "scalar structuration" (1998: 603) implies "relationships of hierarchization and re-hierarchization among vertically differentiated spatial units". In fact, this is a restructuring *between* different scales, rather than beyond the scaffold. His early theoretical work on scale underlined the significance of the state in 'rescaling processes', and the contemporary politics of scale. The nested hierarchical model is an initial premise, whilst Brenner analysed scalar formation and socio-spatial organization within the state mode of production (cited in Marston, 2000).

In order to unpack the restrictions of vertically hierarchical scale, some scholars in critical human geography worked on network models of social processes. Most of them called into question the dominant formulation of scale theorizing that size and space are taken for granted and categorized under the nested hierarchy. They proposed different alternatives to these nested hierarchical conventions in geography. Adams (1996) highlighted the importance of networks premised on the idea that telecommunications enable capacities for crossing space. Richard Howitt (2003b) in part agreed with Adams's argument that network interconnection offers opportunities to get rid of the shackles of scale theorizing. In relation to the politics of scale, Kevin Cox (1998) conceptualized network theory through the concept of 'spaces of dependence' and 'spaces of engagement'. M.P. Smith (1998) extended Cox's account by engaging in cross-border and transnational migrant identities. He stressed the social construction of identities and relationships that primarily constitute the "scaled spaces of engagement". With a more socio-geographic focus, Erik Swynedouw (2004: 129) asked how the social and physical transformation of the world is inserted into a series of scalar spatialities. He underlined that scalar configurations are network-based. These configurations have shifted and been contested among scales, rather than being a distinct agglomeration.

Swynedouw's later work led to more critical debates on the linkage between network theory and hierarchical scale. Cox (1998), Taylor (2004) and Dicken (2004, 2010) engaged in the interconnection between vertical hierarchy and horizontal networks in their recent theoretical writing in order to provide new insights into scale theory. Brenner (2001: 605-6) elaborated on the importance of the correlation between the horizontal 'interscalar' network and the vertical hierarchy. This conflation approach by Brenner implies complex social processes which destabilize the fixed socio-spatial scaffold at political and geographical scales. Helga Leitner took a similar view of the politics of scale, and considered the dialectic relationship between spatiality and politics.[66]

4.2 Bifurcations of globalization debates from approaches of scale

During the course of the 1990s, the rise of attention given to the impassable dialectic of local and global promoted two major bifurcations on globalization debates. They were to the dominant socio-economic trend and to the emergence of a worldwide urban hierarchy. The first group was based on the survey of spectacular globalization flows such as John Friedmann's work system reading, and the early work of Saskia Sassen. Hashim Sarkis (2011) asserted that the world needed to be seen as a possible scale, one spatial entity, of operation which corresponds to the scope of globalization.

The other group of socio-geographic theorists, who focused on the importance of the

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[66] "Transnational networks represent new modes of coordination and governance, a new politics of *horizontal relations* that also has a distinct spatiality. Whereas the spatiality of a politics of scale is associated with *vertical relations* among nested territorially defined political entities, by contrast, networks span space rather than covering it, transgressing the boundaries that separate and define these political entities" (Leitner, 2004: 237).

local, offered broader scopes of scale processes to challenge the existing ones. They worked in local sites or challenged the domination of the global from different aspects, such as David Harvey's reading of globalization as "local disenfranchisement" (1999, 2000), Fagan's analysis of food [67] (1997), the work of Neil Smith (1999), and of Erick Swyngedouw (1996). Kevin Cox extended Neil Smith's notion of jumping scale by further discussing how local states are unevenly developed through networks of associations, rather than operated across boundaries (Cox & Mair, 1991). From the point of view of human geography, Marston (2000 2002) focused on the significance of non-capitalist economic practices in daily life. This is a rescaling process against the hierarchical logic of globalization hegemony. J.K. Gibson-Graham (2002, 2004) highlighted the problem that grand-narrative global discourse negates the empowerment of people as agents. Therefore it is crucial to recover the local as a site of everyday practices, as these can potentially unsettle the hegemony of globalized urbanism. Sharing a similar notion to that of Swyngedouw, Howitt agreed that "the local [exists] not as distinct from other scales, but as 'containing important elements of other geographic scales', thereby achieving a more 'complex [understanding of the] interpenetration of the global and the local'" (1993: 38).

Doreen Massey's key argument was against the pronouncement of a tension between globalization and locality. In *Power-Geometry and a Progressive Sense of Place* (1993), she asserted the blurring of the distinction between binary scales because to differentiate scalings of time-spaces is not a simple issue of hierarchy. Massey (1994, 2004) primarily engaged in theories of space and place which are relevant to the theory of scale. Her argument (2004:7) was grounded on re-theorizing the local dispersed in its sources and repercussions. This interaction is premised on the politics of connectivity – 'power

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[67] He used the analysis of food as an example to emphasize a variety of essential processes that constitute globalization and at the same time might be constructed in the local.

geometries' – which construct places and connect them to other sites at the same time. According to Massey (1994:164), the global is something realized through the articulation of a complex interconnection of variously local relationships, not something that is above, or simply predatory of, the local. In other words, there is no explicit object called the global, instead there is the co-multiplicity of the world. It is hard to categorize what is local and what is global as it leads to the question of how the 'global' determinates or predominates above the 'local' (Massey, 1994: 130). Drawing on Massey's argument, Swyngedouw (1997) framed the term 'glocalization', which is a new scale which shifts upwards to the global and downwards to the local in response to altering economic, political and cultural pressures.[68] The other group of approaches were concerned that the increase of global power is not the undermining of the local but its reassertion. Barber (2001) claimed that globalization and localization are dialectically related processes.

In Sassen's later reading (2007), globalization indeed involves the formation of global-scaled institutions and processes, but it also signals a deeper instability, across borders and races, with multiplicity. Sassen challenged the conventional social research methodology on the global and the national. Her proposed framework was that the formation of globalization discourse involves varieties of explicitly global institutions and process where the national might engage and be active. It might be a localisation of the global or a denationalised instance of the nation. Castells (2001) also pointed out that globalization does not mean universality but a network containing incursions, inclusions and exclusions. It is enacted differently within specific historical situations and influenced by political state and class. Accordingly, John Law (2004; Law & Singleton, 2003) indicated that it is not possible to model the whole as the global explicitly, but

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[68] He (1992, 1997) merged Massey's innovative ideas of the '*geometry of power*' with "the tension between the economic, political and cultural domains in relation to the social construction of scale" (cited in Howitt, 2003: 142).

instead proposed that it must be implicitly imagined through a dialectic. John Law's account of the baroque sensibility which is against the traditional epistemology based on romanticism strongly supports Massey's approach of crossing explicit distinctions of binary scale at the global and local. Sallie Marston (2000: 616) argued that scale is not a given ontology, and that geographical scale is not a hierarchically ordered system which is placed over pre-existing space. Instead, she posited that much of that hierarchical ordering might be fluid.

4.3 Cities and Urban Studies in Globalization Debates

Discussing matters of scale and the rescaling of social life in geography and other disciplines in a big way is clearly evident in discussions of globalization. Globalization processes, in particular urbanization, rescale everyday life through economic and political effects and culture, in social-spatial restructurings. The phenomena of sprawling cities, as addressed in chapter 2, is considered as an urban consequence of such new forces. Newly industrialized countries (NICs), moreover, have evolved a novel world order based on 'a structured global space economy', known as world/global city. In this new world setting, cities, more precisely large-scale urbanized regions, are the fundamental geographical units in the newly emerging configuration of world capitalism.[69] Cities in this situation are regarded as articulators of commodity flows at all geographical scales (Brenner & Keil, 2006). Such urban regions are said to be arranged hierarchically on a global scale according to their different modes of integration into the world economy. These different research approaches have been extended to concern the

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[69] Neil Brenner pointed out there are two influential politico-economic transformations: the new international division of labour, and the Fordist-Keynesian technological-institutional system (Brenner & Keil, 2006).

global city formation which has introduced innovative studies of the transformation of urban socio-spatial form, and the reorganization of the global/urban hierarchy.

Since the mid-1970s, the consolidation of a worldwide urban hierarchy has significantly expanded the scale of major cities' functions into the capitalist world system (Brenner & Keil, 2006: 20). Robert Cohen's text *The new international division of labor, mulinational corporations and urban hierarchy* (1981) is widely recognized as a foundational contribution to the study of the global urban hierarchy.[70] In addition, earlier world city research was based on political economy, influenced by world-system theory, and focused on the analysis of advanced producer-services, as elaborated by such theorists as Friedmann (1986), Smith and Timberlake (1995), Yeoh (1999) and Taylor (2000). Accordingly, Simon Patrick (2004: 115) pointed out that the emergence of urban-regional economic networks should be seen as a complementary process of local economic agglomeration nested within a wider regional and national system of global integration. The older trend for studying the world city was based on the idea that territorial economy is bounded in geographical containers. John Friedmann's *World city hypothesis* published in the mid-1980s set up a foundational theoretical framework for subsequent research work on the global city. He proposed a fresh view to enlarge this research empirically by his world city map (*see* Figure 4.3). John Friedmann and Goetz Wolff (1982: 320) suggested that the world city 'approach' is a methodology, a point of departure, an initial hypothesis. It is a way of asking questions and of bringing loose facts into relation. An extension of this view is that the concept of scale in geographical discourse is a method to determine the theoretical terrain and subject.

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[70] His methodological strategies and empirical data are based on the number of headquarters in a city rather than population to clarify the ranking. His insight was to examine the linkage between the organizational structures of major capitalist firms and the changing configuration of the global urban system.
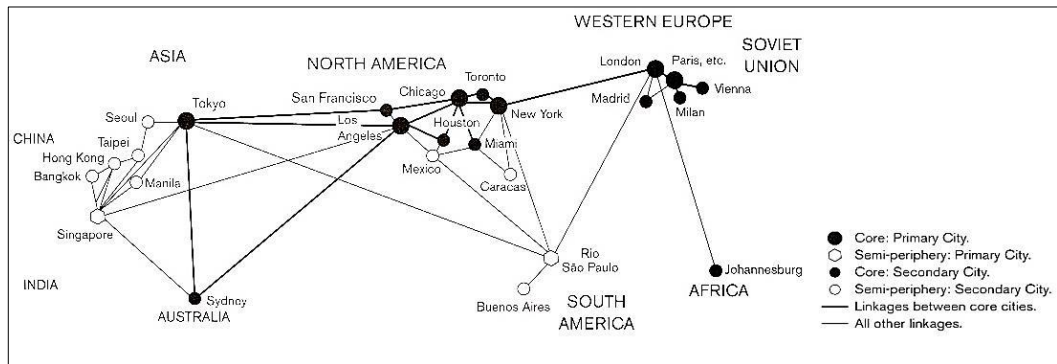
Figure 4.3: The hierarchy of world cities. This map has been widely reinterpreted and reproduced based on different empirical data and research subjects. Although it is not directly illustrated in a sense of hierarchically-nested scale, this concept of scale has been consciously reinforced by the representation of this framework in conceptual and visual analyses of cities in the context of globalization (Friedmann, 1986:74).

Subsequent scholarship has explored a variety of methodological strategies and empirical data sources to map this hierarchy. Elaborating this idea into graphic/written form, the Globalization and World Cities Study Group (GaWC) introduced a 'relational' approach to the study of the global urban system by mapping fifty-five cites to construct a new meta-geography of the global landscape (McCann, 2008: 65-6) (*see* Figure 4.4). This hierarchical mapping system which categorizes cities into different scalar levels is based on industrial restructuring. These different forms of hierarchical mapping of world cities indicate that cities serve fundamental spatial infrastructures and media for the global flows and transactions which they produce and are restructured with.
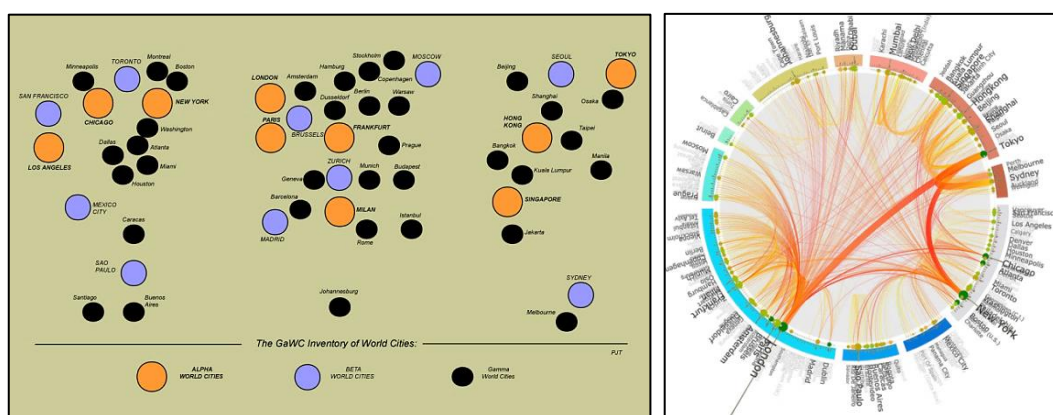
Figure 4.4: *Left*: The new metageography illustrated by GaWC's early project in 1998[1]. (source: http://www.lboro.ac.uk/gawc/citymap.html). *Right*: This map illustrates the office networks of globalised advanced producer services firms with information-rich visualization by S. Hennemann in GaWC. This presentation is prone to topological analysis which is without a hieratical model as it used to be. (http://www.lboro.ac.uk/gawc/rb/rb421.html).

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examine a broad range of urban and supra-urban transformations since the mid-1970s. This leads to exploring the interface between geo-economic restructuring and urban transformation. In her early approach, which was drawn from Friedemann, Sassen (2002) indicated that the hierarchical nature of global networks is presented as the notion of the global North and the global South.[71] More recently, the global North-South division has been transformed into differences in the organizational form and level of urban industrial production and consumption (Soja & Kanai, 2007: 63). Soja argued that the global North-South division has been broken into three continental zones focused on the three super-sized urban fields. In other words, different geographical regions provide specific contributions to a global economic network along with their continental sphere. Therefore, the city's position has been redefined and reconfigured and a new tripartite Global Division of Labour (GDL) has arisen. This is linked within and between each region by inter-urban networks that transcend national borders and connect in an encompassing worldwide web (Soja & Kanai, 2007).

> The global economy emerging from informational-based production and competition is characterized by its interdependence, its asymmetry, its regionalization, the increasing diversification within each region, its selective inclusiveness, its exclusionary segmentation, and, as a result of all these features, an extraordinarily variable geometry that tends to dissolve historical, economic geography.
>
> (Castells, 1996: 106)

Since the early 1980s, a number of urban-sociologists and critics (Castells, 1996; Sassen, 1991; Michel Peter Smith, 1987; Soja, Michael Timberlake, 1985; Anthony King, 1991; and John Friedmann) have explored the question of how global forces and dynamics impact local and regional social spaces. They have focused on the discussion about the

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[71] "What the highly developed countries have is strategic concentrations of firms and markets that operate globally, the capability for global control and coordination, and power." That is how Sassen (2002: 32) described the global North.

interplay between transnational linkages in globalization and urban development under contemporary conditions (Brenner & Keil, 2006). The built environment is an arena of contestation in which competing forces and movements which evolved from global system emerged. The demands of global transactions and supports of an advanced infrastructure have driven out sprawling effects on a regional scale. So the matter becomes not only one of global scale, but also urban and regional scale transformation. Since the 1990s, the urban question has led to the approach that the urban scale is not only a localized arena for global capital accumulation, but a strategic regulatory coordinate in which a multi-scalar reterritorialization of state institutions is currently unfolding. In other words, the global urban is an intensive inter-scalar network linking across geographical locations.

Although globalization brings with it growing competition between cities or a division of functions at both the global and regional scales, Sassen (2008, 2007) engaged with the issue of the periphery of core cities. She investigated the informal economy alongside the associated restructuring of urban labour markets. Her concerns were grounded around conceptualizations of dynamic interrelationships in globalized processes. Paul Krugman (Krugman, 1991; Fujita *et al*., 1999), along with Sassen, highlighted how local agglomerations of economic actors provide economies of scale and international trade advantage. Castells tended to be more directly involved with the changing spatial specificities resulting from global flow, and thus provided a clearer picture of its changing social geography (Soja, 2000: 28). Castells and Sassen both emphasized the contribution of the informal economy. Whether from Sassen's or Castells' perspectives on studying the global, it is important to recognize that globalization processes are operated on diverse geographical and social levels, and involve various scalar actors, from individuals to supranational institutions. The global is a multi-scalar cooperation.

Cross-border regulatory regimes need to fit into the global economic system by new instruments which are built on both local landscape and global transaction exchanges. These are "the complex way in which networked infrastructures of all types, and the diverse technological mobilities they support, become bound up in the production of space, identity and meaning in urban life at various scales, within the context of globalization and extending metropolitan regions" (Graham & Marvin 2001: 406). Graham emphasized how the emergent infrastructural geographies, especially in the field of media and telecommunications, are established in global city-regions (Brenner & Keil, 2006: 77-78). Castells (2001), in terms of informational infrastructure, affirmed that communicability is a fundamental component of globalization. In other words, information technology contributes to the development of this global grid from economic shifts to cultural translations, and also redefines the role and meaning of urban centrality at diverse levels and scales. Through developing worldwide information infrastructures, increasingly information-intensive urban economies, societies and cultures emerge. Cities which function in networks are characterized by the intensity, complexity, global span and de-terrorization at different scales from economy to geography. Cross-boundary infrastructure prompts constantly decentered and re-centered the cartography of post-metropolitan cityspace in the globalization web. However, Sassen (2002) argued that even though dynamic spatial reconfiguration has occurred, in fact new technologies have not reduced hierarchical or spatial and socioeconomic inequalities. Instead, spatial fragmentation and cultural disconnection have been intensified. This is because the configuration of communication technologies and social network infrastructures allows global enclaves to bridge each other across the fixed metropolis and towards the wider urbanized world (Graham & Marvin, 2001). This works in subtle, invisible but highly powerful ways.

Neil Brenner (2009: 68) considered that the multi-scalar configuration of global capitalist

spatiality is unfolding. It can be regarded as a re-scaling process for theorizing capitalist urbanization. Brenner claimed that the idea of scale was already grounded in the urban question since the debates of the early 1970s.[72] This contributed to Manuel Castells' work *The Urban Question* (1977), emphasizing functional specificity.[73] Most importantly, Castells (2000b) proposed that the urban question today is getting close to what Lefebvre (1976: 276) called "the scale question", and extends Lefebvre's multi-scalar approach to socio-spatial theory in order to conceptualize the transformed form of the urban question in the contemporary world. This proposition might be able to open a new space for rethinking methodological and political challenges in critical urban theory. Consequently, scales, especially in the realm of geography, become both arenas and objects of socio-political struggles by continuing to reconfigure the territorial organization of capitalist production.

With regard to globalized urban studies, Eugene McCann (2008) argued that it is problematic and dangerous to take a singular landscape as a whole, whether the focus is on the largest cities or local places. This multi-scalar character of the conceptual global process de-stabilizes the hierarchical scale which is centred on the nation-state.[74] He pointed out previous work constructing the urban as a 'theoretical object' of study, for the instance the L.A. School, GaWC or Miami's reading. McCann, however, argued (2008b) that taking distinct cities as benchmarks of globalness masks the significant dimensions which emerge in places which do not express the features of so-called global cities. More importantly, this paradigmatic approach hinders positioning the city within a broader context of 'interurban networks' and simplifies urban complexity in potential

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[72] The meaning of the urban question, as Scott and Moulaert (1997) asserted, is that it articulates the specific context of urban society in every generation. That means that every generation has its own theoretical issues presented through defining its particular urban question.

[73] In Castells' reading, "the scalar aspect of the urban concerned the materiality of social processes [is] organized on the urban scale as opposed to supraurban scales". For Castells, scale is a kind of spatial unit, a component of the capitalist system (Brenner, 2000: 363).

[74] The concept of nation-states' intervention is the key feature distinguishing relative earlier globalization studies from current debates (Sassen, 2007: 5).

global analysis.

The global is not a singular scale. With an understanding of the urban as a category restructured by social users and interpreters, McCann (2008) asked how we re-theorize contemporary globalization processes as a theoretical object for global cities research. In doing so, he suggested a dialectical approach to contemporary 'globotarian urban studies'. This dialectical approach, on the one hand, opens a space to rethink the concrete idea of 'reality' through interconnected processes and interwoven relations (Ollman, 1993). On the other hand, it challenges the axiomatic problem of the theoretical object in global urban studies which provides exemplary cases from determined content where researchers might answer their default questions. The answers to these current issues or methods developed by each scholar for generating such answers remain quite contentious, and continue to provoke intense debate.

4.4 Critical approaches to the scalar question

The idea of a network is another crucial stream to engage the problematic debate on the binaryness of scales. Details can be seen in section 5.2. However, regarding empirical research on the European Union based on this networked approach, the hierarchical structure of scale remains but has mutated into the form of a myriad networks (Herod, 2011: 244). Marston (2000, 2001, 2004) confronted the focus on socio-territorial reproduction and the hierarchical logic of scales in globalization hegemony. Concerning the nature of scale, she (2000: 616) claimed that scale is neither a given ontology nor a hierarchically ordered system that is placed over pre-existing space. From her point of

view, the logic of hierarchical scale confines possibilities for broader insights in human geography on globalization research. She outlined a comparative list of the spatial associations of the horizontal and vertical approaches in the essay *Human Geography Without Scale* (2005). The problems in hierarchical scale, moreover, have never completely been solved by integrating with the network formulations. That conventional hierarchical ordering of scale might be seen as fluid but not absolutely embracing flow and openness in the sense of dematerialization (Marston, J. & K. 2005; Smith, 1996). Because spatial fixity and fluidity are both important to the capitalist and material world, it is crucial to avoid creating another master narrative to simplify the complexity of the world. Marston criticized the fact that the simple hybrid combination of nested scale with network notion contains some fatal flaws to conceptualizing scale theorizing.[75] To acknowledge scale, therefore, as the foundational ordering of social process is not the same as claiming it as a supreme axiom and confirming its legitimacy, but takes it as an operational function expressing unfolding relationships among diversely intermeshed sites.

In order to challenge hierarchical scale and the incomplete antidote to network theory, Marston (2005: 416-26) proposed a *flat alternative*[76] in response to the theoretical question of scale and to provide a critical approach to scale in human geography. Drawing from significant philosophers and social science scholars (Deleuze, 1993; Latour, 1997, 1999, 2005; DeLanda, 2002) who have addressed conceptions of flat

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[75] First, the conceptual structure of hierarchy has become 'grid epistemology', instructing researchers to its intellectual scaffold imaginary in advance (Dixon & Jones, 1998). As a result, scholars are set up a priori to obey and then answer their pre-sorted questions, which have already been fixed into the scalar apparatus. Consequently, most theorists attach themselves to the global-local binary table, even introducing the potential flexibility of a network concept, but the predominated master remains. Second, both vertical (hierarchy) and horizontal (network) categories are still restricted points of view to identify relations among explicit scales, rather than a new scope for theorizing it. Third, localities research focused on integrating local effects within macro-scale economic development both in theoretical and empirical work is confined to the look-up strategy. She criticized (2005:421) the fact that this so-called localities research, in fact, is a relative macro engagement in which the everydayness of social actors in varied scopes is omitted.
[76] This is absolutely distinguished from Thomas Friedman's *The World is Flat* (2005). Marston (2005: 429) explicitly asserted that "the world is not flat", which relates to her argument against purely celebrating fluidity and deterritoriality in respect of urban-global formations.

ontologies as self-organizing systems, [77] her proposal aimed to avoid both the predetermination of hierarchies or fixed ordering, and the reproduction of a higher spatial category. There are three key points[78] central to her flat alternative which emphasizes the materiality to scale and multiple formations of scale in the emerging fact of temporality and fluidity. To apply this notion to the consideration of social site and space, it is a dynamic contextual field[79] which embodies a complex number of processes, each having potential between different sites and orders, which results in different, unpredictable practices which never becomes axioms. These fields are formed by its intrinsic relations and orders of assembling, disassembling and reassembling blockages of social movements and spatial practices. This refers to a similar quality of the Baroque discussed in Deleuze's *The Fold*. A site is considered as a platform where emergent material objects operate and are shaped at the same time by unfolding relationships that bring about new and creative possibilities for materiality. This dynamic relationship which is central to the idea of the flatness helps to recognize the multiplicity, complexity and mobility of the urban-global connection in a sense of scale.

The sociologist John Law (2004) proposed a critical account of global study in his inspiring work *And If the Global Were Small and Noncoherent? Method, complexity, and the Baroque* (2004). Conventionally, scientific and technical romanticism is about 'looking up', centralized models and control, and moving toward a homogenisation. However, he argued that such a dominant method for imagining the complex world is inadequate. Law illustrated the differences between the *romantic* method (Kwa, 2002)

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[77] In Marston's interpretation, self-organizing systems are "where the dynamic properties of matter produce a multiplicity of complex relations and singularities that sometimes lead to the creation of new, unique events and entities, but more often to relatively redundant orders and practices" (Marston, 2005: 422).
[78] First, the importance of material composition and decomposition cannot be incautiously jumped into unfettered flows. Second, differential relations challenge axiomatic tendencies to classify geographical scales. Third, an emphasis on localized and non-localized emergent events of differential relations is actualized as temporary (2005: 422).
[79] Marston, drawing from Schatzki's site ontology (2002), indicated that social sites as contextual *millieux* compose orders in the forms of arrangements of material objects. Here, the term *milieux* takes place by field to emphasize the spatiality to which the critique of flatness might be applied.

and *baroque* sensibilities, inspired by Gilles Deleuze (1993), for imagining the complexity in a case study of aerospace technologies. He summarised four key features of the baroque alternative.[80] Baroque complexity refers accordingly to a non-closed condition and an unsettling process, resulting from interrelating a range of heterogeneous elements. Through the baroque sensibility, he began an inquiry into how we might understand the global and its interconnections. His critique of the global scale suggests that there is no hegemony and coherence, but only matters folded within each site in expression of collective smallness, heterogeneity, inexplicitness and patchiness. In addition, the issue of scale emerges in his description of the global that size and complexity do not necessarily go together (2004: 18). "Bigger, and Smaller, only imply something can be *made* bigger or smaller at a distinct site" (John Law, 2004). The global, for instance, is not simply large but complex, due to its complicated interconnections within a variety of contexts.

The bigness and smallness, locality and globalness are made differently in diverse places. Taking East Asian cities as an example, they are complicatedly diverse and maintain different appearances of globalization. Geographical scale in this sense is transitive and relational. The characteristics of implicitness, non-coherence and complexity at the global level are closely related to the quality of the Baroque that depth is the effect of movement which continuously folds, refolds and unfolds material forms and sizes, resulting in specificity and interrelation. To extend Law's notion, we argue that it is hard to make any generalization on global cities from a perspective of unity, explicitness and

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[80] First, instead of looking up, looking down means discovering limitless internal complexity in details which are materially heterogeneous and specific. Some phenomena are simply not visible until we look down and turn up the magnification. Therefore, Law suggested (2004: 19) that 'pounds lies within the pound' rather than the emergence of a higher level order. Second, there is a blurring of the environment without limits. He pointed out that "everything is already within the individual"; at the same time, "there is no distinction between individual and environment" (2004: 23). In short, nothing is necessarily explicit. Law argued that "to know something, indeed to know it well, is not necessarily to make it explicit. It may be enough to reflect or refract or enact or embody it" (2004: 23). Certainly, there are always choices to be made between different 'environments'. Finally, he rejected the idea of overview and any assumption of coherence; at best, there are patches and partial coherence. Non-coherence presents the features of a continuing set of differences.

absoluteness in scalar and spatial dimensions. With Marston's and Law's critiques on the idea of scale in the context of globalization, it offers valuable geographical and urban-sociological arguments to propose an alternative approach to conceptualizing scale which will be fully explored in the following chapter.

CHAPTER 5

A BAROQUE ALTERNATIVE FOR CONCEPTUALISING SCALE

As has been discussed in the previous two chapters, architecture and geography have different knowledge and usage of scale for comprehending cities. The dominant concept of hierarchically-nested scale which is applied in different ways in those disciplines has weakened approaches to the complex globalized urban conditions of cities such as Taipei, suggesting that they need to be interpreted as multi-scalar configurations. It is essential to develop a wider framework for re-conceptualizing the idea of scale based on critiques of hierarchically-nested sense in those disciplines. This thesis proposes a 'Baroque' alternative, used here in a conceptual and theoretical sense rather than as a style or a period of time in arts and architecture, to conventional theorizations of scale. This chapter starts with an inter-disciplinary understanding of operating scale between the architectural field and geographic urban studies as a prologue to the formation of the Baroque alternative.

The usage of the term 'Baroque' serves to introduce the theoretic framework in the second section of the chapter, departing from architecture and geographic urban studies and moving towards more philosophical and socio-geographical arguments. The critiques of *The Fold* (1993) which are Gilles Deleuze's interpretation of the Baroque inspired by Henri Wölfflin's (1986) analysis of Baroque qualities, helps to set an alternative way to appreciate the coexistence and dynamics of scales in cities where the big can be folded to become the small and the constantly folding. The concept of 'flatness', as the critical

perspective of social and human geographers (Latour, 2005; Marston, J. & K., 2005), and the application of actor network theory (Latham, 2002; Law, 2004; McCann, 2008), directly challenge the adequacy of the conventional idea of nested and hierarchal scale. This helps to unpack and free the understanding of scale from a hierarchical and nested order as a primary epistemology to the tradition debates on global cities. John Law's (2004) critique centred on the 'Baroque' complexity which reinforced Deleuze's concerns of the depths in the fold enabled those free scales to move in more dynamic relationships which might be read as implicit, non-coherent and non-absolute.

Those critiques have contributed to the development of the Baroque alternative in the last section of the chapter. This alternative suggests that the concept of scale to urban centre should be understood as a folding process of different kinds of scale where multiple scales coexist and dynamically co-present according to the distinction of time. More importantly, the Baroque alternative is properly set on a material grounding. The idea of place-bound specificity (Sassen, 2007a, 2007b) and other materialistic critiques provide an appropriate material grounding for it. In order to offer an enabling approach to East Asian cities, the thesis suggests that the particular knowledge in architecture of operating multiple scales simultaneously supports the development of the 'Baroque' into an alternative methodology demonstrated in the empirical work of Taipei. The detail will be fully addressed in the next chapter, Chapter 6.

5.0 The difference of operating scales in architecture and geographical urban studies

More than a conceptual instrument, scale has been operated as a unique professional knowledge and technique in the architectural discipline for 'scaling' the environment and the world. To examine this might open a new insight to the contemporary unbounded situations and phenomena so that architects might offer an alternative engagement with geographical and urban critiques on issues of theorizing scale.

Architectural Scale

Whether in the past or the present, scale in architecture is not merely a conceptual noun (scale, body, module), but rather an action (scaling), which develops relationships between sizes as imagined and sizes as they are actually seen. This is a transitional and iterative process that acquires and presents architectural design knowledge, namely, the sense of scaling. It reveals the uniqueness of using scale in practices which is a making and examining method for composing spaces and materials on the drawing or in the model. In terms of operating architectural knowledge of scale, Albena Yaneva, in *Scaling Up and Down* (2005), questioned how a building becomes knowable and real through an architect's sensibility. She presented an answer by illustrating the processes by which architects made models and scaled them up and down in the OMA Whitney Museum project. Analysing the whole design process, Yaneva discovered that these architects largely work in a comprehensive dialogue with materials and shapes through a reciprocal scaling process: a repetition of scaling up, scaling down and jumping the scale, or blending. These scaling tracks not only offer a platform linking the known with the

unknown in architects' propositions, but also express questions in each project and then reproduce architectural knowledge through the solutions to those questions.

Traditionally in design projects, scale has been associated with operational instruments such as a scale ruler[81], and is conceived as "a system of ordered marks arranged at fixed intervals that are used as a standard of reference in [model] measurement" (Smith, 2004: xvii). In practice, architects learn to think at certain different scales, such as the site scale of building production, construction scale, planning and contextual scale related to particular decisions in the design and construction process of conceiving and making architecture and its environment. These are often externally or legislatively driven by a communicative requirement in consultation with different groups of actors, or distinctive systematic demands in cities. This emphasizes the fundamentally relational aspect of architecture- relations to site, building, city, and planning in a region- which means that scale is the refined tool for architects to work relationally. In addition, scaling is often attached to model making, no matter which way it is presented. When engaging in different sizes of scopes, such as landscape and urban design projects, scaling becomes a strategy for representing the site and the design programme. Due to its tacit position which means that it is therefore never formally examined in all relative design process, Smith argued there is no adequate discussion and theoretical analysis on the application of scaling in architectural practices. To address that, Yaneva opened up an understanding of scaling which implies engagement at different scales at the same time.

In the architectural design process, small- and large-scale models are correlated at the same time. This means that each scale model contains the other and refers to the other, rather than a chronological succession in a linear sense. This operational condition

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[81] To some extent in the current architectural industry, scale, as a design instrument, might become non-absolute, for instance, in drawings using CAD. This subject requires further development in future work.

demonstrates the interdependence and multiplicity of scales and refers to transcalar movements which are similar to Sassen's argument (2007) but from a socio-geographic perspective. The ability to handle coexistence helps architects to work in an interactive circuit of complexity. In other words, the application of scale for architects enables the conceptualization and management of different relationships between parts and the whole dynamically. Through this repetition and these parallel states, the problems and possibilities of design projects in different scales are revealed at the same time. Consequently, Yaneva pointed out (2005) that these scaling trails, as a significant conceptualization for architecture practices, bring the paper imagination into existence, and at the same time represent scalar questions in design projects or even across different projects. For instance, Aldo Rossi (1993) designed a coffee pot and a building as having nearly the same height by drawing them on an equivalent scale on one piece of paper. Designing domestic artefacts is operating a scaling process just as much as in building projects.[82] Architecture as making a drawing and a model, no matter for what kinds of final invention, is an embodied archive; a body in the model, literally projecting a version of the world that is, or the world that might be.

The ability to jump among and switch between different scales is a specific practical knowledge and even a unique concept of scale in architectural professions differing from other disciplines of urban spatial studies. More importantly, managing different scales at the same time implies acting on a sense of multi-scaling in space and material. This is more than a design procedure. It embeds scalar questions during the whole design process and also reproduces architectural knowledge through responses to them. To extend this argument, multi-scaling might offer a useful principle of architectural navigation to the contemporary global phenomenon since the human body tradition

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[82] "Domestic artefacts become analogous to urban artefacts; the coffeepot is likened to the floating theatre, a typical house, or the monumental architectural of the city" (Rossi & Adjmi, 1993: 101).

becomes problematic for dealing with issues of cities that are becoming extremely big at multiple levels.

'From the Spoon to the City': Objects by Architects was the title of an exhibition[83] which highlighted two relationships between scales and architectural discipline. First, architects are able to handle multiple scales of objects at one or another time. Second, scale is recognized as a multiplicity in both conceptual and operational aspects. In the fertile years of post-war reconstruction, the saying became a keynote of Italian design. Dreaming up cutlery in the morning and urban infrastructure in the afternoon, the architect is expected to take a preternaturally broad-ranging approach. When the Italian architect Ernesto Rogers[84] (1952) famously declared that he wanted to design everything from "a spoon to a city" (*dal cucchiaio alla città*),[85] he was articulating the desire of many architects to design both buildings and their contents. Objects allowed the realization of ideas on a smaller, more viable scale, or were a part of a multifaceted career that spanned all realms of design, as in the case of Frank Gehry. The products of such efforts can function as miniature buildings, conveying the architect's ideals in a compact form. To more critically express multi-scalar conceptions in the discipline, Charles Eames explained that when he made a piece of furniture, he could design a piece of architecture that could be held in the hand. Many contemporary architects and architectural theorists also made efforts to achieve such multi-scalar representations in all forms of design projects (Frank Lloyd Wright, Le Corbusier, Marcel Breuer, Rudolph Schindler, Michael Graves, Charles Rennie Mackintosh, etc.). For Rogers's successors,

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[83] This is a gallery exhibition held by LACMA (2009-2010) in **Los Angeles** to present a collection of design objects *by architects throughout* the twentieth century. This collection is material evidence that the capacity of operating different scalar objects exists in the discipline.

[84] The group of architects including Aldo Rossi, Vittorio Gregotti and Giancarlo de Carlo, with whom he conducted the debate through *Casabella* columns, and through artefacts and writings, continued to influence Western architecture.

[85] This famous phrase is recorded in the Athens Charter. This is a document about urban planning published by Le Corbusier in 1943. The work was based upon Le Corbusier's *Ville Radieuse* book of 1935 and urban studies undertaken by the *Congrès International d'Architecture Moderne* (CIAM) in the early 1930s. The Charter got its name from location of the fourth CIAM conference in 1933.

sixty years later, the motto still applies. "We architects design from the smallest scale to the biggest possible scale where there is our true working field", said architect Matteo Thun. Architects are the scale jumpers who deal with a spoon, a chair and a lamp, as well as in the same day working on a skyscraper. The architectural approach of scale provides the knowledge and ability to provide a bridge between the very large and the very small scale with multiple scalar references, such as street furniture, buildings' façades, forms and urban patterns. In sum, architectural scale is not only a perception and a projection of the relationship between the human body and the space, but more importantly it is a dynamic scaling and rescaling process subject to the context and the appliers' intention.

Geographical Scale

Sassen's (1991) and Taylor's work (1995) on global cities and their hierarchical ranking reveal the differentiation of functions between cities and within cities. More recently, Soja and Kanai (2007: 67) pointed out that cities are no longer spatially defined by and confined to their old metropolitan hinterlands or commuting zones, as urban economies become geographically reconfigured into multiple scales that connect the local with the global in the larger and larger nodal regions and inter-urban networks. It is no longer a single global village, but a globe of villages with no entirety.

The conventional approaches of scale in geography are limited to understanding the contemporary urban development, and fixed continuous spatial conditions. The idea of scale, one the one hand, is considered as an ontological fact that organizes matter in a Russian doll structure from the infinitely small to the infinitely large, a nested set. Such fixed ordering is unable to present the co-existence of different scales and the networked

multi-scalar condition which is a central feature of contemporary cities. On the other hand, scale is posited as a methodological tool that implies a detached spatial-frame to access proposed fields. Even so, scale is neither a given fact nor an imposed methodological frame to simply relate to a zoom-in and zoom-out facility (Jazairy, 2011). Koolhaas and Jazairy shared a similar notion that scale, in architecture or in geography and urban studies, does not consist of fixed spatial boundaries and conceptual objects within which events unfold; rather, it is the unfolding of events that produces a particular scale. To extend this thought, it is a tool to understand relationships, negotiations and tensions between actors in space. Jazairy proposed that scale is plastic because it is a network of dynamic relationships which expands and contracts through the interaction of objects and people, so the reconceptualization of scale deeply matters to all disciplines related to urban spatial studies. In addition, he argued that a plastic scale is an alternative to globalization discourse and offers unexplored opportunities to design the urbanized world through carefully mapping the relationships of continuities and discontinuities between people and their living fabric.

The nested-scale concept founded on the human body scale has been problematic for responding to contemporary urban and global conditions manifested in the dynamic scale of material, technology and infrastructure – with constant changes because architectural scale is about human perception and projection onto the built environment which links tightly with society, culture, politics and economic development. Orr contended that architectural scale requires a more crucial response to this environmental fluctuation. The dilemma of architectural scale in the contemporary globalized urban situation merely provides an opportunity to restudy the question and re-create the theorization of scale in an alternative way.

In summary, architecture and geography have different knowledge and usage of scale

and this difference, the thesis argues, is beneficial to developing a wider and deeper framework as an alternative way of re-conceptualising the idea of scale. The use of scale in architecture from the past to the present is particularly appropriate as an operational knowledge for both theoretical and practical materials. The idea of scale is more related to the spatial dimension so the idea of relationship and comparison between and amongst different scales is central to both practical projects and theoretical debates. For scholars in urban studies and particularly in human geography, scale serves as a conceptual framework discursively working with wider issues including politics, economics and socio-cultural matters that might involve the question of scale in relation to the contemporary urban formations in globalization. From this point of view, scale in geography being associated with different theoretical debates may refer to levels or conditional qualities such as the global, national and the local. These differences can be comparatively recognized in two current publications both with the title *Scale* (Herod, 2011; Adler, Brittain-Catlin, & Fontana-Giusti, 2012) which examine this essential subject in the architectural and geographical disciplines. Accordingly, the critiques of nested scale from each of these disciplines might offer significant insights for shaping an alternative to conceptualising scale. These distinctions of qualifying scale between disciplines have also contributed to the visual analysis in a form of the conceptual scalar diagram which is set in two pairs of scalar qualities to position the socio-spatial practices in the empirical work later (in Chapter 8). The detail will be seen in the following chapter.

5.1 The idea of *Baroque* from Henri Wölfflin to Gilles Deleuze's *The Fold*

When searching the key word *Baroque* in any library and bookstore category, the literature of arts and architecture dominates the result. It is evident that the Baroque is traditionally seen om terms of periodization, stylistic categories, designated forms or essences, particularly with regard to European art and architecture. Its nature as an identical expression deriving from origins of art has been extended by its prevalence over various fields of literature, music and science. In more recent times, there has been a resurgence of interest in the term 'Baroque' in relation to system and philosophical thinking. It is therefore remarkably reworked by various historians and philosophers[86] to explore new theoretical frameworks of contemporary issues in various aspects. Such thickness piled up by interworking multiple sources among disciplines (Deleuze, 1993; Harbison, 2000; Holden, 2007; Hills, 2011) makes the Baroque a useful conceptual term for this thesis. However, as Deleuze (1993: 33) argued, the Baroque has long been restricted to one genre of architecture and the arts, or to a restrictive determination of periods and places. There is an attempt, in this thesis, to mobilize the *Baroque*, as a both a theoretical and an operational approach to matters of scale, instead of the conventional narrative merely associated with architectural styles and historical periodization. The term 'Baroque' in this thesis is at work as a conceptual frame referring to distinctive qualities and specificities for a proposed alternative to scale both conceptually and methodologically.

Regarding the contemporary literature on the Baroque as a theoretical subject, Gilles Deleuze's work *The Fold: Leibniz and the Baroque* (1993) can be considered to be

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[86] The eminent scholars included Walter Benjamin, Gilles Deleuze, Hubert Damisch, Christine Buci-Glucksmann, Jacques *Lacan and* Slavoj Žiže. Except for Deleuze's *The Fold* (1993), these literatures have no relevance to this thesis and will therefore be left to further research.

representative of hybrid and trans-disciplinary work. The significance is to articulate the concept of the Baroque through philosophy, modern language, works of art and architecture, mathematics, and other disciplines (Conley, 1993: xi). Deleuze's *Baroque* text [87] inspired the re-analysis of contemporary culture, sociology and particularly architecture. Therefore, from an architectural point of view, it is helpful to examine what kinds of fruit might be born from Deleuze's interpretation of the Baroque and how they benefit an alternative approach to scale matters, and this will be elaborated in a later section of this chapter. In terms of Deleuze's engagement with the Baroque, the art historian Heinrich Wölfflin provided a significant raw source of material analysis and motivation in his conceptual narrative on the subject.

Wölfflin is regarded as the first theorist who attempted a systematic account of the Baroque. For him, the Baroque refers to the notion that the beautiful proportion systems of tradition Renaissance were replaced by a material and feeling expression concentrated not on being, but on happenings (Wölfflin, 1986: 10). This leads to a key point, the powerful performance of movement, where a conglomeration of parts is subject to a theme without actual independence. Architecture, Wölfflin deemed, is the most expressive embodiment of that ideal. In so doing, he was concerned in *Renaissance and Baroque* (1966 [1888]) to clarify the uniqueness and qualities of Baroque architecture, which significantly inspired and were illustrated in Deleuze's *The Fold*. In his subsequent eminent work, *Principles of Art History* (1986 [1915]), Wölfflin's developed a series of oppositional categories[88] to allow him to formalistically analyse the characters and qualities of the Baroque in art history. These series of conceptual qualities were literally and conceptually inherited by Deleuze, as is evident in his various collections

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[87] Referring to a writing style of the text itself, Deleuze's *The Fold* is a vivid embodiment of Baroque performance in literature (Harbison, 2000: 217-9).
[88] Those oppositional categories include linear and painterly, plane and recession, closed and open form, multiplicity and unity, and clearness and unclearness. In each of these themes, he used two paintings in different historical periods to reveal such oppositional qualities. In terms of this methodology, Wölfflin may be considered as the pioneer of applying comparative analysis in art history.

(Holden, 2007). Both of them shared a wide ranges of interests in and perspective on the Baroque, including the notion of movement, sensation and affect, blurriness and open form, temporality and depth.

Movement is a central condition to the *malerisch*[89], which is one of the Baroque qualities that inspired Deleuze's idea of perception and vision. Through the comparative analysis of the *malerisch* quality in Baroque painting, Wölfflin claimed that the sensation of movement is an effect of the painterly quality of the work, the picturesque movement effect. This idea of movement effect was further explored in Deleuze's work on *Cinema* (2005 [1983]) and *The Fold* (1993 [1988]). The recessional composition, including displacement of figures, chiaroscuro on objects and blurred scenes in Baroque paintings, brought about for Wölfflin a discussion of the quality and effect of depth in relation to space and movement. Deleuze (2005: 108), drawing from this analysis, suggested a new depth which is more about topology and a region of time. Different optical elements and their associated narrative or effect, for instance in modern cinema, are presented together by interacting different planes. The movement in the new depth can be perceived through the appearance of different time regions and scales.

Taking the notion of the new depth in respect of scale, the final optical expression is seen as a representational field in which multiple scales placed in different layers interact and motivate each other. The absence and presence of different scales are temporal and changed according to ways of perception and description rather than the objective absolute. This corresponds with Deleuze's notion of the new depth as the freeing of their relationships from time. This field or assembling performance composed of superimposition and interaction among scales cannot be seen as a closed condition nor as

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[89] This is translated as the idea of the painterly and picturesque. This quality refers to the conceptualization of vision away from tactile vision and towards a purely optical vision. In other words, portraying the real contour of figures becomes less important than the sensational feeling of visual experience from multiple dimensions. Details are in reference to *Principles of Art History* (Wölfflin, 1986).

a single straightforward conditioning. It is fluctuating due to different subjectivity and continuity of reconnection, which also responds to the qualities which Wölfflin analysed of Baroque architecture and painting. Such qualities manifested in the idea of the new depth serve as an important channel to comprehend the Baroque in Deleuze's *The Fold*.

Drawing on Leibniz's work on matter and perception, and along with Wölfflin's reference to Baroque arts and architecture, Deleuze developed a profound narrative on the Baroque in *The Fold* (1993), which is one of the most influential treatises for contemporary architectural theory and practices (Holden, 2007; Livesey, 2010). The key quality of the Baroque, for Deleuze, is the trait of the fold. Its treatment of fabric in art and architecture comes closest to the embodiment of the fold.

At the first level, Deleuze directly employed architectonic structure and the descriptions of Baroque architecture from Wölfflin to build a tangible grounding to decipher the intricacies of Liebniz's philosophy of the monad (1714) and the fold. He illustrated the world as an allegorical 'Baroque house' with a two-floored structure (*see* Figure 5.1), where the fold significantly works within it. This allegorical house crucially follows Wölfflin's description[90] of characters in Baroque architecture. In this Baroque house, the upper room represents the autonomy of the monad, the fold of the soul, which is closed and windowless and where the inside disconnects with the outside (Deleuze, 1993: 33). This quality is linked to a form of a theatre and to the disjunction between the façade and the interior identified by Wölfflin in the Baroque church[91] (Holden, 2007). The lower

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[90] "Wölfflin noted that the Baroque is marked by a certain number of material traits: horizontal widening of the lower floor, flattening of the pediment, low and curved stairs that push into space; matter handled in masses or aggregates, with the rounding of angles and avoidance of perpendiculars; the circular acanthus replacing the jagged acanthus, use of limestone to produce spongy, cavernous shapes, or to constitute a vertical form always put in motion by renewed turbulence, which tends to spill over in space, to be reconciled with fluidity at the same time fluids themselves are divided into masses" (Deleuze, 1993:4).

[91] Deleuze (1993: 33) referred this room to a form of the Baroque theatre which is considered as the performance of fold after fold. Wölfflin wrote, "[i]n the hands of the baroque architects the facade becomes a magnificent show piece, placed in front of the building without any organic relationship whatever with the interior" (1966: 95 cited in Holden, 2007).

chamber which Deleuze added refers to physics, the pleats of matter, where the style of origami is happening. These two floors are separated by a fold (*see* Figure 5.2) which echoes itself, arching from the two sides according to a different order in response to our subjectivity (Deleuze, 1993; Tuinen & McDonnell, 2010).
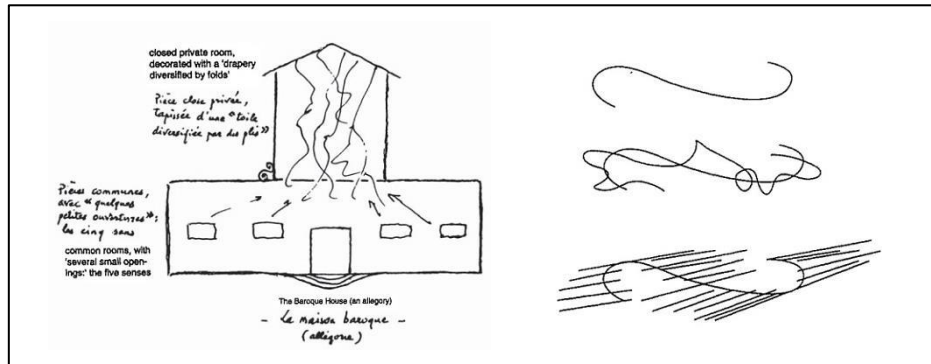
Figure.5.1 Deleuze's Baroque house to conceptualize the world (Deleuze, 1993: 5).

Figure.5.2 Deleuze's drawing of the fold arching from the two sides according to a different order (Deleuze, 1993:16,41).

Deleuze draws our attention to a quality of the Baroque in the specific form of the fold, which involves an opening up of the upper floor and the concomitant affirmation of difference, contact and communication at the same time (O'Sullivan, 2005).

The fold introduces a new relationship between two differentiated categories which interact in complex interplays, both unifying and blurring the distinctions between each (Livesey, 2010). At this level, the qualities of the Baroque are conceptually represented in Deleuze's narrative of the fold. The tendency in the fold characterized as the inseparable distinction is one major characteristic of movement in the Baroque interior where a *hysterical* tension is generated by two oppositional vectors interworking together. [92] This movement-effect from an architectural viewpoint brings two

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[92] "Above all it conveyed an impression of movement, by seeming to be ever in a state of new formation, so much so that given certain proportions it seemed actually to rise upward"(Wölfflin, 1966:115). He showed that

differentiated levels of forces into co-existence, with Deleuze's fold inviting an open dialogue between the two rooms. To extend this effect, all the elements or folds operating in this conglomeration are seen as relatively distinct. In other words, the Baroque refers to the mosaic assemblage in the complexity. It is, therefore, impossible and unnecessary to define each fold or element but only to sustain the continuity of folding which will push material and historical limits towards infinity (Deleuze, 1993). Graham Livesey (2010: 109) contended that the experience and representation in Baroque churches provides a tangible example of material folding and the search for an expression of infinity. Those spaces create the experience of unity and infinity, and an endlessly fluid condition set off by intensive chiaroscuro which links back to the picturesque movement-effects in Baroque paintings.

Deleuze (1993: 123) hence claimed that the Baroque painting is packed with folds. The study of folds can be found in the presentation of objects which are rendered as still life through the use of the light and the texture in colour. The superimposition of layers of drawing among different objects expresses the notion of folding the fold which is unceasing and sprawling out. He cited Wölfflin's summation and emphasised that,

> The baroque realizes a manner of form to be regarded not only in the complexity of those great art works that have come to define a period of art-history, but as the multiplication of matter in extension itself.
>
> (Deleuze, 1993: 123)

It is clear that Deleuze paid more attention to the particular quality of the Baroque as a field where matter tends to move out of the frame. The tendency of stretching out of the boundary is the effect of the waving of fold after fold (Deleuze, 1993: 39). It creates

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the Baroque interior is expressed along two thrusting vectors, toward the bottom and toward the upper regions (Tuinen & McDonnell, 2010). All parts are assembled into a conglomeration by this interplaying force, which forms a new proportional experience to architecture.

infinitely varied patterns of movement, the unceasingly folding and unfolding, through which there is no absolute clearness but only blurriness of boundaries in terms of the object itself and the canvas. There are, in short, objects floating with folds in infinity which is the extreme specificity of the Baroque. The issue, Deleuze pointed out, is not to make a fold but to keep the continuity of the fold which pushes the limit towards infinity. In this endless folding-unfolding process, there is no primary fold or any predominating pattern of the movement: it can be seen as dynamic relationships in response to different subjects of expression, narratives and times. The significance of the fold characterized in the quality of the Baroque provides a fresh insight to scholars, particularly those involved in spatial studies, for exploring alternatives to urban and spatial matters both theoretically and practically.

Deleuze (1993: 3,158) asserted that, practically speaking, the Baroque refers to an operative function which endlessly produces folds in a way that an open trajectory operates in an ongoing movement of folding, unfolding and refolding. It does create things. This statement reveals a practical nature of the Baroque with which the conceptual quality of the Baroque, in the form of the fold, easily makes a bridge to architectural practices. He wrote,

> It is not only because the fold affects all materials that it thus becomes expressive matter, with different scales, speeds, and different …, but especially because it determines and materializes Form. It produces a form of expression … infinite line of inflection, the curve with a unique variable.
> (Deleuze, 1993:39)

This statement describes a possible materialization of the fold which has inspired and been widely borrowed by groups of architectural scholars and designers who work on the exploration of new forms and techniques in response to issues of complexity in the contemporary world.

The French architect Bernard Cache in his work, *Earth Moves* (1995)- based on their intellectual conversations- explained some of the key ideas in Deleuze's text and illustrated how it is implicated with architecture. In the work of Anthony Vidler[93] (2000) and Greg Lynn (2004), Deleuze's fold has been critically addressed to examine its greater complexities. Lynn (1993: 8), an important proponent of folded architecture, considered that the most significant effect of folding in architecture is its ability to integrate unrelated elements in a new continuous mixture. The idea of smoothness and pliancy inspired by Deleuze's fold can be seen as a practical approach to such unpredicted connections among different or similar elements. Livesey indicated that the idea of smoothness in fact comes from Baroque architcture and refers to a seamless continuity. Therefore, a folding architecture, proposed by Lynn, can offer an open communication between elements and a context in a seamless way, and might respond to complexity from a singular gesture (Livesey, 2010: 109). The folding architecture which inherits the quality of the Baroque from Deleuze is appropriately understood as an examination exploring new kinds of architectural practice, rather than only an astonishing form, as was argued by the architectural critic Michael Speaks (Cache & Speaks, 1995: xviii). To extend the application of the fold in architecture, Fraser's argument (2013) of a 'two-fold movement' for design research in architecture took the fold as a dialectical conception to explore an alternative approach of discussion on the relationship between architectural research and practices.

The significance of the fold applied in architecture is not only that it brings an operational method to integrate, produce and create multiple elements such as space, time and social factors, but also more importantly that it represents the quality and power of the Baroque which has been restricted and misplayed in architectural history.

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[93] Vidler has taken modern architecture as an exemplar to expound the implication and the problem.

Deleuze's recalling of the Baroque, in the specific form of the fold, is a useful framework for architects and socio-spatial scholars to re-conceptualize the complexity, dynamism and in/explicitness in urban spatial studies.

Regarding the application of the fold in social-spatial disciplines, there are several scholars (Smith, 2003: 570; Doel, 1999: 18; Herod, 2011: 242) who consider that the world is constituted by innumerable folds over and within folds. Scales, from this point of view, are replaced by folds to imagine the world where there is no mastered fold considered as essential, structural and dominant. Drawing on Deleuze's analogy of origami, they suggest that globalized big cities and their space can be thought of as an infinite movement of folding and refolding, rather than the Euclidean geometries of spatial clarity which determines the imagination of boundaries, limits, fixity, permanence and embedment in social and spatial reading (Smith, 2003b). The character of the continuously folding movement and unfolding fixed enclosure hence deeply reflects the quality of the Baroque. Similarly, Michel Serres used the image of the handkerchief to explore the same idea that two oppositional points can indeed be read in multiple relationships depending on how the same handkerchief is folded (Serres & Latour, 1995 cited in Herod, 2011: 242). According to Andrew Herod (2011), this inspiring idea drawn from the fold provides a critical argument that space as socio-material relations, which used to be constructed and recognized in hierarchically-nested orders, is fluid in a Baroque sense rather than an absolute fixity in a Cartesian way. These new conceptual approaches to the study of urban-global cities have started to connect some motifs as assemblages and networks, fluidity and flows, movement and mobility. In addition to the succession of the idea of the fold, the Baroque, for some theorists (Kwa, 2002; Law, 2004; DeLanda, 2011) interlinks ideas of the complexity, assemblage, lack of linear development and resistance to meta-narrative. These applications have been developed in series of crucial critiques that might help reconceptualise the idea of scale in the context

of globalization.

5.2 The Flatness and Actor Network supplements: critical approaches to hierarchically-nested scale

The quality and concept of the Baroque, in terms of complexity and multiplicity, has influenced approaches to contemporary studies of urban-global connections especially in matters of scale. Several scholars, such as Marston (2000, 2001, 2004), Law (2004) and McCann (2008), whose arguments were explored in Chapter 4, particularly in urban-global studies, proposed significant arguments against the hierarchically-nested logic of scale. The idea of the flatness was strongly shared amongst their critiques. It, literally, is to flatten the vertical hierarchy and to deconstruct nested scale to an imagined plane. This conceptual argument provides a useful way to unfold the hierarchical logic of scale. Richard Howitt in his critical geopolitical analyses (2002, 2003) challenged the nested scheme of hierarchical conception to examine scale-making. Instead, he suggested that scale should be built up and conceived through the understanding of complex and dynamic relationships, and of multi-directional processes within its context. Practices and conflicts within social reproduction provide a contested field to free scales from hierarchical structure and interact in unfolded ways.

The current network critique, used in this thesis with a focus on post-structuralist notions derived from Latour and Deleuze, is linked with particular characteristics such as self-organization, assemblage, non-hierarchicalness, flexibility and topology as a spatial expression. Networks are unpredictable in the field on which they act because network

dynamics can be dramatically affected by small changes in external conditions. The flexibility refers to networks being continually subject to change and periodically restructuring as participants come and go, and thus inevitably they possess fuzzy boundaries. They evolve by creating linkages between participants who were not previously connected, thereby constructing mutuality between actors, or places that previously seemed distant from one another.

Bruno Latour, in his prominent work *We have never been modern* (1993), suggested alternative perspectives against the hierarchically-nested logic as a legitimated phantom ruling the epistemology in disciplines of social science and related areas. He withdrew from a view of subjective and objective distinction and re-developed an approach to work in practice that blurs and dissolves distinctions across various conceptions and disciplines. The idea of assemblage and flatness is central to his critical arguments which support the development of his influential work, along with Michel Callon and John Law, on actor-network theory (ANT) and its application (Latour, 1997; Law & Hassard, 1999; Latour, 2005). Latour (1993: 118), from a post-structuralist point of view, suggested that the term 'network' can be pictured as nets thrown over spaces and retaining only a few scattered elements of those spaces; that is, as a web connecting lines but not surfaces. There is no *a priori* order relationship and no ties to the axiological myth of a top and of a bottom of society. In a network, there is no absolute assumption of whether a specific locus is at macro- or micro-scale. The use of the term 'network' is very similar to Deleuze and Guattari's *Rhizomes* (1987), and is associated with the quality of the Baroque in *The Fold*. Latour stated that there are significant features about the idea of a network that are distinguished from conventional social analysis.

Network is characterized as connectibility rather than proximity and distance

conventionally and quantitatively defined by geographical science.[94] It offers an idea which is neither social nor 'real' space, but one of associations. In this sense, the micro- and macro-distinction is dissolved. The whole metaphor of scales is replaced by that of connections. A network notion is ideally suited to following the change of scales since it does not require the analyst to partition the world with an *a priori* scale. Accordingly, scale, as the type, number and topography of connections, is left to the actors themselves. To extend this notion to scalar issues in urban-global studies, a global entity might be understood as a highly connected body which nevertheless remains continuously local, instead of having to choose between a local and a global pole. In addition, there is no absolute boundary of the inside and the outside in a network. The only issue is whether connections are established between nodes or not. This clearly reflects the Baroque sensibility, as Deleuze's took it from Wölfflin's analysis of Baroque arts and architecture, which expresses the dynamic relationship as a porous and spongy organism. Networking generated by human and non-human actors, consequently, implies a theoretical framework that contains no *a priori* order, no ties to the hierarchy of top-down or bottom-up relationship, and no absolute scale of social-spatial configuration.

Actors, another key ingredient in ANT, refer to a semiotic definition, an actant being something that acts or to which activity is granted by others (1997: 4). The clusters of actors involved in creating meaning are both material and semiotic. ANT, therefore, is regarded as a material–semiotic method through which Latour attempted to explain how material and conceptual networks come to act without intrinsic coherence but with conflicts instead.

Literally, there is nothing but network. The importance of ANT against hierarchically-

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[94] Latour (1997: 3) stated that "the geographical notion is simple another connection to a grid defining a metrics and a scale."

nested logic is based on its features of dissemination, heterogeneity and the careful plaiting of different ties. It offers a condition for actors to unremittingly connect and reconnect but with a non-committal setting of absolute freedom. Actors are associationists floating among multiple scales of network where there is no reserved order and inertia but it is built according to temporality at multi-dimensions.

Sharing a similar critique to that of John Law, which was elaborated in Chapter 4, but from a viewpoint of the socio-cultural formation in globalization, Alan Latham (2002: 120) opposed the idea that "what is large is more important or more global than what is small". The small remakes the world alongside the large. Therefore, overemphasizing local disempowerment in the face of global forces is an uni-directional narrative with a fixed systematic logic of the supreme global. Latham (2002: 116) stressed that specific places are made as both local and global, without necessarily being wholly either. This has challenged Neil Smith's single approach to everyday life practices which are categorized at a level of local scale. To theorize the global, his conception is grounded on the global as made through the diverse interdependencies and discontinuous agglomeration of provisional relationships. Hence, social structure and hierarchy are built and maintained through more complex and heterogeneous assemblages than is usually realized. He demonstrated this conception of globalization with ANT in the essay *Retheorizing the Scale of Globalization* (2002), an empirical work on street re-formation, looking at the development of a specific restaurant in Australia since the late 1990s. This critical work gives an insight into non-scalar spatialities re-theorizing globalization in daily practice and cosmopolitan actor-networks revealing spatio-temporal complexity in the global world. The theorists Eugene McCann (2008; McCann & Lowry, 2011) and Richard Smith (2003a, 2003c) both applied actor-network critiques to challenge nested scale and to suggest the multiplicity and dynamic co-present relationship to depict contemporary urban-global issues in global cities.

Although the actor-network critique is a useful critique to address the conventional idea of nested scale, Marston emphasized that it is still important to turn back to material space to address the matter of scale. As Taylor, Smith, Giddens and other scholars have stressed, scales are socially produced and have real consequences for social life and urban fabric. Geographical scale from this materialist understanding of scale is correspondent to architectural scale which is bounded in material performance and fabric.

In addition to the flatness and actor-network critique, Saskia Sassen's place-bound approach to global cities serves as another significant ingredient in the thesis to formulate a Baroque alternative. Sassen (2007) advocated that capitalist power and communications capacities need to be read through **"place-bound dimensions"** which vary between locations, rather than the overwhelming flux of flow. Brenner and Keil (2006: 75) with the similar tone, indicated that cities provide a locationally specific and non-substitutable infrastructure for the worldwide operations of transactional corporations. The built environments and spatial forms in each city are the concrete and localized channels through which globalization exists and functions (Sassen, 2007b: 280). In other words, the local space in a global city materializes at the tension between global economic forces and post-industrial urban restructuring (Lloyd, 2007). It reveals the importance of a place-bound approach to re-conceptualizing scalar issues in the contemporary urban-global context.

A significant perspective on reading the network in the place-bound dimension is enabled and materialized in the Baroque alternative as an operational multi-scalar method. As Marston's critiques have suggested, scale is an interactive relationship. It establishes and is established by means of social interactions which have material consequences. As a kind of ordering, scale embodies a complex number of processes that assemble,

disassemble and reassemble blockages. Material composition and decomposition are synchronized as temporary emergent events shaped by unfolding relationships which provide new and creative possibilities for materiality (Marston, 2005). In material, the contested and interconnected actors in the city are the mediators providing the possibility of a perpetual flux in global processes across boundaries and scales. It is important to pay more attention to urban human actors who are simply omitted in the macro structure of global studies, because they are pivotal agents of the multi-scalar process in the global world. They have shifted and have been contested among scales that physically rely on social actors interacting on the urban ground.

The concept of the Baroque which is the trait of the fold in Deleuze's description provides some significant qualities to assist freeing nested logic in order to reconceptualise scale. The new depth attributed to movement-effect implies a dynamic way that scales operating at different layers of networks in fact interwork patchily as a result of unpredictable new relationships and activities. In addition, the Baroque sensibility to the fold refers to a complex and infinitely folding condition. The nested global hierarchy would be loosened through this unceasingly folding-unfolding process. In other words, from a Baroque perspective, scale is inseparably distinct objects and continuously redefines different spatial categories with blurred boundaries and relative clarity in nature. In practice, Lynn (2004) celebrated the effect of folding in architecture for its ability to integrate unrelated elements in a new continuous mixture. I argue that this ability relies on an operational function of scale, a simultaneously multiple scaling process. The Baroque, in both architectural and geographical applications, provides an alternative approach to understand relationships between differentiated positions, elements and scales. Its features of complexity, multiplicity, and temporality help to conceptualise the idea of scale in an interdisciplinary and dynamic way.

Latour's concept of ANT as a material-semiotic method is helpful for studying the intrinsic process of scalar movement and re/production to the formulation of the Baroque alternative. His proposal offers a useful insight to re-conceptualize the idea of scale without being trapped into traditional hierarchical sensibilities in social theory. Deleuze's *The Fold* exemplified in the Baroque concept offers a new approach to extreme relationships. I attempt to extend his idea of the folding process to a multi-scalar condition where multiple scales co-exist and interact dynamically according to different times and spaces. More importantly, the Baroque alternative proposed in this thesis is not only a critical approach of scale to the hierarchically-nested logic, but also an operative method, as Deleuze's description of the Baroque with an operational function, to depict contemporary multi-scalar cities in the global networking context. This alternative will be developed as an enabling methodology in multi-scale in the next chapter and activated through an examination of five socio-spatial practices in Chapter 8, where case studies will be explored.

CHAPTER 6

INTERDISCIPLINARY APPROACHES TO CONTEMPORARY

CITIES: METHODOLOGIES IN MULTI-SCALE

The Baroque alternative of scale can be taken as a theoretical framework to develop critical approaches to the globalized urban formations of big cities which are loaded by the logic of nested scale. The task of this chapter is to set out some of the principal methodologies to depict cities, and to activate the Baroque alternative of scale as an enabling methodology for examining and loading cities in a particular urban context. The chapter outlines a set of methodological approaches to the depiction and analysis of cities in terms of three aspects: the dynamics of the participants, the transformations of urban fabric, and socio-spatial movements in time. These are drawn from interdisciplinary traditions in the fields of anthropo-geography, urban studies and architecture. This approach raises questions of whether multiple methodologies can enable empirical research in a more dynamic way, and of how to understand methodological approaches to multi-scalar conditions in response to global urban centers such a city of Taipei. Because the empirical project in the thesis contains five socio-spatial practices at multiple levels of scale, using a single methodology is inadequate to address that multiplicity and patchiness. It also reveals the demands of an alternative methodology to provide wider and in-depth investigations on the multi-scalar networking conditions in Taipei city.

The methodological focus of this chapter will help to connect the theoretical literature

explored earlier and the case studies that will be demonstrated in subsequent chapters. Importantly, it reveals that the conception of scale is both a theoretical subject and a methodological practice. The first section of this chapter is based on reviewing the visual methodologies which are conventionally used to investigate and depict cities, and discussing the representation of the collected data in the form of analytical drawings and narratives. The second section will concentrate on the dynamic relationship between methods and five selected practices in central Taipei. These five practices will be understood as urban socio-spatial practices (Certeau, 1984) rather than limited in any single subject to approach and comprehend cities operated in multi-scalar conditions. The methodologies in multi-scale are introduced to explore the five practices which will be fully presented through a series of spatial stories articulated in Chapter 8. The data collected by multi-scalar methods will be illustrated in analytical diagrams and comparatively discussed in greater detail in Chapter 9. The general research boundary of the empirical project is clarified in this chapter but, more significantly, the individual limitations of each practice according to the capacities of their access and technology need to be carefully considered.

6.1 Scaling cities with visual methodologies: the interdisciplinary practical methods

If in the contemporary world, the acts of looking, seeing and knowing- as Chris Jenks (1995: 1-2) has argued- have become tightly interlaced, visual materials then work for this conflation in great degrees. These materials have been produced by what Paul Virilio (1994) has called a "vision machine" with new visualizing technologies in which our

vision is constructed. In other words, visual materials interpret the world and display it in very particular ways. With such power, they have been widely privileged by and infiltrated into various disciplines, in particular in relation to socio-spatial studies, as a theoretical or empirical research method or even as a research project itself.

The geography scholar Gillian Rose (2007: 6) pointed out that anthropology and human geography, for example, have a long-term tradition of using visual materials as research tools. Photographs and diagrams are methods mostly shared between disciplines but there are conventional distinctions, such as of film-making in anthropology (Schneider, 2011; MacDougall, 2011; Pink, 2011) and of mapping in geography (Caquard, 2013; Kurgan, 2013; Wehrya *et al*., 2012). Despite such a variety of methods, the content of these visual materials provides a supple field for researchers which can be interactively re-examined and even serve to redefine the subject through its hidden schemes. Scholars in sociology and some in human geography, therefore, have worked with visual materials, especially images, as supports or supplements to a research project. In this case, images are used to address questions and issues that are generated in a wide range of theoretical and empirical contexts (Rose, 2007: 238). They may be taken in the form of film, still photographs, maps or diagrams (Latham, 2003; Young & Barrett, 2001) or drawings (Kearney, 2004). These different visual methodologies, as Rose (2007: 237) indicated, are applied actively in the research process, accompanying other types of data originating from interviews or ethnographic fieldwork. In this sense, visual materials not only contribute to both quantitative and qualitative analysis in the project, but also to reflexive comprehension (Pink, 2001, 2003; Tsekeris, 2010), and might reshape research questions and methodologies in or beyond the project.

In terms of ethnographic studies, Sarah Pink (2003, 2007) has claimed that visual materials have their own authority and are powerfully capable of delivering the

complexity of empirical subjects such as the sensorial reactions of human experience between the environment and other subjects. As visual methodology has increasingly taken a prominent place in anthropological research nowadays, Pink argued, we should pay more attention to how it is able to produce a novel framework that theoretically informs research projects using photography, video, drawing and other media alternatively. The 'new' visual methods, she suggested (2003: 182-191), on the one hand, invite collaboration from different disciplinary perspectives, and on the other hand critically reform contemporary anthropological theory and practice toward a more reflexive and plural approach.

Amongst the diverse types of visual materials, photographic images, whether moving or still, are regarded as the most popular sort of visual images being used by social scientists. This is because photographs can carefully bring out particular agendas which articulate information, affect and reflection appropriately in social science research, so that some textural but un-speakable phenomena which are not easily achieved by writing and transcription can be expressed in depth (Rose, 2007: 237-8). In *Practising photography*, Rose noted that

> Thus photographs should be seen in terms neither of scientific description nor of artistic aesthetics, but as cultural documents offering evidence of historically, culturally and socially specific ways of seeing the world.
>
> (Rose, 2000: 556)

Photography involves complex practices of observation, production, reproduction and representation that serve as a visual methodology for social science researchers to navigate the material environment and the sophisticated rhythms in society. To this extent, the practices of photographic methods, on the one hand, refer to various angles of using technologies, and on the other hand, they can be defined as an equipment to reflect or explore research questions. Therefore, the subjects which have focused on socio-

spatial studies such as geography, in particular architecture, and urban studies have heavily relied on the use of photography to capture or engage social life and the different scales of space which it produces.

A project in *Open City, Reciprocity: Transactions for a city in flux* carried out by Stephen Cairns and Daliana Suryawinata (2009: 407-416) provides an example of how photography is applied to capture a collective sense of the city, and to invite a critical engagement with the processes of urbanization in an urban project. A local artist, Erik Prasetya, was invited to produce a series of documentary-style, photographic portraits as one method to depict the transactional field of reciprocity in the contemporary architectural fabric of Jakarta. Focusing on groups of workers and poor people in a specified peri-urban transect, his documentary photos not only offer an insight into an individual life-story but a type of urban dweller and their spatial performance. As Rose pointed out (2007: 247), photographs are able to convey the feeling of specific locations. In other words, the information and details of the texture, tactilities, smells, air and atmospheres of that place can be captured and delivered in a moment. Photographs contain subtle but abundant data of the spatio-temporal configuration. The weight and condensation of the city and its social element, therefore, are refracted through such thematic photographs for a wider empirical discussion of urban reciprocity.

Charles Suchar's *Seeing the macro-characteristics of gentrification* (2004: 147-65), offered a geo-sociologist's perspective on using photographic images. He used photo-documentation and "photo-elicitation interviewing" to survey and answer research questions.[95] His ingredients for photographic methods were field observations, archival research, ethnographic field-notes and photo-probed interviews. Clearly, as a visual

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[95] His research project focused on what new neighbourhood patterns of urban development and structural influence resulted from extensive gentrification in Chicago and Amsterdam. The method of photographic images helped to reflect and reshape his original questions of the work

methodology, photographs here are evidence to answer research questions and are used to encourage interviewees actively working in the project.[96]

Similar to the major tools which Suchar used, photographs and interviews, in Allan Latham's empirical project reading three streets in Auckland, New Zealand (2003, 2004), played a role as more like performance, reportage and re-accounting. For him, applying a number of visual methodological technologies such as photographs and drawings served to explore the reframing of research processes which attempted a more experimental and more flexible attitude towards the performance and interpretation of research evidence. Latham's methodology was the reformulation of diary-photo, commentary and diary-interview[97] to enable an understanding of everyday urban public culture. Although the empirical work of this current thesis did not take this daily base idea to conduct photography and interviews, his mixed usage of multiple methods to explore the possibility in the empirical field provides a valuable source for interpreting the visual materials of the empirical work in the following chapters. Unlike Suchar's project, informants were asked for their permission to take photo images and to express themselves in the interviews, most of which are conversational types with brief commentaries characteristic of most ethnographic fieldwork (Rose, 2007: 197). The presentation of final empirical data, most significantly, is designed to be suggestive of individual partiality. In Figure 6.1, time and space have been simply presented in two dimensions via traces of individual daily movement spotted by photographed events. Components of space, time, people, movement and intention composing individual urban daily life are captured in this collective diagram. The use of handwritten text, freehand sketching, along with computer-processed text and graphics, enriches such narrative

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[96] Rose in *Visual Methodologies* (2007) categorized two types of groups using photographs in social science research;
evidence supporting, and supplementary to a research text. Suchar's photo-elicitation project is grouped in the first one. In the second group, photo is taken as excessive to the researcher's interpretative work and is regarded as supplementary to the written text. Tim Edensor's project (2005), *Industrial ruins*, is an example.
[97] This is drawn from Don Zimmerman and Lawrence Wieder's (1977)[97] 'DDIM'.

resources and at the same time enlarges the visual materials so that the empirical data can convey a sense of fluidity and a feeling of the subjects in an innovative way. Taking photographs as an interrelated mosaic of interpretative snapshots, and compiling a presentational drawing as vignettes of a particular social space and a set of social practices sufficiently captured the context of the partial-ness and moment-ness in everyday urban social life (Latham, 2003: 2005-9).
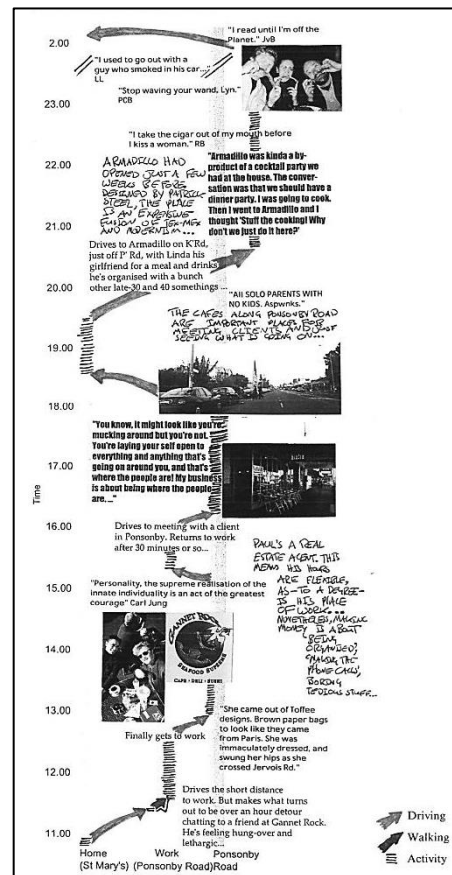
Figure 6.1: The presentation of Latham's empirical data includes the dimensions of space, time, and daily activities and the way of movement. The methods that he conducted have been zzzexpressed in photos, drawing, and different forms of text (Latham, 2003).

Video images are another principal tool of the visual methodology, especially for visual anthropology, to represent and answer research questions in a particular way (Rose, 2007: 238). Researchers who have used video images in empirical projects, such as Barry Brown (2005), Sarah Pink (2001, 2007, 2008) and William H. Whyte (1988),[98] provide different lenses for this visual technology practised at various scales of the interaction between human behaviour and space. Video shooting for them is as a technique to map or trace social-spatial movement with participants. In the film *The Social Life of Small Urban Spaces* (1988), the urbanist William H. Whyte used the multiple-angle video technique to study human behaviour in urban settings. The attempt

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[98] Book published in 1980, video released in 1988.

of that survey through motion picture footage is an engaging tour of the urban landscape focused on the streets of New York and looked at how its public spaces can provide more liveable qualities for the urban dweller. The methodology that Whyte exemplified in the film was through direct observation and by talking to people. Accordingly, the audio-visual practice was taken from different spatial perspectives, such as aerial shots, ground views with a street walk, portrait or event focus, and photo-lapse. Practising a visual method with such diverse angles fittingly assists in studying the relationship between people's action and space in an urban context which occurs at multiple scales.

Although visual methodology, no matter which kinds of method are used, has its privilege in social science research, interviews have publicly permeated in and deeply supported empirical projects, in particular in qualitative ethnographic research. Regarding ethnography as a method that refers to sustained periods of observation of and engagement with subjects, interviews might be conducted in unstructured, conversational and informal types with those active in the field (Rose, 2007: 195-7). Such ways of conducting interviews contribute to the exploration of the direct experience of dynamic social interaction in the acting field for many ethnographers' projects (Morley, 1980; Lull, 1990; Pink, 2008) which investigate the configuration of social life and its physical settings.

According to the social anthropologist Marie Gillespie (2005: 151), an ethnographic approach to a research project attempts to use a plurality of methods and techniques to investigate a field in particular contexts. It is carried out through close observation, participation and talking to people as picturing their life-stories in the socio-cultural locality. This practice of multiple methods can be also founded in Whyte's written (1980, 2000) and filmic (1988) work on urban inquiries. So integrating such multiple practices of methods and techniques, especially photography and video, with interviews provides

an appropriate methodology for my empirical project in a particular urban context.

Visual materials, indeed, provide rich supplements and an additional set of narrative resources for social science research. They do, however, need to be accompanied by text (Rose, 2007). Images and written texts should be used together with a sense of the interdependency that visual materials deliver information and texture which words find it hard to convey, and written text at the same time articulates such visual evidence in an effective way (Mitchell, 1994; Rose, 2007). More importantly, a research project can never leave it to written presentation to express arguments and research questions accurately. Taking note of anthropologist Sarah Pink's self-claim to be an 'image-producing' and a 'writing' researcher (2007: 250), the empirical project in this current thesis will be considered as a work of visual and narrative conflation. For an architectural discipline, images are essential communicators. But the critique never leaves narrative. So in this thesis, in the first part of the navigation of five socio-spatial practices, images might be the visual subject to be narrated and also be taken as visual supportive material to the urban narration.

Putting more emphasis on socio-spatial restructuring, the particular urban projects on large and globalized cities collected in the book of *The Endless City* (Burdett & Sudjic, 2007) and its sequel have provided more interdisciplinary inquiry and rich statistical data to explore the connections between diverse global forces and the emerging mega-urbanism.[99] This comparative analysis reveals the distinctiveness of contemporary urban landscapes which have been driven by and examined in the same context, the globalized urbanization process. However, this thesis argues that the conventional macro-reading of urban formations of big cities in both architecture and urban literature has been

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[99] It is structured by investigating six cities in different zones: New York, London, Mexico City, Berlin, Johannesburg and Shanghai. The survey was amplified with more cities: Istanbul, São Paulo and Mumbai in the sequel.

interpreted with the idea of the nested scale. In terms of subject, it is focused on the top-tier cities according to the world hierarchical economic geography. As a methodology, the scale of methods that Burdett and Sudjic conduct has been set on a macro level and yet been absolute. As McCann (2002) (Herod, 245) asserted, there has been a troubling bifurcation in urban studies literature between the world's largest cities which display signs of globalness, and on other ordinary or local cities. Here is a dilemma between micro and macro methodological approaches. In the first camp, as mentioned in Chapter 4, most sociologists, geographers and urban analysts develop their strategy from macro perspectives such as quantitative comparison amongst extremely big cites. They are keen to use methods of scaled maps, diagram data and aerial photography to recognize the global wholeness. This raises the blind sides of reading multiple layers of conditions in and between such urban agglomerations. That is a problematic deficiency in our understanding of the complex and multi-scalar urban transformations in the contemporary situation. As a consequence, cities which explicitly express similar processes to those seen in the global cities are deemed to be less affected by or less significant in globalization, and then are less likely to be seriously studied.

Methodology in multi-scale; methods of methods

The urban formations in contemporary big cities were processed and changed in a way which in a single and conventional method for most social science research is difficult to grasp, such a mosaic and plurality in the social life and the city. There are groups of human geographers (Linda McDowell, 1997; Grey Pratt, 2000; Allan Pred, 2000) who have been pushing at the boundaries of established conventional approaches, and proposing innovative and insightful methodological hybrids. Canonical cultural methods

in human geography, they have suggested, such as in-depth interviews, focus groups, participant observation of some forms, require innovative refreshment to be enlivened. As Latham (2003) urged, there is a need to recognize and rework more experimental and more flexible methodologies towards both the production and representation of cultural research in human geography. To extend this stance, Rose (2007: 187) pointed out that some specific empirical projects require the use of mixed methods that broaden the empirical scope of a study and the angle of using methods. This might be a benefit for access to both research and methodological issues neglected by the methods so far discussed.

In a more architectural vein, Raoul Bunschoten's work *Urban Flotsam* (Bunschoten, Hoshino & Binet, 2001) invoked a way of conducting a theoretical framework through a methodology of urban engagement and architectural practice in the contemporary city. The formation of the urban flotsam, he asserted, is propelled by global trends and their multi-directional forces that formed and sustained their impacts on the built environment. In order to explore the thickness of such urban conditions, he outlined a methodology with four main concepts[100] to capture different facets of the urban flotsam ranging from theoretical, cultural, and urban-planning case studies. Each of them is presented a variety of methods which were conducted not only by the analysis of historical context, socio-economic structures and morphological patterns, but also through interviews, field participation, representation of visual materials and written text. Bunschoten said that "it is a method in progress" (2001: 10). For instance, the methods conducted in the project[101] of reading a particular city fabric and its dynamics included visual material collection,

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[100] They are Proto-urban conditions- *how to see*, fieldwork; Taschenwelt- *how to model*, dynamic modelling; Taxonomy and unfolding- *how to tell*, scenario development; Liminal bodies- *how to act*, organizations (Bunschoten et al., 2001).

For example, the concept of *Proto-urban Conditions* focuses on the theme *how to see*, and the key method is fieldwork which can touch the city fabric as well as its dynamics directly, and involves local participations. This series of empirical projects was demonstrated in Alexandrov, Russia, through a seven-walk strategy. The seven walks were walk towards, walk across, walk along, walk into, walk out of, walk through, and walk about (Bunschoten *et al.*, 2001: 82-107).

story hearing, phenomena observation, thematic drawing, and analytical representation of field data. More importantly, he continued to adapt the methods in each walk exploration in order to critically see what is usually unperceived, unknown, and to detect ongoing changes in the social life network in the city. These multiple practices of methods to investigate the city flux support my empirical project from a more architectural perspective.

Practising mixed methods, as in ethnographic research, or conducting different methodologies, as in architectural and urban fieldworks, in one empirical project, offers more possibilities and wider angles to engage the subjects or research questions. These operational approaches open a range of flexible dialogues between already-established forms of qualitative research, especially in disciplines of spatial study, and novel perspectives to conduct fieldwork. Through such experimentation mixing different degrees of methodological ingredients, we might take a more supple and pluralistic view of depicting the fluidity and complexity of socio-spatial matters in the city. If visual methodology, as Rose (2007) argued, is rooted in social science work, and the city, as Bunschoten *et al*. (2001) suggested, is the unceasing flux and dynamic processes, mixing the use of visual methods with other methodologies such as interviews, narratives and drawings, which helps to capture dynamic stories visually and deliver the spatial context properly at multiple scales.

The new urban formations contain hypermobile, fluid and metamorphic traits which cannot be properly captured by means of conventional methodologies based on the macro-micro and nested scalar dichotomy alone. Therefore, the operation of an alternative methodology in multi-scale is an appropriate approach for addressing the dynamics of globalized urban transformation across spatial, subjective and systemic domains. The combination of multiple methods and methodologies provides a space to

reconsider and rework the ways in which architecture and urban scholars undertake empirical research. It does not, however, suggest a set of operational instructions to follow, nor even a position from which to apply methods. It is rather an approach to engage the deeper investigation of new urban conditions including the rich ingredients and the multi-scalar combinatorial processes of which they are composed in the space and networks. In the operational dimension, therefore, these multiple methodological approaches are demonstrated in five selected cases through different methods which may not coincide nor be equally used. This uneven practice and methodological adjustments will, in fact, respond to individual issues when carried through each case study in the project. The practice of the alternative methodology in multi-scale not only serves as an instrument to answer the research questions, but also brings out a set of critical probes to read the complex and fluid socio-spatial networks taking place in the richness of globalized urban contexts.

6.2 A framework for the study of multi-scalar socio-spatial practices

As de Certeau (1984) indicated everyday practices as spatial stories evolving in the city, to extend, the five selected case studies in the Xin-Yi planning district can be understood through the active term 'socio-spatial practices', which signifies their content and urban performance in general. To support in-depth and dynamic investigation of multi-scalar networks amongst the five socio-spatial practices, the methodological approaches are focused on three aspects. The first is the dynamics of participants who engage in or act outside the practical fields. Each person and each group of people works as a nodal point that can be recognized as a kind of fold in the social tissue and the trajectories to

stimulate multiple networks which weave different layers of the socio-spatial structure of the city (Bunschoten *el t.*, 2001:96). Second, it is the transformations of urban fabric including infrastructure, architecture and material performance to accommodate the practices. This dimension is appropriate to reflect the physical scale that is the basic approach to a socio-spatial practice in a city used in architecture, geography and urban studies. Thirdly, socio-spatial networks include communication, particular community and economic transaction. It helps to understand cities as multi-layer stratum that covers a great extent of the urban environment and social groups without any visible physical installations. By navigating from person to person, using the different maps of urban fabric and exploring different social networks appear a city map of relations and soft structures that maintain a community and geo-historical cohesion, necessary in the current urban conditions, and further acting as seeds for the next status of uncertain and explicit development, as Bunschoten claimed (2001:96). Therefore, these three aspects are benefits to investigate the condition and relationship of five socio-spatial practices operating in multiple scales in the context of global urban Taipei. They are the process of municipal rubbish management, the 7-Eleven franchise store, the Mass Rapid Transit System (MRT), the Taipei 101 Building, and a long-standing allotment garden.

Criteria for selecting the Five Socio-Spatial Practices

Bunschoten (2001: 163) recommended cutting a small section out of the city fabric and then investigating the content and processes that catalyse the flux and complexity which it contains. Five particular socio-spatial practices were selected in a special south-west corner of the Xin-Yi planning district in central Taipei. The detail of city transformation and the significance of this district will be elaborated in greater detail in Chapter 7. Each

of these five socio-spatial practices presents unique facets of the dynamics in scale in Taipei city. The features of rubbish management, a 7-Eleven franchise, and the MRT are recognized as part of the city infrastructure. In a city network, practices such as the MRT, the process of rubbish management and a commercial franchise are representative of local-daily networks. Regarding service and materiality, rubbish management and the MRT are regarded as part of the civic service infrastructure, but the franchise and the MRT intrinsically rely on specific levels of material construction to maintain their function. The Taipei 101 building stands as a solid and visible architectural structure to landscape the Xin-Yi planning district. The allotment garden, by comparison, can be seen as a soft and subtle city landscape opposed to the Taipei 101 building. It is also the only informal activity and space studied in this thesis.

These five socio-spatial practices characterize different complex networks not only from the above reading, referring to de Certeau's notion of tactics and strategies (1984); as urban infrastructure, landscape and architectural fabric, or from the ground approach, as tactics- in his words, as daily activities, city mobilization, international production and consumption embodied in the space. The thesis emphasizes that these two perspectives that serve to engage a city are both required in order to appreciate the dynamics of multi-scale in cities. These networks represented by each socio-spatial practice are constituted of multiple scales that are manifested by investigating the participants, the urban fabric and socio-spatial movement. Moreover, these socio-spatial practices not only offer an actively grounded field but also involve different geographical places outside or even far away from that acting location at the same time. The feature of such trans-territories and the complexity of networking in the multiple scales which essentially reside in five socio-spatial practices offer an appropriate condition for examining the alternative methodology inspired by the Baroque in a particular urban context, Taipei city. The dialogic relationships between the five socio-spatial practices reveal dynamics of

interconnection and yet an independence resulting from spatio-temporal variations. The approach of the Baroque alternative has been activated into a practical field through such empirical investigations amongst those practices and at the same time attempts to materialize the abstract networks onto grounded debates. In so doing, the data collected by multi-scalar methods from each socio-spatial practice will be first addressed using the sense of nested scale and then re-analysed in Chapter 9 using the approach of the Baroque alternative.

In terms of geographical specificity, the Taipei 101 building and the allotment garden are two distinctive practices which only exist in this selected corner of the Xin-Yi planning district. The practices of the MRT, the 7-Eleven franchise, and rubbish management, as city-wide systems, are considered within a general condition and are further focused on designated examples located in the domain of the investigated site to express a significant context in this area. The World Trade Centre station on the Xin-Yi line is considered as representative of studying the MRT infrastructure in the thesis. There are two targeted 7-Elevenstores, one situated in the residential area, the Xing-Mao store, and another located on the basement of the Taipei 101 building, the 101 store, exemplifying the socio-spatial practice of the 7-Eleven franchise. Regarding the process of rubbish management, three collection points (*see* Figure 6.2) which serve Jingxin village were taken as observation points to study this socio-spatial practice.
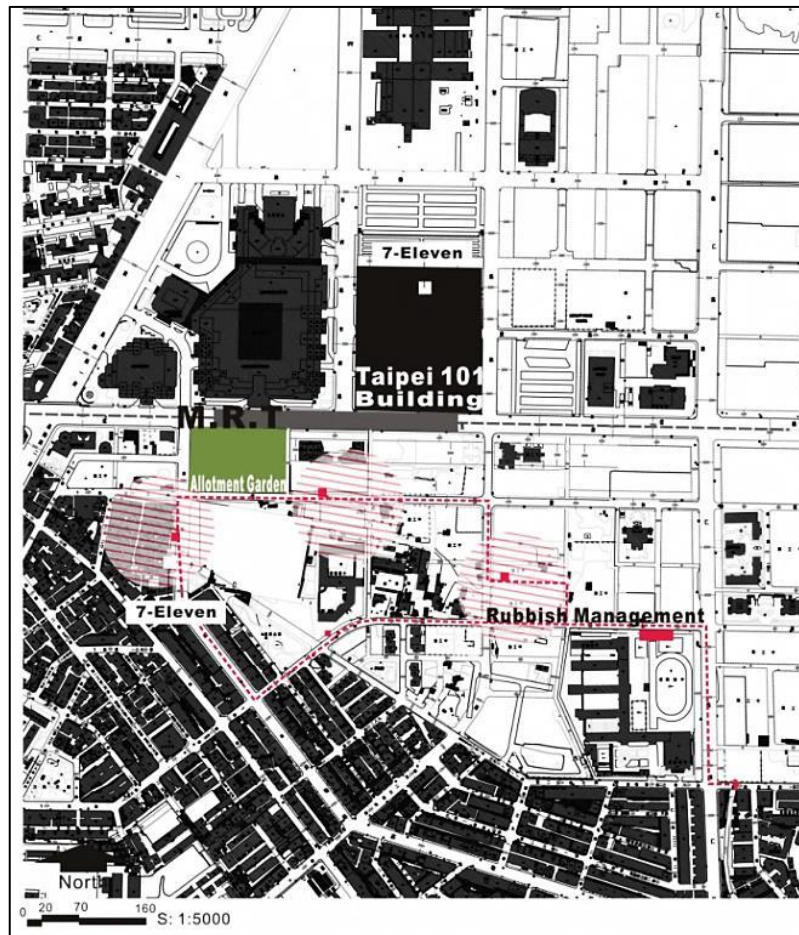
Figure 6.2: The location of five socio-spatial practices (compiled by the author).

The Taipei 101 building and the allotment garden stand firmly, as landscape and architecture, and are clearly visible from both a bird's-eye view and a ground-level approach. Unlike the Taipei 101 building, a giant super structure operating twenty-four hours a day, there are only small numbers of assembled huts standing on the allotment garden. This is a daytime practice with activity mainly occurring in the very early morning and in the afternoon. Although the practices of 7-Eleven franchises require an architectural space in which to operate, the mixture of land use and renting a unit in the Taipei 101 building makes them different enough to be identified as individual objects on a map. The twenty-four-hour service might be slightly adjusted according to the location, such as in the Taipei 101 building. The MRT presents an extremely complex case which

structurally is a mega-structure but because it is predominantly below ground, it will never ever be seen once it starts to operate. Its enormous materialized character will be transferred to a handy map of MRT routes and be minimized to several exits/entrances on the ground and the public station platforms in the system. Therefore, this practice articulates an underground and temporary story about urban infrastructure and its constructors as well as its users. The impermanence and a night-route service are two key features of the process of rubbish management. Because the collecting service only occurs at night-time with a duration of ten minutes at each collection point, it is hardly recognized or read in the daytime. Moreover, there is neither any physical structure indicated at each point nor any presence of people who are involved in this practice shown before the exact timing of each visit. This practice, in fact, deals with a large amount of material sources and gathers various groups of people at a time, but it works temporarily and invisibly behind all urban practices.

The fieldwork for this empirical project was carried out over two sustained periods of research in Taipei, three months in 2009 and two months in 2010, and in further continuous contact with different groups of people carried out by telecommunication from 2009 to 2012. The five practices visually and practically reflect the discontinuities and incongruities of found or indicative site conditions. In order to deeply and effectively study such complex processes in and amongst these five socio-spatial practices at different scales, using more than one method for each practice is required. Using limited methods for this empirical project seems to dissect a fluxional body of networks with only a one-dimensional lens. It is supported by Rose's argument (2007: 202) that multiple methodological approaches are appropriate to this empirical project.

Case studies and Methods

Regarding methods themselves, on the one hand, they are regarded as distinctive scalar tools to approach subjects. On the other hand, the way of practising each method is to use critical approaches of diverse scales appropriate to their technical and operational significance. The practice of methods is considered as a performance of scaling. For instance, the method of interviewing refers to a human scale in which bodily or vocal interaction cannot be avoided. Geo-historical mapping illustrates a bigger scale of the socio-spatial contexts. In terms of photos and videos taken from different angles, such as a bird's-eye view or ground shot, they can reveal unique material via distinctive scalar observation and indeed announce a specific proposition to engage subjects and sites.

Using the same method from particular positions can reveal different scalar matters, and using different methods can express socio-spatial conditions at the same scale. This dialectic perspective helps to depict the complex and fluid relations taking place in the richness of the five socio-spatial practices in a more supple and pluralistic way. Applying multiple methods in this empirical project, therefore, provides a dynamic framework to reflect the specificity of each practice and to activate the Baroque alternative of scale in methodological implication, as a methodology in multi-scale. It in some parts echoes Latham's (2003: 2010) view that an openness and plurality to methodological experimentation gives a certain amount of broadness for studying contemporary socio-spatial situations.

The empirical exploration of the selected five socio-spatial practices focused on three key facets- the dynamics of participants, of urban fabric and of socio-spatial movement-which represent a multi-scalar body networking in and amongst these practices. In

addition, the matter of timescale[102] was also a considerable dimension throughout this empirical project. The multiplicity of spatio-temporal configurations, therefore, should be thoroughly taken in to account continuously. Deleuze also emphasized the significance of time for the new depth which is extended from the Baroque quality of depth constituted by movement and space. To extend this thought, the passing of time is shown at the presence with different embodiments in material or abstract conditions. In the context of globalization, time is the cohesive element to link different activities across territorial boundaries.

Regarding the processes of municipal rubbish management, this socio-spatial practice focuses on different groups of participants who have involved different geosocial networks in and beyond the city but are gathered for a very brief point in time and reproduced the socio-spatial connection and locality in this urban scale. The method of video-recording activity offers an effective technique to capture this temporary practice, especially at night-time. It records a sequence of surrounding images and live conversations which provide more details in that acting field that might not have been gathered by individual subjective observation. The video was not taken from a fixed angle and position but shot in an interactive way because this socio-spatial practice is acted on an open site and different groups of people come and leave from all directions. One single angle would be inadequate to reflect such floating movement.

In addition, rubbish management is a very intimate community practice. In other words, an outsider, as I am, has limits in terms of their ability to conduct formal interviews or carry on deep conversations with the participants, in particular while holding a camera. Holding formal and long-term interviews with any specific foreign housemaids taking

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[102] This approach is mainly drawn from the quality of Baroque in Deleuze's reading referring to time region. It is also inspired by Nigel Thrift's account of time-space (1977,1996,1999b) which is essentially relative to generating complex networks of the interaction with social practices and interlinked subjects.

part at any collection point of this practice was restricted and difficult. The reason for this is that, first, most of them are under strict time control by their employer so they have to return immediately once the task has been fulfilled. Second, they are in a floating condition according to the length of their contract. This group of participants, therefore, was approached by informal conversations and along with long-time observation in the empirical field. Holding deeper interviews with other housemaids who shared similar circumstance was considered an appropriate supplement in this case. There is no appropriate access to interview designated foreign maids in the practice of rubbish management, so alternatively I interviewed other foreign maids who shared the same social background and were responsible for the same duty living in similar neighbourhoods as supplements.

7-Eleven franchise stores are primarily understood through general conditions in terms of their aspects of operating and regional support systems. Zooming in on two specific stores provides more details about how different groups of participants practise and relate to this site geographically and functionally. Due to the franchise's business policy, interviewing the staff working in these two stores was restricted. However, staff in other stores who were in similar circumstances to a large extent offered great knowledge and understanding of this practice as appropriate supplements to this limitation. Photography and long-running observation, therefore, were considered as major tools to collect materials of this practice. The MRT infrastructure is understood through the same approach as the three time phases used in the Taipei 101 building, but extended to a more general account of the whole system. The focus on a specific construction site, the World Trade Centre station which links the Taipei 101 building and the allotment garden through several exits/entrances, helped to explore how participants interact with the surroundings and what kinds of socio-spatial movement diversely evolved and transformed. This construction was carried out from 2005 to 2013, during which time

massive amounts of materials and large numbers of planners and contractors were engaged in the project. The fieldwork, however, took place from 2009 to 2012, which is the time period that needs to be considered in this empirical project.

The case of the Taipei 101 building is articulated following three phases of time: the planning period, the present time and future activities. Therefore participants include planners, existing users, and potential or indirect participants. In aspects of urban fabric and socio-spatial matters, the current project accordingly focused on the roles of and effects on the development of the area, current environmental connection and disconnection, and networking with respect to commercial and cultural attractions. The investigation was conducted from outside the geographical site of case studies, surrounding the site and inside the building. For understandable reasons of security control and privacy, the number of times it was possible to visit particular areas was restricted. It needs to be taken into consideration that there were limitations of access to a security centre and of contact with some services.

The focus of the allotment garden is its environmental reaction and socio-spatial relationship between the site and the participants. Therefore, the information hidden under the ground, practices revealed on the ground, and supply systems inside and outside the field were three-dimensional approaches used to study this practice. It required substantial efforts to interview participants in the field to explore the more subtle networks which are apparently acting but not visually perceived at diverse scales. Because it is an open field with floating actors most of whom are older people and unwilling to have formal interviews, interviews could only be conducted in an informal manner and with those who were more frequently present. Language was another crucial matter which was particularly pertinent in this practice in terms of the ease of approaching people in the field. The major language used by the gardeners was

Taiwanese, so I requested an appropriate assistant to help with interpretation. This communication technique plays an important role in engaging groups of people, and in sharing knowledge as well as information among them.

Drawing from well-established traditions in the fields of anthropo-geography, urban studies and architecture, the methodological techniques carried out during the fieldwork included interviews with participants, empirical observation, collection of archives and literature references, thematic photography, video-taking, graphic diagrams and mapping (*see* Figure 6.3). These methods provided access to the grounded narratives of contemporary Taipei city and the fluctuating socio-material conditions that they animate. Because each socio-spatial practice contains different research limitations on time, access and material resource, I used methods and media which could be adapted when appropriate to generate knowledge and evidence about the questions which I was seeking to address (Pink, 2007: 245). These methods in this empirical project were used in accumulation, which provided an interdependent approach to exploring the five socio-spatial practices that co-present multiple scales and involve spatio-temporal networks in the global urban centre of Taipei. According to the specificity and limitations on time and on access to materials and resource, each socio-spatial practice was studied by multiple methods with different degrees of use of the same methodological techniques. As a consequence, the amount of data collected by the same method was uneven and varied at each of the practices (*see* Figure 6.3)[103].

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[103] Figure 6.3 can be read together with an alternative visual presentation of empirical data accumulation by multiple methods which is included in the appendix, p310.
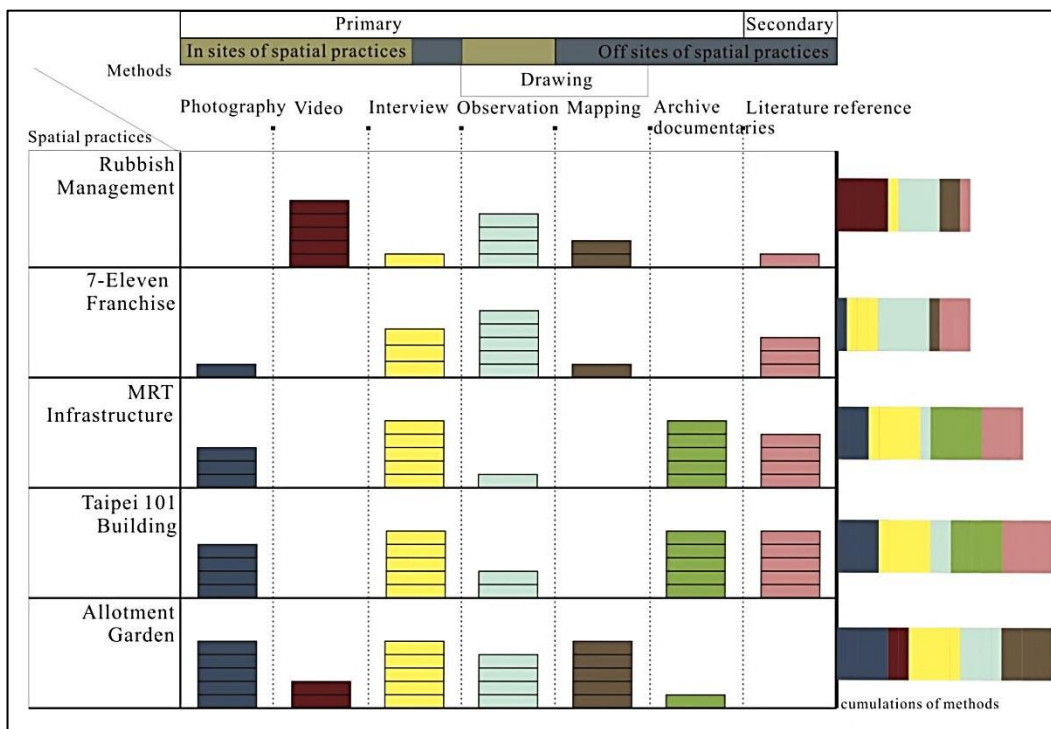
Figure 6.3 Methodology matrix; multiple methods have been carried out at the same time during the field work in this empirical project and co-presented empirical data in accumulation (author's illustration).

Legend:
0-5: degrees of use of a selected method
0: no access or use, 5: most use for collecting data
Photography: first-hand and second-hand photographing; DSLR Cannon 500/ S80 Cannon
Video: participant video-taking by author; S80 Cannon/camera
Interview: formal and informal interview; I-phone 3s/ Digital recorder
Observation: participant or objective experience, sound recording, sketch
Archive and documentaries: report, official paper and documents, maps
Literature resource: relative academic research, and dissertations

Reading vertically, the central part of Figure 6.3 shows that still photography was ineffective in the case of rubbish management, because of the night-time movement and the diverse groups of participants involved in such transient gatherings at the same time. Video, however, worked more effectively for this case but had restricted success in the cases of the MRT and the Taipei 101 building. Interview and empirical observation were successfully conducted in each of these cases but with different degrees of availability of contact and of access. Resource of official archives and documentaries for the 7-Eleven franchise was absent because of commercial restrictions and trade security controls.

There is hardly any literature to be found on the long-standing allotment garden which the city government is unable to deal with or engage in positively. Although the method of mapping provides richness of data especially in the case of the allotment garden, it is inadequate for the practices of the MRT and the Taipei 101 building in terms of gathering effective information for research analysis. In addition, these multiple methods in the project not only operated on the site of the socio-spatial practices as anthropo-geographical research conventionally does, but more importantly were practised outside the geographical site and with subjects who were not present at the time.

This methodology reveals the idea of the Baroque alternative that multi-scalar conditions are a continuing and dynamic folding process. Therefore, the five socio-spatial practices were investigated by a methodology in multi-scale which crossed geographic boundaries and shifted between different time scales in dimensions of participants, urban fabric and socio-spatial movement. The combination of methods is shown on the right-hand side of Figure 6.3, showing that the alternative methodology developed in the concept of the Baroque provided a wider understanding of collecting information and data at and from different scales in the field. For instance, if we only take account of a single method such as video, there was not sufficient data collected from the case of the Taipei 101 building because this method was inadequate for the practice. However, the case of the Taipei 101 building shows a higher degree of data collection in total because of the combination of methods used. The rich and abundant data resulting from these multiple methods are represented as a spatial story along with visual materials in the following chapter.

Conceptual Scalar diagram

Drawing, the representation of visual discovery, provides an investigative, transformative and generative tool for the transference and articulation of ideas (Taylor, 2011: 9-14). It can be performed in various types supporting particular purposes, especially in spatial disciplines. More significantly, it is a form of architectural knowledge used to present ideas and scales. Diagrams, from a more architectural and design perspective, involve a shift between a specific extent of found reality and a level of abstraction. The significant aspect of a diagram is that it has its own materiality in a visual form which creates an alternative understanding of the relationship between the represented source and the proposed idea. As Bunschoten (2001: 35) explained, the power of the diagram derives not only from its openness of alteration from source to a drawn object, but also composes a specific visual organization that indicates a particular set of relationships and configurations.

With a focus on an analytical diagram of the grid, this coordinate diagram has long been used to present the relationships between different qualities and features in urban and architerural analysis, such as Patrick Geddes's urban matrix, the C.I.A.M grid which Le Corbusier, at certain extent, has used as a tool in his work on particular large projects, and Doxiadis' ekistics in the mid-1950s (Bell & Tyrwhitt, 1972) (*see* Figure 6.4). To extend this coordinate diagram, this thesis suggests a conceptual scalar diagram composed of two-dimensional qualities; small-and-big, and local-and-global (*see* Figure 6.5). The purpose of these two-dimensional settings is to reflect the different qualifications of scale in architecture, geography and urban studies. The idea of architectural scale is more related to spatial dimensions such as the size and volume in which the spatial relationship, for instance proportion and comparison, takes place. For scholars of urban studies and particularly of human geography, scale mainly serves as a

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conceptual framework associated with issues of politics, economics and geosocial matters. From this perspective, scale in geography can refer to levels or conditional qualities such as the global, national and the local. The conceptual scalar diagram has therefore been designed using these two pairs of scalar qualities in response to such interdisciplinary approaches to scale which will support the analysis of the five socio-spatial practices in Chapter 8. In addition, the dimension of time is rendered in the different levels of circles in the diagram, which helps to demonstrate the moving quality of the Baroque in the empirical work and the data examination. This conceptual scalar diagram appropriately serves to distill the empirical data in the visual representations collected in the fieldwork. Taipei as the empirical site for the fieldwork with particular reference to the Xin-Yi planning district serving as its global urban centre will be introduced in the following section.

PLACE	Place Work	Place Folk	Achieved Polity	Achieved Synergy	ACHIEVEMENT
Work Place	WORK	Work Folk	Synergized Polity	SYNERGY	Synergized Achievement
Folk Place	Folk Work	FOLK	ETHNOPOLITY (Love)	Politized Synergy (Wisdom)	Politized Achievement
Feeling Sense (Home)	Feeling Experience (Mastery)	FEELING	EMOTION (Mysticism)	Emotioned Ideation (Philosophy)	Emotioned Imagery (Poetry)
Experienced Sense	EXPERIENCE	Experienced Feeling (Folkways)	Ideated Emotion (Doctrine)	IDEATION (Science)	Ideated Imagery (Design)
SENSE	Sensed Experience	Sensed Feeling	Imaged Emotion (Symbol)	Imaged Ideation (Mathematics)	IMAGERY (Imagination)

Directive Facts : The School   Reflective Dreams : The Studio

	10 Environment Physical, Historic and Demographic Data	11 Land Use Rural and Urban, Existing and Projected	12 Building Volume 3-Dimensional City Structure	13 Community Facilities	14 Ethics and Aesthetics	15 Economic and Social Aspects
Living						
Working						
Recreation						
Transportation						
Miscellaneous						

	16 Legislation	17 Finance	18 Stages of Realization	19 Miscellaneous	20 Rational Reaction Client, Public, and Authorities	21 Emotional Reaction Client, Public, and Authorities
Living						
Working						
Recreation						
Transportation						
Miscellaneous						

COMMUNITY SCALE	i	ii	iii	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
EKISTIC UNITS	ANTHROPOS	ROOM	HOUSE	HOUSE GROUP	SMALL NEIGHBORHOOD	NEIGHBORHOOD	SMALL POLIS	POLIS	SMALL METROPOLIS	METROPOLIS	SMALL MEGALOPOLIS	MEGALOPOLIS	SMALL EPEROPOLIS	EPEROPOLIS	ECUMENOPOLIS

EKISTIC ELEMENTS rows: NATURE, ANTHROPOS, SOCIETY, SHELLS, NETWORKS, SYNTHESIS: HUMAN SETTLEMENTS

POPULATION — T (Thousands), M (Millions)

Scale: 1 · 2 · 5 · 40 · 250 · 1.5 T · 10 T · 75 T · 500 T · 4 M · 25 M · 150 M · 1,500 M · 7,500 M · 30,000 M

Ekistic Logarithmic Scale

Figure 6.4 Up-right: Patrick Geddes' diagram with the highlight of coordinates. Up-left: The C.I.A.M grid was used by Le Corbusier's office for checking relevant aspects in particular projects. Down-right: The ekistic grid (Bell & Tyrwhitt 1972:20,22,23).

Global

small   **BIG**

Local
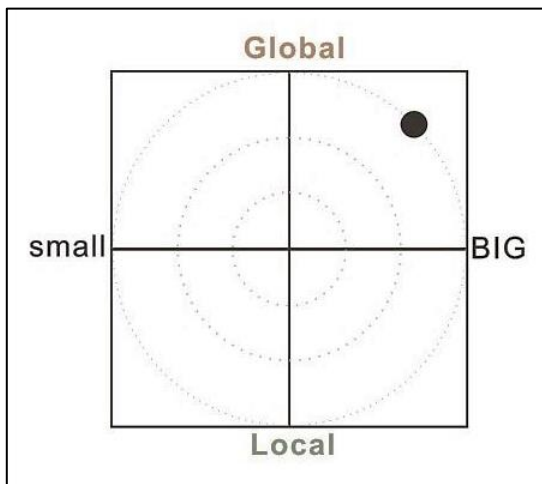
Figure 6.5 The conceptual scalar diagram, the practice of the Taipei 101 building as an example (author's illustration).

CHAPTER 7

THE FORMATION OF CONTEMPORARY GLOBAL URBAN CENTRE IN TAIPEI

Cities, especially large and globalized ones in East Asia, have often been indicators of the distinction of historical fabric and containers of global flows practised in a contested and extreme way. They are remarkable sites of co-presenting and co-operating multiple scalar practices rather than unresisting receivers of city models, socio-spatial systems and technologies set by the western tradition of hierarchical and nested scale. With a special focus on the city of Taipei, Taiwan's largest city, the thesis shows how the hierarchically-nested logic of the global city reading has disguised many overlooked global 'middling' cities (Sassen, 2007a), and the contextual smallness which emerging from their struggle with post-war urban reconstruction and the emergence of globally networked urban logics has not been carefully considered. As described in Chapter 1, that the bigness of a giant building and the smallness of a flat garden co-exist, Taipei works through multiple and co-present scales as a complex scalar field which registers the contextual specificity to the importance of approaching in a multi-scalar way. Therefore, the 'Baroque', as a way of appreciating the multi-scalar nature of such cities, is demonstrated by the alternative methodology that was developed in the previous chapter, Chapter 6, in Taipei with a particular focus on the Xin-Yi planning district as its urban centre designed in the context of globalization. The empirical subjects of the five socio-spatial practices at different scales which have been selected to represent multi-scalar characteristics in the Xin-Yi district will be introduced in the next chapter, Chapter

7.1 Urban Formations: Localizing Taipei City
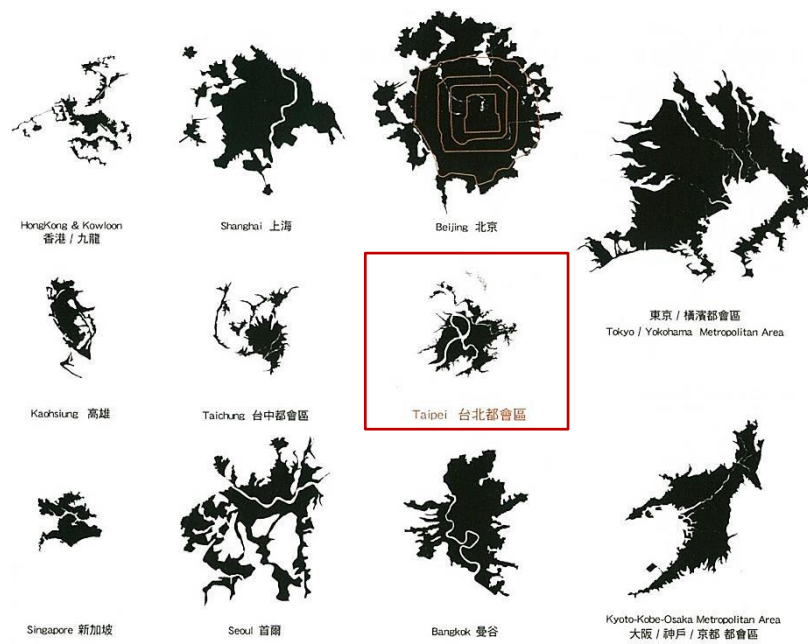
Figure 7.1 A comparative map of city sizes and urban patterns of eleven East-Asian metropolises (Chang & Wang, 2013).

Taiwan is not in Southeast Asia, nor Northeast Asia. It is located in *the middle* (Sassen, 2007a), geographically and culturally in East Asia, and economically in the world. Geographically speaking, it has been a strategic base for both China and Japan – the two superpowers in East Asia – as they resisted European imperialists in military terms (*see* Figure 7.2). Due to its important geo-position in the Pacific Rim and its abundant natural resources, it has been occupied by different hegemonies including the Dutch (1624-1661), the Spanish (1626-1642) and later the British from the late-nineteenth century. Taipei city, the current capital of Taiwan, was established over one hundred years ago.[104] Like many other cities in East Asia, Taipei has been subject to various reconfigurations

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[104] It has been established that the city wall and Taipei Fu (city government) were established in 1882, but the Taipei area had previously been covered with villages for three hundred and fifty years.

in the transfer from colonial to post-colonial socio-spatial contexts.[105] Consequently, this has brought them to a convoluted post-colonial situation which differs from the configuration of other top-ranking cities. Taipei has experienced the tension between its geographical grounding and global de-territorialization in especially intense ways. It has had to respond not only with urgency to the pressures that come from global inter-city competition for investment, but has also been struggling to reconcile the legacies of colonial history particularly in the post-Cold War period and the era of global reconstruction, in all aspects of the city since the end of the nineteenth century.
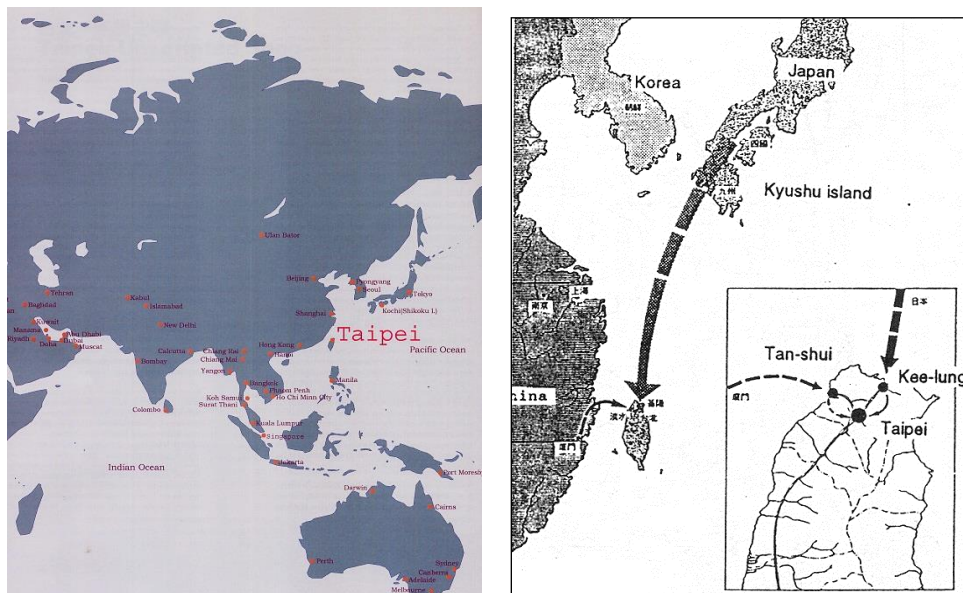
Figure 7.2 Taiwan's geographic relationship between China and Japan. Taipei city is located in the North of Taiwan.

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[105] Ryan Bishop, John Phillips and Wei Wei Yeo, *Postcolonial Urbanism: The Southeast Asia Supplement* (New York; London: Routledge, 2003: 4).

As has happened in many cities in East Asia, such as Hong Kang, Singapore and Seoul[106], Taipei has been developed and reformed through three crucial time periods by different authorities with different specific intentions. More explicitly, there was the period of Japanese colonization, the post-Cold War period supported by US aid, and the period of co-operation between the city and the central government in the era of globalisation. These temporal layers are spatially co-existent in the Taipei metropolis of today, (*see* Figure 7.3). It therefore seems essential to examine this metropolitan transition chronologically in terms of urban development and socio-spatial structure in order to provide a wider framework to support and investigate specific urban socio-spatial practices in greater depth.
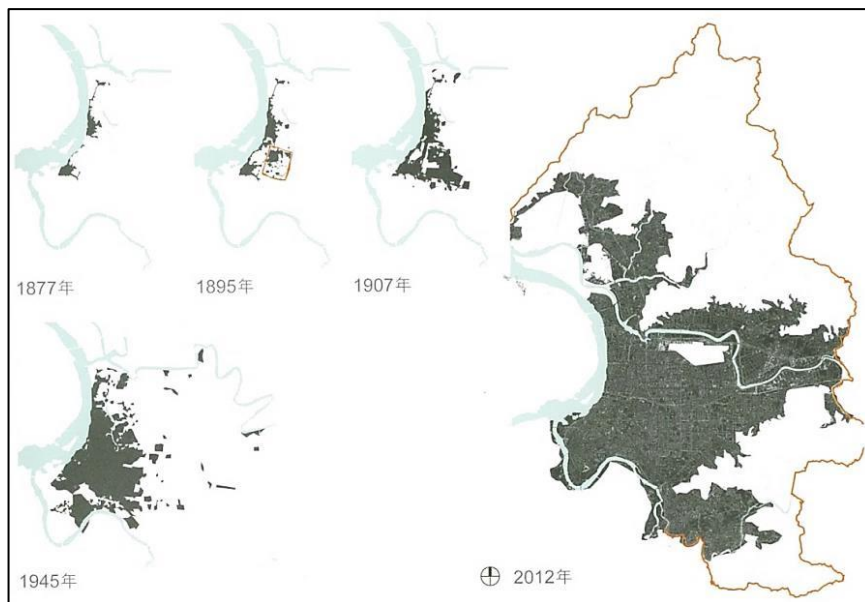
Figure 7.3 The urban development history of Taipei city. This figure shows the rapid sprawling which has occurred since the 1940s (Wang & Chang, 2013).

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[106] The further discussion about the power of post-colonial and globalization impacts on those cities can be found in *Postcolonial Urbanism: Southeast Asian Cities and Global Processes* (Bishop, Phillips, & Yeo, 2003), *Cities of the Global South Reader* (Miraftab & Kudva, 2015), *Assimilating Seoul: Japanese Rule and the Politics of Public Space in Colonial Korea, 1910-1945* (Henry, 2014).

	台北 Taipei	香港	上海	大阪	首爾	新加坡
Land Area 土地面積 (km²)	271.8	1,104.4	6,340.5	222.5	605.3	712.4
Population 人口數 (萬人)	265.09	710.23	1,412.32	266.53	1,057.54	377.17
Population density 人口密度 (人/km²)	9,753 21,000	6,431	2,227	11,981	17,473	5,294
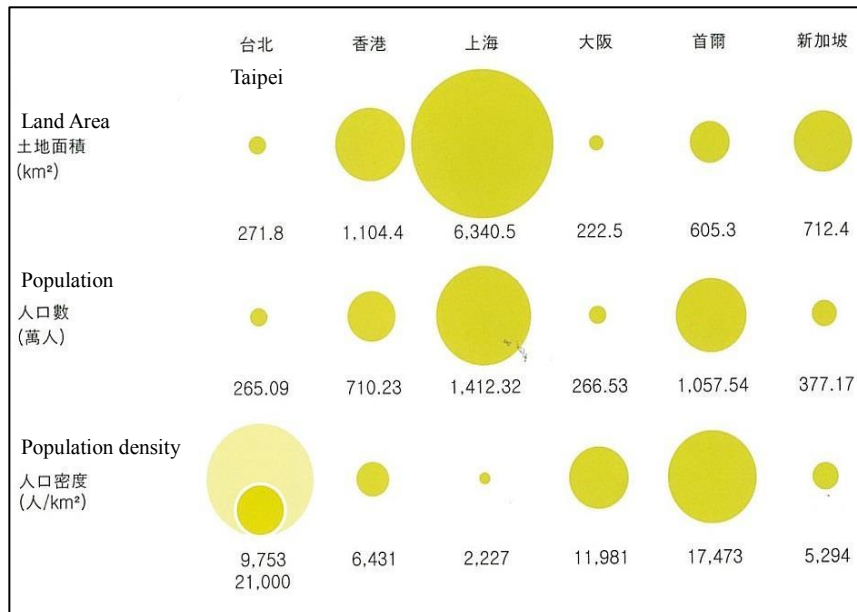
Figure 7.4 *Left*: This figure shows comparative data between Taipei and other East-Asian cities, Hong Kong, Shanghai, Kyoto, Seoul and Singapore. *Right*: a photograph showing the view of the western area of Taipei (Wang & Chang, 2013).

The Japanese colonial legacy is clearly an intrinsic part of Taiwanese heritage and an important factor in Taiwan's modern development. Taiwan was the first Japanese colonial acquisition; its annexation very clearly demonstrated the expanding power and symbolized the ruling ability of the Japanese empire from 1895 to 1945. Japan regarded Taiwan as an extension of the 'mother' country. Taipei and other cities hence have been reformed towards modernization during this colonial period. Most of the public buildings that the Japanese built in Taipei largely express a borrowed western formal vocabulary which suited their colonial intention and masked their authoritarian outlook to demonstrate the absoluteness and supremacy of their colonial power.

In terms of geo-political strategies in Taipei, there were two major techniques to serve the Japanese colonial empire: first politically, to reform the existing Chinese city form and to re-adapt the city to meet their colonial requirements, and second economically, to establish a framework for the future development of the city in terms of bringing profits to the 'mother' country. In order to achieve these goals, the Japanese implemented series of policies from spatial construction to behavioural education in three stages. In the first stage, creating a monumental circulation system was the primary concern. They tried to liberate the urban form by the removal of the city walls, which were subsequently replaced by a three-lane boulevard. After destroying the material obstacles, the grid pattern and radial streets which established the basis of road planning in the future were their next instruments for combining the old villages and extending the size of the city.[107] Because of the mobility achieved by the three-lane boulevard and the new street/block layout, it was possible to execute the land-filling project[108] successfully. Regarding overall city planning, in the earlier stage of the Japanese colonial period, they put great efforts into consolidating 'the central city', the east side of current Taipei. The blueprint of the eastern Taipei area was mostly planned during the mid-colonization period. Figure 7.5 shows a map of the first expanded Taipei city plan which was completely finished in 1932. It was then cautiously executed through some crucial infrastructural elements, such as parks and new street layouts. Taipei then underwent a full reconstruction using the modernistic tools imported by the Japanese sovereignty as a transformed westernized model of the city. The blueprint for the new Taipei planned under the Japanese imagination of a modern city set up a solid base for successive city developments.

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[107] The Japanese used a seven-level network of communication to integrate the inner and outer city areas, and the combination of hygienic facilities, as well as the block systems, also promoted the ideals of the new Taipei , see *Taipei's urban planning in the colonial period* in *Taipei* (W. (黃武達) Huang, 1997).

[108] This project was significant in that it connected the two old villages and became the foundation of the northern regional development of the city, see *The History of spatial transformation of Taipei city and its suburban* (Lin 2011).
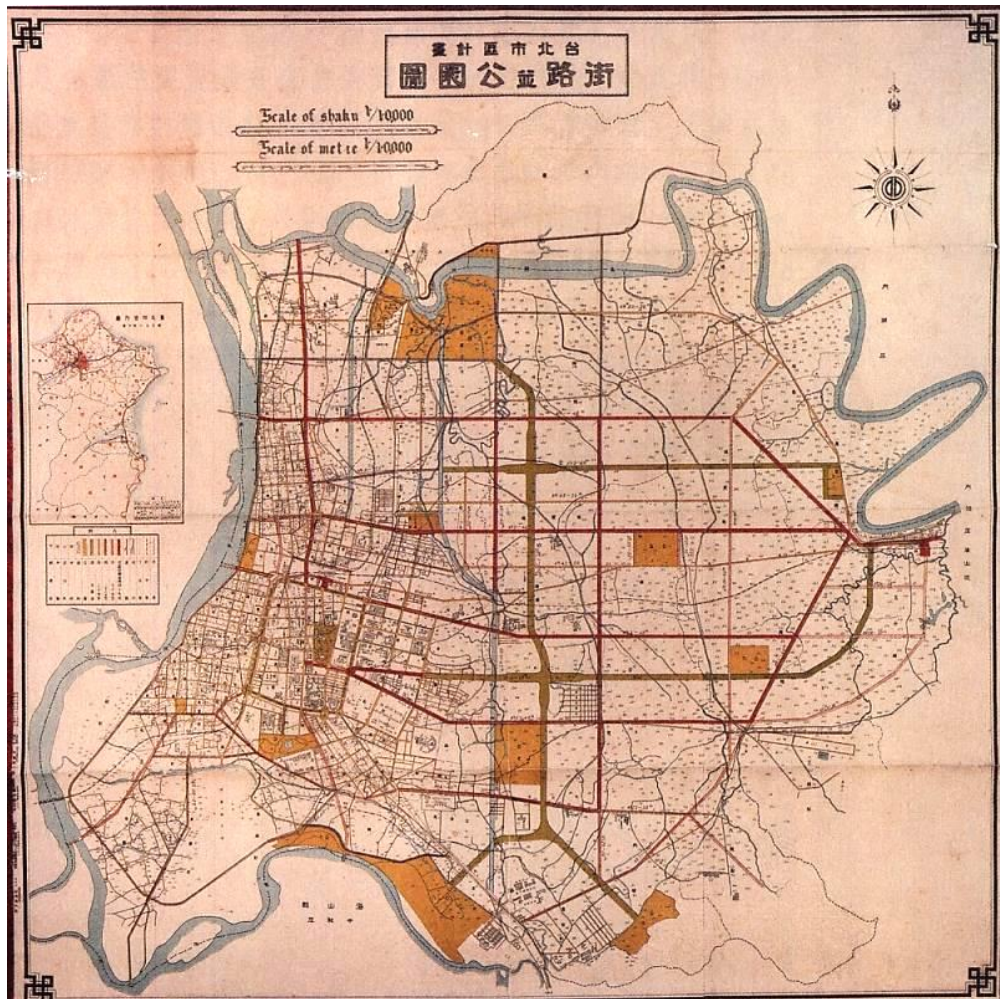
Figure 7.5 The first expanded Taipei city-plan map in 1932 (Huang, 1997).

The Nationalist party (the Kuomintang, or KMT) led by Kai-shek Chiang took over Taiwan after Japan surrendered at the end of the Second World War in 1946[109]. The new ruling body of Taiwan, the ROC government, gradually introduced a new vision for the city. In its early period, due to the destitute conditions of the city,[110] the ROC government attempted to follow the previous Japanese systems and monopolized the take-over of Japanese properties. After the Cultural Revolution in 1966, the government gradually realised that the country could not return to mainland China and, diplomatically, the

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[109] Although the war in Europe ended in 1945, it continued in the east until the Japanese surrender on 3 September 1946.
[110] The Japanese were defeated and took everything that they could carry before retreating from Taiwan, so the island's infrastructure suffered huge damage and the economy was in the great depression (Dai, 1991).

United States began to offer aid for the defence of Taiwan at the same time. Hence the national authority was capable of starting a series of infrastructures and demonstrating its new idea for an ideal capital. The US aid, which was the consequence of being able to use Taipei as a supply base during the Cold War, alleviated the pressure of the shortage of housing and assisted the city government in expanding its road schemes towards the east. During the first period of this phase, the city extension was largely intended for ceremonial and evacuative functions. Once the city's roads had been developed, and economic development and population were about to spread, the eastern side of Taipei became the new virgin ground for building the future city from the 1980s onwards. In contrast with the old city, the new mode of development in the eastern area from the 1980s to the present was strongly driven by market forces. The major attraction was the 'Xin-Yi sub-centre project'[111], initiated by the city government, which lay on the axis leading to the President's Office and the Taipei Parliament (*see* Figure 7.6).

Figure 7.6 The two red spots on the map show the locations of the Hsin-Kuang insurance building in the old city centre on the left, and the 101 Building in the sub-city centre on the right (Wang & Chang, 2013; Lo 1998)

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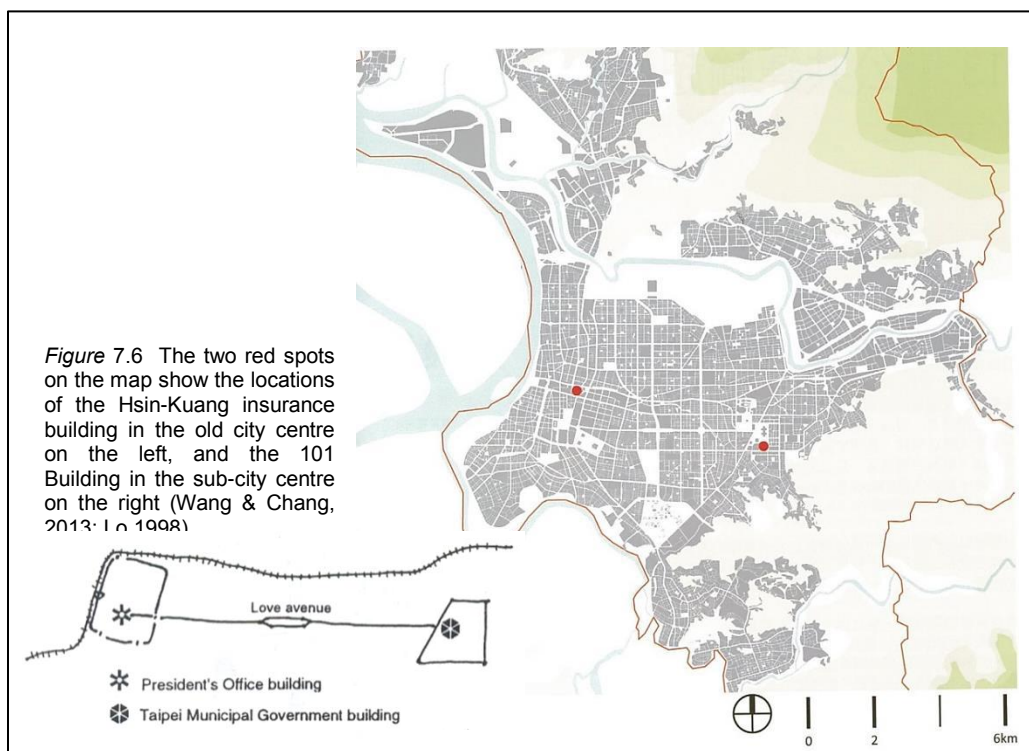
[111] In 1976, Mayor Lin proposed a 'Xin-Yi sub-centre project' which would be located on a 42.56-hectare site in eastern Taipei city. In original, this project was intended to develop a sub-city centre in Taipei. However, the result of this successful development brings about the formation of a second city centre in competition with the old city centre in the west side.

The new commercial typology and the logic of real-estate operations created a new life for the citizens of Taipei. Super-block development contrasted with the old urban pattern in the western areas of the city and also with the earlier established blocks in this western region. In order to accelerate the development, the World Trade Centre complex, with its associated hotel, office building, conference hall and commercial centre, was built by the national government as an indication of its strong global intention between 1986 and 1988. Taipei 101, [112] the major landmark of Taipei, even of Taiwan, was another spectacular outcome of this global intention and practice (*see* Figure 7.7). This was the tallest building in the world from 2004 until 2010 and stands in a special zoned district giving rise to claims that Taipei has become a twin-cored city. This new centre, known as the Xin-Yi planning district, expresses the spatial coexistence of multiple layers that combine Taipei's convoluting past and its global dream of the future. On the one hand, this new structure exhibits some degree of continuity with the Japanese plan of 1932. In addition, the twin-centre project not only stimulated the growth of the eastern area but also revitalized the old city centre in the western site of the city by increasing the available commercial and residential floor areas[113]. On the other hand, this was the contextual framework for the city and the central government of Taiwan to develop their urban strategies in the globally competitive world after the 1980s. The global era of Taipei had begun.

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[112] It is 508 metres high and was designed by the architect TY Lee. New types of the commercial industry which are structurally different from those in the west city centre have been developed in this area.
[113] The real-estate development in the west city centre has been limited for a period of time due to the regulatory restrictions on low floor area and land division in small piece.

Figure 7.7 The skyline from the eastern side of Taipei looking towards the west side. This aerial photograph shows the Xin-Yi planning district in the eastern area of the city (Wang & Chang, 2013).

In the old city centre, the ROC government implemented a continuous series of reforming policies. Significantly, the Hsin-Kuang insurance building[114] was the second-highest skyscraper on the island, lying in front of the Taipei railway station and rising to a height of fifty storeys. This distinctive landmark served as a role to regenerate the old city centre and meanwhile presented competition with the new city centre in the east. The layered Taipei city which has resulted from all these phases reveals a startling variety of multi-scalar practices which underwrite structures of colonialism, nationalism and global capitalism. Taipei is a compelling urban example for exploring post-metropolitan urbanism. Its rapid urbanization over the last decades of the twentieth century requires more attention and critical reflection.

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[114] The Hsin-Kuang insurance building was built earlier than Taipei 101, but the land prices surrounding it were still the highest in Taiwan.

In geo-political and socio-economic terms, Taipei city offers a specific context for urban studies and architectural practice. First, being situated in the 'middle' position of the global map, Taipei faces extreme pressure to respond to regional competition from Singapore and Hong Kong, and at the same time to participate in global investment circuits. Second, it accommodates the tension between the occidental mode and Chinese-based structures – affecting everything from everyday life to city development. The conflict between the power triangle of China, Japan and the US in socio-spatial and geo-political dimensions distinguishes Taipei from other metropolises in East Asia. The westernized model was imported into Taiwan as 'modernisation' by the Japanese and subsequently by the US as second-hand and indirect urban applications, which has led to the dynamic urbanism in Taipei today.

Taipei is now tightly embedded within a broad range of global networks, including worldwide economic transactions, immigration flows, and transnational infrastructural systems. These have major implications for the everyday lives of the inhabitants. Therefore, Taipei has functioned as a powerful, local-global 'sorting machine' which mixture local practices, international trade, and regional immigration flows. In short, it is regarded as a specific geography of globalization maintaining multiplicity and dynamics of social-spatial practices on a particular ground in Xin-Yi planning district.

7.2 The Development of the Xin-Yi Planning District in Central Taipei

After over thirty years of development, the Xin-Yi district has undergone a metamorphosis from a rice field to a high-rise residential zone which also contains

flourishing shopping centres and office blocks. This second city centre in twenty-first-century Taipei has evolved as a result of the long-term and multiple intents of different authorities, based on the Japanese plan of 1932, the US aid for extending the street network to the east after World War II, and a city government's dream of New York's Manhattan skyline. It fully represents a process of contemporary urban transformation from a colonial capital to a globalized metropolis. The Xin-Yi planning district in central Taipei (*see* Figure 7.8) is a significant developmental project which has emerged from globalized competition manipulated by city and national governments, and meanwhile worked with its local practices at the urban scale.
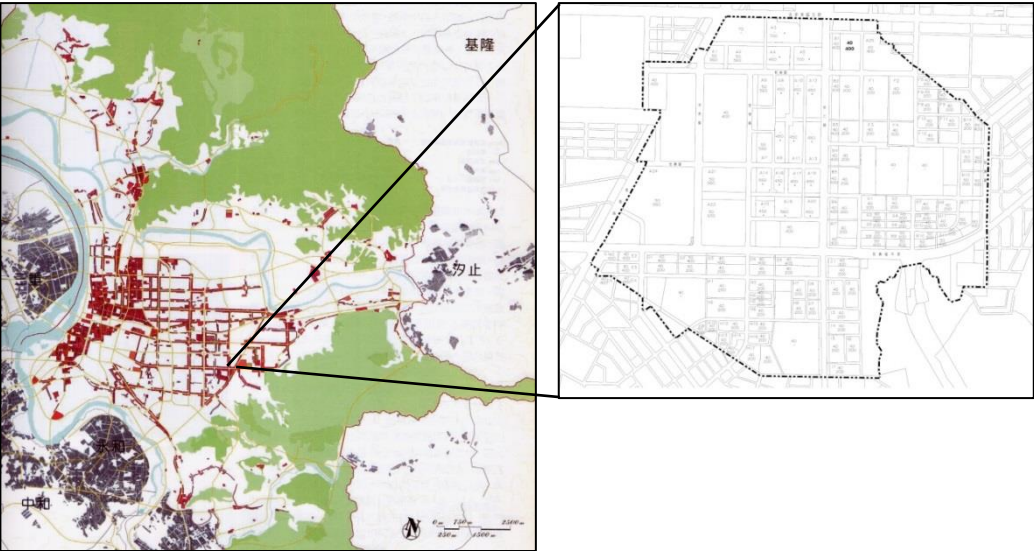
Figure.7.8: The location of the Xin-Yi planning district in Taipei city. The right-hand map shows the boundary of the Xin-Yi planning district in the third entire urban review (source: Dept. of Urban Planning, Taipei city government, 2013).

1984

1997-8

2001-2
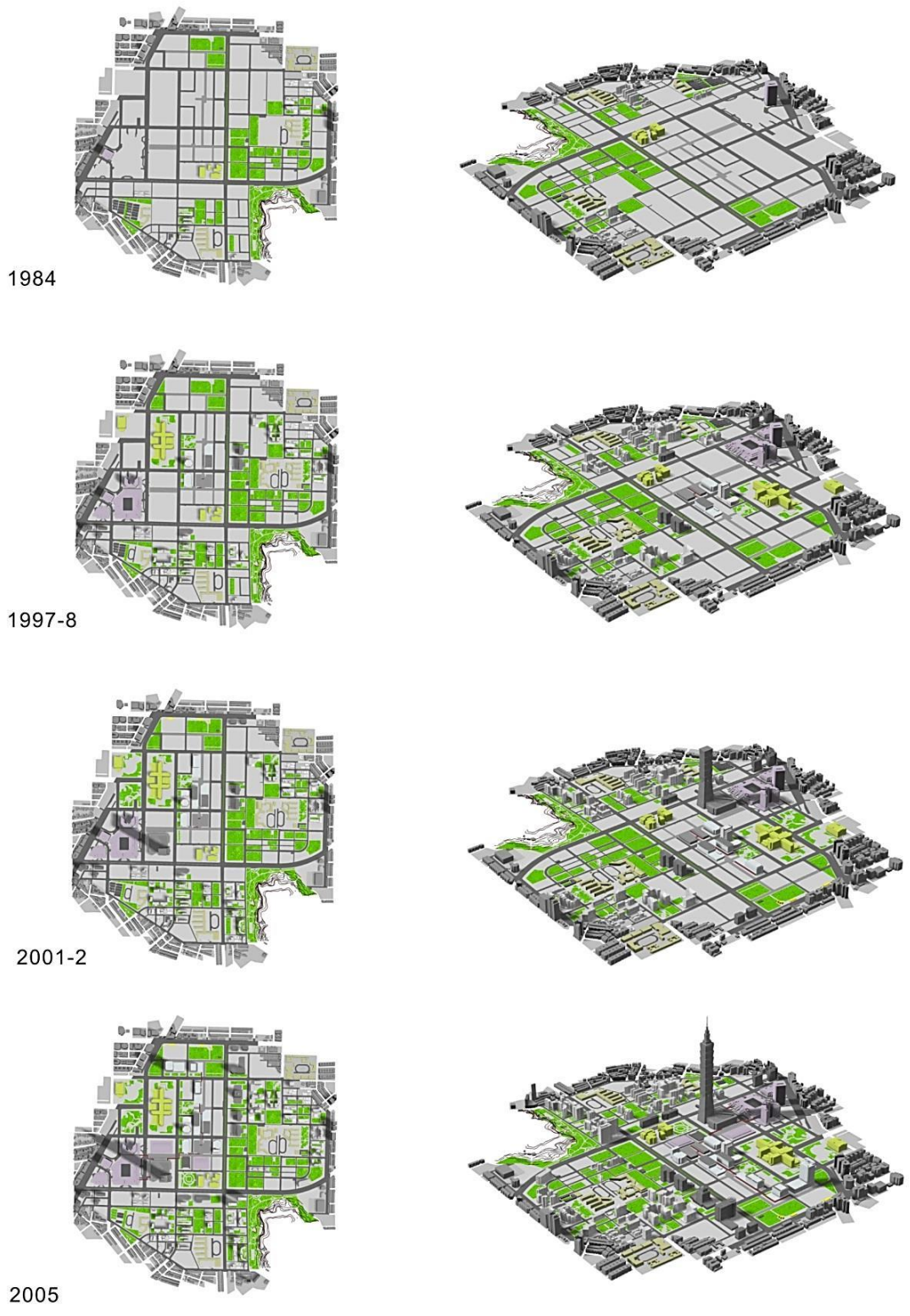
2005

Figure.7.9: The chronographical development of the Xin-Yi planning district from 1984 to 2005. Since the mid-1990s, some public building and institutes carried on the first stage of development. The large extent of development in all aspects started at the beginning of the 2000s. A series of commercial and residential developments and new infrastructures were implemented following the completion of the Taipei 101 building in 2004 (source: Huang, 2011).

A Palimpsest of Urban Formation in the Xin-Yi Planning District

The blueprint of the eastern Taipei area, later known as the Xin-Yi planning district, was early planned during the mid-colonization period (*see* Figure 7.5). During the post-World War II period of urban reconstruction, US economic and technological aid improved the city infrastructure, and in particular in the eastern area of Taipei. In addition to public facilities, military structures such as the Four-0-Four Arsenal (*see* Figure 7.10) were particular projects supervised by the sponsor of the U.S.A government.[115] This was the contextual framework for the city and central government of Taiwan to develop their urban strategies in the globally competitive world after the 1980s. The Xin-Yi planning district was officially announced at that time. It was developed with the purpose of becoming a regional financial centre with specific commercial zones, and of creating a second centre in the city with high-quality residential zones and facilities. Under this pattern, with facilities catering for global events, the monumental building for the city government's service and local communities were acting and co-existing in this specific area.[116]

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[115] Taiwan is situated in a crucial geographical position for military strategy in the Asia-Pacific region. The security and development of Taiwan became a primary political and military concern for the US. As a result, the 'American idea' was exported to Taiwan through physical, economic and cultural aid between 1950 and 1965, but its influence has never ended.
[116] The area of the Xin-Yi planning district is 1.53 km² and of Taipei city is 271.7 km².
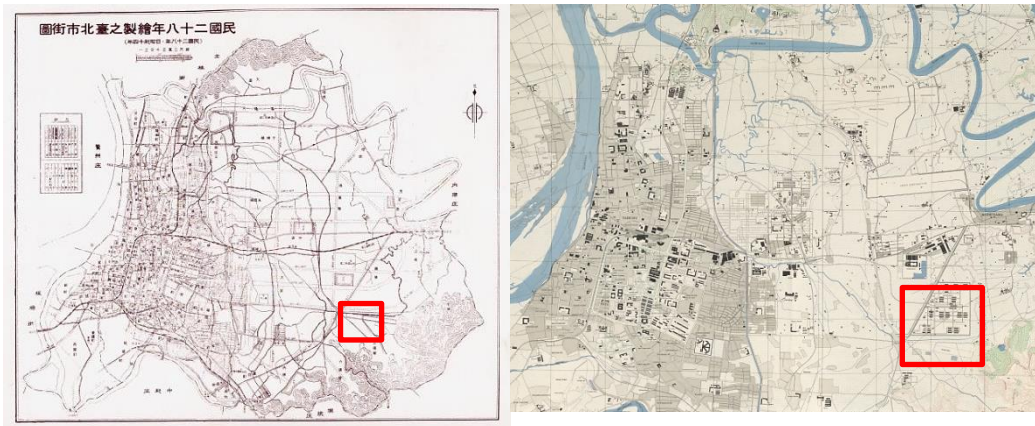
Figure.7.10: *Left*: The map of the entire city plan designed by the Japanese colonial government in 1938. The streets and infrastructure system toward the east can be seen in the blueprint. The location of today's Xin-Yi planning district is still in empty (Huang, 2009). *Right*: US army air defence map in 1944-45. The frame of the Xin-Yi district can clearly be seen but serves as the Four-0-Four military base. The city extends to the east with of the development of new boulevards, the airport and various infrastructures (source: http://www.lib.utexas.edu/maps).

In the early 1970s, the Taiwanese government commissioned an American firm to study the feasibility of developing a second city centre on military land near the city to compensate for the inadequacy of the old business centre. However, this project was suspended because the site was used for the construction of a memorial park for the former President Chiang, kai-shek (1887-1975). In order to solve the urgent problems of the overload of land use in the old city area in the west, the idea of a second city centre emerged. This development order was carried out by the Taipei City Public Works Department[117] under instructions from the Executive Yuan (行政院) (Jou, 2005). The first proposal, made by the Secretary General of Executive Yuan, was called the 'Xin-Yi New Community'. A high-income residential community was to be established there (Jou, 2005: 123). However, it was not the original goal to relieve the pressure of land-use density for the major public. During three meetings with the mayor, Yong-Kan Lin, in 1977, several local planners and scholars recommended that the plan should include a

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[117] There was no specialized division of urban planning in the City Government until 1980, so city planning issues were categorized under the authority of public works (Jou 2005:138). The Executive Yuan is the executive branch of the central government of the Republic of China.

new centre with multiple functions rather than just a new residential community. Although this new proposal carried more commercial and flexible concerns about land use, the Xin-Yi special plan was still principally devoted to providing residential and local commercial development. The next mayor, Teng-Hui Lee, accepted a new version of the Xin-Yi plan proposed by a well-known Chinese architect in Japan, Kaku Morin. In his version, the Xin-Yi district incorporated administrative, cultural and economic zones. The boundary of the district was also enlarged (Tseng, 1994). Furthermore, in 1978, the Urban Planning Studio in Taiwan University proposed a further modified version of this development which was focused on a commercial, residential and cultural mixture. This new plan, entitled the Xin-Yi Sub-centre Project,[118] was officially announced on 30 August 1979,[119] but the development was not carried out until 1987.

According to Sue-Ching Jou (2005: 121), the developmental process of the Xin-Yi planning district can be read in two phases. In the first phase, the main target was the re-division of land use, including the area's planning processes and its land-holding transition. The second phase was related to the landscape and linked activities and also the realization of the Xin-Yi planning district. There were two main strategies for ensuring success in this national development: land consolidation and staged development. During the 1990s, most of the large lots of land were transferred from two sources: the military base and the industrial manufacturing areas on the one hand, and agricultural and reserved fields on the other. As a result, only large developers could participate, according to Jou (2005: 124). This new urban development controlled the land use, the building density and the layout of open space. In terms of developmental regulations, the idea of urban design control was introduced into Taipei's urban planning

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[118] The project was officially announced in 1981by the Ministry of Economic Affairs, the Executive Yuan, Taiwan.
[119] The master plan was published on 1 May 1980, followed by a detailed plan on 17 August 1981 (Jou 1997:124).

system to reinforce the control of the landscape in this district[120] (Jou, 1997; Lin, 1995). The Xin-Yi second-centre area, assigned as the Xin-Yi planning district, was therefore subjected to an urban design review which was organized by relevant officials, experts and scholars. All public and private construction was scrutinized by the urban design committee before the approval of building permits.

After the successful programme for the World Trade Centre in eastern Taipei, the central government made an advanced proposal based on the idea that modern and large-scale shopping malls were essential to the formation of the contemporary metropolis. They were seen as bringing in new management technology and new service industries to Taiwan (Tseng 1994). This new urban and industrial strategy was the response to the worldwide economic restructuring. In order to promote such developments, the central government decided that extensive land had to be provided, and that the urban infrastructure, especially the subway connection, had to be improved, and that urban land zoning probably had to be changed. On one side, the central government canvassed private enterprises to invest in this district, and on the other side, the city government was put in charge of organizing and executing the project and its pre-conditions (Lin, 1995). Although the central government and the city government were both involved in this project, the entire development of the Xin-Yi planning district did not proceed as expected until the second half of the 1990s when, for the first time, Taipei's mayoral election brought up the issue of revitalizing this project which had been suspended for such a long time (*see* Figure 7.11). The development of the Xin-Yi planning district was considered to be the most visible and powerful urban policy in the mayor's campaign and during Cheng's period on office, the Xin-Yi district's master plan and detailed plan were completely reviewed.

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[120] The Xin-Yi District was the first area in which urban design control was applied in Taipei and Taiwan, so it became a model for following urban developmental projects in most areas of Taiwan.

Figure.7.11: A bird's-eye view of the Xin-Yi planning district in 2001 (Ho 2004, shot by Huang 2002).

The Xin-Yi planning district served two major intentions of the city government. The Taipei City Hall was regarded politically as an architectural instrument to reinforce the Love Avenue axis connecting with the Presidential office in the old city (*see* Figure 7.6). In terms of economic formation, it provided a new commercial typology and the logic of real-estate operations created a new experience for Taipei's citizens which was in contrast with the local markets and the dense commercial area in the western part of the city. It was under these conditions that Mayor Chen, in the 1997 council report, promoted the slogan 'Creating the Manhattan of Taipei'[121] which became a mission statement for the city government. In order to create this image of Manhattan, the "skyline of New York" (Koolhaas, 1994) was transplanted in a way which answered that diversely exaggerated, high-rise buildings mushroomed in this area. As in the case of the Empire State Building, an architectural symbol of Manhattan, monumental architecture was now required to represent the city's mission and its image-making for this global-urban district. Architecture, here, as a material aggregation, indicated the connotation of otherness, and the landscape reproduced a sense of place in disguise. For instance, the World Trade Centre, the high-rise commercial and office buildings, the Four Seasons

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[121] This idea came from mayor Chang Shui-Bian during the 1990s, and he was president of Taiwan from 2000 to 2008. The project is still expanding to more areas, including the northeast economic special zones, and combines them with the existing urban structure of the eastern region.

hotels, the 'New York' shopping mall, and mega-blocks as well as boulevards were designed under the notion of assembling western city icons in this planning district serving for the competition and re-production of globalization on the ground. Accordingly, the Xin-Yi planning district became an important physical representation of the 'Manhattan of Taipei project'. Here there was a creative geography where the dream of the new city area was concretized into tangible form and at the same time represented the invisible motivation. Consequently, the twin-core city was represented by two skyscrapers each with its own planning district, the Hsin Kong Building in the western district, and the Taipei 101 Building in the eastern district (*see* Figure 7.6).

The Xin-Yi planning district has richly embodied the globalization process into the urban fabric through a variety of urban planning strategies, such as the 'Manhattan project' (Chen, 1990) and a blueprint of an Asia-Pacific regional operations centre. The vision of becoming a global city and connecting with other global cities was entirely structured and manipulated by the government's ambition to gain access to global competition, ranging from economic and political to cultural identity, which makes the Xin-Yi planning district distinct from other areas in the city.

Mapping Three Distinctive Contexts in the South-west Corner of the Xin-Yi Planning District

The complexity of this particular city area can be articulated by zooming in to the south-west corner of the Xin-Yi planning district. The Xin-Yi second-centre area was mainly used to serve the Joint Services Forces (currently the Joint Logistic Command) under the Ministry of National Defence (*see* Figure 7.13) till 1976. The site was originally

occupied by the Four-0-Four Arsenal Factory including a military vehicle division and its maintenance facilities. To meet residential demands, the Four-0-Four military village and other related facilities were established around this area, especially on the south-west side of the district. The factory itself became inefficient after World War II and was planned to be removed from the city (Jou, 2005). The whole huge area of free land which was created became an ideal site to launch such a large-scale development in Taipei. The communities which used to work at the military factory were relocated to three areas during the late 1990s: there are two blocks of council houses next to the original location of the village where the original residents have priority rental rights (*see* Figure 7.14). As a result of this strategy, the strong communities based on the old military village remain in this neighbourhood.
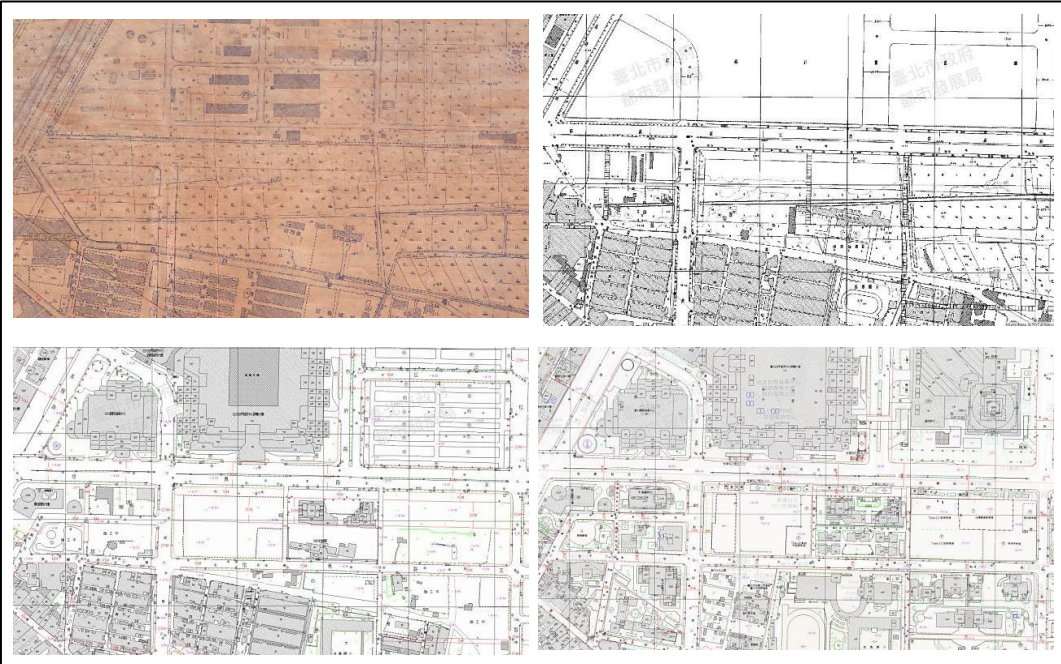
Figure 7.12 The historical map of the south-west corner of the Xin-Yi planning district. From the left, maps made in 1958, 1980, 1991 and 2013 (source: Dept. Of Urban Planning, Taipei city government).
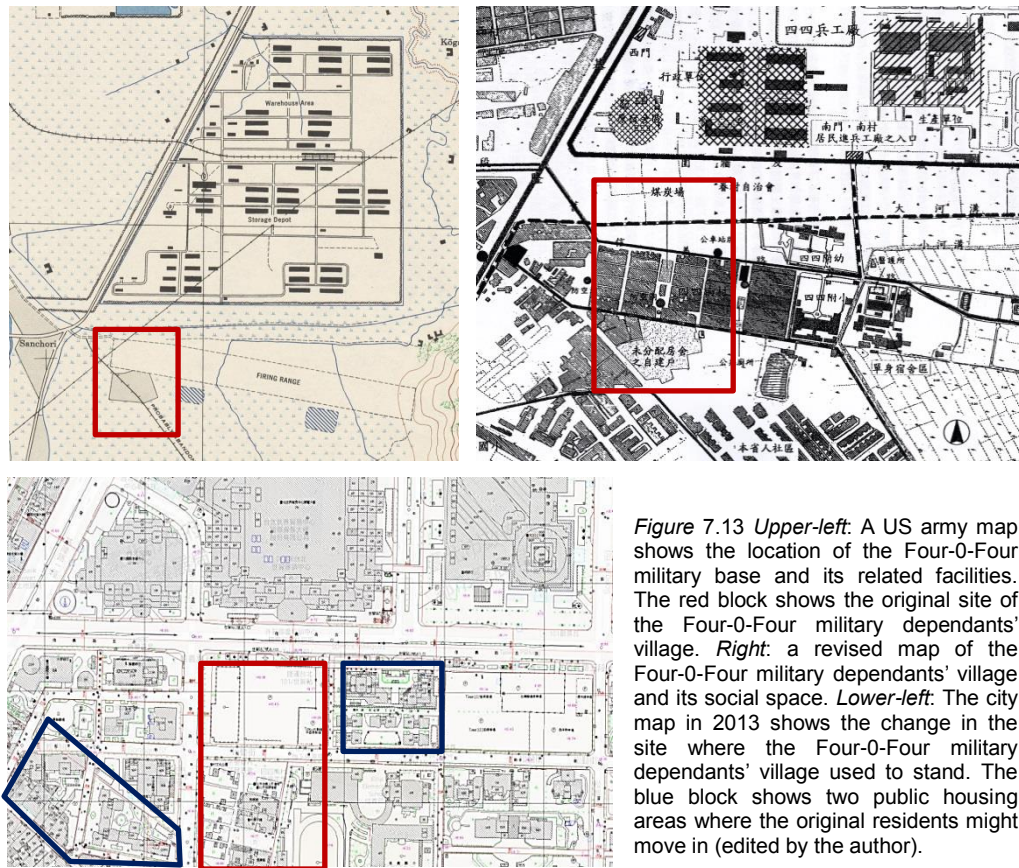
Figure 7.13 *Upper-left*: A US army map shows the location of the Four-0-Four military base and its related facilities. The red block shows the original site of the Four-0-Four military dependants' village. *Right*: a revised map of the Four-0-Four military dependants' village and its social space. *Lower-left*: The city map in 2013 shows the change in the site where the Four-0-Four military dependants' village used to stand. The blue block shows two public housing areas where the original residents might move in (edited by the author).

There is another administrative boundary involved in this multi-layer context. This is the neighbourhood division [122] which is associated with all municipal services and infrastructural configurations. In Figure 7.14, the area marked with the blue line shows this neighbourhood division, called Jin-Xin village, which ideally should contain similar social and urban conditions. However, the boundary of the Xin-Yi planning district, marked with the red line in Figure 7.14, makes it into a segment. This division is geographically invisible, but the land development in terms of house prices and building types, and the social context regarding the traditional middle class and new bourgeoisie who arose from the emergence of international electronic industries and financial sectors

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[122] This is similar to a postcode area in the UK, but slightly smaller. Taipei city is divided into twelve districts and the Xin-Yi district is constituted by forty-one villages.

in Taiwan since the late 1990s, are differentiated. Regarding social and cultural activities, this special corner lies in between global commercial events such as huge exhibitions and international tourism which mainly occur in the area north of Xin-Yi Road, and the small scale of local everyday life sprawling at the southern side. As a result of these overlapping multiple layers, different intensities of land use, diverse social communities and different levels of urban infrastructural service interactively operate in this particular area. This corner thus provides a type of frame, as Roul (2001: 163) pointed out, for cutting a small section out of city fabric and then investigating its contents and the processes that act as catalysts for the flux and the complexity which has evolved there. The five specific case studies which will be investigated in greater detail later were selected from this corner of the Xin-Yi planning district as being representative of the complex and multi-scalar conditions of metropolitan Taipei.

Legend:
- Area of US military facilities 1945
- 404 South Village (No.44 arsenal auxiliary) 1960
- Boundary of Xin-Yi Planing District
- Boundary of Jingxin Village

North

0 20 70 160   S: 1:5000

Layers of urban fabric
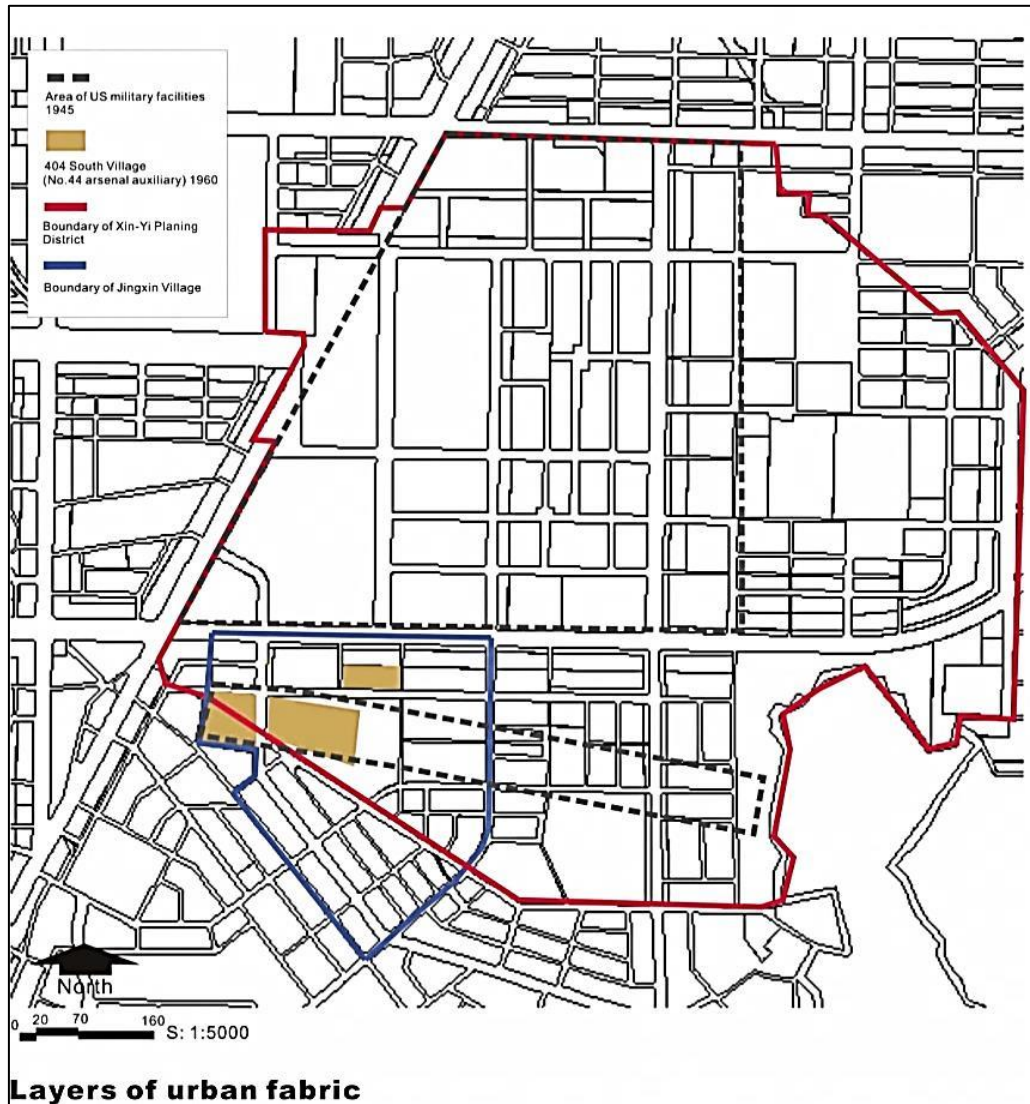
Figure 7.14 Three-layer contexts in the south-west corner of the Xin-Yi planning district (edited by the author).

7.3 Locating the Selected Socio-spatial Practices in the Xin-Yi Panning District

The rich geo-historical context in the south-west corner of the Xin-Yi planning district preconditioned a multi-scalar urbanism and has continued to change in response to the current global-urban forces. It serves an appropriate field to demonstrate the Baroque alternative of scale to comprehend globalized cities by an alternative methodological approach in multi-scale. Five selected socio-spatial practices located in this corner will be (re)examined in great detail in the following chapters. They are the processes of municipal rubbish management, 7-Eleven franchise stores, the Mass Rapid Transit (MRT) system, the Taipei 101 building and a long-standing allotment garden.

In terms of geographical specificity, the Taipei 101 building and the allotment garden are two distinctive practices which exist only in this selected corner of the Xin-Yi planning district. The World Trade Centre station[123] on the Xin-Yi MRT line represents a focus for studying the MRT infrastructure in this empirical project. There are four exits/entrances to this station and two of them will connect the allotment garden and the basement of the Taipei 101 building once the station is open and ready for use. This circumstance explains the significance of examining these practices together in this empirical project. There are two targeted stores in the study of practices involving the 7-Eleven franchise; one is situated in the residential area, the Xing-Mao store, and the other is located in the basement of the Taipei 101 building, the 101 store. These two points provide contextual situations to reveal the characters of this socio-spatial practice. Regarding the process of rubbish management, three collection points (*see* Figure 8.6) serving Jing-Xin village were selected as observation points for studying this socio-spatial practice. Their

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[123] The station (R6) was renamed the Taipei 101/World Trade Centre station on 22 July 2011 (source: Department of Rapid Transit Systems, TCG)

physical size and relative locations can be seen in Figure 7.15.

The location map (*see* Figure 7.15), in fact, results from folding different layers of time and spatial dimension into one visual performance. This map shows information and data which no visual images, neither bird's-eye-view photographs nor street videos, can present at the same time. It is a multi-scalar instruction on flatness, rather than a geographical map. It is composed of topology and time and even more, an architectural perspective, with spatial catchment and infrastructural networks. This multi-scalar instruction map describes the rhythm of a city and displays the unique content of each socio-spatial practice in terms of time, material performance and ways of practising.
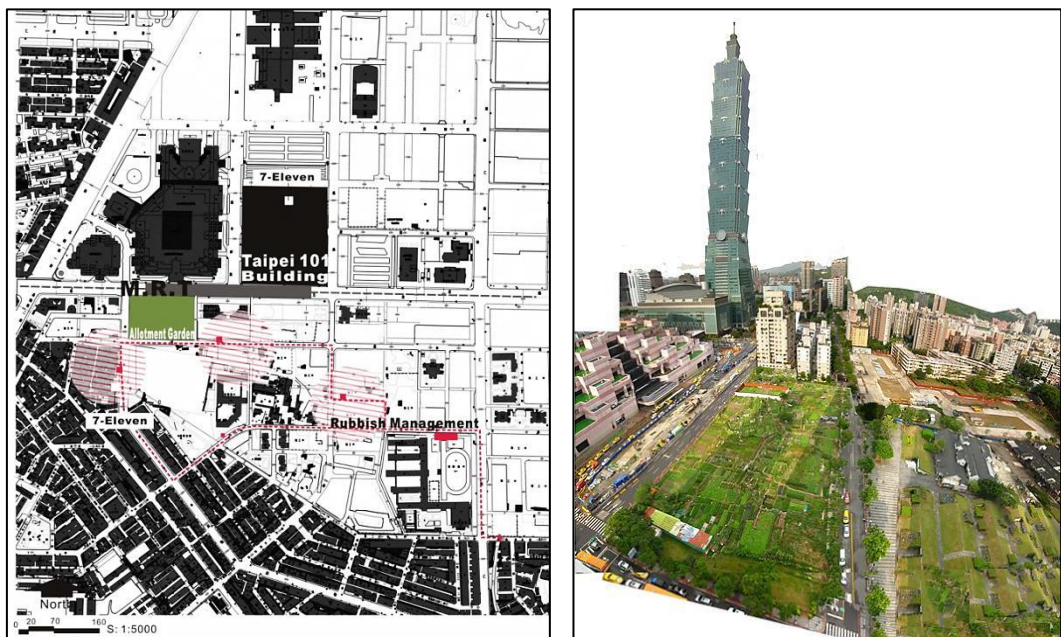
Figure 7.15: *Left*: The locations of the five socio-spatial practices in the south-west corner (edited by the author; the base map is from the Taipei city electronic map data source 2004, Taipei city government). *Rigt:* A bird's-eye- view of the entire empirical site in which the two 7-Eleven franchises and the process of rubbish management are carried out (author's illustration).

The conditions of Taipei register the contextual specificity to the importance of thinking in a multi-scalar way. Therefore, the Baroque alternative for conceptualising scale is an appropriate response to the complex and multi-scalar conditions that are extremely manifested in the large, globalized cities such as Taipei in East Asia. In order to demonstrate the Baroque as an operational methodology, the five specific socio-spatial practices selected for this study have been introduced in this chapter. They are read as five spatial stories in visual and in written terms to serve as a prelude to understanding the urban texture and socio-spatial context of those practices which will be examined in depth in the subsequent chapters (Chapters 8 and 9).

8.1 The Processes of Municipal Rubbish Management and Foreign Housemaids

Time: 10 minutes at night
Actors: 1A1, 1A2, 1A3, 1A4, 1A5 cleaning staff
1 A6, 1A9, 1A10 Mainland China background
1A7, 1A8,1A11, 1A12, 1A13 foreign maids
Urban fabric: P1, P2,P3
Network: Mainland China, Philippine, Indonesia
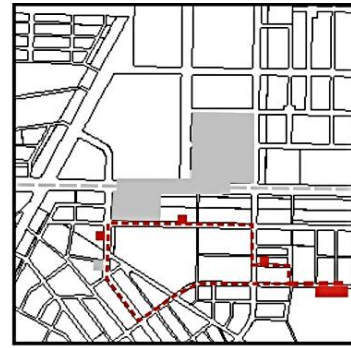
Location
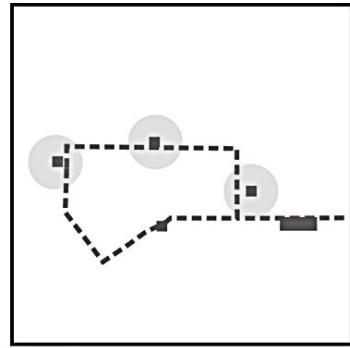
Topology
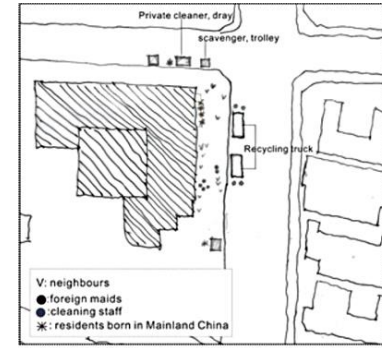
Mapping

Engagement

8.2 7-Eleven Franchise

Time: 24 hours
Actors: 2A1, 2A2 foreign maids
2A3, 2A4,2A5 7-11managers, staffs
2A6, 2A7 neighbours
2A8 cabbies
Urban fabric:F1, F2

Network: locals, foreign maids, cabbies, western workers
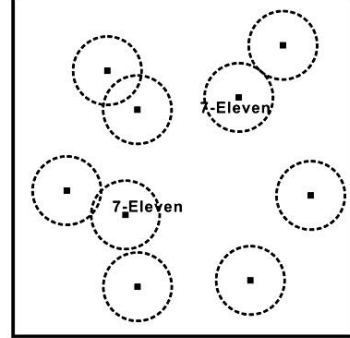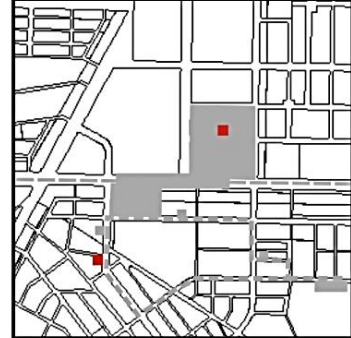
8.3 M.R.T Infrastructure

Time: 18 hours, 6:00-00
Actors: 3A1,3A2,3A3,3A4 constructors, planner, architect
3A5,3A6 Thai workers
3A7,3A8 supervisors of shed and manpower
Urban fabric: Xin-Yi line, World Trade Centre station
Network: Thai workers, local professionals, international team, regional and global visitors
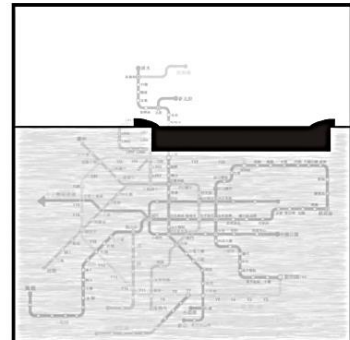
8.4 Taipei 101 Building

Time: 24 hours
Actors: 4A1 architect
4A2, 4A3,4A4 mangers of the building
4A5,4A6 cleaning staff
4A7, 4A8 office staff

Urban fabric: building and sky-bridge

Network: local professionals, globe, city authority, mainland China and Native society
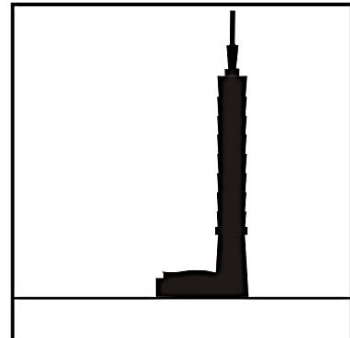
8.5 A Long-standing Allotment Garden

Time: 15 hours, 4:00-19:00
Actors: 5A1, 5A2 officials
5A3, 5A4,5A5,5A6,5A7,5A8cultivators
5A0 translator
Urban fabric: garden and MRT shed

Network: local community, regional market developers
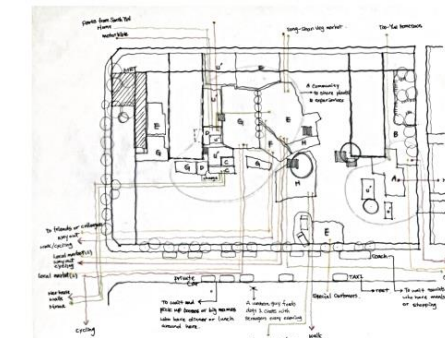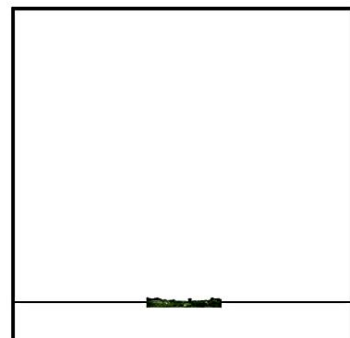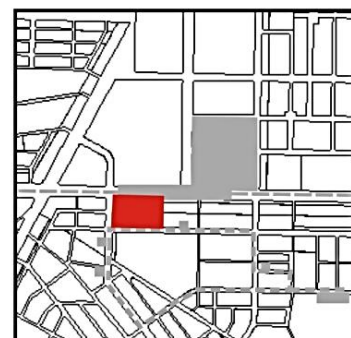
Figure 8.0: The collection of five socio-spatial practices in the Xin-Yi Planning District, Taipei (shot and edited by author) .

CHAPTER 8

Spatial Stories: Depicting Five Social-spatial Practices in the Xin-Yi Planning District, Taipei

The formation of contemporary Taipei and its planned globalized urban centre, the Xin-Yi planning district, have been thoroughly discussed in the previous chapters to provide a solid geo-historical and social network context for the examination of the five selected socio-spatial practices which work within it. They lie in a special south-west corner of the Xin-Yi planning district described in detail in section 7.2. Each of these five practices (*see* Figure 8.0) presents unique facets of the dynamics of multi-scalar activity in Taipei. They are the process of municipal rubbish management, the 7-Eleven franchise store, the Mass Rapid Transit System (MRT), the Taipei 101 Building and a long-standing allotment garden. Each of them is presented, in this chapter, as a particular spatial story in visual and in written terms. These serve as a prelude to understanding the urban texture and socio-spatial context of those practices which will be examined and rescaled in the subsequent chapters (Chapters 9 and 10).

8.1 The processes of municipal rubbish management

P3

P2

P1

Figure 8.1 Video-collage of the three rubbish collection points. It was made from multiple video clips shot between 2009 and 2012 (edited by the author).

Waste and recycle resource have materially documented a city. The daily collection and management of them serve as the metabolism of a metropolitan city. These subtle actions which scatter over the city truly reflect the breath and rhythm of its urban organism. At this short time, many fascinating actors present and play temporary and unique social stories in moonlight Taipei. (Stated in the author's empirical work, 2009-2012)

Because of the crucial demands for living space, food supply and infrastructural services in every modern metropolis, rubbish and resource management is a critical part of the city function in which all residents and the city government have to be involved. However, we can never fully take part in this process without living in that specific social context in which the collecting and recycling programme is operated, as it operates differently in each country. The programme in Taipei city can even be distinguished from that in other cities in Taiwan.

After dinner, when the melody of Beethoven's *Für Elise* comes gently floating in through the window, we know that it is the time. An odd reminder, but this familiar tune drives you to hurry out carrying waste bags to the designated collection point. There is no more mundane matter than this in Taipei's everyday life. This process of municipal rubbish management can be traced back to a series of sanitary reorganization projects, including infrastructural reformation and a policy called *Keep trash off the ground* in 1997. When Taipei started to grow increasingly denser and bigger, the old sanitation system established by the Japanese colonists[124] (1896) required renovation and extension for it to become an advanced system serving the new metropolitan life in the city. Financial and technical support from US aid (1950-1965) enabled this to happen (DU, 2011). The waste and recycle action plays another crucial part that works with the underground sanitary infrastructure to serve a denser and more diverse Taipei. One of the major goals of the city government is to deal with the problems of hygiene which result from the hot and humid sub-tropical weather conditions. The crowded street blocks and very compact city plan with such a high population density cannot afford to have large numbers of public collection bins placed on the streets. The recycling programme in

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[124] Counsellor W.K Burton suggested a sanitary project to the Japanese imperial governor in Taiwan. This project was first installed in Taipei city in 1896 and public announced in *New Taiwan Press* <台灣新報>(1897). Increasingly, the Taipei prefecture introduced a regulation to use rubbish bins in every official residence in 1904 according to *Civil affair regulation of official residences* <民政局官舍規則>(1898). This could be considered as the beginning of the modern sanitary system in Taipei (Wang, 2010).

Singapore, which has similarities in both weather and urban fabric, provided the inspiration to introduce the policy of *Keep trash off the ground* in Taipei. As a result, there are no large public rubbish bins on the street.. All residents have to be there to meet the rubbish collection truck at a specific time and a designated place in order to keep the ground clean all the time. The *Per Bag Trash Collection Fee* policy (2003) and recycling regulations (*see* Figure 8.2) have made this ordinary practice become more symbolic and local.[125] The process of managing rubbish in metropolitan Taipei therefore delivers a new relationship between people, rubbish and their environment.

Type of recycling item	Time	Collective Way
General rubbish	Mon, Tue, Tues, Fri, Sat	Rubbish collecting truck
Food scarps	Mon, Tue, Thurs, Fri, Sat	Food scarp bin at rubbish collecting truck
Soft item	Mon, Fri	Recycling truck
Solid item	Tues, Thurs, Sat	Recycling truck

Figure 8.2 This blue bag is the official pre-paid rubbish bag which is only used in Taipei metropolis. According to the *Per Bag Trash Collection Fee* policy, general rubbish is required to be packed in this blue bag, otherwise a fine has to be paid. This bag identifies residents and a city boundary of Taipei within which the practice of rubbish management occurs. The rubbish sorting guide shown on the right side instructs users about the particular regulation of rubbish management in Taipei. In other words, this socio-spatial practice is a very Taipeian everydayness which requires information from the sorting guide about the right container and the correct collection time and location to successfully operate this action. Details of the recycling categories can be found on the official website of the Dept. of Environmental Protection, Taipei city government (source: http://english.dep.taipei.gov.tw/ct.asp?xItem=190069&ctNode=15288&mp=110002, photo and translated by the author).

Around a quarter past nine in the evening, groups of residents chatting and laughing at least in three different languages, such as Mandarin, Indonesian and English, cluster or

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[125] According to the *Per Bag Trash Collection Fee* policy, residents must only use the designated type of prepaid bags. This policy, specifically, is only applied in Taipei city. In other words, the administrative city boundary can be embodied by these prepaid blue rubbish bags repeatedly in everyday life. In addition, the recycling of kitchen waste and different categories of rubbish each day limit residents to complete this process at the nearest point where most neighbours ideally gather together.

stand in line in an open space waiting for the melody of *Für Elise*. The place which is referred to as P1 in the following text is the front space of a twelve-storey commercial building facing onto a busy street which leads onto the heavy traffic flow on Xin-Yi boulevard.It is an ordinary space passed through by thousands of people every day without any glance or meaning until this ten-minute evening activity occurs (*see* Figure 8.3). Just a handful of rubbish bags is the significant entry code, as in many membership clubs, to join this practice. Without this particular blue bag, my presence would be incongruous. The still air is then broken when the collection team, comprising two trucks and four operatives, arrives.[126] Because of the ten-minute limit, *the locals* get into their right positions immediately and are able to chat with the collection teams even in such a short time. In contrast, new participators are identified by their hesitant posture and their questions to the team. The space in that ten minutes is filled with many phenomenal-puzzled activities including dynamic position changes, chatting and querying in the languages of Taiwanese and Mandarin in many different accents, Beethoven's classical melody, the pungent mixture of odours, and official management and inspection of cleanliness in the urban environment. Even in such an intense and transient atmosphere, my peculiarity attracts the attention of one of the collection team, referred to as A1 later. Following his friendly invitation to come to their squad base, a city journey threaded with rubbish management is embarked upon.

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[126] Four staff and two trucks, one for rubbish and kitchen waste and one for recycling, are the basic unit for each collection line. P1 is located on the no.576 line which serves five points, three in the late evening and two in the earlier evening. No. 576 line is one of four lines in the Wu-Xin squad which serves five neighbourhoods, similar to post code divisions in the UK.

Figure 8.3 *Left*: A photograph of the P1 collection point during the day time. *Right*: A photograph of the rubbish management practice at P1, 21:35, June 2009 (author's photographs).

On a hot late afternoon, groups of middle-aged people chatting in Taiwanese[127] with some younger faces speaking in their mother language, an aboriginal dialect, flow into the basement of the neighbouring Xin-Yi elementary school. It is the location of the regional municipal office and the equipment base for around forty employees preparing for their daily duty (*see* Figure 8.4). A regional map hanging on the wall shows the parking spot for each recycling vehicle with its duty schedule. A city map next to it is marked with a number of spots indicating different service levels of transit management centres. All the material collected on the corner of P1 starts upon a midnight journey traced on these maps throughout Taipei city.

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[127] Taiwanese language can be called Hokkien, spoken and understood by the major population of Taiwan. Because the majority of Taiwanese migrated from southern Fujian of South China since the late-nineteenth century, one of Min Nain languages, Hokkien, then was brought to the island.

Figure 8.4 *Left*: In the leader's office, there are posted route maps and manpower charts and vehicle dispatch information. Notices on the board include new regulations, duty shifts, and all notifications. *Right*: The main space offers room for staff meetings and equipment lockers for each employee. A regional map next to the blackboard shows the neighbourhoods which this squad serves (July 2010).

With a particular focus on the south-west corner of the Xin-Yi planning district, the leader (A5) of the Wu-Xin squad shares rich information about changes in community life and urban fabric transformations embodied in the rubbish management process over the past decades of his duty. The majority of land use in this area remains residential, but land divisions have become bigger and the floor-area ratio and height control have increased hugely in recent years. A new type of real-estate development, luxury condos and gated housing has grown up (*see* Figure 8.5). Although there are two distinct communities in this area, one which speaks Mandarin based on the former Four-0-Four military village, and another which communicates in Taiwanese generally scattered in three- or four-storey ordinary buildings, there residents are expected to manage their rubbish on their own. Since the emergence of the new types of housing[128] created by the Xin-Yi planning project, however, the way of managing household waste has changed. This everyday practice has been to various degrees been sub-contracted to foreign maids and part-time cleaners. This phenomenon is more obvious in an area where great numbers of high-rise buildings and luxury condos stand. One particular collection line,

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[128] The land in the Xin-Yi planning district has been re-divided into large building plots which require a complete development at one time. The intention of building Taipei as a global city by copying the Manhattan's model into the Xin-Yi planning district provides a contextual image for real-estate developers. The luxury condos, with their large floor areas and private gateways, become a fitting type in both the spatial and the social contexts.

no. 576, the squad leader (A5) suggests, expresses this phenomenon in a more specific way (*see* Figure 8.6). A conversation with the four operatives in charge of this line leads the thread back to the collection field.
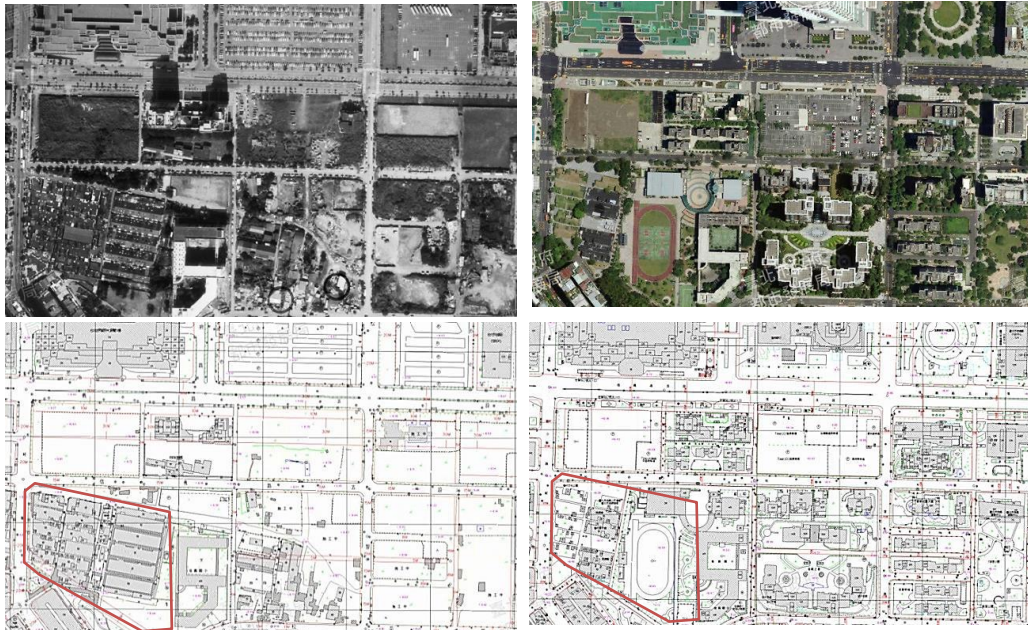
Figure 8.5 *Left*: A 1991 aerial map and topographical map of the south-west corner of the Xin-Yi planning district which was planned in 1980. *Right*: A 2013 aerial map and topographical map of the same corner. The red block shows the original location of the Four-0-Four military dependants' village which became a memorial park and was partially allocated to Xin-Yi elementary school. Comparison of these two maps shows that the residential development has taken place in more complete and bigger construction sites (source: Taipei city government, Department of Urban Development database, Scale: 1/1000, edited by the author).

This is the first time that I have been able to see them in the daylight. One junior operative (A4), perhaps surprised at the appearance of a female of a similar age to himself, comes over to talk. He has chiseled features on his face with a native accent. According to him, this unique service work not only provides him with a living but also gives him an unusual chance to see how this big city functions in its everyday mundaneness. He introduces some of his hometown neighbours and friends, who did not

find it easy to find a job in their indigenous villages so they took part-time positions on the morning clearing shift. To talk about the social network, employee A1, who has served this area for over two decades, comes over to share a basket of lychees and a pineapple brought from his hometown[129] and starts upon his away-from-home story. His thirty-year adventure leads from the countryside in the southern part of Taiwan to this modern Xin-Yi district. It finally ends with the pride he takes in his children working in the global commercial zone opposite this side of the Xin-Yi district. Two other senior operatives (A2 and A3) intermittently join our bi-lingual chat as translators because of my difficulty in switching between Taiwanese and Mandarin.
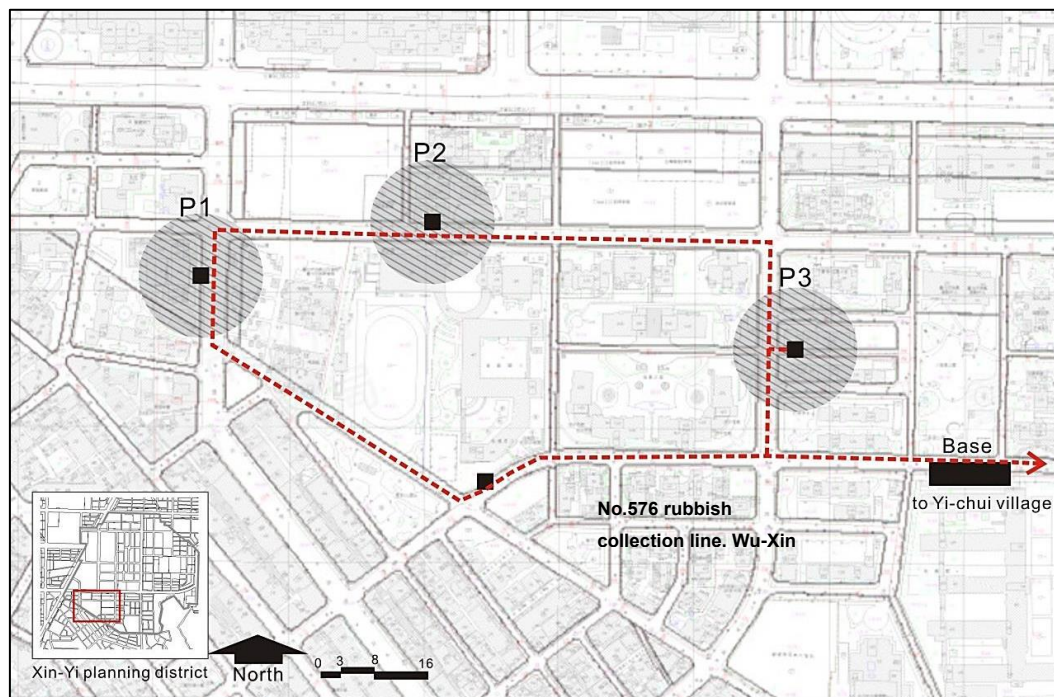
Figure 8.6 A map of a collection route of the no. 576 line. It serves five collection points starting from the back door of Xin-Yi elementary school at 18:00 to 18:30, and then moves to Yi-Cui village (挹翠山莊) serving from 19:00-20. The No. 576 crew then drives to the Liu-zhang-li (六張犁) recycling transit centre to unload the first batch of waste and rubbish, and then has a break. The second part of the collection service begins from P3 at 21:07, moving on to P2 at 21:15 and ending at P1 at 21:20, moving towards the transit centre. The two service vehicles are then returned to the Zhon-qian park (中強公園) parking centre and the staff move back to the office for duty sign-off. This is the full schedule of the no.576 crew daily service. Technically speaking, the crew only stops at each point for around five minutes so all details of socio-spatial activities occur momentarily and simultaneously (source: topographical map and urban block map as a reference from the Department of Urban Development, Taipei city government, edited by the author).

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[129] The agricultural produce of pineapples and lychees is famous in Guanmiao town where employee C1 comes from. It is thirteen miles away from Tainan city located in the southern part of Taiwan, where people mainly speak in Taiwanese as their mother tongue rather than Mandarin.

During their long-term service, an increasing number of household maids, to certain degrees, have brought about a distinctive change in the rubbish management process. The rubbish operatives point me to a private-gated village[130] served by the no.576 line on a regional map, and they describe it as seeming like another South East Asian country for them (*see* Figure 8.6), because there is full of foreign maids who speak Filipino, Bahasa Indonesian or Thai and are mainly responsible for this new form of everyday practice. Frequently, these maids too immerse themselves in conversation as they dispose of their rubbish bags. The collection staffs have to remind them and instruct them about what they have to do using an unfamiliar tongue along with body language. Although serving at the other collection points along the same line requires less ability to communicate, there are more different kinds of participators involved in the process resulting in more complex and contextual situations. They therefore suggested that I should follow their night route in order to observe three distinct collection points in detail in the southern region of the Xin-Yi planning district.

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[130] The private village called Yi-Cui Village is a ten-minute drive away from P1. This collection point and the one located at the back door of Xin-Yi elementary school are served on the day route of the no.597 line. Because both of these locations are at the periphery or outside the Xin-Yi planning district, they are only considered as supplementary references rather than as empirical targets such as P1, P2, P3 in this research study.

Figure 8.7 *Left*: Two maids walking and chatting in Bahasa Indonesian while they approach the collection point located at the back door of Xin-Yi elementary school. Although this location is not a main investigation point in this study, the photographic image taken at this point in the daytime provides clearer visual evidence of the foreign maids' social gathering during this everyday practice. *Right*: Two leaflets about the recycling sorting guide, the left-hand one written in English for Philippine workers and the right-hand one in Bahasa Indonesian for Indonesian workers; they are printed by the human resource agency and promoted by the city government. These different versions of the guide shows evidence that foreign maids are highly responsible for the daily practice of rubbish management for their employers. There are also Thai and Vietnamese versions provided. (source: South East Asia Agency Group, edited by the author).

21:07-21:1, P3

Figure 8.8 Top: A collage of video clips. *Middle*: A distribution map of different groups of participators sketched in the field. *Bottom*: the sketch of spatial distribution of groups of participators in location P3 and its environment in the daytime (shot and edited by the author).

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Back in the field in the Xin-Yi district, residents who live in twenty-year-old, four-storey residential communities amble along a street carrying their blue bags and designated recycling stuff. This location is recognized as the first point (P3) of the no.597 service line's night route. In fact, before the crew arrives, the process of rubbish management has already started informally. A scavenger (A6) with a large trolley waits for any rubbish that people are unwilling to carry. There thus seems to be an unofficial pre-checking point which is located ten metres away from the collection point. This scavenger, identified as a female spouse newly migrated from mainland China, kindly shares some tips with me about which kinds of rubbish can be sold at high prices at trade-in stations. Surprisingly, a few of these informal economic stations are just around the corner.
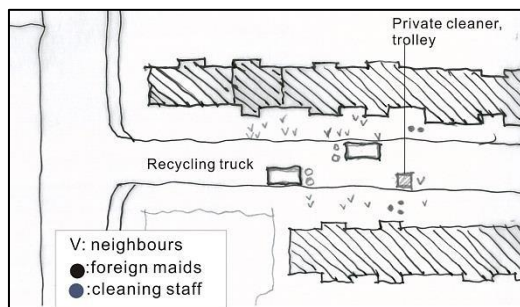
An unfamiliar chatting tone from a small group of foreign maids attracts my attention. Coming from the same country, Indonesia, they easily open a conversation with me by expressing their nostalgia for home and sharing their life skills in this foreign country. They are very eager to exchange all kinds of information within this precious ten minutes, confirming the cleaning staff's description of that particular area as an 'exotic' village, because most of them are not allowed to go out freely in the rest of the city without their employer's permission. One of these maids (A7) appreciates this everyday practice of rubbish collection as a living information centre where she could acquire practical information when she first arrived in this place. According to her, there is an Indonesian 'street' located in the opposite side of the city which can meet their needs

ranging from foods and special commodities to informal remittance sending. More conveniently, a few local grocery shops in the neighbourhood provide a similar service but only on request. These stores refer to a much wider social network which links regional Indonesian communities together in Taipei and also back to their homeland. A senior maid (A8)[131] (*see* Figure 8.9) proved this hidden connection by explaining how her work application in Taiwan had been encouraged by her friends' experiences and suggestions. Some advice, including on language and manners, had been given to her before her departure, and were then reinforced and updated by local Indonesian communities in Taipei. Their ten minutes of free time is almost running out and they are in a rush as they say goodbye.

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[131] Due to time and access limitations, the maid's (A8) experience will be supplemented by an interview with another Indonesian maid who shared a similar working background and conditions in Taipei.

Housemaids 1A8

Religion/ Christian

No day off
cut hairs by herself
to buy daily supplies with employers in a shopping mall

Have radio
only can watch TV with grandma

No cell phone so far
calling back home with Intl calling cards in employer's house

Employer bought calling cards for her
(control money and time)
parts from subvention by agent, parts from own wages

agents come to employer's house to help the maid
transfer money back to Philippine around once a month
The maid had rights to decide how much petty cash that
she can keep aside in this month when signed the pay cheque

cannot communicate !
lots of Indonesian/ spouses– more than 1yr
/5 maids– 1.5yrs
6mth
3yrs

several friends but unable to or lost contact

other maids

old friends

Network

cleaning workers supervised in detail

employer taught her how to
manage recycling around 1 month

Street collecting point
19:30-45pm throwing away the rubbish
about 10mints back

after dumping the rubbish will take a walk
one 7-11 franchise nearby– buy drinks or biscuits

Emma

Aim: earning money
some friends of her have been working in TW before
they recommended this agent in Philippine and the place, TW

42 years-old
Indonesia
Family:5people/ 3 kinds

College/ hose management
Unable to speak Mandarin
learnt since arriving TW

First time/ 11month

Nursing elder
Housekeeping/ cleaning, cooking

7:00 breakfast
cleaning
13:00-14:00 nap
indoor or outdoor nursing
flexible time

21:00 sleep

Figure 8.9: Visualized interview with Housemaid A8. It displays the socio-spatial networks that she involved in, and meanwhile represented the co-existence of transitional and local movement taken place by one social-spatial practice (edited by the author).

21:15-21:19, p2

Figure 8.10 Top: A collage of video clips. *Middle*: A distribution map of different groups of participators sketched in the field. *Bottom*: The environment of location P2 in the daytime (shot and edited by the author).

The collection trucks stop at the second point (P2) on a street with high-rise public housing on one side and high-walled luxury condos on the other. Most participators live in the public housing which was built for the rehousing of the original residents of the Four-0-Four military village. As a result, there is a close network circle in this neighbourhood. It is easy to spot a new member or outsider by whether or not he/she is carrying blue bags at this practice. Interestingly, there were almost no participators from the side behind the high walls, but only two middle-aged women pushing trolleys and crossing the street. A cleaning lady pointed out the guarded reception area and told me that the foreign maids serving in those condos simply need to handle the rubbish from the upstairs to the basement. The rest of the cleaning work has been subcontracted to individual cleaners or private cleaning companies. The collection
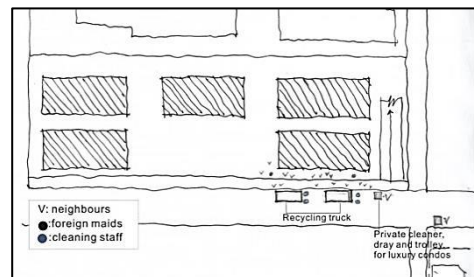
employee (A1) echoed that this new situation has only appeared in the last decade since the real-estate development in the Xin-Yi district began to grow. In this case, the action of rubbish collection is not necessary as an everyday practice in this particular urban field. Before moving on to the last collection point, operative A2 raised an annoying issue that a large area of a long-term allotment garden beside the public housing is a limbo where the waste and rubbish are not collected or handled carefully. It seemed that this interesting 'non-place' would be worth paying a visit in the daytime.

21:20-21:28, P1

Fig 8.11 Top: A collage of video clips. *Middle*: A distribution map of different groups of participators sketched in the field. *Bottom*: The environment of location P1 in the daytime (shot and edited by the author).
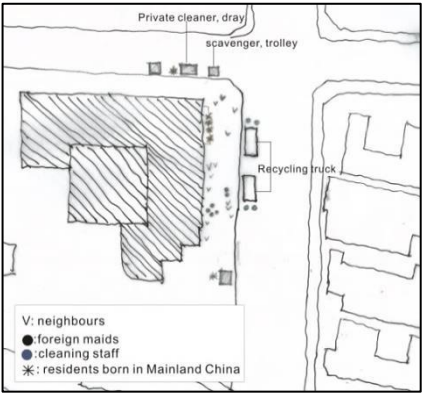
Turning around a busy traffic corner, the collection trucks arrive at the final location of this 'rubbish' journey. As this point (P1)[132], the pre-sorting of the rubbish is carried out by two elderly scavengers who gather with other older people and two middle-aged women chatting together in a very strong Chinese accent to form a temporary group. This group shares a similar geographical background; they are immigrants from mainland China, but with a time gap of five decades. The two scavengers are original residents of the Four-0-Four military village. One of them stores belongings and items for recycling in an interstice of a narrow lane and sells them later with the help of his old military comrades. Two other younger members (A9 and A10) in this group are female spouses from mainland China who migrated to Taiwan around five and two years earlier and now offer private cleaning services for residents in the public housing in this particular neighbourhood. In this short daily meeting, they re-imagine an ideological homeland and at the same time build a social network in their current quasi-homeland.

Another striking group is constituted of several foreign maids from the Philippines (A12 and A13) and Thailand. They are comparatively young, not only sharing the latest music album, most of which features regional singers, through their smart phones, but also discussing the best place to go shopping and to find a beauty salon. These esoteric places in Taipei, none of which I know of, surprise me very much. The maid A12 is keen to encourage me to visit the Filipino market,[133] especially at the weekend (*see* Figure 8.12).

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[132]A supporting illustration of the spatial distribution of different groups of participators at P1 can be seen at appendix p317.
[133] The Filipino market, in fact, is a specific section of Zhongshan North Road filled with great numbers of temporary vendors at the weekend and several permanent stores providing groceries, shopping and financial services. There are two particularly popular attractions in this area, St Christopher's Church and the KimWanWan Mall, where foreign workers are able to meet their spiritual and material requirements at the same time. The large number of foreign workers in Taiwan has resulted in particular issues and phenomena and has raised a great amount of study in many fields. Most of the research work published in theses, reports and books focuses on social and political dimensions which provide a great understanding of the discourse as a supplement to this thesis. Pei-chia Lan's work *Global Cinderellas: Migrant Domestics and Newly Rich Employers in Taiwan* (2008) is one of more direct references which outline maids' everyday life practice in the city. However, the significance of the rubbish management in their everyday practice has not been carefully articulated in these current literatures.
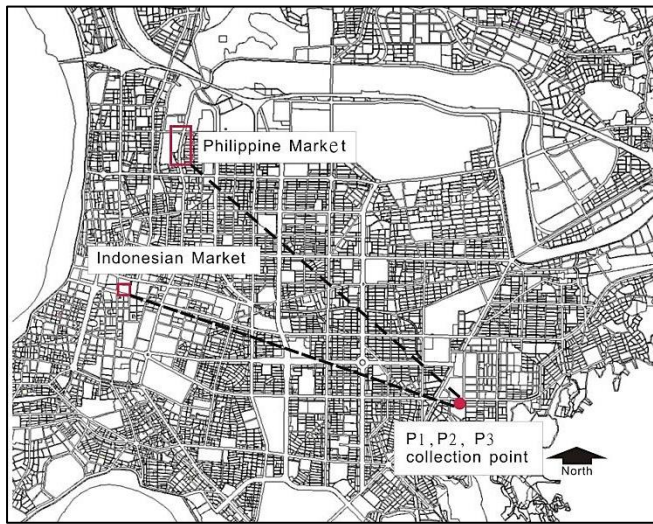
Figure 8.12 A cross-field map showing the location of both the Philippine Market and the Indonesian Market on the opposite site of the city. The everyday practice of dumping rubbish is the beginning point for foreign maids to connect with this social network hidden in Taipei city (edited by the author).

She tells me that although there are a few fusion stores in the neighbourhood which are able to meet urgent needs, a small amount of remittance for example. If possible they (A12 and her peers) do not miss the chance to meet numbers of new and old friends at the market. Sometimes they might meet some Filipinos working in other Taiwanese cities where they can then pay a visit as a short trip. But most of the time, they share their working experiences and suggestions for the future- for instance, which country is better to work in and which is not, any part-time job offers being advertised, how and where to get lower commission fees when sending remittances, and which agency is reliable. The maid A13, for instance, considered accepting a suggestion to work in Singapore later on due to the good experience shared by another Philippine maid whom, she met at the weekend market a couple of weeks ago. Her bi-lingual capacity resulting from her working experience in Hong Kong and Taiwan gives her higher mobility to find work across East Asian cities. The event of the Filipino market does offer a bigger scale of social and material resources that assists in transnational connections, and yet this ten-minute everyday practice of rubbish management plays a role as a transmitter of the network on an everyday scale, according to the maids. Unlike the maids at P3 who had to

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rush back to their houses, this group moves on towards a 7-Eleven franchise store next to collection point P1 some of them buy themselves some sweets and refreshments, and a few to queue up to use a public telephone to contact close friends. They happily say goodbye to me with shining smiles, still beaming even in this dark night.

Housemaids 1A12

Traveling around TW with employers' family

No day off

cut hairs by herself or hair salon suggested by employer

to buy daily supplies and grocery shopping with grandma in markets or sometimes in supermarkets with employers

highly mobile/ trusty

most of her friends using cell phones as this way

Religion/ Christian

go to church with employers
no pork dishes

2 cell phones/ only answer by one, only calling out by another calling back home with Intl calling cards in employer's house one cell phone used for texting or calling friends in TW another one is under roaming for home contact

To buy calling cards by herself pay as you go/ top pop once around 6month how often and how long to call back--depends on time boyfriend back to the land special events

pay by own wages

employers paid a half-year fees to agent then agent sent pay cheque to the maid the maid can ask agents help her to transfer money back or transfer by herself The maid had rights to decide how much petty cash that she can keep aside in this month

not easy to communicate! lots of Indonesian/ some of them staying in the same building 2 Philippine /not familiar 1 Thia Some Vietnamese spouses

other maids

old friends

by cell phones/ closer

Magazine
Philippines' local news
watch TV with grandma

Transfer money through a specific Philippine store nearby best rates illegal information and connection

Now most of Philippines were highly recommended by agnets to work in Canada Speak English Higher payment Phillippines were more agile than Indonesian

Climate concern

Aim: earning money some friends known in Dubia have been working in TW before and wanted to apply again they recommended TW

Applied for the job through deferent agents in Philippines before coming TW, maids have to sign the contract/ pay commission fees

working experience/ Germany (1.5yrs) Dubia(3yrs) Australia

29 years-old Philippines. Family: single/one sister boyfriend

College/ Home & Hotel Management not finished Dress making classes-- 6 month Speaking Mandarin very well

2 weeks Chinese class in Philippine certification-- half self and half agent funded

Winne

Network

4th yrs/ 2nd time

employer taught her how to manage recycling around 0.5 month

cleaning workers supervised in detail

Community special point/ basement 20:30pm collecting time immediately back

sometimes go earlier cannot take a walk, because there is only elder at home no 7-11 franchise nearby, but go to other franchise to buy drinks or biscuits with grandma at the day time

Nursing elder Housekeeping/ cleaning, cooking needlework

8:00 breakfast cleaning 13:00-14:00 nap indoor or outdoor nursing flexible time

21:30 sleep with grandma

Figure 8.13: Visualized interview with Housemaid A12. It displays the socio-spatial networks that she involved in (edited by the author).

8.2 7-Eleven Franchise Store

7-Eleven is a good friend to you, people say. Once you find a 7-Eleven store, you are almost guaranteed to meet your urgent or daily needs through their networking service (*see* Figure 8.12). Foreign maids queue for a public telephone or come to buy sweets; foreign workers and visitors order a cup of coffee; locals are busy paying bills and choosing lunch boxes. On every day and at each moment, it always opens its arms to welcome people and the entire city. (Stated in the author's empirical work, 2009-2012)

Fig 8.14: *Left*: the Xin-Mao store is located in the local neighbourhood so foreign maids might go for using public phone and having some refreshments. *Right*: the 101 building store is located on the basement and mainly serves employees working in the building (author's photographs).

A 7-Eleven franchise embodies a daily consumption practice which reflects a formation of world marketing, knowledge translation, boundary-crossing and an interflow of different media. Its supply system and network management were originally learned from Japan and then reinterpreted in The Philippines and mainland China (*see* Figure

8.15). The service extends beyond national boundaries and stores into a digital service, product ordering, food production and mass media. With regard to the emergence of the 7-Eleven franchise in the Taiwanese context, it generates a special urban reference and city landscape in terms of its company core values, service and store presentation. This unique language embodies two key ideas; uniformity and modernity. Its operating system and a universal training model in all aspects of its operation symbolize these characteristics.

Fig 8.15: The global franchise map of 7-Evelen. This chain has been embodied into each local store, for instance in Taipei, by their international products and groceries. Their service in Taiwan for instance such as telecommunication device might provide reconnection with the global networks by distinct groups of participants and actives, detail in chapter 9.(source: http://www.uni-president.com.tw/).

The urban landscape of this franchise system stands as a symbol of progress and development. In some places, especially in the countryside or in residential areas, 7-Eleven stores attract other temporary or permanent local commercial activities, such as diners, snack-bars and street vending. It seems to form a local gathering hot-spot. Due to the high density of stores, it might be possible to recognize the arteries of a city by mapping and calculating the 7-Eleven franchise stores.

The uniformity of a 7-Eleven practice might confuse the perception of the local environment. This unity would be restructured by its neighbours. In other words, one store might be identified by others, such as the specific shops, activities or landmarks surrounding it. It is 7-Eleven franchise stores and night markets, an opposite type of food supplier, which generate an endless night landscape in Taiwan. But 7-Eleven franchise stores cannot be simply regarded as the global monopolization of a specific market in Taiwan. On the contrary, franchise stores represent a lively Taiwanese landscape. As the light bulbs of the city, franchise stores that appear every fifteen minutes or so as one travels through the city create a specific spatial rhythm of urban life in Taiwan. It is a direct way to experience civic energy in Taiwan.

In addition, 7-Eleven franchise stores publish their own magazine as a tour guide for every city in Taiwan. In each issue, there is a map based on different themes, but all connected with 7-Eleven stores and their services Through these themed maps, the 7-Eleven franchise system creates its own way to recognize a place. Each store also provides a secure and supportive place because the stores are operated twenty-four hours a day and three hundred sixty-five days an year. At the same time, the transparent glazed façades with their lights and surveillance equipment create an image of safety and assistance. An urban no-darkness night-time landscape has emerged in most Taiwanese cities but particularly in Taipei. With a particular focus on two branches, the Xin-Mao store and the Taipei 101 building store (*see* Figure 8.16), in the south-east corner of the Xin-Yi planning district, the uniqueness of the participants based on their distinct location presents a global network in this small place- symbolizing the specificity of the East Asian daily landscape in a large, globalized city.

Figure 8.16: Upper: Locations of two selected store for the empirical work. It shows the spatial relationship with its surrounding communities. *Left*: The Taipei 101 building store mainly serves employees working in the building including maintaining workers and office staff. *Right*: the Xin-Mao store. It is more open to public and maintains partnership with the neighbourhood (author's photographs).

8.3 Extending the Infrastructural Network of the MRT

A new MRT line will join the system to serve and link the heart of the Xin-Yi planning district with the entire Taipei metropolis and onward with the world. The World Trade Centre station on this new Xin-Yi line provides a global link between the Taipei 101 building and the national airport and then extends to an

international airport gateway. It is Taipei's urban pulse beating

underneath our feet (*see* Figure 8.17). (Stated in the author's

empirical work, 2009-2012)

Figure 8.17: A whole view of World Trade Centre Station which is under construction since 2002-2012 (by MRT construction team).

The extreme expansion of Taipei metropolis in terms of its geographical spread and

population density created a demand for a new city transportation system. In 1980, the

Taipei city government proposed the Mass Rapid Transit System (MRT) as an

infrastructural strategy to reform and reorganize Taipei city. The MRT construction is

regarded not only as a magnificent engineering achievement, but also as a representation

of a progressive and modern city.[134] This huge infrastructure is regarded as an engine to

animate the city through the renewal of under-used urban space, the reorganization of

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[134] The goal of Taipei MRT includes efficiency, safety, excellent construction and easy travelling in Taipei. The Department of Rapid Transit Systems funded by the Taipei city government in 1986 is responsible for construction and related maintenance work.

multiple transport systems, and some specific joint development programmes. In 1981, the Taiwan Institution of Transportation (MOTC) commissioned a feasibility study for a Taipei metro from the British BMTC[135] and Chinese engineering consultants. The framework for the metro routes was drawn up for a medium capacity system at that time. At the same time, a contract was signed with American Transit Consultants (ATC) to import construction technology, including system planning and control, station design, construction knowledge, and evaluation models. The layout of this system reflects the twin-cored development of Taipei. It not only tightly connected the old and new city centres, but also included the expanding Taipei metropolis. The latter superimposed a new nodal network on the existing urban morphology and completed the city extension with a metropolitan infrastructure (Lo, 1998: 77).

Following the blueprint for transportation designed through the imported knowledge of BMTC and ATC, the Taipei metro network was built in three stages.[136] The Xin-Yi line was established as part of the third stage, which comprised eight additional routes and the international airport line, as well as the circular line which was carried out by both the Taipei city and Taipei county governments (*see* Figure 8.18). Taipei's MRT integrates four possible city gateways: the central railway station, Taipei airport, the international airport and the Taiwan high-speed rail station. These multiple gateways are constructed in two city layers, the underground and the elevated systems. MRT transport is considered as the network linking the former within the city, while in the latter case is nationwide. However, it has actually been merged into an experience of instantaneous movement in time, rather than strengthening geographical distinctions. It demonstrates

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[135] British Metropolitan Transport Consultants.
[136] In the first stage of the eighteen-year construction programme, the main system composed of seven routes came into operation. There were a total of 64 stations which served around one million people every day across metropolitan Taipei. The second stage focused on multiple connections between routes. In the third stage, an additional 57 new stations were estimated to be in operation by 2012, and then Taipei MRT will average 2.3 million passengers per day. The third stage will offer a completed metropolitan network by extending several routes to Taipei County. This full network is expected to be fully operational by 2018.

Virilio's description (1997) that speed and distance obliterate the notion of a physical dimension. In this sense, the Taipei metropolis is unlimitedly expanding with this giant infrastructure.
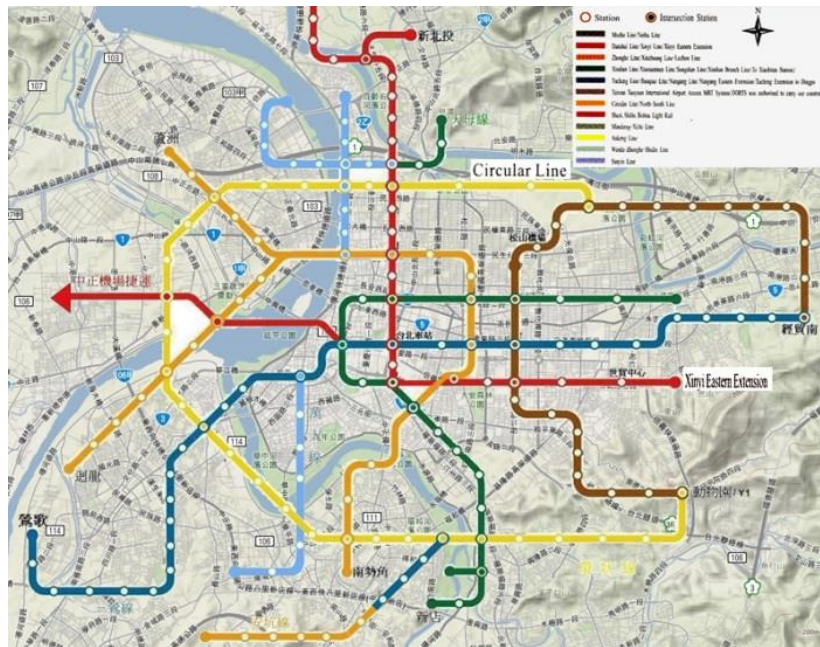
Figure 8.18: The city map of MRT system. It integrates Taipei and Taipei county which become a large Taipei metropolis with this extending infrastructure (*Taipei MRT Xin-Yi line R06 station construction report*, 2009).

The MRT has become the most important vehicle for Taipei people and provides an angle for understanding the city. When sharing time and space in its trains, all passengers are connected into a 'non-place' complexity in a metropolis (Augé, 2002). Their presence is interwoven with speed as a technical manifestation that represents the city interchangeably. By passing through the security surveillance at each station, users can share a temporary identity with relative anonymity within time, but not space, by holding an 'easy-go' card. This travel card not only affirms your authority to access technological time-space for movement, but physically creates a collective identity of being Taipeinian, similar to the Oyster card system in London which has become a domestic passport. Crossing the control line, a 'no-food' sign subjects the individual consciousness to an

entirely new experience of the space, which directly links them with non-places (Augé, 1995). With respect to time, which defines continuity, the changing computerized timetable for routes displayed on screens offers a sense of unity, a transparent surface which controls passage and interruption.

Taking the Xin-Yi line as an example, it provides a significant perspective from which to understand how the Taipei metropolis extends widely and yet connects tightly. The Xin-Yi line serves to alleviate overloading on the east-west lines and connects three north-south lines to form a more complete metro network. By also linking with the Xin-Yi expressway at the end of the line, it offers a rapid transit service to travel between Taipei county and the Xin-Yi planning district. This line is not only the second artery passing through the heart of Taipei, but it also plays a significant role as a transport corridor to the Xin-Yi planning district. Designers of stations and entrances were directed by construction engineers, rather than architects and urban planning professionals, before the Xin-Yi line was started. These engineering-led projects generated a series of criticisms in several fields, especially in metropolitan urban planning. Aware of these difficulties, the Department of Urban Development of Taipei city government tried to intervene through deliberation systems, urban redevelopment strategies and codes of amendment. In addition, there are three joint development lots on the Xin-Yi line in which developers can obtain more floor area and looser height limitations. This construction not only extends Taipei people's capacity to move about but also leads to certain degrees of urban landscape transformation.

There are nine underground stations along the 7.9km-long Xin-Yi line which starts from a border of the old city[137] and ends in the eastern area of the Xin-Yi special district. With

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[137] Chiang Kai-Shek Memorial Hall station is located on the east-south corner outside the old city centre; Elephant Mountain station is at the eastern geographical boundary of the Taipei Basin.

a particular focus on the World Trade Centre station including its four exits/entrances, the significance of different participators working at specific times is revealed. This implies specific invisible urban networks operating and layering inside and outside this construction site. The architects and contractors present professional knowledge about practical performance and urban fabric influence. Construction workers, in particular foreign worker from Thailand, express distinct social networks which have ever taken place in this site (*see* Figure 8.17).

Figure 8.19: The empirical work has conducted interviews with both the local constructors and foreign workers in the shed which is situated on a piece of land in the allotment garden. They express distinct social networks in Taipei city, the detail can be seen in the following section 8.4 and the chapter 9 (author's photography).

8.4 The Taipei 101 Building

The Taipei 101 building was the world's tallest building from 2005[138] and stands in the Xin-Yi planning district. Its spectacular height can be recognized from every corner of the city twenty-four hours a day and seven days a week. The Taipei cityscape is changed by this new skyline. This monumental structure produces a symbolic image for Taipei metropolis as well as for Taiwan. (Stated in the author's empirical work, 2009-2012)

Figure 8.20: The Taipei 101 building stands on the Taipei basin (source: *Architect* 2005:98-99).

Coming out from the MRT's World Trade Centre station, a one-hundred-and-one-storey building breathtakingly fills your vision. It is the financial centre recognized as the Taipei 101 building. It takes fifteen minutes to walk around the whole building, which is composed of two main blocks with four entrances to parts of the shopping mall and two

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[138] The Taipei 101 building was certificated as the tallest building in the world from 2005, until the Burj Dubai was completed in 2010. It is also the largest environmentally conscious skyscraper in the world. The Taipei 101 building was ranked as the third highest building on the world list 2014 (source: http://skyscraperpage.com/diagrams).

entrances to parts of the office tower. On the one side, different small flags waving in the crowd identify distinct groups of tourists from mainland China, East Asian and Western countries preparing for their visits to the 101 Building mall. On the other side of the building, smart-dressed business teams pass straight through the security check point and quickly disappear into lifts (*see* Figure 8.21). Between these two distinctively phenomenal entrances, a metallic board (*see* Figure 8.21) displays a plaque stating that it is the world's tallest building, which raises great interest and curiosity in visitors. It makes a great introduction to its designer, constructors and other hidden heroes who made a huge contribution to achieve it in practice.

Figure 8.21: *Upper-left*: The security check gate in the lobby. Taking a direct shot of the gate is forbidden. *Lower-left*: Groups of tourists and visitors gather in front of the building entrance. *Lower-right:* The sign in front the main entrance displays the honour of being the tallest building in the world in 2004 (author's photographs).

Confronting a visitor stepping out of the lift, an architectural model of the Taipei 101 building is displayed in front of the waiting area of the office of C.Y. Lee & Partners. The chief project manager of this building, C.P. Wang (4A1), explained to me the challenges and specificities of this design project from particular aspects. In order to understand this giant building, it needs to be seen as one component, but a significant one, in the globalization development package of the Xin-Yi planning district, rather than as a single architectural 'bigness'. The idea of this development, which was born in the 1990s was associated with the national policy of the *Asia Pacific Operation Hub*, and has been intensified and promoted into practice by the blueprint of *Creating Taipei's Manhattan*. The execution of urban land reconsolidation in 1981-1986 according to the detailed plan for the Xin-Yi planning district was crucial to this real-estate development, for which the size of building site is large enough and the land use is sufficiently changed to serve this special purpose. Following the completion of several Grand Projects[139] surrounding the block, the engine for this project began to speed up (*see* Figure.8.22). This financial building was never planned initially to hold any position in the world's tallest building list. But to pursue his grand metropolitan dream of emulating Manhattan, and to attempt to identify the city itself in a global network, Mayor Chen[140] promoted it to become as high as it is now. A series of challenges therefore followed, said Mr Wang.

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[139] The new building of city hall and city council offices which were moved from old city centre located on the west side of the city were the first public buildings completed in this district. The world trade centre, exhibition hall and Grand Hyatt Hotel establish a geo-economic framework of this area in the 1990s.

[140] Shui-Bian Chen served as Taipei city mayor from 1994 to 1998. He actively implemented the development at the Xin-Yi planning district through leasing the city-owned land to private enterprises. This programme encouraged public-private partnership in that Department of Urban Development used floor space subsidies and fines as instruments to activate commercial developments for both private land and public land (Jou, 130: 2005). The developmental project of the Taipei Financial Centre, known as Taipei 101 Building, which was proposed by the previous mayor, Da-Jou Huang in 1991, started the contract under this eco-political condition (Tseng, 1994).

Legend in figure:
- Whole block
- Half block
- Over
- Over
- Width over 8m
- Over
- Planning boundary

Site of 101 building
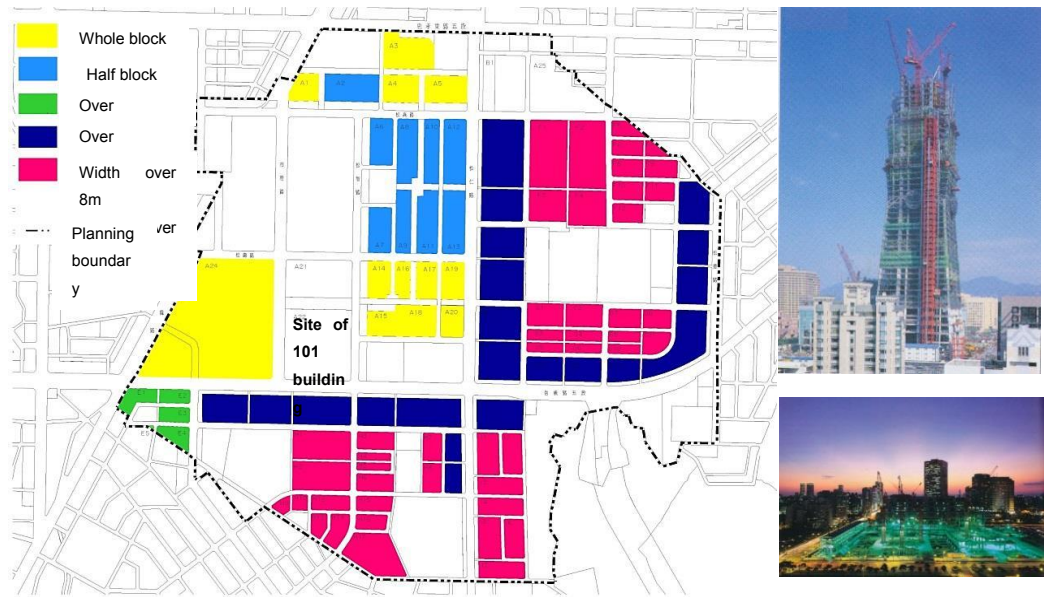
Figure 8.22: *Left*: The miniature land use in the Xin-Yi planning district according to the third entire urban review in 2013. The block of the Taipei 101 building marked with red-dotted line was appointed as a special block for business service. Therefore, it was a comparatively big and complete urban block and other unmarked blocks were preserved for public and governmental institutions (source: Department of Urban Development, Taipei city government). *Right*: The process of building construction (illustrations offered by CY Lee & Partners).

Due to the size of the building's volume and its enormous height,[141] (*see* Figure 8.23), the building code and urban regulation review confronted unprecedented issues which led to amendments of that regulations, such as in terms of building height and open space restriction, traffic environment assessment and building bulk increase. These new regulations associated with this development project in Taipei became a paradigm for high-rise building and mega-blocks for other cities in Taiwan. In addition to the urban issues, the knowledge and ability of construction and structural design are the most significant facets of this project. Although the construction knowledge of tall buildings was well established in the western profession, the client insisted on using the local architectural team of C.Y. Lee & Partners, who participated in the project from the

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[141] The Taipei 101 Building was planned on a 30,277 ㎡ site and is 508 metres high. The total building areas is 480,236 ㎡ (Lee, 1998).

beginning of the development competition to the completion of construction. This architectural firm did, however, have experience of constructing a ninety-five-storey building in south Taiwan, and to construct a building at such a scale in a seismic activity zone requires far more professionals to cooperate. Mr. C.P. Wang and Mr. C.Y. Lee both had long working experience in an international architectural firm based in the US, and this professional background and connection impelled a trans-national construction package. Mr. Wang explained that this huge project was achieved using the 'double-up' concept, which means that each part of the construction project involved a local team cooperating with an overseas team.[142] The number of contractors and related participators during the whole construction period reached a total of twenty thousand. Mr. Wang showed me huge piles of paper drawings and contracts associated with this project, saying that there were only the tip of the iceberg. Since the opening of this building in 2004, the architects and all the constructors have no longer remained on the site but left their positions to different managers responsible for building operations and maintenance.

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[142] OMA, Chicago was invited to be the main contractor and CY Lee & Partners was the local cooperator. In order to improve construction knowledge and encourage local firms, the client finally entrusted CY Lee & Partners as the main design and construction team. That brought about the double-up concept in practice. The overseas teams included a German façade consultant, a US structure consultant, a Japanese main contractor and Canadian wind engineering experts.
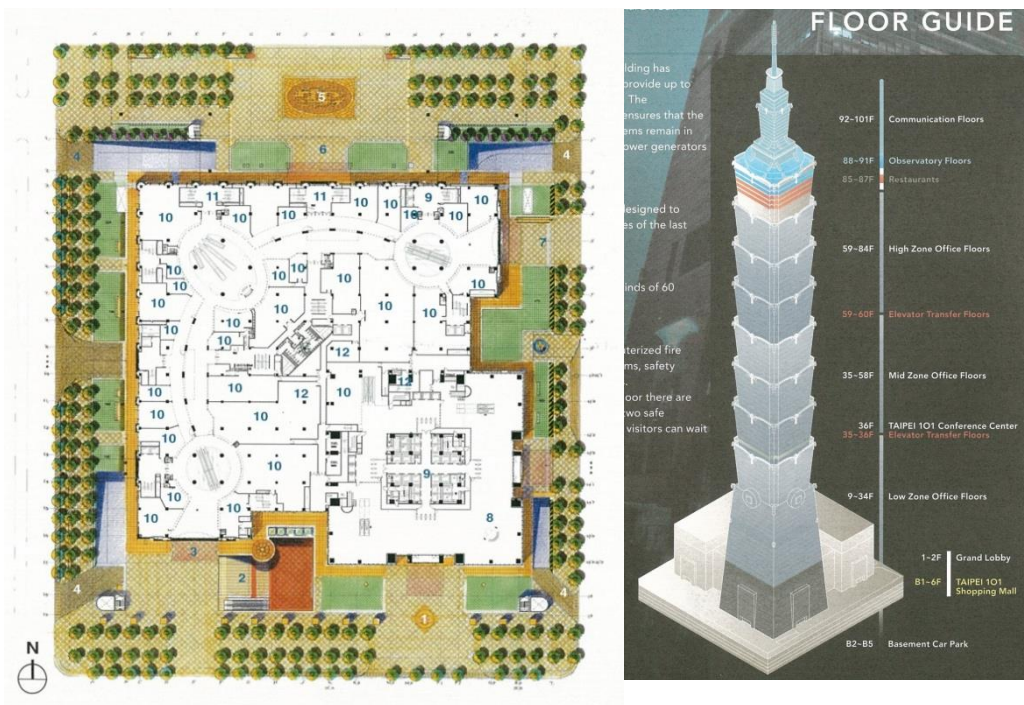
Figure 8.23: *Left*: The ground floor plan. The lower-right area is the office tower and the rest belongs to the shopping mall. The building area is 15,138m^2 in total (source: *Architect* 2003:87). *Right*: The building height is 508m. The building is separated into three parts of office floor by two elevator shafts marked in red. The top area includes a restaurant, an observatory and a communication floor from 85-101F (source: a brochure of Taipei 101 building, *Architect* 2003, 2004).

Before meeting with one of public relations managers of the Taipei 101 building in a corner of Starbucks, my eyes and my footsteps roamed around the office tower lobby. People were floating in a bright and quiet atmosphere with distinct but clear destinations for business visits, delivery or cleaning. My roving gaze again attracted the attention of the security guards. When a guard came over to stop me taking pictures of the security checkpoints, the manager (4A2) rescued me from this embarrassing situation. The main work of the public relations managers is to introduce and promote this building not only to the nation but to the world. For instance, they applied for the world tallest building rating and later had this building rated by LEED as a gold standard and also the tallest building in the world at that time. All kinds of international press and special events, such as filming and art exhibitions are invited. The annual Taipei 101 Run-Up race and New-Year fireworks display are other significant activities to advertise this building. The

manager highlighted that the building façade which is rented out to commercial or governmental advertisements provides a different face and angle from which to recognize this landmark (*see* Figure 8.24). Most of campaigns proposed by the PR team are highly welcomed and supported by the city government because they share a common aim that the Taipei 101 building- as representative of Taipei city as global status- requires an expression of this globalized identity and at the same time enhances local urbanity. The city government supports the building of a globalized urban container, and the management team fills it with transnational programmes, she emphasized. The leasing strategies of the building follow this dual purpose with the result that most of the leaseholders are transnational corporations and banks, which some of them are regional representative offices. The building is therefore in operation all day long to connect global markets in time. The security system and building maintenance consequently play a very important role in sustaining and protecting this trans-national hot-line.

Figure 8.24: *Left*: The new-year firework display is the signature event of this building which is used to promote Taipei city in diverse commercial and governmental campaigns (source: the cover photo of a brochure of the Taipei 101 building). *Right*: The lighting of the building's façade provides an alternative dimension to both highlight the building itself and the information which its lessee wishes to promote (source: Department of Public Relations, Taipei101 building).

The head of security (4A3), who had attended training courses in high-rise security in Switzerland and had experience of leading security in another forty-one-storey office building in Taipei, led me on a short but secret adventure around the security procedures in this building.[143] There are three levels of the security system, which include intelligent control systems in charge of major duties, stationary and patrolling guards, and managing support teams from the city government. Every visitor can only approach an appointed floor from a single entry which is controlled by a check-in machine and a check point in the lobby, as well as restricted elevator controls. The electric and gas systems as well as a CCTV system are managed by a control centre located on the basement level two where all security crew, cleaning staff and delivery personnel enter the building. According to the head of security, applicants for positions as guards not only need a high standard of physical fitness but also a knowledge of English and Japanese. Due to their strict recruitment procedures, they have a very low turnover of staff and only recruit new members who are indigenous people and who have been given references by other senior members of the cleaning staff. The head of the maintenance and clearing service (4A4) then came in and took over the lead in my continuing adventure.

Sheets of facility distribution, duty shifts, special requirements and notifications are posted over the entire wall in the manager's office. It is surprising to find that the first shift of morning duty begins at 6:30am and the evening shift ends at 10:30pm, and moreover every member of staff requires thirty-minute preparation time before and after their duty period (*see* Figure 8.23). Ms Wu (4A4) proudly presented her cleaning crew which is efficiently organized into teams with five people responsible for fifteen floors and sharing mutual support with all the other teams. All the staff are Mandarin speakers, including ten employees who emigrated from mainland China. They all have to have

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[143] Parts of the interview information and photography taken during the visit are confidential. The interviewee and the author agreed that this information should remain unpublished. Therefore, the material used in this thesis excludes any material which is subject to this data restriction.

cleaning skills and behavioural training delivered by international etiquette and maintenance institutions. In addition to their daily duty, some of them are paid by leaseholders of the building as private cleaning ladies specifically responsible for their office interiors. Because of this circumstance, staff might have access to confidential information, so they are not allowed to leave the building during their working time. Although manual labour is fundamental to the cleaning work, the final waste disposal process relies on refrigeration equipment on the second basement floor and is then removed from the building by a local private cleaning company (*see* Figure 8.25). In other words, the internal staff have no direct contact with the municipal rubbish management crew in the area. The cleaning of the façade of such a tall building is another technical job which requires special support provided by a US-based cleaning company.
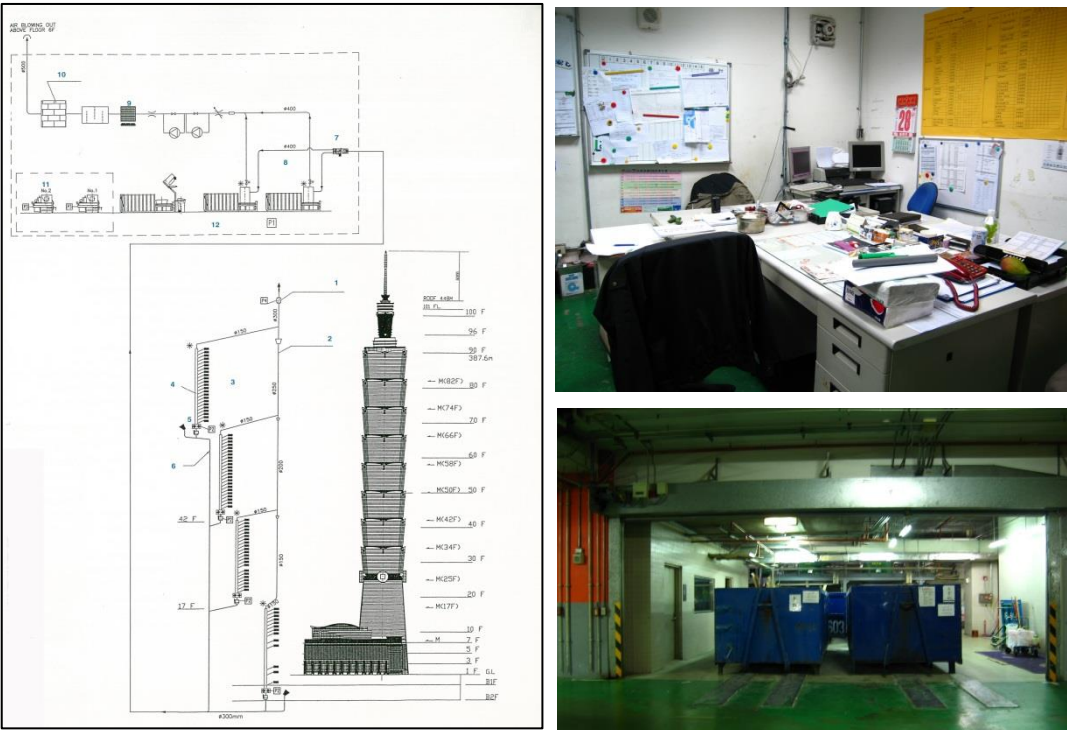
Figure 8.25: *Left*: The building cleaning and recycling system. There is a disposal collection point on every floor and all the rubbish and waste is dealt with on the second basement floor, shown in the photograph at the lower right. *Right*: The maintenance office. The daily schedule and special requirements notes are all posted on the wall (author's photographs).

About thirty uniformed employees crowd into a staff lounge next to the office to have their lunch break (*see* Figure 8.24). An employee (4A5) shares some of her working experience with me, explaining that the staff in the international firm by which she is hired as a private cleaner are very helpful in communicating about issues that foreign managers might have. Sometimes they might be given a private job offer for cleaning white collar workers' houses or apartments, some of which are located around the neighbourhood opposite the 101 building. In addition, she also told me about her husband, who worked as a part-time employee in charge of the exterior cleaning work of the building, including the pavement and the first-floor façade, and through that work, he later joined the façade cleaning company. According to her, most of their colleagues travel some distance to get to this district and that there is a perfect location across the allotment garden opposite the building where they can park their motorcycles freely. Another employee (4A6) with a strong Chinese dialect accent enthusiastically told me that her job had been kindly introduced by another female spouse from mainland China who served in the observatory team responsible for floors 89-101. Over a quarter of the building's staff are female spouses from mainland China, which provided her with a micro-mainland community to share her life experience in this new homeland.
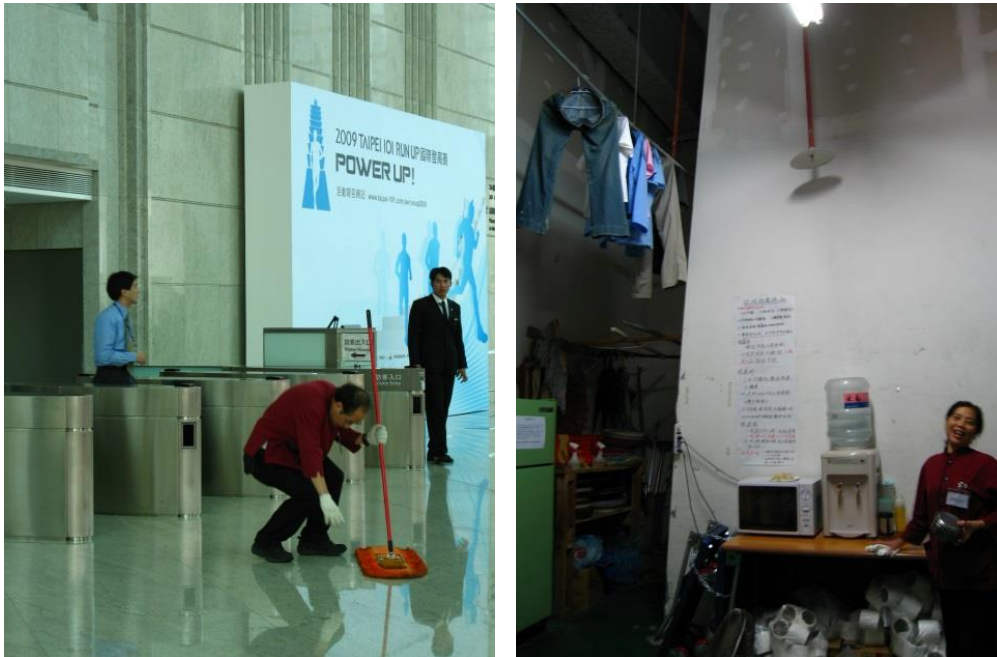
Figure 8.26: *Left*: A employee is responsible for cleaning the lobby. Male staff have to deal with the first and second floor façade cleaning. *Right*: A cleaning lady (4A6) shares her working experience in Taiwan in a strong accent with another employee who is also a spouse from Mainland China (author's photographs).

Following this employee (4A6) into a staff elevator, there are cafes, restaurants and convenience stores for staff in the building on the thirty-fifth transition floor (*see* Figure 8.27). Two office ladies who were sitting in the mini-bar looking out over the Taipei city view shared their experiences of working in this special building. Ms Wu (4A7) had worked as a Forex commissioner at AA Bank for five years and frequently stayed overnight in the office in order to track New York and the west-coast markets via conference calls or online trading. Ms Lin (4A8) was a commissioner of the investment trust in the ING Group and was supervised by a British chief manager from the regional headquarters in Hong Kong. Since she was in charge of the East Asian markets, she had to travel between major big centres such as Hong Kong, Japan, Singapore and Australia, and at the same time arrange various meetings in the Taipei office. Therefore, her schedule was based on broker time which meant a two-hour later time difference. Both of them mentioned the special situation that employees can easily be isolated in the

building because most of their daily requirements[144] can be found there, and hence it really takes time to move from the upper floors to the outside city for any reason.[145] They felt that it seems like a small city. This description raised my curiosity about how many ways there are to get outside this giant structure. An answer was found on the fifth floor, where there are exits to the city skywalk.

Figure 8.27: *Left*: A mini bar in the Sky franchise store on the 35th floor. During the lunch period, this store is crowed with employees from different offices. *Right*: A view of an office lounge where most employees choose to stay for their lunch break instead of spending twenty minutes going down to the ground floor (author's photographs).

Staring at the Taipei 101 building from its links to this skywalk, there were two dimensions of extremeness which caught my attention; the vertical giant structure of the building itself and the horizontal labyrinth of the extended city skywalk. Walking along this skywalk, which was carefully planned in accordance with the urban planning act of the Xin-Yi district and sponsored by each office and commercial building in this connected area, the entire western landscape of the Xin-Yi planning district fills the

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[144] On the transition floor, there are a franchise store, a café, restaurants, a simplified post office, a telecom branch and several bank branches. As in the 7-Eleven franchise stores, these might provide clothes, cleaning and other home delivery services. Other simple daily requirements might be provided by each individual company or found in the food court and service area in another part of the mall.

[145] It is a feature of the elevator control system that appointed lifts only stop at a specific floor and people only can transfer to the 35th floor by using an open transition area. There are only two lifts serving the floors above the 70th. According to Ms Wu, at peak time, it might take twenty minutes on average to take a single lift. Even the cleaning lady who was a leader in charge of the observatory on the 89th floor mentioned the same issue, so that her team had their own small staff lounge for their break instead of moving down.

observer's vision. Ultimately, it leads to another beginning point of extreme city infrastructure, an entrance to the MRT transportation system, one situated in the basement of the Taipei 101 building and another located next to Taipei City Hall (*see* Figure 8.28). To someone exiting from the MRT's Xin-Yi line here, a completely different scene appears: a large allotment garden with people planting things and birds flying freely. It appears as another ravishing world, but one far removed from the sense of the *Taipei Manhattan*.
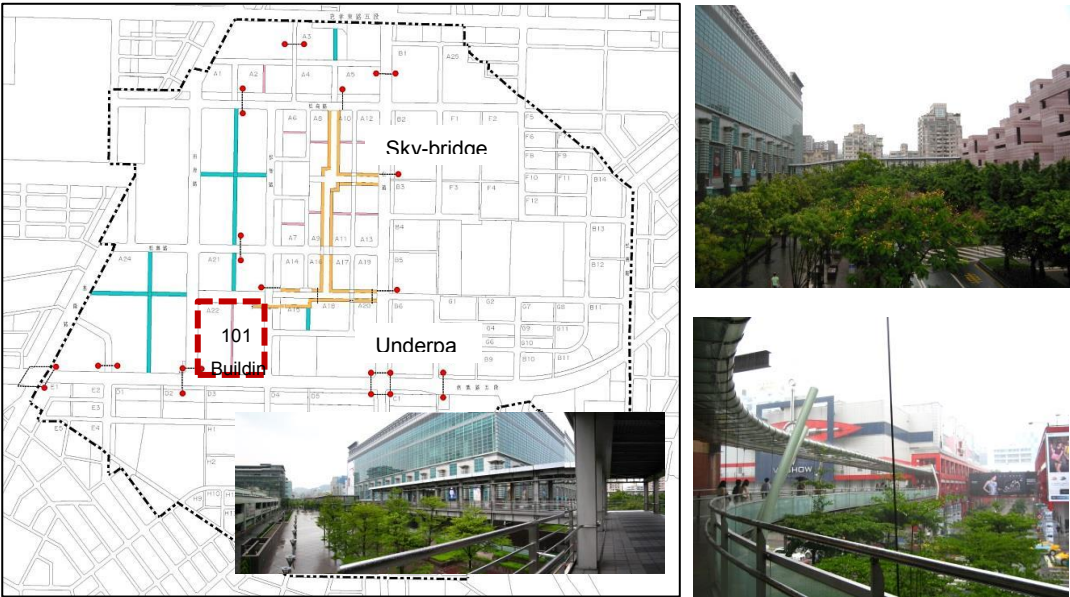
Figure 8.28: *Left*: The plan of the connecting system in the Xin-Yi planning district. The 101 building is linked with the surrounding facilities by the sky-bridge, underpasses, and ground-level passways which all have different widths. It is highly connected in all dimensions and to many institutions (source: Department of Urban Development, Taipei city government). *Upper-right*: The sky-bridge between the 101 building and the World Trade Centre. *Lower-right*: The sky-bridge extends to commercial areas at the north-east side of the building (author's photographs).

8.5 A Long-standing Allotment Garden

As I can recall from memory, that location has long been an allotment garden. It still stands there but now accompanied by the World Trade Centre and the Taipei 101 building rather than another planting field which used to be there. (Stated in the author's empirical work, 2009-2012)

Figure 8.29: A corner of the long-standing allotment garden viewed from the south side on a weekday evening. The angle of this photograph was taken from a human horizontal perspective and presents a direct sense of the allotment garden which refers to a local and daily spatial practice in the Xin-Yi planning district (author's photograph).

This long-standing allotment garden facing onto the busy Xin-Yi boulevard often raises a sidelong glance from passers-by because of its unplanned and low-rise conditions in stark contrast to other blocks in the Xin-Yi planning district (*see* Figure 8.28). Visiting various specific people, including gardeners themselves, the head of construction of the MRT station, and the official head of the neighbourhood who is appointed by the city council in charge of supervising this place, provided particular geo-historical clues about

this undeveloped situation. According to Mr Chang (5A1), the official head of the neighbourhood, this place was simply a piece of farmland for a long time. Since the establishment of the Four-0-Four village in 1948-1950 and the extension of its service facilities, such as an elementary school and a public hall, this land was occupied and later partially purchased by Ministry of National Defence (*see* Figure 8.30). Over twenty years of real-estate development and land subdivision, the ownership of the land was registered with over one hundred land holders. The Figure 8.31 showed the ownership of the land registered in 2005. Due to the surrounding military facility and the complicated ownership of land holders,[146] it has proved impossible to develop this land before and even after the Xin-Yi planning district was implemented.

Figure 8.30: *Left*: The view of the east side of the garden. These are mainly high-rise residential areas. *Right*: The view of the west side. Commercial and office buildings occupy most of the blocks. The garden is a flat, undeveloped block surrounded by those big volumes (author's photographs).

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[146] Following the very specific developmental regulation of the Xin-Yi planning district, no block can be fully developed without an agreement between all the owners. All the plots of land in one block can only be developed as one full developmental plan.
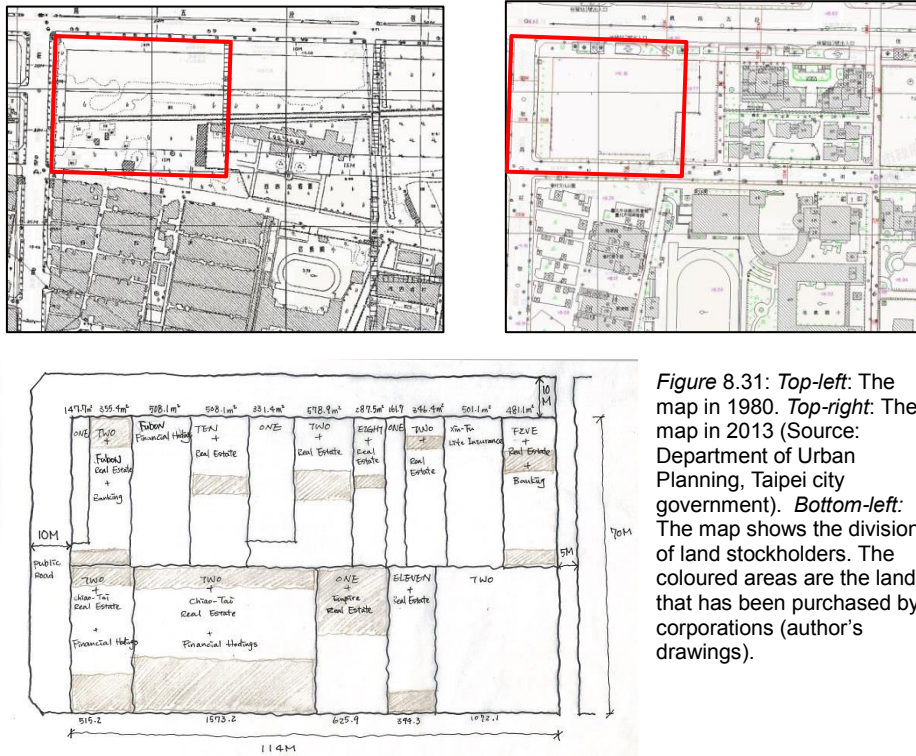
Figure 8.31: *Top-left*: The map in 1980. *Top-right*: The map in 2013 (Source: Department of Urban Planning, Taipei city government). *Bottom-left:* The map shows the division of land stockholders. The coloured areas are the land that has been purchased by corporations (author's drawings).

The head of construction of the MRT station, Mr Huang (5A2), described how this developmental difficulty became a benefit for him and his staff to set up a temporary shed for construction facilities and materials (*see* Figure 8.32), because they were able to rent a small piece of land for a very low price. During the construction of the MRT station, some of the landowners who hardly ever appear did make their presence known to those who were cultivating the garden, and implied that their plots of land might be taken over by banking or real-estate groups for an integrated development, so that the planting of the allotment area might not be given approval anymore. One gardener (5A3) said that the construction of the MRT station had stirred up certain changes that obviously result in the decrease of the planting area in this garden. In Figure 8.32, it clearly showed evidence of those subtle changes in the allotment garden.
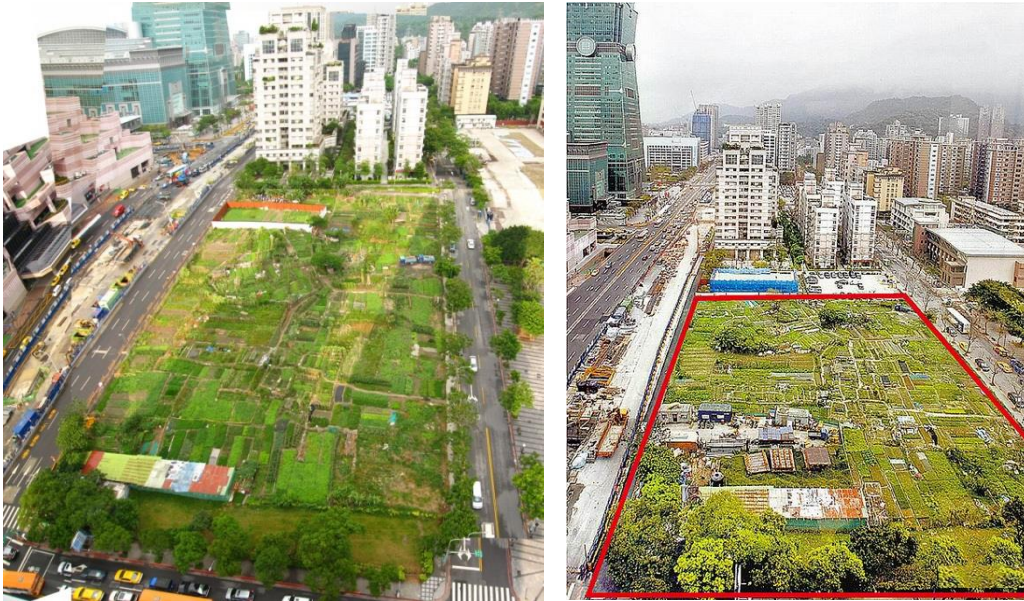
Figure 8.32: *Left*: A MRT shed is situated in the lower-left corner, and there is an enclosure on the upper-left side where a temporary structure once served as a reception office for selling the particular housing product which is not, in fact, situated on this land at all (author's photograph taken in 2010). The temporary usage of this land is because it has not been granted development permission by the city council due to the urban policy for the whole block development in this district. *Right*: This photograph was taken in 2012. There are two plots which have been borrowed for MRT construction service. A plot next to the enclosure has been turned into a charged parking lot. The change of uses in the allotment garden shows the demand pressure on this land development stirred up by the preparations for the new MRT line. It also highlights the boundaries of individual land divisions which are unperceivable in any view of the garden.

There is a special situation in the allotment garden which is that none of the land's actual owners use this land. Even though it is free for the public to approach without surveillance, there are few people who dare to enter in except for MRT workers, the gardeners and their friends. Curiosity encouraged me to go across that invisible line. In the peak time every evening, there are around ten gardeners moving around in the garden at the same time. Most of them are local people and live nearby. Walking and short-distance cycling are the major ways to approach this garden (*see* Figure 8.31). The majority of them share a similar social background so that the Taiwanese dialect is the

prevalent language used among them, instead of Mandarin. [147] That was the first challenge to me to get involved in this practical field. With kind help of a beautiful lady, Mrs. Huang- my actual mother just as much as an assistant in the field- the language barrier dissolved. A group of gardeners similar in age to Mrs. Huang welcomed us to share their planting experiences in this garden (*see* Figure 8.34).

Figure 8.33: The photograph shows evidence that walking, bicycle and motorcycle in a few cases are the major ways for gardeners to approach the garden. The vehicles that they use reveal that this garden is a spatial field based on local people and the local neighbourhood (author's photograph).

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[147] People who come from the ethnic group of Hokkien are used to speaking the Taiwanese dialect and agriculture was the major way of living for them, especially in the south of Taiwan. Mrs Huang, my mother, originally came from the south, which shares a similar social and geographical background with some of the gardeners in the garden.

Figure 8.34: Mrs. Huang's rich knowledge of the Taiwanese language provided great help for communicating with diverse groups of gardeners in detail. Her semi-translation work and common interests in planting offered the key to access engagement in this unique practice (author's photograph).

An old lady (5A4) leaning on a bicycle with her freshly harvested produce explained that at the beginning her intention was to look for a small planting plot which was within one mile from her home for daily exercise and leisure use. This free land has now become an ideal place for her for the past five years earlier. Another old lady (5A5) cultivating next to her plot (5A4) was encouraged to plant here by neighbours living in the same community of public housing next to the garden. She (5A5) proudly showed me her distinctive plants from those of other gardeners which she had brought from her native village where she was born (*see* Figure 8.35). A middle-aged lady (5A6) with a Cantonese accent living in a Xin-An public housing started to participate in this practice only two years earlier, and acquired all the planting knowledge which she had never had before from other gardeners.

Figure 8.35: *Left*: Gardeners are sharing their planting experience and having a daily chat. Three of these gardeners had been worked in the garden over two or more years. According to them, the allotment garden is a place of social community. *Right*: A lady (5A5) takes care of her plot with more skilful use of her tools than other gardeners (author's photographs).

In the late evening and early morning,[148] some other keen gardeners showed up. An old lady (5A7) with proper equipment took care of a relatively bigger plot of land. She hardly spoke or responded to anyone but was busy just managing her land. Boxes of vegetables were then uploaded onto her motorbike and she left without notice (*see* Figure 8.36). An old gentleman (5A3) wearing full gardener kit parked his bike and explained that one particular garden is for the official head of the neighbourhood, and that to health and environmental inspectors the allotments are a hot potato. He told me that because there is no contract between land users and owners, there is no exact way to handle various legal issues, but only to leave them alone. For example, in order to sell vegetables to local markets, some gardeners might use pesticides; other gardeners might collect recycled materials for planting use but without any proper arrangement for dealing with waste. He led me to his planting area and generously showed me how he managed the practice in all aspects of running his plot.

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[148] The observation time at the late evening was from 21:00pm to 22:00pm. The early morning time refers the observation around 4:30am to 5:00am.

Figure 8.36: *Left*: This lady (5A7) is one of the very intense gardeners taking much bigger plots in the garden. *Right*: She even plants on whole area in the construction enclosure. In the very early morning and evening, she sells her plants to traditional markets nearby (author's photographs).

His planting area is patchy; some plants are next to the pavement on the south and some are in the middle of the entire garden (*see* Figure 8.38). It seems that the planting boundaries are very 'organic'. He responds to my surprise that this garden is a fully free land where gardeners have come and gone over the last twenty years and managed their planting areas as much and in whatever shape they want (*see* Figure 8.38). There is, however, an unspoken consensus among the participants in this practice that no-one would overlap or cross over the 'organic boundaries' (often invisible to an outsider) of each allotment. He emphasized that every gardener seems to have membership of this specific garden community. Some varieties of vegetables on his land were exchanged with other gardeners and some were transplanted from another garden which he has on the nearby higher land.[149] Most of the seeds supplied to major gardeners of the allotment garden were brought from a gardening and planting centre in Nan-gang by himself and another senior gardener. The soil of this land in fact is not rich enough. A middle-aged gentleman (5A8) sprinkled some white granules onto the ground as a fertilizer and source of nutrition for plants. These were waste residues of soy bean milk collected from

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[149] The nearby higher land is located on the west side of the Xin-Yi planning district. It is the place where Yi-Cui village, which was referred to in the case study of the rubbish management process, is located.

Chinese breakfast shops around the west side of the Xin-Yi planning district where this gentleman lived (*see* Figure 8.39). As with the plant seeds, this organic and special fertilizer was shared among the gardeners.
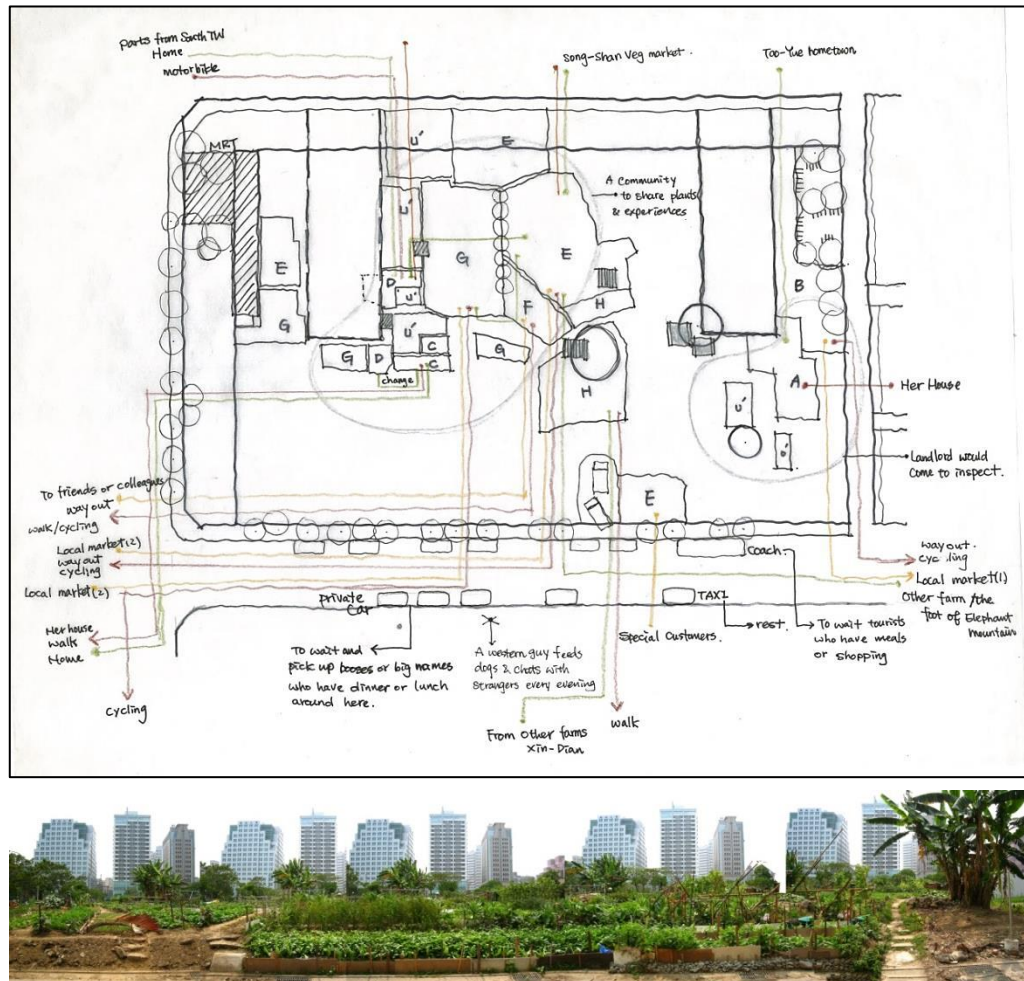
Figure 8.38: The path between and boundary of individual plots is organic and changeable. There is an unspoken consensus among participators that no-one would overlap or cross over the 'organic boundaries' of each allotment (author's photograph).

Figure 8.39: The locations of the garden centre where gardeners of the allotment garden mainly purchase seeds and of the Chinese breakfast shops where they collect fertilizer in Taipei city (author's map).
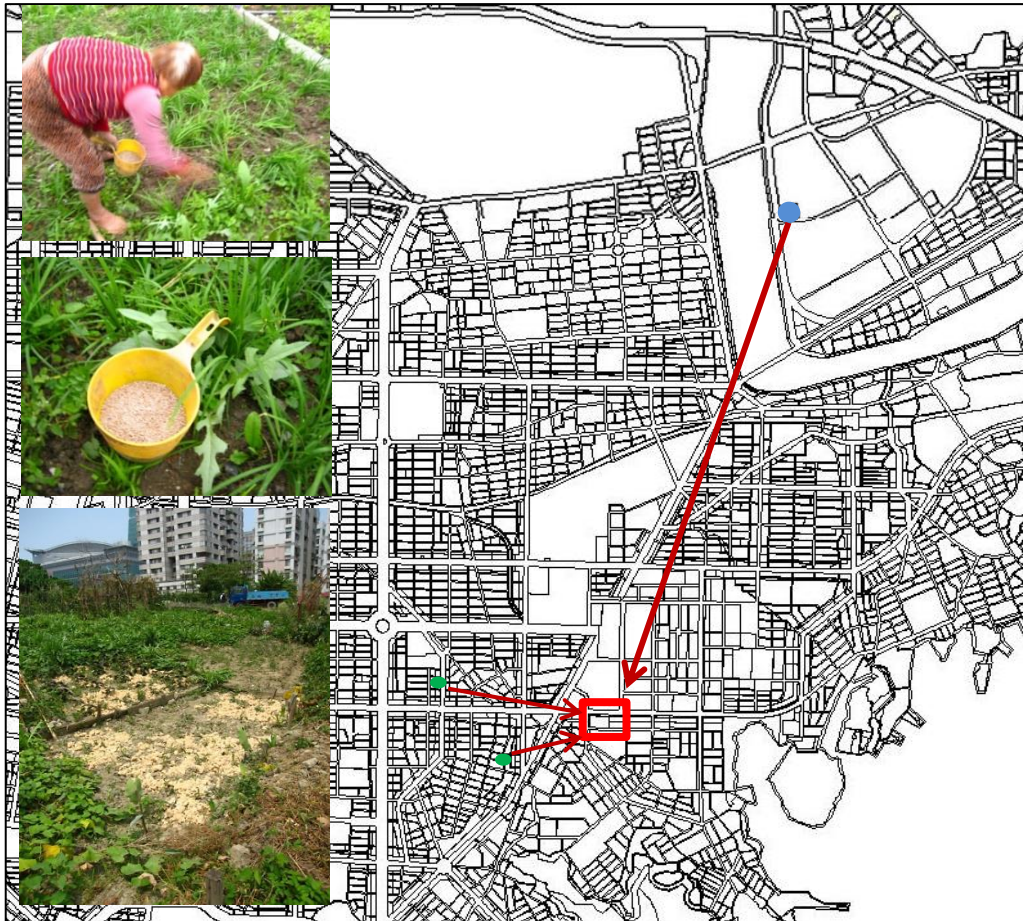
He stressed that there are two crucial resources, not a public shared concept as such: the supply of water and of electricity. An old but strong gentleman (5A9) was watering his land with a hosepipe, and he explained that there are two natural wells and two artificial wells pumping ground-water for the exclusive use of the gardeners. These irrigation systems have been established and developed by various long-term gardeners who have worked there. In this sense, they are now a quasi-private resource. Other gardeners need

to find their water from sources such as ditches, rainwater tanks and bottled water brought from home to water their plants (*see* Figure 8.40). This gentleman (5A10) whispered to me that they sometimes 'borrow' small amounts of water and electricity from the MRT shed next to their planting area. Some Thai workers and native people working as MRT staff and using that shed kindly provided this unspoken help to them, and fresh vegetables were given as appropriate reciprocal gifts. The gentleman (5A9) who had worked in Thailand and had a basic knowledge of the Thai language revealed that this relationship of mutual co-operation works in different ways. To have smoother communication between them, the Thai workers are willing to contribute their muscle power to undertake heavy work on the garden facilities for him. Cigarettes and other leisure products which their employer does not allow them to purchase for themselves are given in return.
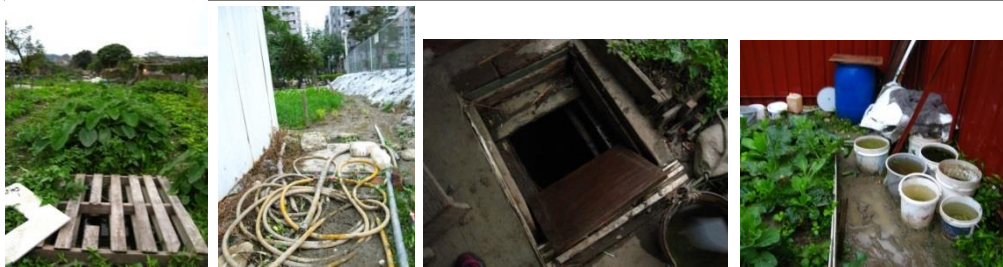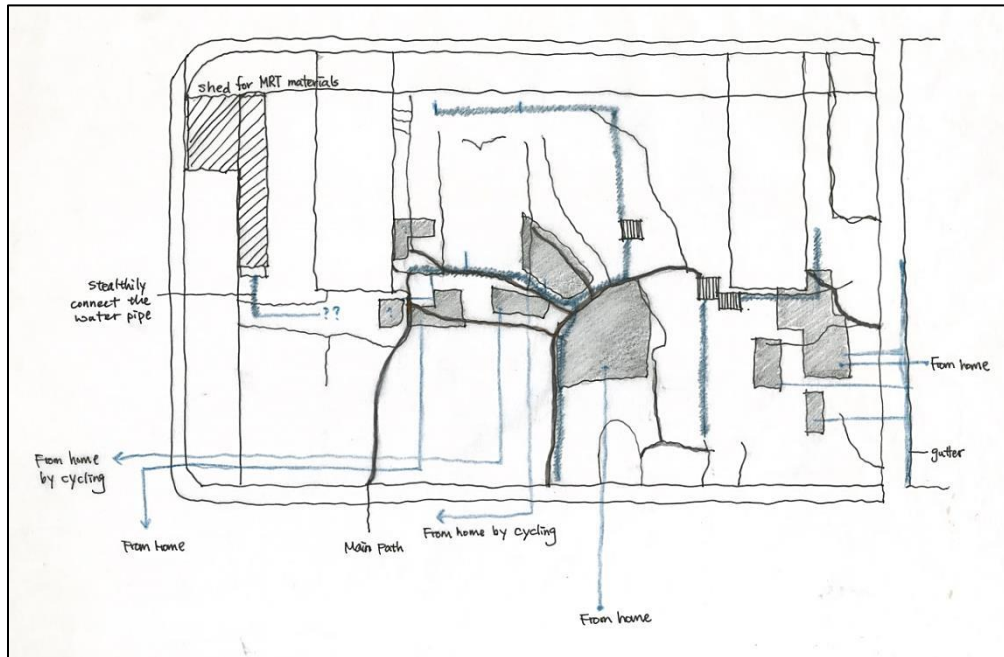
Figure 8.40: A map of water use in the garden. There are generally four ways of watering; artificial wells, gutter water, collection of rain or home water supply, and 'borrowing' it from the MRT shed (author's photograph).

Some gardeners take care of much bigger planting plots, and this aroused my curiosity about where their crops of vegetables finally go. Most of these vegetables are for their own consumption but some gardeners, such as 5A3, 5A9 and 5A10, sold their crops to local traditional markets in the morning or evening. The locations of these markets are shown on Figure 8.41. For himself (5A3), some particular vegetables which he planted met the special demands of a friend of his who required such plants as ingredients for Chinese medicine remedies for his own illness. Others were for seedlings which would be transplanted to his other garden on the nearby higher land.

Three areas of local traditional
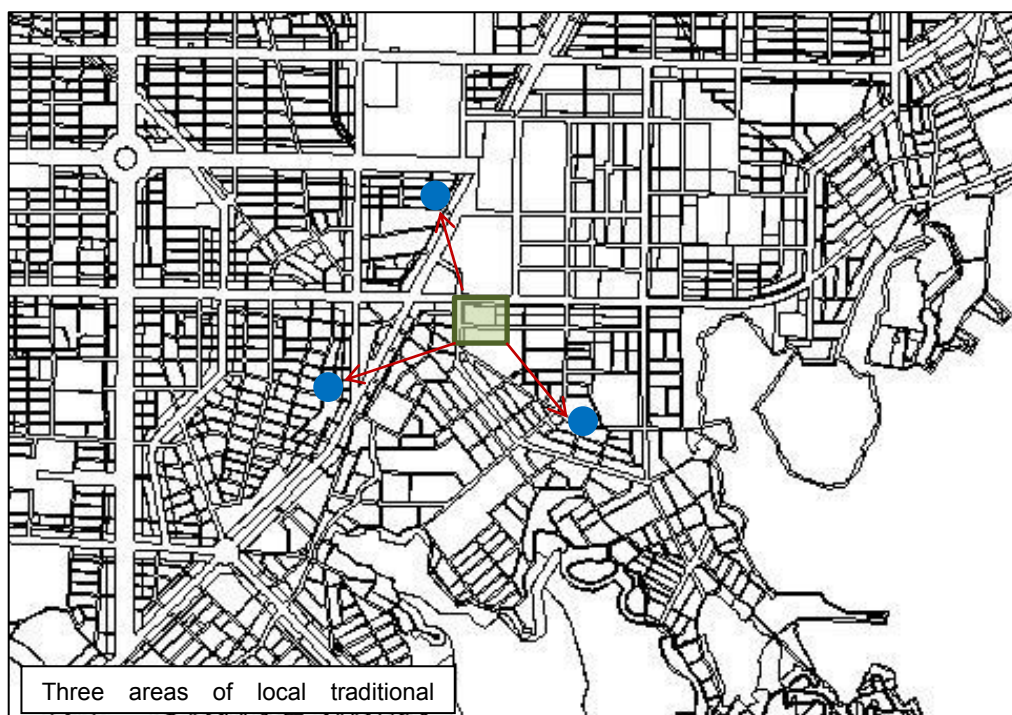
Figure 8.41: Three locations of traditional markets where gardeners might sell their fresh vegetables in the morning or evening market daily (author's map).

As we were chatting about the vegetables, three young people walked confidently into the allotment garden. They were exchange students[150] (5A12) from Beijing who had come to explore the differentiation and conflict in Taipei metropolis as an assignment for their course on comparative environmental studies. To encourage them to join us, a middle-aged lady (5A11) who had been growing there for over five years led us to her home-made shed, which stands on the middle of the garden (*see* Figure 8.42). There we shared our personal experiences of this unique place and practice with one another. In addition to these visitors from mainland China, local teachers and students in elementary schools or universities sometimes pay a special visit to this garden as an ideal place to learn about city agriculture, the lady (5A11) explained. Before leaving the field at sunset,

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[150] They were third-year students in the School of Arts at Beijing University. Ms Mo was the leader of this study group and the students interviewed us. According to the lady (5A11), they sent photographs and a greeting card to her from Beijing one year later.

she welcomed me to return there and enjoy the New-Year firework display on the Taipei 101 building from the garden- which is, she said, the best place to experience that splendid global performance with the fresh scent of local plants all around you.

Figure 8.42: *Left*: This gentlemen (5A3) shared his over ten-year planting experience with me in this garden. He is preparing to fertilize his plot with the residues of soy bean milk which are in his left hand. *Right*: A photograph showing this lady (5A11) and an exchange student from Beijing conducting her field work in the garden (author's photograph, taken in 2012 in the lady's home-made shed).

CHAPTER 9

(RE)SCALING FIVE SPATIAL PRACTICES IN FORMING MULTI-SCALAR TAIPEI

In the previous chapter, five socio-spatial practices have been elaborated in a richness of spatial stories, each with its particular context on the south-west corner of the Xin-Yi planning district. Each involves complex and dynamic urban formations at particular levels of scale in terms of urban fabric, participants, socio-spatial networks and the dimension of time. With such multiplicity, they greatly serve to explore the multi-scalar conditions in globalized urban Taipei. As it has been argued that the concept of scale offers a critical approach to recognising the contemporary urban conditions arising from the demands of globalization, the intention of this chapter is to examine the theoretical approach of scale in these five socio-spatial practices.

Accordingly, the first section of this chapter will analyse the five practices using conventional approaches of scale based on hierarchically-nested reading. Following this conventional approach, each of the practices will be illustrated by a conceptual scalar diagram associated with the scalar conditions of big-and-small, global-and-local, and presented in a particular fixed position. This diagram, on the one hand, will contribute to condensing the quantitative and qualitative empirical data into visual analysis, and on the other hand will help to express the limitations of the theoretical and methodological approach to the five practices in a conventional sense of architectural and geographical

scale which will be argued and rescaled later. The second section will re-examine the five socio-spatial practices using the approach of the Baroque alternative of scale. The multi-dimensional socio-spatial networks involved the complexity of cross-boundary, trans-national and place-bounded conditions operating in and amongst different scales and times have been unpacked in each practice. The fixed scalar positions of each practice rendered by the nested concept of scale in the previous section have not only been folded into an alternative scalar reading, but are also argued to be understood as a dynamic moving field in the scalar diagram. The detail will be elaborated in the following chapter, Chapter 10. By this examination and re-scaling process, the conceptual approach of the Baroque alternative to scale is demonstrated as an enabling methodology to capture the richness of the complex and multi-scalar conditions greatly manifested in the globalized urban context of the Xin-Yi planning district in Taipei.

9.1 Analysis of the Five Socio-Spatial Practices Using the Conventional Scalar Approach

The processes of municipal rubbish management
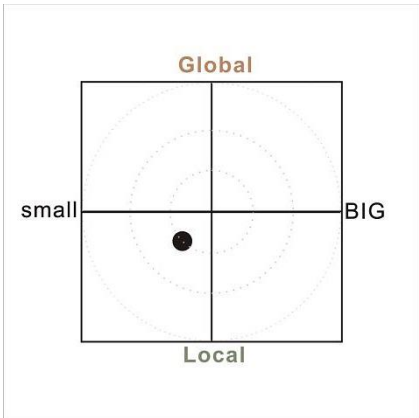
Figure 9.1: The handling of the processes of municipal rubbish management and the involvement of foreign housemaids lies in the small-and-local quadrant of the conceptual scalar diagram. It is, in comparison with the practice in the allotment garden, much closer to the centre because its time scale is considered to be shorter (author's illustration).
The three levels of the circle refer to the time scale: outer twenty-four hours, *middle* over fourteen hours, *inner* within a half hour.

From the empirical investigation presented in Chapter 8, the process of rubbish management examined using the conventional approach of hierarchically-nested scale is illustrated in Figure 9.1 as a practice positioned in the quadrant of small-and-local on the conceptual scalar diagram. Seen as a small-scale practice both quantitatively and qualitatively, the duration of the operation, the catchment of its municipal service and its field of practice, and the number of participants involved in each collection site all provide material evidence. As described according to its spatial story in Chapter 8, the unique way of handling the process of daily rubbish management is restricted to ten minutes at each designated location once a day in the evening. In terms of its time scale, the operation is extremely brief in comparison with the other four socio-spatial practices discussed in this chapter, and with the general metropolitan infrastructural service. The service catchment of each collection point is estimated as serving residents living in a $15000m^2$ area calculated as the distance that people have to approach the site by a five-minute walk from their homes. The distances between each point, except for the one in the private village described in section 8.1, can be covered within a fifteen-minute walk. From the aspect of urban fabric, its field of practice needs no permanent material supports and simply occurs on an ordinary street corner within an area of around 300 m^2. It material and spatial requirement is therefore considered to be on a small scale. The number of actors at each survey point is about fifteen people on average engaging in the practice during the time that the fieldwork was conducted. Not only is the number of actors steady, but also the people who are present. This confirms that the daily rubbish management is practised on a local scale.

This scale is attributable to the particular way of carrying out this practice in terms of time and location limits. People have less will to go far and to cross different neighbourhoods to practise such mundane work. Accordingly, it is, on the one hand, regarded as an everyday local practice and, on the other hand, it identifies actors who are

to a specific degree associated with particular communities and neighbourhoods in this area. According to the empirical survey, the groups of actors practising at the three collection points of the rubbish management were current or former residents of the three neighbourhoods. Even the private cleaning staff and scavengers lived in the neighbourhood nearby and so shared the same geographical domain. The socio-spatial network occurring in this practice might be seen as being on a scale of territorially local from this point of view. Using the conventional approach of scale, therefore, the everyday practice of rubbish management is rendered in the scale of numerically small, territorially local and spatio-temporally brief, operating in a specific corner of the Taipei metropolis.

Since it is a small-and-local practice but also a municipal infrastructural service, mapping its routes and service catchments on a city map (*see* Figure 8.0) needs a direct field-based approach, especially in terms of architecture and urban study, to depict such practices. However, it is clear that there are some difficulties in that the scale of smallness and the sense of localness are hardly presented on such maps. The sketch map showing the spatial positions of the different groups of participants and the operational process in each site (*see* Appendix) only barely presents some local relationships in a static way rather than fully capturing the dynamics of movement practised in the field. In addition, the use of photography, which is a conventional means of depicting information visually, is inadequate to this particular practice. The thematic photograph (*see* Figure 8.7) can only express the small-scale feature of this practice through a still subject, but spatio-temporal relationships are absent. Its extremely short practical time is also hardly captured by either method. Therefore, an appropriate method which is suggested for recording this particular practice is taking a video film, the results of which can be shown in the form of a series of sequential photographs. This methodological issue will be discussed in greater detail in the following section 9.2.

7-Eleven Franchise Store
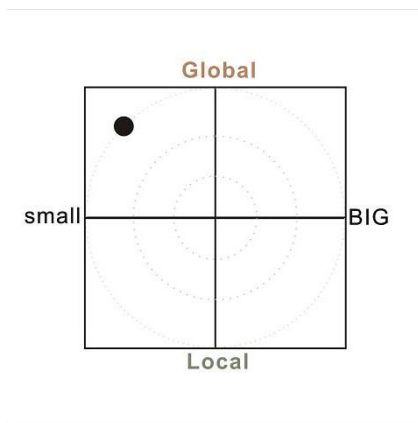
Figure 9.2: The practice of the 7-Eleven franchise store is positioned in the small-and-global quadrant of the conceptual scalar diagram (author's illustration).
The three levels of circle refer to time scale: *outer* twenty-four hours, *middle* over fourteen hours, *inner* within a half hour.

If the process of municipal rubbish management is regarded as a form of city infrastructural service, the 7-Eleven franchise store can be seen as another city infrastructure but one which operates in a commercial and private-enterprise form. It is conceptualized as a small but global practice on the conceptual scalar diagram shown as Figure 9.2. Reading it in the urban fabric, the size of each store, the two selected branches, Xin-Mao and the Taipei 101 building stores for instance, covers an area of 135 m^2 on average, which is comparatively small compared with other grocery stores and supermarkets in Taipei. The service catchment, according to the company's setting, supplies the communities within a 700 m^2 area surrounding each store. Although the 101 building store investigated in the fieldwork is not located in a neighbourhood context, it much more exclusively serves a specific community working in and for the Taipei 101 building. Its architectural structure and space as well as its estimated catchment are both small in size and scale. In addition, the number of actors in the practices is floating and also small in number. This can be attributed to their commercial status, providing a convenient, efficient but modern service for customers who are essentially city-dwellers. The small scale is obvious in that there are two employees in charge of one store and the number of customers in the store at any one time is seldom more than ten as a

consequence of the efficient service and products which are available, as was investigated in the fieldwork. Stock replenishment is also operated within an extremely short time and in a way which attracts no attention. The simplification and uniformity which are in the guidelines for a 7-Eleven franchise brings a global-scale network into a small-scale practice in Taipei city.

Operating as a franchise estimated to have more than 50,000 stores throughout the world, 7-Eleven is certainly a global enterprise, and the Taiwanese part of the business is closely linked to a Japanese headquarters and operates as part of the network in South Asia and mainland China. Materially, the seasonal products and the product brands sold in the store reflect this global influence. For instance, on various special occasions, stores in Taipei can be filled with Japanese summer foods interspersed with products which display a distinctly South Asian flavour, as well as European drinks. According to the interview with the supervisors conducted in the empirical survey, their procurement and logistics system are intensively interconnected and exchanged using telematic communications and material circulation. Because of the uniformity of 7-Eleven franchise stores operating on such a global scale, people who have had daily consumption experience at 7-Eleven stores in other big cities might have considerable knowledge of how to access and practise in such a compact global-scale field in the different cultural and social consumption context of Taipei.

The practice of a 7-Eleven franchise is clearly a typical global-scale organization which can be presented on a world map showing its global distribution and networks (*see* Figure 8.0). Highlighting its location, structure and service catchment on a map of the urban fabric provides a sense of the scale and the size of this practice in a big city. The thematic photographs showing particular products and various groups of participants practising in the stores (*see* Figure 8.12, Figure 8.14) have visualized the quantitative

information about its global connection and operational strategy in a small context, and a sense of this was obtained from the interviews with relevant supervisors and managers in the 7-Eleven franchise corporation.

Extending Infrastructural Network MRT
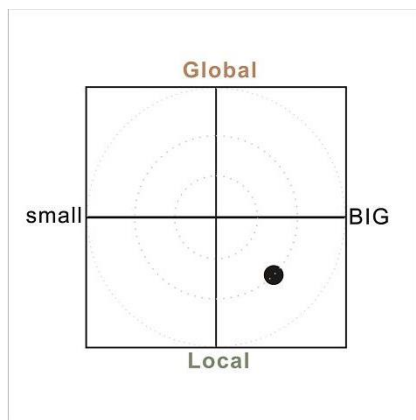
Figure 9.3: The practice of extending the infrastructural MRT network 7 is positioned in the big-and-local quadrant of the conceptual scalar diagram (author's illustration).
The three levels of circle refer to the time scale: *outer* twenty-four hours, *middle* over fourteen hours, *inner* within a half hour.

Serving as a city transportation infrastructure, unlike other vehicles such as buses and the public bicycle system, the MRT offers its delivery service through a full material construction system with multiple entrances/exits and lines in the Taipei metropolis. It is classified as a big-and-local practice on the conceptual scalar diagram shown as Figure 9.3. During the fieldwork, the selected station in the south-west corner of the Xin-Yi planning district was in the final stage of construction. It offers clear evidence of a huge urban structure in terms of the construction material, waste generation, jobs and site area[151] which is hidden below ground level, so the public would never discover just how large in size and big in scale this new MRT line actually is. The number of participants in construction alone on the site has been estimated at more than sixty workers, not even

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[151] The excavation area of World Trade Centre Station is over 5800 m^2 and the project cost amount is 1,750,252,067 NTW equivalent to 35,005,041 Pounds (*Taipei MRT Xin-Yi line R06 station construction report*, 2009).

including planners, consultants and architectural professionals. This is a large number. In addition, the construction period which is lasting for seven years to completion and the MRT's daily operating period of eighteen hours are both evidence of the project's comparatively large time scale. Regarded as a city infrastructural network, the MRT not only connects different places in the city with its lines and many stations, but also integrates with other layers of the city's transportation systems. Therefore, the scale of the spatial fields which the MRT involves is bigger than the place simply reached by its entrances and exits.

Materially, the MRT provides the specificity of mobility throughout Taipei city which can be regarded as a particular level of local scale. Local commuters, on the one hand, are highly reliant on this transportation network in their everyday life. On the other hand, using the 'easy-go' card as a top-up ticket for the MRT to visitors particularly identifies themselves travelling and experiencing Taipei localities. The system is a localized experience in Taipei city. In terms of the urban fabric, each station of every MRT line has generally become a local reference for identifying a place or a direction for both locals and visitors. In addition, MRT stations which provide access to a local attraction or landmark, such as the Taipei 101 building, have spatially or materially promoted each other to highlight the significance of the locality, which reveals the sense of a local scale.

To reveal this simultaneously big-and-local scale practice, a whole-city MRT map and birds-eye-view photographs serve as clear visualization data. The MRT city map, as a traditional approach to the city's transportation system, characterizes its infrastructural mobility networking throughout the city. The specific birds-eye-view photographs show its large size and scale in materiality very clearly, and this is something which cannot be experienced while in the service (*see* Figure 8.15, 8.16 and also Figure 8.0). A thematic photograph of a particular exit and its environment, the World Trade Centre station for

example, displays a spatial connection between the super-structure and the local gateway. These visual data are represented as a conventional methodological approach of scale.

The Taipei 101 Building
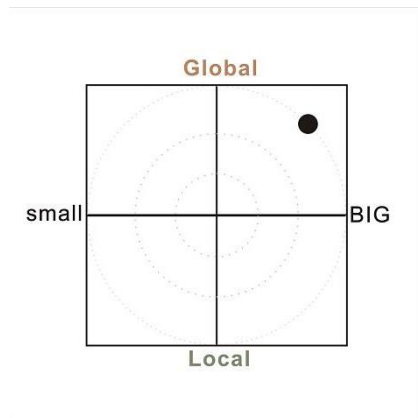
Figure 9.4: The practice of the Taipei 101 building is positioned in the big-and-global quadrant of the conceptual scalar diagram (author's illustration).
The three levels of circle refer to time scale: *outer* twenty-four hours, *middle* over fourteen hours, *inner* within a half hour.

Both materially and economically speaking, the Taipei 101 building is undoubtedly categorized as a big-and-global scale practice on the conceptual scalar diagram shown as Figure 9.4. Similar to the scale of the MRT infrastructure, the construction of the building involved extremely great amounts of materials[152] and experiments associated with the specific geographical environment on a seismic belt, as well as of distinct expertise according to the double-up concept of its construction strategy described in Chapter 8. These large amounts of material resources and labour forces help in piling up an extremely high architectural structure on a big scale. The operation of this architectural 'bigness' not only requires higher volumes of infrastructural supplies such as natural resources and telematics provision, but also raised the restricted height of the city landscape and changed the urban codes for larger real-estate developments in Taipei.

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[152] See the appendix for a list of construction materials.

This architectural practice, therefore, has brought about a series of influences of bigness on different dimensions of the urban fabric including architecture, the city landscape and urban infrastructure and planning. The number of actors involved in this practice, including employees of all the companies which work in the building, the building's own staff and visitors, might reach 2,500 people each day merely in the office tower, which excludes any floating participants involved in special events taking place in and outside the building, such as the Run-Up race or the New Year firework display. In addition, the building serves as Taipei's financial centre, globally connected with diverse markets and industries in different cities and countries. The realm of the global economic flows and information exchanges which occur in this building are far greater than even this giant architecture. This is evidence of the appearance of cross-boundary bigness.

Globalization has been built into the planning and the designation of the mission of the Taipei 101 building. From the perspective of urban development and economic-political strategy, the aim of the Xin-Yi planning district was to serve the policy of the Asia Pacific Operation Centre and later the vision of creating a window onto Taiwanese Internationalisation, and this has established a global-scale position for the Taipei 101 building project. Consequently, over a half of the leaseholders in the building are transnational companies and banks with multi-national workforces, according to the staff of the building's management team. In order to maintain this worldwide connection, the building is in operation twenty-four hours a day, which makes clear the big and global time scale of this practice. In addition to its main programme as a financial sector, the architectural building itself has materialized globalization in a particular way, its completion as a world skyscraper. The Taipei 101 building, an architectural practice in Taipei, has achieved a global scale of recognition which brings more international activities and tourism to the city.

Regarding the visual material, thematic photographs showing the relationship between the building and the city provide astonishing images to present this big-and-global practice. As an urban and an architectural project, conventionally two different maps can be used to reveal its material bigness; a city map showing how big the urban blocks is in which it stands in the city and a site plan scaling its size and space in architecture (*see* Figure 8.18, 8.21 and also Figure 8.0). Visualization data of this type taken from a higher and bigger scalar approach have been conventionally and widely used in the literature to present this architectural practice in Taipei.

A long-standing allotment garden
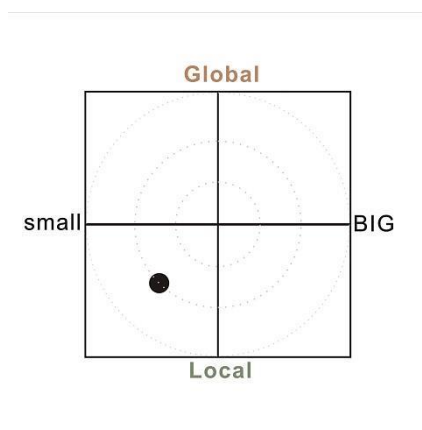
Figure 9.5: The practice of the long-standing allotment garden is positioned in the small-and-local quadrant of the conceptual scalar diagram. Because of the duration of the practical time, it is located on the middle circle, differing from the practice of rubbish management in the same quadrant (author's illustration).
The three levels of circle refer to time scale; *outer* twenty-four hour, *middle* over fourteen hours, *inner* within a half hour.

Neither a type of infrastructure nor a form of architecture in the city, the long-standing allotment garden which is still practised on an open field is regarded as a small-and-local scale both quantitatively and qualitatively on the conceptual scalar diagram (*see* Figure 9.5). In terms of quantities, the number of major participants in this practice, considered as those who cultivate the land, is on average fewer than twelve people present at any

time. Due to its property conditions in limbo, infrastructural pipelines, such as gas, water and electricity, are not fully deployed on this land according to distribution maps of these resources. This results in the limitation of such resource supplies for planting in the allotment garden. In addition, the construction of permanent and bigger material structures is prohibited under this rare land circumstance. Regarding the urban fabric, therefore, it is seen as a 'ground zero' without any official resource supply or solid material constructions. Even so, there are some small and temporary structures serving as stores and sheds for the gardeners standing in the garden. This small scale of the material assemblage which is constituted with little manpower and from construction waste materials from sites near the garden has materialized this practice as existing on a local scale.

Based on my investigation of the way in which gardeners approach this garden, such as walking, cycling and short-distance motorcycle riding, it is evident that the practice of the allotment garden can be recognized as being on a geographically local scale. In terms of social network, a particular local social community has been formed based on the gardeners using the same local language, the Taiwanese dialect, and having a particular degree of knowledge of planting and growing plants and vegetables. Although the garden is essentially an open field, the planting activities are merely a common understanding between gardeners and landlords rather than a formal contract. There are no large-size plants or flowers growing there which require long-term care, but local and seasonal vegetables and plants fill the garden. Thus, the time scale of the growing season and the harvest is short and the produce of the practice is ideally fresh for both local people and traditional markets. Accordingly, as described in Chapter 8, some gardeners regularly sell their vegetables to traditional markets nearby, according to the empirical survey. The practice of the allotment garden is not only recognized as a local spatial field operated by local participants, materials and plants, but also supplies an informal economic network

taking place subtly on a local scale.

A direct approach to this small-and-local scalar practice is provided by thematic photographs of the planting practice taken from ground level. These close-up images portray the relationships between gardeners and also the urban landscape of the garden, which characterize its smallness and localness in the spatial texture (*see* Figure 8.32, 8.33). Because it is an unorganized socio-spatial practice, informal interviews with gardeners in the field are considered to be another main method to approach it. The data obtained are illustrated in different sketch maps showing the individual planning area and resource distribution (*see* Figure 8.35, 8.38 and also Figures 8.0)[153].

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[153] The Figure 6.3 can be read together with an alternative visual presentation of empirical data accumulation by multiple methods in the appendix.

9.2 Re-scaling: a Multi-scalar Approach of the Baroque Alternative to the Five Socio-spatial Practices
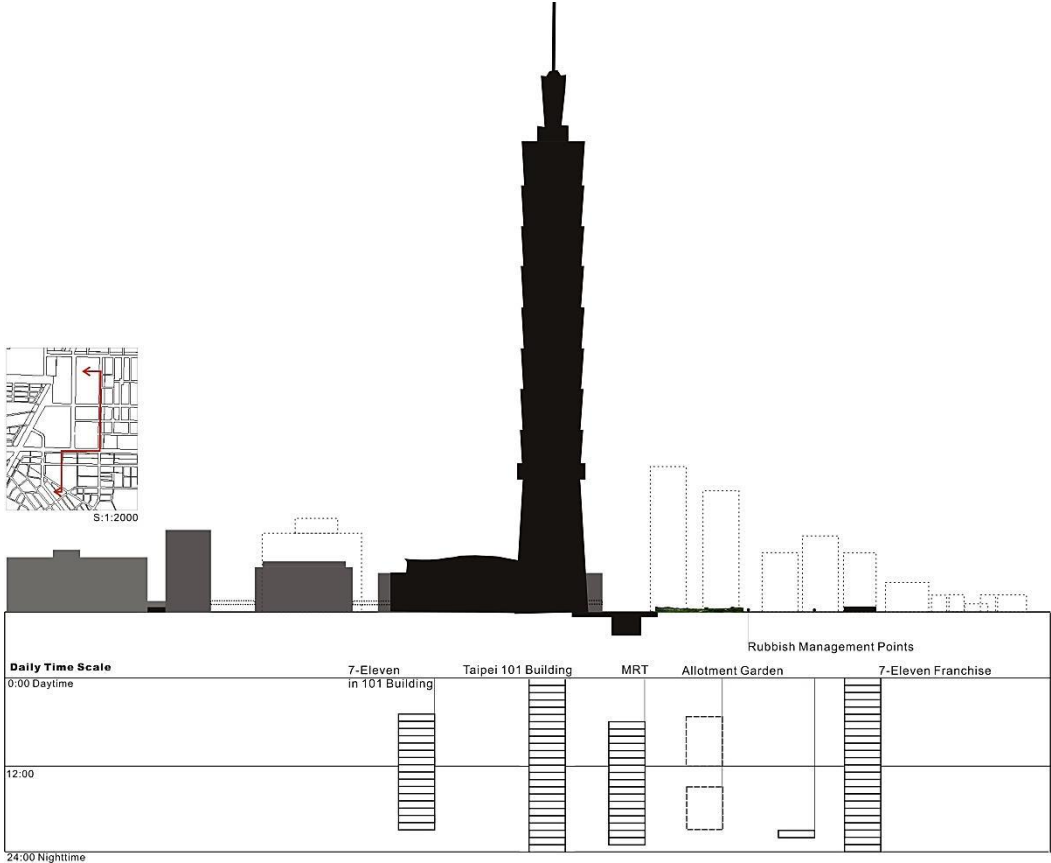
Figure 9.6: The relationship between the five socio-spatial practices expressed by a city landscape section in urban scale. The bottom data displays the duration of time when each practice is operated in one day. To read the spatial scale and time scale together, the approach of fixed and nested scale to the five practices is challenging and problematic. The Baroque alternative of scale might suggest a more appropriate engagement to the multi-scalar conditions in Taipei which are partially expressed in this illustration (author's illustration).

The processes of municipal rubbish management

In the conventional reading, the processes of municipal rubbish management were examined in the previous section as a local daily practice on a small scale. With the

approach of the Baroque alternative, it is recognized as the operation of trans-national networks and the accumulated bigness of the city infrastructure. The social networks among the different groups of participants at the three survey collection points in fact represent the transformations of urban fabric and the influence of global flows in the city. The most significant thread is the participation of foreign housemaids who embody the exchange and labour flows occurring in the regional and global demands. Most of housemaids living in the same neighbourhood are able to freely meet up when they practise this routine. [154] Thus, they intensively exchange all aspects of their social information during this short period of time. This includes purchasing 'exotic' commodities, exchanging information about connecting with their 'local' society, transferring their wage cheques to their homeland and so on. Through this informational exchange, geographically, the unique socio-spatial networks, the Filipino market[155] and the Indonesian 'street'[156] for instance, occur on the other side of Taipei city and are some distance away from the south-west corner of the Xin-Yi planning district. The formal global exchange including remittances, shopping, and commodities meeting foreign labours' requirements takes place in these specific localities. Yet, more importantly, there are informal transactions and exchanges operating around those main markets and collection points in the neighbourhoods they stay in, according to the empirical survey. Through this daily practice, they have, on the one hand, reproduced the network of community in Taipei and even throughout Taiwan and, on the other hand, have access to transnational networks which both connect them to their motherland and allow them to obtain information for their next working step in other countries. This daily practice of

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[154] Foreign workers, especially in domestic service, are under strict supervision by their clients in their daily lives. Therefore, to carry out that ten-minute task away from the house is the daily free time for them to meet their neighbours.

[155] The street area from section 2 to 3, Zhongshan North Road in the west side of Taipei city is the so called Philippine market. It provisionally occurs on Sunday because of Catholic Church ceremonies and the weekend day off for, in particular, Philippine workers. There are a few permanent shops and even malls specifically selling Philippine commodities located in this area. It is more like a carnival gathering a wide range of Philippines in Taipei city who are going to disperse after this temporary event.

[156] It located on Beiping West Road in the west side of Taipei city close to the rail station. Permanent delis, shops and agents for Indonesians and Muslims on that street generate the exotic atmosphere that meets Indonesian workers' nostalgia physically and emotionally.

rubbish management can be seen as a special global hub to access particular networks of global flows taking place in Taipei and among other big cities.

Another group of participants, the scavengers and the private cleaning workers, based on the empirical observation on P1, reveals a mainland China-based network associated with different time and socio-spatial transformations. The appearance of them in this practice expresses a sixty-year time differentiation of migration from mainland China to Taipei. The senior participants practising as scavengers represent the transformation of urban development in this Xin-Yi planning district. As original residents of the Four-0-Four military village located between the empirical sites of P1 and P2, their relocation is the consequence of the development of the new planning district serving a global purpose. The rise of luxury housing has driven them out of this location in terms of house prices. An urban consequence of global flows is considered as pressure on them. In contrast, the mainland spouses practising as private cleaning workers have been drawn into the city and supply the demands for manpower in the global circuit. The impact of global flows on the urban fabric and economic network are embodied in their communication sharing the same geographical nostalgia in this spatio-temporal practice. It assembles multi-scalar territories, networks and times at a specific moment in Taipei.

Regarding urban fabric, this practice in fact reveals the trace of urban formations driven by the pursuit of being a global city. At the three survey points, the people and the way that they manage this practice show the residential type and zoning as well as the socio-spatial level. The committees of luxury apartments usually offer a private rubbish management service for the tenants inside their buildings. Outdoor attendance is unnecessary for maids or for clearing workers, as investigated at P2 and described in Chapter 8. The environment of a middle-class or mixed neighbourhood becomes the most active site with more diverse groups of participants as investigated at P1. These

differences in residential types are the result of the planning policy based on the guidelines of the Xin-Yi planning district serving the image of a *Taipei Manhattan* as discussed in Chapter 7. This selected empirical field which has been divided by the boundary of this specific district as described in Chapter 7 significantly reveals the distinctive urban patterns. The practice of rubbish management is operated on a small daily scale but yet should be read on a bigger scale in response to the urban formation.

In short, this daily practice of rubbish management articulates not only the complexity of the inter- and trans-urban networks in Taipei, but also manifests fragmental relationships interpreted by diverse participants coexisting and interacting at multiple scales. It importantly involves manifold socio-spatial reproduction and re-assembly and is indeed grounded materially. Although this practice is worked in subtle ways and is invisible during the daytime, it embodies highly dynamic and multi-scalar networks in terms of the transformation of the urban fabric and the floating actors. It is rather more than a singular reading as a small and local performance in the scalar diagram, but is continuously folding in scale and moving in time with multi-scalar spatial reconfigurations.

Methodologically, this rubbish management practice might be possibly missed in any form of conventional methodology, such as maps and figures showing all diverse data in a scope of global comparison, as well as photographs taken from a birds-eye view or from the ground, to understand the global urban formations of cities. In other words, under the nested scale set, this practice contains no thread linking with the globalized urban conditions and encloses its own fixed scalar position, especially from the approaches of human geography and urban study in which macro-network comparison dominates the legitimacy, as argued in Chapter 6. Methods such as the figured ground, urban morphological maps and thematic photographs of urban fabric used in the

architectural tradition to approach cities are insufficient to engage this practice. Therefore, multiple methods taken from particular perspectives including video-taking (*see* Figure 8.1), informal and formal interviews and distinctive maps based socio-spatial transformations (*see* Figure 10.1 later) are required to capture the transient and multi-scalar conditions characterized in this practice.

7-Eleven Franchise Store

Through empirical investigation and informal interviews with relevant participants including employees in selected stores, consumers and neighbours, the 7-Eleven franchise store is considered to be folded as a local-scale service in Taipei. Based on its business strategy, each store has to serve and to be involved in activities in the designated communities and surrounding neighbourhoods where it is geographically located. For instance, the Xin-Mao store in the empirical survey has a close partnership with the community board of its surrounding residential community in terms of environmental cleaning service, supplying particular traditional and cultural events, and security. This store even becomes an indexical place and gathering location for neighbours and their friends. It practises as a localized plaza with air conditioning and refreshments in the community but at the same time welcomes the public. Accordingly, some special activities have taken place inside and outside the store. A local vegetable vendor who in fact grows his produce in the allotment garden opposite the Xin-Mao store sets up a small and temporary scale of business in the evening in front of the store for those who shop for daily commodities and also demand fresh food which the store does not offer. There is an informal cooperation and reciprocity between these practices.

In addition, the supply of a public phone, photocopier and fax machine as well as the sale of international call-cards particularly for the Asian region has become an attraction for foreign housemaids once they have finished the daily practice of rubbish management close by. For them, the store provides a physical platform and resource to access the trans-national telematics network linking them to their home city or with particular groups in 'local' Taipei. From this point of view, the practice of the 7-Eleven store, particularly the Xin-Mao store, is registered as a local place for foreign housemaids in this neighbourhood spatially gathering to exchange information and materially managing the networks provided by the store.

Another selected store in the Taipei 101 building provides different stories of local community service. Groups of office workers, security staff and cleaning employees become the major communities which it serves. In this case, the territory of a community is defined by the vertical dimension of the architecture itself rather than by a horizontal geographical domain. In addition to these specific groups working in this building, groups of regular participants such as scheduled taxi drivers and routine deliverymen regard this place as a reception for their service. They share job information and are sometimes offered food, commodities and bargains by the store's employees. A unique but subtle local social network amongst employees, particular taxi drivers and deliverymen thus occurs.

Although the spatial size of each store is considered small, taking account of it as a networking service system it is a large urban landscape in the city. The 24-hours operation marks it as a brightly light hub in the city where people can meet almost all of their daily needs from a cup of coffee and laundry delivery in the morning to the police patrols and taxi services at night. This 7-Eleven serving practice has a geographical appearance within a twenty-minute walk on average. Moreover, the branches are

systematically connected as a regional and city service web. As the urbanist Tzai (2006) argued, 7-Eleven stores weave a large-scale and endless landscape by linking each individual spot in Taipei. This networked landscape is signified by its identical architectural performance and unceasing operational condition. In short, it is a practice which is operated in a bigger urban networking scale well beyond the small space and the amount of material limited in a single store.

Regarding the informational aspect, the 7-Eleven franchise stores have rendered a unique city and regional map by the company's magazine, which introduces the attractions and specificity of particular districts in Taipei and even other counties in Taiwan based on the location map of the stores. In this sense, this practice not only involves a spectacular city landscape with the density and uniformity in the city, but also provides a particular approach to understanding a city from a particular catchment and service. In other words, this practice is folded into the urban scale by its re-interpretation of the city of Taipei.

The exploration of these local and urban scales characterized in the practice of 7-Eleven franchise stores contributes to the methodological approach based on the Baroque alternative to scale. Each method used in the fieldwork has been taken in different perspectives to discover the multi-scalar conditions that the practice might engage in. For instance, the maps including world franchise distribution (*see* Figure 8.13), a city guide and the locations in communities (*see* Figure 8.14) provide great resources which reveal different scales of the networks involved in and formed by this practice. These multi-scalar methods help to set this socio-spatial practice free from an approach of a fixed geographical and architectural scale in the urban context of Taipei. They moreover render a more complex folding movement of scales in terms of the different time and space involved in this practice.

Extending the Infrastructural MRT Network

If Taipei is regarded as a dynamic complexity manifesting parallel and selective connections, the practice of the MRT plays a significant role in this condition. Each station, more precisely the exits/entrances of stations, is the most important part in terms of providing a physical access to participate in this practice. Yet materially speaking, these exits are on a comparatively very small scale in relation to the whole construction of the MRT system. Reading it on an urban map, some of them are unrecognizable or hidden inside buildings. But such small-scale structures indicate the path to the expanding city underground. In the station, the sense of scale to understand a city is arguably confused because every geographical place has been replaced by the name of a station with the same speciality and system control. The geographical scale of distance is broken into pieces by the arrival of trains and the station announcements every few minutes. The architectural scale of the MRT, referring to the size of the construction fabric, has become unrecognizable, but yet the area of the platform and the space in a train can be perceived. To extend Augé's argument of 'non-places' to such a modern infrastructure serving the explosion of cities, it is argued that this practice to certain extent operates on a flat scale which co-exists and works in parallel with other urban conditions, but in different dimensions of time and movement.

As an example of an advanced infrastructure designed for serving most modern metropolises, the urban practice of the MRT is undoubtedly a product of globalized urban formation imported from the West- specifically knowledge and support from the UK and the US in the case of Taipei. In terms of the project itself, it is a trans-national practice that demonstrates a new way to travel in and re-configure the city of Taipei. This practice, similar to the construction project of the Taipei 101 building, involved

consultation with trans-national corporations, but there are great numbers of foreign labourers, mainly from Thailand, who have been and still are involved in this local construction. According to my interviews with supervisors and the head of contractors, the Thai workers have made a great contribution to the site and by their presence a small-scale Thai community based on this construction has been formed and has created further links with other Thai social networks in Taipei. In the empirical survey, it was found that the workers had not only developed a special home group based on the MRT shed next to the allotment garden, but had created different exchange networks between locals, such as particular gardeners as described in Chapter 8, and other workers from different countries; foreign housemaids and their friends for instance. These trans-national socio-spatial networks occurring in the practice are easily omitted under a conventional grand-scale approach to the MRT only recognizing it as an urban and large-scale project.

The Taipei 101 Building

Concerning the Taipei 101 building, as Sassen (2007) claimed, many of the resources necessary for this complex of global practices and functions are heavily reliant on the local infrastructure, local suppliers and services such as sanitation and electricity systems, as well as the maintenance service. On an infrastructural supply map (*see* Figure 9.12), not only the density of pipelines but also the volume of usage is less than the urban blocks on the other side of the Xin-Yi Boulevard. This map shows an unrevealed quality of this practice as comparatively small rather than absolutely big in all dimensions. The neighbourhoods outside the border of the Xin-Yi planning district are considered as old and dense residential communities in contrast with the new

development of mega-blocks in the district. Accordingly, the population and total resource demands for the same size of area in the old neighbourhoods are much higher and distributed much more densely than in the block of the Taipei 101 building. The bigger size of land plot and of architecture in this respect is folded into a smaller size.

Environmentally, the Taipei 101 building has also been designed to be part of the regional landscape network to serve as a public passageway, following the detailed city planning guidelines. Accordingly, the building is not just a giant landmark standing on its own, but is also regarded as an architectural 'joint' which connects other individual buildings in the Xin-Yi planning district by the skywalk system. To extend this account on a visual representation, this single building is not as big as it is generally thought, and seeing it on a skywalk system map there is only a small joint visible in the spatial network. Moreover, the height of the building is not absolutely large vertically when it is numerically compared with the length of the skywalk system on the horizontal dimension. In addition, the building which serves as an exit/entrance of the MRT system is expanded to a much bigger urban landscape outside this district. Taipei 101, from this angle, is transformed into a local infrastructure for everyday mobility, connecting different scales of transportation, such as the city underground system, the regional skywalks, the local subways and light vehicles.

Although name-boards of the building's leaseholders placed in the lobby obviously express its world-wide networking role, there are other working schedules running subtly at the same time. This can be seen in the cleaning and security shift lists posted in their staffrooms (*see* Figure 9.13). The cleaning and security services, practised by local employees, in fact play crucial roles in maintaining those trans-national activities within this building. They are, in Sassen's (2000:7) description, "types of workers in the story of globalization (who) are in their own way as vital to it as international finance and global

telecommunications are". These significant groups of participants, compared with office workers, have a higher accessibility to cross different spaces in the building and to communicate between the diverse participants of this practice. According to the office workers, the building is regarded as an isolated enclosure in terms of restricted accessibility and the time-consuming movement to ground level, which is not as mobile as their trading deals of global transition made possible by their computers. In addition, different groups of maintenance employees exchange their personal connections to introduce other people to undertake similar or other jobs, or share their professional experience. Some of them also offer private office or home services to foreign office workers. A subtle network of cleaning services within and outside the building has been formed.

The Taipei 101 building can be seen as a part of a local practice and network which can best read from both an external and an internal logic. This architectural landmark manifests diverse inter-dependencies and interconnections of relationships on the ground and between participants. It not only serves as a global representation of architectural bigness and hyper-transactions, but is also grounded as a node of local transportation service and is physically operated by local employees who have formed multiple socio-spatial networks throughout the city.

Methodologically, conducting interviews with different participants at particular times and positions within this practice and reading the urban infrastructural map (*see* Figure 8.27) from various perspectives helps to reveal the different scalar networks operating and serving the globalization activities conducted on the contextual ground. In this sense, the global practice is folded into a local grounding. By using multiple methods with the Baroque alternative to approach this practice, the Taipei 101 building is unpacked from a

scalar position as a big-and-global practice. It is no longer merely recognized as a giant architectural performance of globalness in an urban centre.

The long-standing allotment garden

Re-approaching the practice with the Baroque alternative, the long-standing allotment garden has been unfolded from a small and local scale and is seen to have multi-scalar networks patchily connecting different geographical places and social groups in and beyond the city. Regarding the complexity of the relationships between participants and the urban fabric involved in this practice, they are multi-layered in coherent and non-coherent forms, as noted in Law's (2004) argument about the quality of globalization. Looking at the map of official land divisions in Figure 9.7, the land ownerships are complicated and multiple. In contrast to the reality taking place on the ground, the division of each plot is blurred, organic and changeable, and is operated by only a few gardeners, none of whom are actually owners. The land division map drawn in a traditional and official way to clarify this land becomes hidden and irrelevant to some extent to the practice. This traditional map is overlapped by a practical and visible working map which is only perceived amongst gardeners by common consensus and collaborative practice. In addition, the conflict between the formation of a big city in the global context following the guidelines of the Xin-Yi planning district and the situational issues of land use existing on the local ground have been embodied in this unique garden. The consequence of a globalized urban project operated by the Xin-Yi planning district has made this former military village site into a prospective land for later development. However, the contextual difficulties of property consolidation keep this

garden remaining on the flat. It seems unassailable. Therefore, the status of this garden reveals an urban conflict which cannot be simply understood on the local scale.

This land reveals a spatial dilemma of the current users and its former residents. The land was part of the Four-0-Four military village where residents mainly emigrated from mainland China with little intent or knowledge to be involved in planting crops. Even though they were relocated in the housing nearby, none of them come to use this free and familiar property. The people living in the neighbourhoods of old Taiwanese communities who have never had a socio-spatial relationship with this land have become the users of this land because of their interest in and knowledge of gardening.[157] The social territorial connection is not the determinant factor of this practice, it is knowledge, interest and capacity that are the keys to this activity.

The water system is one of the informal facility maps concealed in this practice and involves different networks outside this empirical site. There are various different ways of accessing a water supply as shown in Figure 9.7, and each of them reveals particular unique spatial networks in multiple scales. For instance, bringing water from home captures the living territorial boundary of the majority of gardeners, usage of water from gutters marks the location of the surrounding infrastructure, self-sinking wells shows the pattern of groundwater. Moreover, some water resource is kindly (but unofficially) linked with the MRT shed on a corner of the garden. This unique means of water supply reveals another subtle social network between the gardeners and the foreign workers who work for the MRT construction. According to the empirical survey, one gardener (5A3) who had knowledge of the Thai language from his working experience can communicate with

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[157] Previous residents mostly came from military backgrounds and had little experience in cultivating and gardening. In contrast, people from traditional Taiwanese communities have skills and rich experience in cultivation and gardening, because they mainly come from agricultural families - a mainstay of the Taiwanese tradition.

this group of foreign workers for some particular requests, including a water supply and heavy work. Some particular commodities and vegetables are offered in return. Other gardeners even refer other labouring jobs to them. An informal economic and infrastructural network is occurring without anybody noticing. Sassen (2007) indicated, such an informal economic practice is one of the significant components of the global process, and is contextually taking place in this almost indiscernible practice in Taipei. These exchange activities form a multi-scalar process, involving diverse spatial engagements inside and outside the practical site, and manifold trans-national networks which directly act on the ground of the garden and have been formed beyond the time and the geographical site, as in Latham's (2002) scalar argument. The infrastructural network essential to this practice works in subtle but highly dynamic and powerful ways.

Other socio-spatial networks, such as the trading flows of vegetables and the supply systems of fertilizer and seeds described in detail in Chapter 8, have extended this practice to a wider scale throughout the city[158], rather than it remaining a small practice bounded within a particular geographical location. This practice articulates inter-urban networks in a multi-scalar condition by direct and indirect participants patchily and temporarily interacting on the ground. The current condition of this allotment garden also manifests the conflict between global impact and local resistance in a way which results in it remaining flat and green so as to enable such multi-dimensional networks and multiple urban layers to persist.

By the conventional methodological approach, this practice is not statistically accounted for or materially presented as a matter by which to understand the globalized urban

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[158] For instance, the gardeners share a special fertilizer made of the left-over dregs from soybean milk which is only able to be collected from a few snack bars in the city. People who have personal relations with the shopkeepers are able to take the soya milk dregs for free and give vegetables in return.

formation in a large and globalized city. However, the operation of multi-scalar methods based on the approach of the Baroque alternative explores varieties of hidden threads and levels of scale involved in this practice. For instance, a wide range of informal interviews with gardeners and other participants, and tracking the different material flows (*see* Figure 8.37, Figure 8.39) which occurred before and after the practice, provide complex and cross-boundary socio-spatial maps to re-understand the scalar position of this practice and the multi-scalar conditions in the city. Comparison between a planning map and a birds-eye photograph as a practical map helps to reveals the differentiation of land use which is seen as a small-scale distinction but yet results in the formation of urban scale in the Xin-Yi planning district. The complex networks layered in this practice which are discovered by application of multiple methods in the empirical work are associated with different geographical places in the city, trans-national social backgrounds, and distinct practical time. Accordingly, a fixed scalar reading of these allotments as a small-and-local practice is inadequate. The allotment garden should be reconsidered in the conceptual scalar diagram as a practice constantly folding to different positions of scales.

CHAPTER 10

CRITICAL REFLECTION: THE BAROQUE ALTERNATIVE IN THE

CITY

Five socio-spatial practices in Taipei have been examined and re-scaled through both the nested and the Baroque alternative of scale in the previous chapter. Each of them maintains particular cross-boundary interconnections and complex socio-spatial networks characterizing the multi-scalar nature of the Xin-Yi planning district as a global urban centre in Taipei. The 'Baroque' proposed as an alternative approach to cities has been demonstrated by conceptually rescaling these five practices as articulators of co-existing and co-presenting multiple scales. The relationships and socio-spatial networks involved in and between these practices are dynamically folding and changing in inexplicit and spatio-temporal ways. This suggests that these five socio-spatial practices should be understood together as a moving scalar field illustrated in the conceptual scalar diagram to capture the complexity and multi-scalar dynamics of Taipei. This thesis argues that the concept of the Baroque alternative to scale and its inspired methodology are appropriate to comprehend the contextual specificity of East Asian cities. The thesis concludes by proposing an idea of the 'Baroque city' which might advance the 'global city' reading in the urban scale especially its overlooked global middling cities in East Asia. Significantly, this innovative term suggests an open research body for architecture to re-address the question of scale to respond to and engage with such dynamically complex and multi-scalar conditions of global urban centres.

The first section of this chapter will start with a comparative discussion of the rescaling of the five socio-spatial practices to reflect the significance of the Baroque alternative to comprehend the city of Taipei. This alternative to the concept of scale is affirmed as an adequate approach to explore the urban conditions of globalized Taipei in East Asia. The second section will focus on the concept of scale that serves as an appropriate conceptual framework to understand cities and will revisit the inadequacy of the conventional idea of scale inherited in architecture, geography and urban studies. This helps to emphasize that the Baroque alternative approach to conceptualizing the idea of scale not only provides a fresh proposition for engaging in East Asian cities on its own terms, but also opens an interdisciplinary channel to work on scalar questions in response to contemporary urban conditions. The chapter will conclude by proposing the idea of the 'Baroque city' as a more suggestive, multi-dimensional approach to capturing the richness of the contemporary urban scale of East Asian cities in the context of globalization.

10. 1. Critical Analysis of Multi-scaling Five Socio-spatial Practices in Taipei

Following the conventional reading and rescaling by the alternative approach of scale to the five socio-spatial practices individually in the former chapter, the comparative analysis between them provides a wider picture for exploring the significant urban conditions in the context of the Xin-Yi planning district. Regarding the geographical relationship, the Taipei 101 building spatially links with a 7-Eleven store (the 101 store in the basement) and with the allotment garden by the MRT exits of the World Trade

Centre station. The garden temporarily shares some land with MRT material storage and the shed for the construction of the station. It might seem that the practice of rubbish management has no direct connection with them. However, from the point of view of social networks, the linkage between the rubbish management, the allotment garden and one 7-Eleven store (the Xin-Mao store) is formed by the informal economies and social gatherings practised by particular gardeners and some foreign housemaids. Similarly, the connection between the gardeners and foreign workers for the MRT is developed by a reciprocal relationship associated with informal economy and resource exchange. It is about the social and material relationships that are forged through transactions. In addition in this empirical work, there is a particular visual connection between the building and the garden which can only be fully recognized in visual terms from the higher level of the building. The relationships between these five socio-spatial practices are fractal and multi-dimensional; they are neither necessarily geographically connected nor linked by socio-spatial networks. This reveals the urban conditions that different scales of socio-spatial practices work in coherent and non-coherent ways in the global urban centre of Taipei.

A practice on a very small scale, as Bunschoten argued (Bunschoten *et al.*, 2001: 209), in fact involves a wide range of subsequent activties and networks on a variety of scales, which manifests the complexity of interactions and relationships in a global urban field. Each of these five practices can be seen as mini-scenario maps of Taipei that involve a variety of urban tissues, participants and socio-spatial networks operating in and amongst multiple scales. With the approach of the Baroque alternative, each of them has been re-understood in an alternative scale, based on the sense of the 'fold' that, for instance, the physical bigness of the Taipei 101 building can be folded in the understanding of the systematic smallness in the district. And the process of rubbish management as a local daily practice is folded in a scalar condition physically and economically manifesting

global flows by a particular group of participants. These scalar folding processes according to the empirical data suggest that different kinds of scale such as 'bigness' and 'smallness' co-exist and are characterized in a socio-spatial practice. This co-existence of scales is not only central to the revealing of these practices, but also to the experience of global urban Taipei. It argues that Castells' (1999) claim of the concurrence of fusion and diffusion in globalized urban centres and Soja's (2000) arguments on the co-existent urban phenomena of the inside-out and outside-in in the postmetropolis have both echoed this constantly folding approach of scales as the quality of the Baroque in Taipei.

More importantly, the folding approach of scales with the Baroque alternative in each practice is not intended to fold each practice into an exactly opposite scalar position, which frees it from the setting of dualism in Deleuze's the 'fold' with a more dynamic concept to interact multiple scales. The MRT, for example, is re-considered as multi-dimensional networks operating with diverse social and spatial scales associated with the foreign workers and local geographical activities, and even argued as a 'flat' scale in terms of non-place spatiality (Augé, 1995) occurring in the practice, as discussed in detail in section 9.2. Even so, it is scaled rather as an infrastructure in the global scale. The practice of the allotment garden continues to operate on a local scale but yet involves much wider and complex trading and socio-spatial networks in the city. Therefore, the Baroque alternative activated in a form of folding scales supports the deconstruction of the fixity and explicitness of scales to each practice which are rooted in the hierarchically-nested logics of scalar enclosure. This argues that each practice requires to be understood in the concept of scale that works implicitly and is complexly co-presented due to its constantly folding and dynamically moving process between different times and multiple levels of socio-spatial networks. Law's (2004) critique on the complexity and the reading of uncertainty against the dominant hierarchical model of the globalization study also shares a similar account to this Baroque argument but with

more abundant empirical data on the urban ground.

The rescaling of the five practices reveals an essential idea of scale, especially in architecture, as a relative condition of space and material and not a defined level in which different kinds of 'bigness' or 'smallness' co-exist and operate in particular ways. For instance, the architectural bigness of the Taipei 101 building and the embodiment of a global socio-spatial network in the practice of rubbish management are co-presented in the city. The bigger dimension of time operated in twenty-four-hour activity and the global scale presented by the engagement of global transactions have been manifested both in the practice of the Taipei 101 building and of the 7-Eleven franchise store, but in extremely different spatial and physical scales on a particular urban corner in the Xin-Yi planning district. In short, approached by the idea of the Baroque alternative, each of practices is not situated in an absolute scale explicitly, but in the co-presentation of multiple scales in a relative condition.

These five practices, when examined by the Baroque alternative, not only embody the co-existence of different kinds of scale in a folding sense, but assemble multiple socio-spatial networks operating on different scales that form the multi-scalar conditions in Taipei. The socio-spatial network, such as community and social groups, is a soft structure that might cover a great extent of the urban formations and transformations without any visible physical installations. These open multi-scalar layers which the five practices have involved and radiated from this urban corner of the Xi-Yi planning district have all manifested global urban conditions, including cross-boundary interconnection, socio-spatial fractality, and informal economic and environmental transformations. These networks practised in different scales (*see* Figure 10.1) have involved diverse geographical places and socio networks patchily crossing the city or beyond the nation. This series of diagrams emphasises networks in representation. More importantly, these

multiple socio-spatial networks in each practice are operated in a flat sensibility rather than a nested order. For example, the trans-national networks emerging in particular local places of Taipei and between East Asian cities are stimulated by the information exchanged between foreign housemaids in the practice of the rubbish management (described in section 8.1). This shows a paralleling work with multiple scales such as globalness and localness none of which is superior to any other. In this sense, the five practices representing the multi-scalar conditions of Taipei need to be read in 'depths' where scales constantly fold and present in a flat sensibility associated with different times and socio-spatial dimensions.
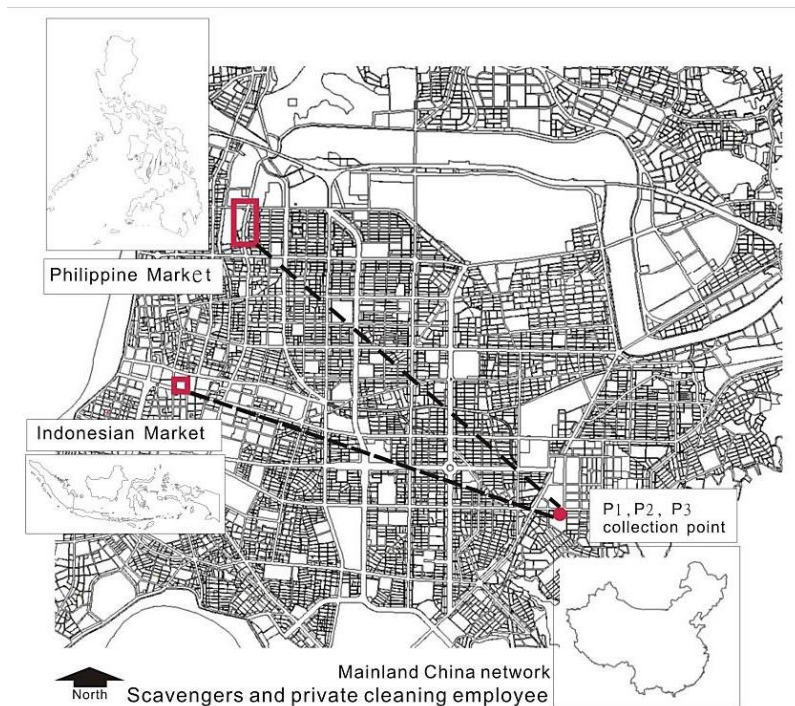
Figure 10.1: Each practice has its own network map ordered in the process of rubbish management, 7-Eleven franchise store, MRT, the Taipei 101 building, and the allotment garden. The different networks associated with different groups of participants, territories, and economic exchanges practised in different scales are shown by this multi-layered map. It graphically demonstrates the operation and co-existence of multiple scales on one map where the urban scale co-presents with other kinds of scales at particular time (edited by the author).
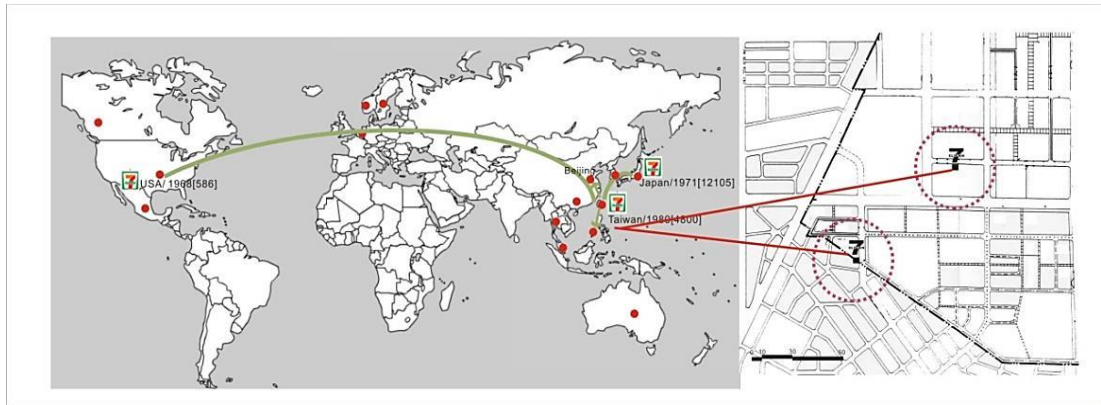
Figure 10.1.2: Multi-scalar network map of 7-Eleven franchise store (edited by the author).
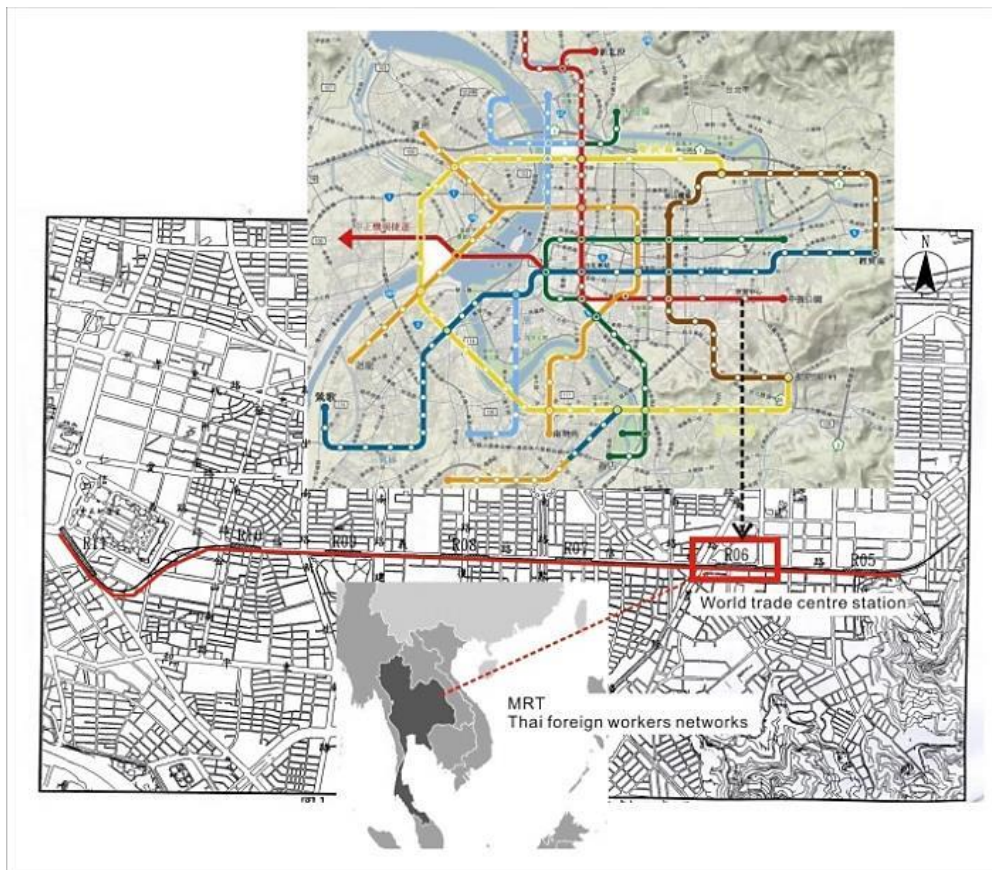
Figure 10.1.3: Multi-scalar network map of MRT infrastructure (edited by the author).
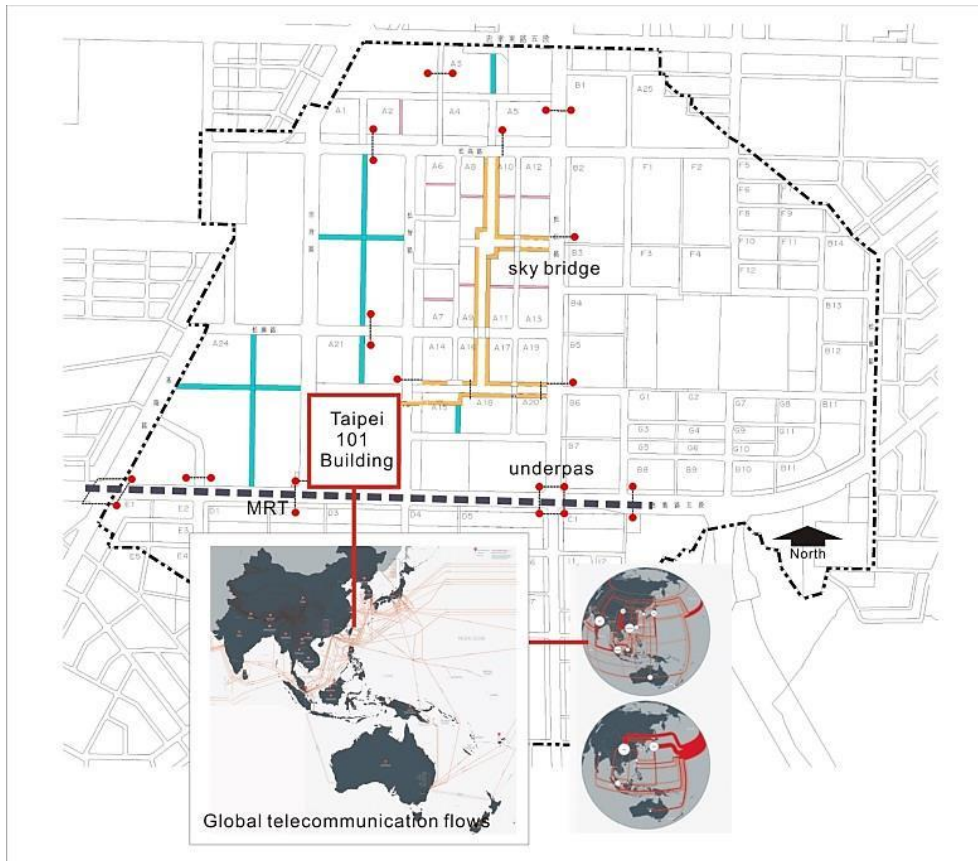
Figure 10.1.4: Multi-scalar network map of the Taipei 101 building (edited by the author).
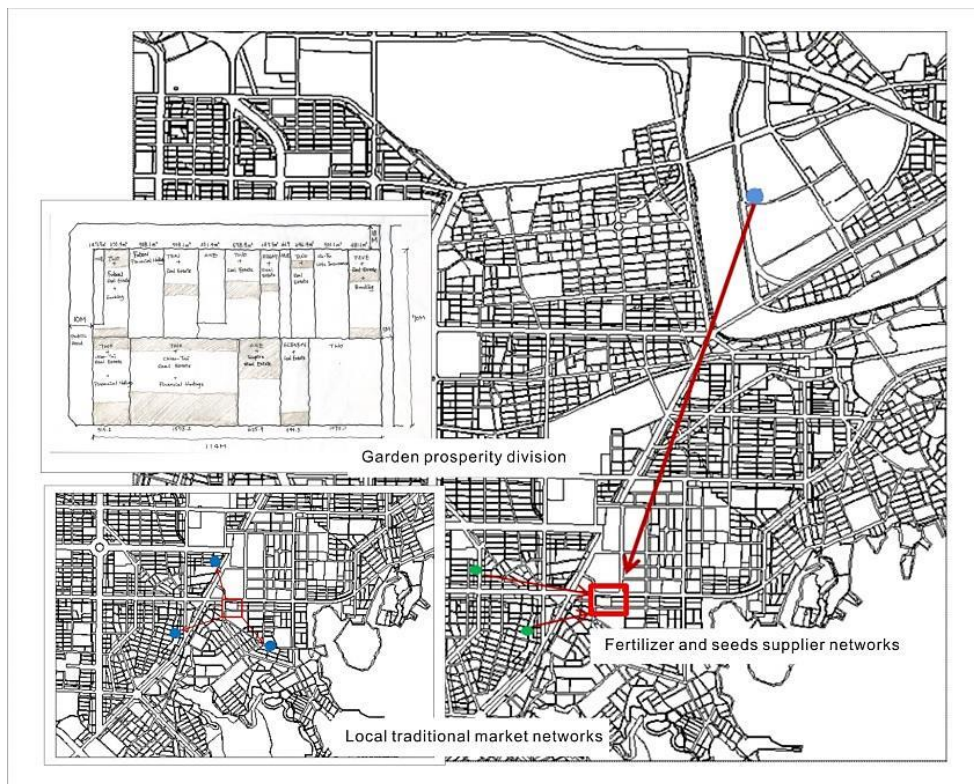
Figure 10.1.5: Multi-scalar network map of the allotment garden (edited by the author).

Accordingly, this ongoing and complex working process in which the five socio-spatial practices are operated in the co-existence and dynamics of multiple scales is restricted by a fixed and explicit scalar understanding rooted in the idea of nested scale. The illustration of this conventional approach (*see* Figures 9.1, 3, 5, 7, 9) is suggested to be re-understood as a moving scalar field that dynamically works with multiple scales without clear boundaries and absolute positions in the conceptual scalar diagram (*see* Figure 10.2). Based on the rescaling process, the co-existence and the multiplicity of scales that interweave in and amongst the five practices have revealed the multi-scalar urban condition in Taipei. This thesis, therefore, claims that the complex scalar condition of these five practices should be read together as a scalar field interacting with each other. The presentation of this scalar field in a free form shows that the condition of the co-existence and multiplicity of scales in the city is never formed in a set order or absolute track but performed in temporary positions according to different spatio-temporal dimensions. This suggestive diagram as a moving scalar field acknowledges and illustrates the empirical outcome based on the approach of the Baroque alternative which grapples with the limits of current conceptualisations of scale and scalar practice to engage the multi-scalar conditions in Taipei.
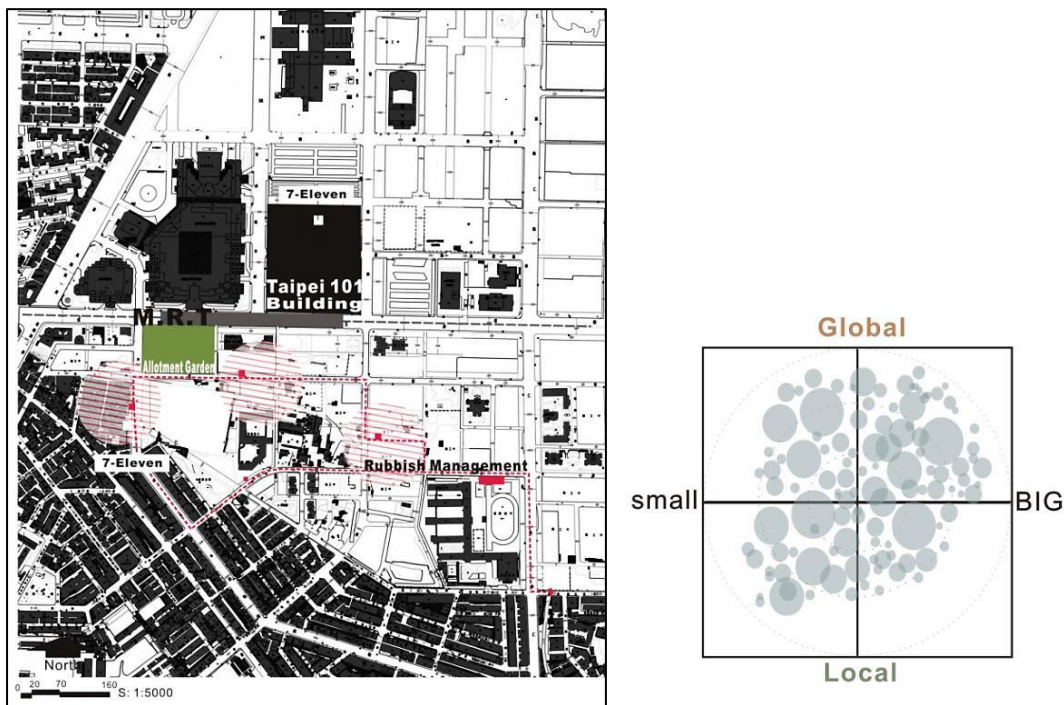
Figure 10.2: *Right*: The five socio-spatial practices have been repositioned together in a new conceptual scalar diagram, recognized as a moving scalar field. It is redrawn based on the Baroque alternative of scale to re-approach these practices (author's diagram). *Left*: The multi-dimensional map serves to identify the spatial location of the five practices on the south-west corner of the Xin-Yi planning district. It demonstrates the concept of the Baroque in a visual analysis of the empirical work (edited by the author).

The map of the five socio-spatial practices (*see* Figure 10.2 and also Figure 7.16) as another visualization critique supports the new diagram of the moving scalar field illustrated by the approach of the Baroque alternative in a more empirical way. This map in fact involves multiple scales at the time when the evening practice of rubbish management without any physical structure, the hidden construction of the MRT and the basement store of the 7-Eleven franchise are not presented on any geographical or urban map, as discussed in section 7.3. Conventionally, it is considered as not presented 'to scale' and even the sense of scale is lost. However, this map serves as an excellent presentation for co-presenting multiple scales in dimensions of time, physical size and invisible structure and network. The Baroque alternative of scale to approaching the urban context of Taipei is visually demonstrated by this presentation map locating empirical subjects and then the new conceptual scalar diagram of a moving scalar field

summarizes the empirical data.

Regarding the empirical map and conceptual diagram of scales, to operate multiple methods from different levels and perspectives is central to presenting these co-existent and multiple conditions of scales in the global urban context of Taipei. As explained in the previous chapter and in Chapter 6, each of the practices has been explored by diverse methods including mapping, photography, interviews, archive and literature, diagrams, video-taking, and direct observation (as described in detail in section 6.2). Most of these methods have been conducted in different spatial and social dimensions to develop the idea of folding scales in the methodology. For instance, photographs taken from a birds-eye view and from the thematic ground view deliver different scalar references in the practice of the allotment garden. A global chain map and a map of the locations in the neighbourhood of the practices of the two 7-Eleven franchise stores reveals the different scales that it involves. More significantly, the empirical data collected by multiple methods and in different scales have been displayed in an assembled form in which the five practices are understood by accumulated materials (for a visual analysis, *see* Figure 5.3). This not only responds to the multi-scalar conditions characterized in these five practices and in the city of Taipei, but also suggests an alternative methodology to approach cities based on the Baroque alternative of scale. This thesis argues that this methodology of co-presenting multi-scalar data and methods contributes to the particular architectural knowledge and technique of scales that different scales, no matter whether in one object or between different objects, can be operated and comprehended simultaneously, as the quotation 'From the spoon to the city' explained in Chapters 3 and 5 shows. This practical knowledge in architecture provides an operational vehicle to depict the co-existence and the dynamically co-presenting conditions of scales in contemporary large and globalized cities such as Taipei.

Such a complexity of operating and co-presenting multiple scales in the five practices contextualized in global urban Taipei is easily simplified and jumped over by the conventional approach of scale to engage these East Asian cities. Methodologically, the current geographical and urban literature concerning globalized cities has largely focused on the consequence of hypermobile electronic financial networks or on global commodity transactions in and between cities, which Sassen (2007b: 280) argued causes much of advanced and subtle networks and scales to be missed in such a grand grid. To echo this argument, some socio-spatial practices in this empirical work, such as the processes of rubbish management and of the allotment garden, will never become legitimate subjects in globalized urban studies. Taking a traditional approach to studying cities in the sense of architecture, there is only the Taipei 101 building, and maybe the practice of the MRT to some extent, qualified to enable an understanding of the urban scale. In addition, with the retrospect of current urban literature on Taipei (Chang & Wang, 2013; Allen, 2012; Kwok, 2005; Chen, 1993; Lo, 1996), most of them are set in a conventional framework because Taipei is considered as a wholeness of urban scale understood by a single scalar approach in all dimensions, such as planning strategy, urban morphology, architectural typology and so on. Accordingly, none of them or any urban project have drawn attention to the practices of an allotment garden, of rubbish management or of the urban specificity of 7-Eleven franchise stores. They are omitted both from the reading of globalized cities and from the study of the city itself as a result of a nested and fixed scalar approach. Therefore, the use of conventional methodological approaches rooted in such hierarchically-nested scale to engage the city of Taipei is questionable. According to the in-depth empirical work presented in this thesis, globalized Taipei involves processes connecting individuals, groups, firms, industries and other organizations and communities into specific multi-scalar webs of geography, urban fabric, participants and social networks at trans-and inter-urban scales. It is thus that the Baroque alternative to conceptualising scale is an enabling and appropriate

framework by which to explore such a global urban centre of an East Asian city, Taipei.

10. 2 Rethinking the Concept of Scale: the Baroque Alternative as an Interdisciplinary Reflection

With the empirical investigation of Taipei detailed in Chapters 7, 8 and 9, the contemporary globalized urban formations in East Asian cities on the one hand reveal the phenomena of extremely large cities referring to a geographical expansion on an urban scale. On the other hand, they situate the *blurred-edge conditions in which* territorial fractality, cross-boundary interconnection and patchy social networks occur. Cities such as Taipei, as an urban stage in a ceaseless and mobile interplay between many different scales, are impacted by and at the same time reinforce the pressure of the globalization process in virtual and physical dimensions (Graham & Marvin, 2001). Importantly, these cities, especially in their global urban centre, *juxtapose multiple scales simultaneously, with* different kinds of 'bigness' and 'smallness' co-existent and dynamical co-present. These particular conditions have deeply challenged the conventional approaches to understanding the contemporary urban conditions of such cities. Therefore, this thesis argues that finding new ways of thinking beyond the concept of scale are essential to a proper understanding of the large, globalized cities of East Asia. The re-conceptualisation of the idea of scale provides an appropriate conceptual framework and methodology with which to approach these on-going urban phenomena in today's world.

To depart from the architectural standpoint, a set of conceptual and methodological limitations in conventional approaches to scale in architecture and relative spatial

disciplines working on the idea of scale, such as geography and urban studies, has provided a rich interdisciplinary foundation on which to develop the alternative in this thesis. In architecture, the body, a human scale, as a principle is at the root of architectural history, theory and practice. This centric idea that has traditionally been applied to both architectural building and city planning has confronted struggles in the new metropolis guided by modernism. As cities become more fluctuating and patchily functioning, the sense of scale which is fundamentally used to define the spatiality of cities and how to approach them is lost. Accordingly, the human-body tradition of architectural scale experiences a painful inability in response to the dynamics and the deconstruction in the new cities, as argued by Vidler (1990), Teyssot (1994) and other critics. The theoretical margin of renewing the sense of scale based on the human body, Koolhaas (1996) criticized, results in the architectural unavailability to critically respond to contemporary cities in the global urban context. This thesis has demonstrated that the abundant literature and debates on scale in geography and urban studies offers great interdisciplinary approaches to the conceptualization of scale. However, the dominant concept of hierarchically-nested scale which pervades those disciplines has weakened approaches to the complex globalized urban conditions suggested to be interpreted as multi-scalar configurations (Brenner, 1998; Sassen, 2007a). The urban phenomena of trans-territorial connections and dynamic socio-spatial exchanges involving and co-working on multiple scales have become more difficult to maintain by the nested assumption of the systematic coherence of the urban hierarchy (Michael P Smith, 2001).

It is not only the conceptual approach of scale which is problematic, but the methodology conventionally used to understand cities is also challenged and found to be inadequate. When the conditions of contemporary globalized cities are characterized as extremely large territorial aggregations in fragmental connection, blurred boundaries and co-presented multiple scales, the traditional tool designed to work with compact and

centralized cities and to clarify city boundaries, sizes and populations is not fully applicable. In addition, the methodological approach to cities which is set in limited methods at a fixed scale often taken in architectural and urban empirical work is in difficulties when it comes to revealing the co-existence and complexity of multiple scales operating incoherently and dynamically in globalized cities. Recent empirical work in geography and urban studies, moreover, has been prone to taking two extreme perspectives of the spectrum as macro- or micro-approaches to cities, which is conceptually based on the ideal of nested scale. For instance, global city studies pay more attention to the examination of top-tier cities such as New York, London and Tokyo and the relationships between them as the benchmarks for the global economic restructuring processes (Herod, 2011). This is likely to lead to a methodological simplification of complex, multi-scalar urban practices contextualized in different cities.

As has been discussed in this thesis, architecture and geography have different knowledge and usage of scale, which is beneficial to developing a wider and deeper framework as an alternative way of re-conceptualising the idea of scale. The use of scale in architecture from the past to the present is particularly appropriate as an operational knowledge for both theoretical and practical materials. The idea of scale is more related to the spatial dimension so the idea of relationship and comparison between and amongst different scales is central to both practical projects and theoretical debates. For scholars in urban studies and particularly in human geography, scale serves as a conceptual framework discursively working with wider issues including politics, economics and socio-cultural matters that might involve the question of scale for the contemporary urban formations in globalization. From this point of view, scale -even in different theoretical debates- mainly refers to levels or conditional qualities such as the global, the national and the local. These differences are clearly revealed and compared in two current publications both entitled *Scale* (Herod, 2011; Adler, Brittain-Catlin & Fontana-

Giusti, 2012) to examine this crucial subject in architectural and geographical disciplines (*see* Chapter 5). Accordingly, the critiques of nested scale from each discipline offer distinct insights for shaping the alternative to conceptualising scale. These distinctions of qualifying scale between disciplines have also contributed to the visual analysis in a form of the conceptual scalar diagram set in two pairs of scalar qualities to position socio-spatial practices in the empirical work for this thesis (see Chapter 6).

The Baroque alternative proposed in this thesis is an interdisciplinary approach to reconceptualising the concept of scale. It is drawn from two aspects of critical approaches to the hierarchically-nested logic of scale. As clarified in Chapter 5, the term 'Baroque' as used in this thesis refers to a philosophical and critical idea rather than a specific architectural style and period of time. Therefore, the importance of Wölfflin's (1986) critical analysis of Baroque qualities should be paid more attention, particularly its conceptual inspiration on Deleuze's reading of the Baroque, interpreted in the form of *The Fold* (1993). This critique departure from architectural and arts analysis provides an understanding that one condition can be seen as two folds of scales; the big can be folded to become the small. There is no absolute and no implicitness. The sensibility of the Baroque is in the fold featured as temporality, a process of continuous movements, and furthermore refers to formations of depth in regions of time (Deleuze, 2005). The 'fold' provides a conceptual vehicle by which to engage critiques of the complexity and multiplicity of scales in the urban conditions of large, globalized cities.

The concept of 'flatness', as the critical perspective of socio- and human geographers (Latour, 2005; Marston, J. & K., 2005), and the application of Actor Network Theory (Latham, 2002; Law, 2004; McCann, 2008) directly challenge the inadequacy of the conventional idea of nested and hierarchal scale, and form the second approach to the concept of the Baroque alternative. The idea of flatness helps to unpack and free the

understanding of scale from a hierarchical and nested order. For them, the quality and sensibility of the Baroque which is inherited in the concept of flatness, but not literally used in their work, is an appropriate contention against nested hierarchy, referred to as 'the scientist's grid epistemology' (Dixon & Jones 1998 cited Marston et al. 2005:422). Law's (2004) critique departed from the 'Baroque' complexity and enabled those free scales to move in more dynamic relationships, which can be empirically and theoretically applied in the fields of urban geography and urban study. His argument that the global might be small and work in implicit and incoherent ways reinforced Deleuze's concerns of the depths in the fold associated with the time region that activates the movement and folding processes of scales, which is central to the Baroque alternative that we propose here.

In addition, to enhance the architectural perspective, the Baroque alternative, in this thesis, is a properly conceptual and practical approach set on a material grounding. Although the theoretical framework is supported by Marston's critiques of scale, it has not taken her suggestion of the non-scale nor the perspective of networked abstraction that she argued. The idea of place-bound specificity (Sassen, 2007a, 2007b) and other materialistic critiques provide an appropriate material grounding to the alternative. It crucially reflects the assumption of scale contended in this thesis that scale is the theoretical and methodological object to appreciate the new urban conditions of contemporary globalized cities.

Accordingly, this thesis argues that the 'Baroque' is a way of appreciating the multi-scalar nature of globalized cities and a means of developing a methodology by which to better appreciate and understand them. The methodology inspired by the Baroque alternative is set to reveal the quality of the fold; scale is both a state of two-sided folding, and the fruit of flatness; scales are working freely and moving dynamically. The

intension is to reflect the complexity and multiplicity of cities by employing different methods in multiple scales at the same time, rather than determining precise methods to delineate the implicitness. It is asserted that architectural knowledge and the technique of operating different scales simultaneously are beneficial to practising multiple methods and their scales in the empirical work, and to conceptualise scale which can be recognized in co-existence and operating in multiple ways. In short, the Baroque alternative for conceptualising scale and the methodology developed in such a conceptual framework are appropriate responses to the complex and multi-scalar conditions that are extremely manifested in the large, globalized cities such as Taipei in East Asia.

10.3 From Global City to Baroque City

The term 'global city' or other terminologies that attempt to capture the current globalized urban conditions of cities remains contested in debates in urban and spatial disciplines. Such terms, however, show their inadequacy to understand the urban phenomena of multi-scalar co-existence and dynamics in East Asian cities in particular. This thesis argues that the current prevalent terms such as 'global city' and 'post-metropolis' need to be renewed and enriched by an alternative proposal.

Much of the recent literature on global cities, as Smith (2001: 50-1) has argued, depend on the assumption of the systematic coherence of an urban hierarchy, the trans-territorial economic restructuring preceding and determining urban socio-spatial restructuring, and the decline of small-scale practices which have become more difficult to maintain

because the reconfiguration of globalized cities unceasingly takes place in a complex, fractal and implicit way. In other words, the hierarchically-nested logic of scale and macro-engagement with cities have proved to be insufficient to respond to the on-going urban transformations which in fact operate dynamically and simultaneously with and among multiple scales in cities. McCann (2008) emphasized the risk that it is problematic to take a singular perspective to simplify dynamic urban conditions whether the focus is on the largest cities or on local practices. The new urban condition is an assemblage of continuously co-presenting multiple scales which happens patchily and incoherently, instead of being a typological entirety.

In addition, the study of the global city is traditionally set on a nested-level reading, the global North and South, and mainly focuses on top-tier western metropolises and their regional or co-operative relationships with other cities. More recently, Soja (Soja & Kanai, 2007: 63) argued that the global North-South division has been broken into three continental zones focused on the three super-sized urban regions due to the transformation of different organizational forms and levels of urban industrial production and consumption in the world. In other words, different geographical regions register unique contextualizations of the globalized urban conditions within their continental sphere.

The study of East Asian cities which have stridden with an intensive pace in geographical size, global economic influence and regional flows of socio-spatial networks in the past two decades has been peripheral for a long time in urban and spatial studies. Supporting the argument of crossing beyond the global North-South setting, this thesis demonstrates that they sustain an abundance of unexplored and complexly-situated materials to study contemporary urban conditions. Taipei, one of the significant East Asian cities, underpins such urban exploration and reveals contextual urban evidence in

response to the inadequacy of the reading of the global city.

The urban form of Taipei, like other East Asian cities, did not simply emerge but was set in the traditional urban pattern of the West associated with particular economic, political and social trends. The model of a modern eastern city was imported from the West and imposed by colonists at different periods of time according to particular worldwide situations. In addition, the city is pressured to respond to competition for investment at a global level, and to accommodate the tension between the occidental urban model and the Chinese-based structure. Taipei exemplifies the socio-spatial complexity and unstable transformation of East Asian cities which appear to be merely 'big' urban formations which disguises and overlooks their global 'middling' (Sassen, 2007a) and 'small' conditions that emerged from their struggle with their post-war urban reconstruction and the emergence of globally-networked urban logics. The urban conditions of such globalized cities can be seen as a complex multi-scalar and multi-temporal series of processes co-presenting different scales and practised in specific structural contexts. In this sense, the scalar dynamics are appropriately understood with the Baroque alternative that frees the nested setting of primary or subjected scales which in fact co-exist and co-present each other in the particular urban context of Taipei. Therefore, the new proposition to engage East Asian cities such as Taipei should be framed with openness and alternative approaches on their own terms.

Based on the approach of the Baroque alternative, this thesis proposes the idea of the 'Baroque city' as a more suggestive, multi-dimensional approach to capturing the richness of the contemporary urban scale of East Asian cities. This innovative term suggests that such cities are contextually characterized as the trans-scale locality where different scales are co-existing, folding and moving on the urban ground. It characterizes that there are inter- and trans-urban conditions involving multiple scales which

dynamically form the complex socio-spatial networks in the urban scale of these cities. This kind of city is appreciated in the multi-scalar nature that is not only constituted of multiple scales but is the result of multi-scaling. Accordingly, the Baroque city can be recognized as a scalar articulator continuously reforming and repositioning rather than as an absolute urban wholeness.

The proposal of the Baroque city, in addition, is an attempt to liberate the restriction of the East Asian cities from the nested setting in the global-city hierarchy. There is neither a global north-south division nor the middle, but contextual and situated conditions of each multi-scalar city in the context of globalization. In this sense, cities such as Taipei which have been positioned as the global middling can be appreciated with the idea of the Baroque city. Taipei, a 'Baroque' field, maintains different kinds of globalness, localness and even flatness of scales co-existing and dynamically operating in its global urban centre underpinned by the richness of empirical investigation conducted by the multi-scalar methodology inspired by the Baroque alternative to scale. In short, this proposed term of the Baroque city, in this thesis, drawn from the theoretical framework of the Baroque alternative to conceptualise scale, is not intended to set a new clarification of what this kind of city exactly is, nor to qualify which cities can be categorized into it. It is more important to reveal the features of the complexity, the multi-scalar dynamics and the implicitness composed of and at the same time restructuring the Baroque city. This therefore supports the opening of a fresh register to explore the complexity and multiplicity of urban conditions in depth, where different scales co-exist across spatial, subjective, time and systemic domains, which are intensively represented in East Asia.

Significantly, this thesis argues that the assumption of the Baroque city establishes an open research body for spatial disciplines particularly focused on globalized urban issues

to develop a wider and deeper approach but a less hierarchically-nested logic to respond to extremely large, complex and multi-scalar urban conditions of cities required in the decades ahead. This thesis therefore suggests that the global urban reading should be shifted from the 'global city' to the 'Baroque city' as an alternative. More specific to architecture, every generation of architects and architectural scholars has to respond to its own scalar questions and problems which address the built environment and the society of their time, as Orr (1985) asserted. This thesis argues that this fresh research body of the Baroque city serves this purpose that architecture can review and re-state the question of scale in response to the contemporary urban environment in the context of globalization.

Contribution and Further Research

This thesis, based on the in-depth empirical work, manifests the local conditions and knowledge of a particular global urban centre in Taipei where the richness of the situational complexity and multi-scalar dynamics are distinct from the Western urban tradition and have not yet been fully explored. More importantly, this research and investigation on how the extreme urbanization formations and conditions effected by globalization have been contextually understood and rendered in East Asian cities were set up from the question of scale. Although the concept of scale is a fundamental skill and knowledge in architecture, it is barely re-addressed and renewed in contemporary architectural literature. The thesis then attempts to provide an alternative insight to engage with the existing scalar debates on cities.

The interdisciplinary approach to the concept of scale based on different usages and

propositions of scale in architecture, geography and urban studies that traditionally work individually provides a solid theoretical foundation for the proposed alternative. This approach to conceptualization of scale, in fact, has not yet been widely explored in any of those disciplines. In addition, the Baroque alternative, supplemented by philosophical and socio-geographers' critiques, suggests an innovatively recombinant body of knowledge on scale which sets a terrain not restricted to any particular disciplinary tradition. It indeed reveals the intention of this research that the contemporary city is composed of multi-scalar movements and relationships which require different knowledge from various spatial disciplines to depict and decipher.

The quality and sensibility of the Baroque suggested in the thesis, including the infinitely folding-unfolding process, inexplicitness of porous assemblage and temporary relations in dynamic mobility, kindles an alternative possibility for understanding the contemporary urban situations and their context. In other words, the limits of human scale in architecture and tactical perception have given the way to multi-scaling processes which generate diverse temporary scalar associations and actions. Therefore, this thesis might create an open path to architecture for re-stating the question of scale and engaging the complexity and multi-scalar dynamics in contemporary urban-global cities.

To extend these innovative approaches of scale to the global urban conditions of cities, it is suggested that more architectural practical knowledge and projects should be welcomed to enrich the theoretical critiques and empirical demonstration of the 'Baroque' in further research. On one hand, it will help develop the architectural engagement to current issues of urban studies, especially in East Asia. On the other hand, the terrain of architectural discipline might be amplified with more contextual spatial issues on urban-global studies. In short, the theoretical framework of the Baroque and the

empirical work conducted by its methodology in this research might provide a fresh view- a folding movement- for design research in architecture. Methodologically, the continuously folding process needs to be understood as a three-dimensional rolling movement which vividly outlines the Baroque dynamics in fluid spatio-temporal relationships and the multi-scalar context. I suggest hence using a three-dimensional presentation of the conceptual scalar diagram that can support the argument of scale stronger requires further development. Meanwhile, to use such digital technique and its representation also brings about another aspect of debates on scale about the relationship between virtuality, logical implements and physical reality that might require further research. Regarding the empirical work, five social-spatial practices for examining the Baroque alternative require a much long-term observation which could reveal more subtle networks and record multi-scalar movements in depth. In addition, Taipei was selected to demonstrate the idea of the Baroque alternative to scale in this thesis, and it serves to set a first step towards further experimentation and comparative research amongst cities in or beyond the East Asian region. These further experimentations and research will help develop sufficient empirical data and certain amendments to a theoretical framework for consolidation of a proposal of the Baroque city.

APPENDIX

CHAPTER 2

	Rank	City-Region	Country	Population	Visual comparison
1950	1	New York-Newark	United States of America	12,338,000	
	2	Tokyo	Japan	11,275,000	
	3	London	United Kingdom	8,361,000	
	4	Paris	France	5,424,000	
	5	Moscow	Russian Federation	5,356,000	
	6	Shanghai	China	5,333,000	
	7	Rhein-Ruhr North	Germany	5,295,000	
	8	Buenos Aires	Argentina	5,041,000	
	9	Chicago	United States of America	4,999,000	
	10	Kolkata (Calcutta)	India	4,446,000	
	11	Osaka-Kobe	Japan	4,147,000	
	12	Los Angeles	United States of America	4,046,000	
	13	Beijing	China	3,913,000	
	14	Milan	Italy	3,633,000	
	15	Berlin	Germany	3,337,000	
	16	Philadelphia	United States of America	3,128,000	
	17	Mumbai (Bombay)	India	2,981,000	
	18	Rio de Janeiro	Brazil	2,930,000	
	19	Saint Petersburg	Russian Federation	2,903,000	
	20	Mexico City	Mexico	2,883,000	
1985	1	Tokyo	Japan	30,304,000	
	2	New York-Newark	United States of America	15,827,000	
	3	Mexico City	Mexico	14,109,000	
	4	São Paulo	Brazil	13,395,000	
	5	Shanghai	China	12,395,000	
	6	Buenos Aires	Argentina	10,538,000	
	7	Osaka-Kobe	Japan	10,350,000	
	8	Mumbai (Bombay)	India	10,341,000	
	9	Los Angeles	United States of America	10,181,000	
	10	Kolkata (Calcutta)	India	9,946,000	
	11	Beijing	China	9,797,000	
	12	Seoul	Republic of Korea	9,549,000	
	13	Paris	France	9,105,000	
	14	Rio de Janeiro	Brazil	9,086,000	
	15	Moscow	Russian Federation	8,580,000	
	16	Cairo	Egypt	8,326,000	
	17	Tianjin	China	8,132,000	
	18	London	United Kingdom	7,667,000	
	19	Chicago	United States of America	7,285,000	
	20	Metro Manila	Philippines	6,888,000	
2005	1	Tokyo	Japan	35,327,000	
	2	Mexico City	Mexico	19,013,000	
	3	New York-Newark	United States of America	18,498,000	
	4	Mumbai (Bombay)	India	18,336,000	
	5	São Paulo	Brazil	18,333,000	
	6	Delhi	India	15,334,000	
	7	Kolkata (Calcutta)	India	14,299,000	
	8	Buenos Aires	Argentina	13,349,000	
	9	Jakarta	Indonesia	13,194,000	
	10	Shanghai	China	12,665,000	
	11	Dhaka	Bangladesh	12,560,000	
	12	Los Angeles	United States of America	12,146,000	
	13	Karachi	Pakistan	11,819,000	
	14	Rio de Janeiro	Brazil	11,469,000	
	15	Osaka-Kobe	Japan	11,286,000	
	16	Cairo	Egypt	11,146,000	
	17	Lagos	Nigeria	11,135,000	
	18	Beijing	China	10,849,000	
	19	Metro Manila	Philippines	10,677,000	
	20	Moscow	Russian Federation	10,672,000	

Appendix 01: The statistical data of world population ranking (Burdett & Sudjic 2007, edited by author).

CHAPTER 6

5 Spatial Practices	Variation of Methods							Time Scale			
	First Hand				Outside Field		Second Hand	Duration		Intensity	
	Inside Field		Interview	Observation	Mapping	Source documentaries	Literature reference			Daily	Annual
	Photography	Video-taking		(Drawing)						Peak time	
Rubbish Management	0	5	1	4	2	0	1	10 mint	Night time	21:20-21:30	--
7-ELEVEN Franchise	1	0	3	5	1	0	3	24 hours	Day / Night	--	--
MRT Infrastructure	3	0	5	1	0	5	4	18 hours	Day / Night	--	2008-2011
Taipei 101 Building	4	0	5	2	0	5	5	24 hours	Day / Night	--	1997-2003
Allotment Garden	5	2	5	4	5	1	0	around 14 hours	Day time	16:00-18:00	--

Legendry:

0-5: degrees of use of a selected method

0: no access or use, 5: most use for collecting data

Duration: the time when practices happened in fields

Intensity: the peak time to perform the practice

Observation: experience, sound recording, sketch

Source documentaries: report, official paper and documents, maps

Appendix 02: An alternative methodology matrix. Please refer to Figure 6.3 for the comparison (by author).

CHAPTER 8

The processes of municipal rubbish management

P1	21:25-35	An open space in front of Nan-Shin Insurance Building (南山人壽) facing Zhuang-Jing Road (莊敬路) with 10m wide New built high-rise residential building, public housing and office building.
1A1	Mr. Huang	53 year-old staff of no.576 line. Collector
1A2		Senior staff of no.576 line,20ry, Driver
1A3		Senior staff of no.576 line, Collector
1A5	Mr. Chang	Leader of Wu-Xin squad, 25 yr
1A4	Mr. Liao	Junior staff of no.576 line, 2 yr, Collector
1A6		Scavenger in Pl, original resident of 404 military
1A7		Housemaid from Indonesia
1A8		Senior Housemaid from Indonesia (see supplement)
P2	21:15-21:19	An open space on the Song-gin Road (松勤路) where one side stands high-rise public housing and another side is high-wall luxury condos.
P3	21:07-21:12	On a street surrounded with four-floor residential communities.
1A9		Private cleaning lady, mainland spouses, 5yr
1A10		Private cleaning lady, mainland spouses, 2 yr
1A12		Housemaid from Philippine
1A13		Housemaid from Thailand

Appendix 03: The index of participators and locations. Please refer to Section 8.1 for the background of empirical survey and its spatial story (edited by author).

Direct Participants

Current Users	Local Residents
	Operating Crew
	Foreign Housemaids
	Private Subcontractor
	Scavengers

Objective Participants

Hidden/Indirect Users
Supervisor of operating crew
Council Staff
Foreign Workers
Head of neighbourhood

Appendix 04: Groups of participants and the observation detail. Please refer to Section 8.1 and Figure 8.0 for the background of empirical survey and its spatial story (edited by author).

7-Eleven Franchise

2A1		Housemaid from Indonesia
2A2		Housemaid from Philippine
2A3	Mr. Lin	7-11 store regional supervisor
2A4	Mrs. Chang	7-11 logistics manager in the central department
2A5	Mr. Chou	7-11 store staff in Min-mao store
2A5.1		7-11 store staff in 101 store
2A6		Neighbors
2A7		Neighbors
2A8		Cabbies
2A9	Mr. Wu	7-11 marketing manager in the central department

Appendix 05: The index of participators and locations. Please refer to Section 8.2 for the background of empirical survey and its spatial story (edited by author).

Direct Participants

Current Users
- Store Staff
- Regional Manerger
- Customer
- Supply Crew
- Neighbourhood

Objective Participants

Hidden/Indirect Users

Headquarter Supervisor
Supervisor of Advertising and Finance
Cabbie
Special Event Participant

Appendix 06: Groups of participants and the observation detail. Please refer to Section 8.2 and Figure 8.0 for the background of empirical survey and its spatial story (edited by author).

MRT Infrastructure

3A1	Mr. Huang	Senior contractor in charge of whole construction site
3A2	Mr. Chang	Senior planner in dept. of MRT in Taipei city government
3A3	Mr. Lin	Architect in charge of station exits design
3A4	Mr. Wang	Senior engineer in dept. of MRT in Taipei city government
3A5		Thai worker in construction site
3A6		Thai worker in construction site
3A7		Supervisor of shed and manual labour
3A8		Senior supervisor of shed and manual labour
3A9		Staff in dept. of MRT in Taipei city government

Appendix 07: The index of participators and locations. Please refer to Section 8.3 for the background of empirical survey and its spatial story (edited by author).

Direct Participants

Current Users	Governmental Officer
	Constructor/Subconstructor
	Worker
	Passenger
	Planner/Designer
	Operator
	Maintenance Staff

Objective Participants

Hidden/Indirect Users
Infrastructural Institute
Perspective Passenger
Real Estate Investor

Appendix 08: Groups of participants and the observation detail. Please refer to Section 8.3 and Figure 8.0 for the background of empirical survey and its spatial story (edited by author).

The Taipei 101 Building

4A1	C.P. Wang	The chief project manager
4A2	Ms. Hsu	the manager of PR team
4A3	Mr. Cheng	The head of security manager
4A4	Ms. Wu	The head of maintenance and clearing service
4A5		An cleaning lady, Taiwan,5 yr
4A6		An cleaning lady, Mainland, 2yr
4A7	Ms. Wu	Forex commissioner at AA Bank
4A8	Ms. Lin	Commissioner of the investment trust in ING Groups

Appendix 09: The index of participators. Please refer to Section 8.4 for the background of empirical survey and its spatial story (edited by author).

Construction Materials List:

Reinforcing bar: 94,000 tons
Steel bar: 28,288 tons
Concrete: 242,852 m^2
Template area: 226,135 m^2
Curtain wall area: 115,000 m^2
Volume of foundation excavation: 542,116 m^3
Foundation pile: 547 piles

(Resource: C.Y. LEE & Partners)

Direct Participants

Current Users	**Office Staff** Aa1/Aa2/Aa3/Aa4/Aa5
	Commercial staff Ab1
	Publicist of 101 Building Ac1
	Maintaining Staff Ad1
	Clean Ladies Ae1/Ae2/Ae3/Ae4
	Security Guard Af1/Af2
	Tourists Ag1/Ag2

Planners	**Architect** Ah1/Ah2
	Landscape Architect Ai1

Objective Participants

Hidden/Indirect Users

Surrounding Residents Aj1/Aj2
Special Event Participants Ak1/Ak2
Courier Al1

Aa1	05.2009/1/interview/09-18/TW.US	Ae1	05.2009/1/interview/05-18/TW	Ah1	05.2009/1/interview/variety/TW.US
Aa2	05.2009/1/interview/09-18/TW.ASIA	Ae2	12.2009/1/interview/05-18/CHINA	Ah2	12.2010/1/interview/09-18/TW
Aa3	05.2009/2/interview/09-18/TW.ASIA	Ae3	05.2009/1/interview/05-18/TW	Ai1	12.2011/1/interview.archive/variety/TW.US
Aa4	06.2009/1/interview/09-18/TW	Ae4	12.2011/1/interview/05-18/CHINA	Aj1	05.2009/1/interview/variety/TW.UK
Aa5	12.2009/1/interview/09-18/TW	Af1	05.2009/1/interview/changeable/TW	Aj2	12.2009/1/interview/variety/TW
Ab1	12.2011/2/interview/changeable/TW	Af2	12.2009/1/interview/09-18/TW	Ak1	12.2010/1/interview /18/TW
Ac1	12.2011/2/ interview/09-18/TW.Wld	Ag1	12.2010/1/interview/12/HK	Ak2	12.2010/1/interview/09-11/ITL
Ad1	07.2011/1/interview/09-18/TW	Ag2	07.2011/1/interview/4:30/CHINA	Al1	05.2009/1/observation/variety/TW

Appendix 10: Groups of participants and the observation detail. Please refer to Section 8.4 and Figure 8.0 for the background of empirical survey and its spatial story (edited by author).

A Long-standing Allotment Garden

5A1	Mr. Chang	Official head of neighbourhood
5A2	Mr. Huang	Constructor head of MRT station
5A3		Cultivator F, 25yr,
5A4		Cultivator F, 5yr,
5A5	Ms. Lin	Cultivator F,
5A6		Cultivator F,
5A7		Cultivator F,
5A8		Cultivator M
5A9	Mr. Chen	Cultivator M
5A10		Cultivator M
5A11	Ms. Lee	Cultivator F, 5yr,
5A12	Ms. Mo	exchange students M, F
	Mrs. Huang	Special assistant, also my mother
		Others cultivators
		Pulps and teachers

Appendix 11: The index of participators. Please refer to Section 8.5 for the background of empirical survey and its spatial story (edited by author).

Direct Participants

Current Users
- Cultivator
- Workers in M.R.T shed
- Temporary Visitor
- Scavenger
- People using parking lot

Authority
- Owner
- Governmental Institute

Objective Participants

Hidden/Indirect Users
- Real-estate investor
- Head of neighbourhood
- Officer of Public Health Dpt.
- Customers of Local Market
- Journalist
- Passenger of M.R.T
- Seeds & Nutrition supplier

Appendix 12: Groups of participants and the observation detail. Please refer to Section 8.5 and Figure 8.0 for the background of empirical survey and its spatial story (edited by author).

Spouse from Mainland China/ Hunan
Scavenger
Several residents left recycling for her
At most time she didn't talk

Safe zone
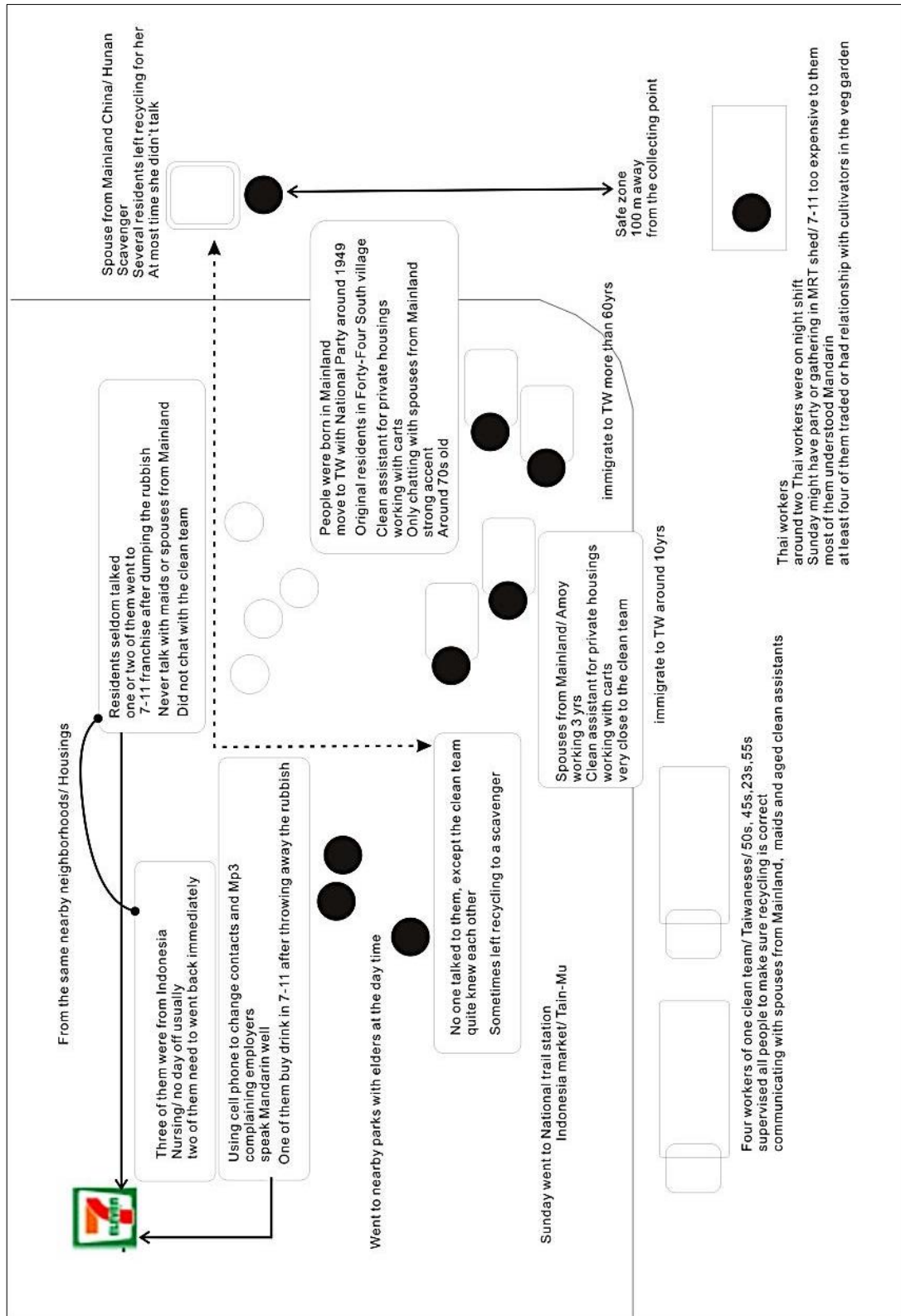100 m away
from the collecting point

People were born in Mainland
move to TW with National Party around 1949
Original residents in Forty-Four South village
Clean assistant for private housings
working with carts
Only chatting with spouses from Mainland
strong accent
Around 70s old

immigrate to TW more than 60yrs

Thai workers
around two Thai workers were on night shift
Sunday might have party or gathering in MRT shed/ 7-11 too expensive to them
most of them understood Mandarin
at least four of them traded or had relationship with cultivators in the veg garden

From the same nearby neighborhoods/ Housings

Residents seldom talked
one or two of them went to
7-11 franchise after dumping the rubbish
Never talk with maids or spouses from Mainland
Did not chat with the clean team

Three of them were from Indonesia
Nursing/ no day off usually
two of them need to went back immediately

Using cell phone to change contacts and Mp3
complaining employers
speak Mandarin well
One of them buy drink in 7-11 after throwing away the rubbish

Went to nearby parks with elders at the day time

No one talked to them, except the clean team
quite knew each other

Sometimes left recycling to a scavenger

Spouses from Mainland/ Amoy
working 3 yrs
Clean assistant for private housings
working with carts
very close to the clean team

immigrate to TW around 10yrs

Sunday went to National trail station
Indonesia market/ Tain-Mu

Four workers of one clean team/ Taiwaneses/ 50s, 45s, 23s, 55s
supervised all people to make sure recycling is correct
communicating with spouses from Mainland, maids and aged clean assistants

Appendix 13: An illustration mapped according to the empirical observation and informal interviews with different groups of participators in P1. Please refer to Section 8.1 for the detail of its spatial story (edited by author).

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