

学 位 論 文 題 名

# Decoding Tokyo Metropolis through Multi-combinatorial Systematization of Patch, Arterial and Interstitial Space: The Spatial Chronology of Patchwork City

(都市空間の複合的組み合わせシステムから見た東京メトロポリスの解析  
～パッチワークシティにおける空間クロノロジー～)

## 学位論文内容の要旨

When exceptions are frequent, they become rules. Tokyo is full of exceptions. Tokyo is an anti-city. This thesis analyses splintering urbanity with focus on Tokyo as a patchwork city of multiple collages.

The main aim of the thesis is to understand urban life world of Tokyo through analysis of past, present and future to identify new values and concepts of urbanity in Asia and Japan.

This thesis is also aimed to define the following points; 1) to add to the existing knowledge of urban life world of Tokyo. With the changing world politics and history, new ways of understanding the cities are also important, 2) New ideas to interpret planning, design and management, as we search for the future of Asian cities. Population decline, compact cities and urban shrinkage are the main challenges which are required to be considered. 3) Interpreting future through multiple layers of meanings and associations to find the comprehensive solutions. 4) To propose a manifesto to guide future development through by philosophy of 'culture of congestion' and patchwork where city is conducive to all kind of forces, flows which connects 'islands' generating the landscape of multiplicity. Future cities of Asia will continue to grow on their historical background of patchwork of past, present and future.

The thesis is composed of 5 chapters, and the content and the result in each chapter is summarized as follows.

The first section opens up the discussion on critical appraisal of urban design in Japan with analysis of past projects in architecture and city planning. Also it takes a look at urban planning exercise initiated by Japanese city planning authorities in past and recent present. It brings out some critical facts about Japanese urbanity such as impermanence, patchwork as a method to deal with design. This chapter review the views expressed by Japanese as well as western authors on Japanese cities. The study of Tokyo shows adoptability principle of the city which adjusted to almost all kinds of changes brought by human and forces of nature. These processes are increasingly demanding the inclusion of aesthetics of 'fragmentation' in urbanism. Tokyo evolved into a great heteropolis. Section summarizes a picture of the Japanese sense of urbanity.

Second section focuses on Asian spirit of urban design which is characterized by chaos, multiplicity, impermanence, connectivity, content and congestion. Section 2 establishes key findings as where the urban design took direction in earlier Japan. With the impact of geography as a determinant of urban form, new urban pattern was established which was result of both spiritual and natural notions. Edo's urban structure based on natural elements gave a new identity to urban life. The chapter finally summarizes on some of the characteristics of Asian spirit of urban design as 1) autonomy of patches and individuality as identity, attention to fragments rather than whole 2) piecemeal approach to the development rather than continuous.

Section 3 highlights the importance of this research as a quest for new approaches to urban design. This section briefly introduces urban design of cities in Japan in with focus Tokyo city. Analyzing Tokyo chronologically through various periods of 1) Edo era, 2) earthquake of 1923, 3) Meiji era, and 4) Modern period gives us impression as how these stages marked a great change in approach towards urban planning. Section 3 summarizes the very individualistic urban design tools.

Section 4 builds the case for necessity of urban modeling of Tokyo, especially for the systematization of its urban

components. The modeling will also pave way for addressing the future issues of shrinkage, compactness, and sustainability in Asian cities. Section 4 concludes that, 1) cities with diversity and extreme mix of activities are the only ones which will survive in future, 2) Tokyo's adoptability will depend on how it reinvents its urban components 3) Patch becomes important element to deal with the future challenges.

Section 5 and 6 explains the organization of the text in the background of current scenario of urban design research. Patchwork is identified as important urban design tool which is not only critical for Tokyo but also is a product of current urban crisis through which postmodern metropolis is going. These sections also lay out future possibilities and extension of study; 1) patchwork as a universal urban design tool to intervene in future cities 2) systematization of urban design elements for the better management of cities.

Chapter 1 of the report introduces various definitions of city in Japanese context and then contextualizing Tokyo into these definitions. Comparing with the other city models throughout the history, the main models which are considered for analysis are 'city as metaphor' and city as a garden. Both of these concepts explain the nature of impermanence and flexibility as principles of Japanese cities. There are four models dominating the 'urbanscape' of Tokyo since its inception; 1) Edo era (the city of faith and ecological city) 3) Meiji era (the city as showcase) and 4) metabolism movement (the city as machine). Chapter also brings out two main criteria: 1) Tokyo is composed many cities and patches which constitutes the field in continuous instability. 2) All of the above mentioned models surface their characteristics simultaneously in Tokyo.

Chapter 2 throws further light on Urbanism of Tokyo which is distinctive and result of complex urban life world of Japan. During the postwar era, master plan changed its policies, and Tokyo acquired the shape of polycentric city where multiple landscapes were connected with networks of trains. Tokyo's urbanism took a turn where parts gained autonomy of activities, creating multiple 'patches'. Meiji era epitomized the import of foreign ideas which shaped Tokyo into architectural showcase. In the modern era, the metabolism movement re-strengthened the idea of 'city as infrastructure'. This can be seen as the first step towards classifying urban elements in their individualistic roles in Tokyo. Chapter summarizes; 1) Tokyo acquired collage city status through various periods of time because its expansion was not continuous but rather ruptured and mediated by disasters like war and earthquake 2) Tokyo focused its further development on programmatic urbanism appealing to both global and local scale 3) assemblage and patchwork connected with arterials of trains generated a collage city of splinters.

Chapter 3 systematizes the elements of urban design in Tokyo city. This chapter details out the component of those models. This systematization will help us to unearth the structure of Tokyo. The three identified elements are; 1) patch 2) arterial and 3) interstitial space. Chapter 3 states detailed definition of all these components the kinds of combinations they create to form an urbanscape of Tokyo and also identifies the 'codes' of the elements and they way they behave in an urban system of Tokyo. Finally chapter 3 highlights three features of combinatory system 1) patch is a multidimensional element with diverse uses 2) arterials throughout history of Tokyo city changed city's structure from 'water city' to 'net city' 3) Interstitial spaces generating out of combination of arterials, patch and geographical feature are characteristic spaces of Tokyo.

Chapter 4 starts on the foundation of urban models and combinatory elements identified in previous chapter. To bring out the importance of all elements and fragmented landscape of Tokyo into realm of understanding, the philosophical concept of 'fold' is been used. There can be fold in urban space too, with the patchwork lacking any absolute center and collision in its patches, events are frequent and are folded in each other to make city. Tokyo is a patchwork city of events, folded together. Chapter 4 summarizes again four basic kinds of folds in Tokyo city as follows: 1) the city of faith (fold of spirituality) 2) the city as power (fold of empire) 3) the ecological city (fold of geography) 4) the city as process (fold of metabolism). This chapter in the end enlists combinations of various folds within urbanscape of Tokyo to find out hidden codes of urban order.

Chapter 5 in the end propose a manifesto for the future development of Tokyo with some major direction of that of 1) "Multi-habitat", means environment which is plugged in a spatial mixed land use, and accompanied with diversified living styles of residents with more intensive patchwork. 2) To search the alternative urban form in the age of shrinking, Japan has to look into its own cultural roots. Patchworks with its inherent ability will negotiate between various uses and landscapes. 3) In the background of expanding Asian cities, the collective form of patch can address compactness in a more versatile nature.

Conclusion:

Cities are escaping from definitive forms which master plan tries to impose. The research found out that Tokyo will continue to adjust its 'locations' in space and time. Its status as global city is further enhanced by its ability to respond to recent phenomenon of shrinkage. The city will find its solutions in its history, its multiple cities of ecology, power, machine and faith will give it a much needed diversity to exist in future and acquire a new identity which is based on patch dynamics combined with multi-scale networks of movements.

# 学位論文審査の要旨

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(都市空間の複合的組み合わせシステムから見た東京メトロポリスの解析  
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世界の都市がグローバル化する中で、都市は以前のような時間空間的な意味での単一の実在としてではなく、文化的背景の作用によって個性化された都市空間が集積分散した多様体として理解される。本研究ではアジアの大都市の特徴である多様性とコンパクトさを顕著に現す東京を対象とし、複数の時空間的位相による「パッチワーク・シティ」として分析を行い、今後の都市性(アーバンティ)の新たな概念とアジア都市の基礎的計画理念について論じることを目的としている。序章、及び本論4章からなり、各章の概要を以下に示す。

序章では、日本国内外における日本の都市に関する既往の研究について整理し、東京はこれまで経済・社会的及び自然によるインパクトによって変化を遂げて来たことを示した。断片的な都市空間の積層が複合化し、東京を有機的な巨大都市圏へと発展させた動因であることを本論の視点として示した。こうした東京の複合的な秩序化が多様な時間空間的变化に対応可能であったとした上で、今後の持続可能性を求められる将来のアジアの大都市においても、新たな計画的な認識論として有意であることを示した。

1章では、東京を都市活動と生活文化の集積から時系列的に整理しつつ、国内外の文献から「都市化プロセスの類型」について整理し、比較分析を行った。東京の都市形成過程の分析から複数の空間モデルが組み込まれていることを明らかにし、(1) 儀場都市モデル(縄文期)、(2) 有機都市モデル(江戸期)、(3) 展示的計画都市モデル(明治期)、(4) 代謝都市(メタボリズム)モデル(高度成長期)が重なり合い、都市活動と利用の重合によった特徴ある歴史的位相が今日の都市空間として重層的に表出化していることを示した。

2章では、東京の都市計画の変遷を(1) 江戸期、(2) 明治期、(3) 戦後復興期、(4) 高度成長期の4

期から把握し、「パッチ (個性化された土地利用)」「動脈 (都市の基盤施設)」「間質空間 (地的なオープンスペースなど)」の3要素により東京の都市空間が構成されていることを示した。地域地区の地理地形的特徴をベースに3要素が上記の各期で自律的そして計画的に構成され、重層化の進捗が明確となり、有機的構造性を獲得するに至ったことを明らかにし、パッチワーク・シティと定義した。

3章では、東京における分節されたランドスケープがそれぞれ形成されて来た動因について検証を行い、地政的な特性を根拠にした場所のアクティビティが相互に影響し、多様に変化した結果が積層されていることを明らかにし、変化の過程を「出来事」、積層の過程を「折り畳む」という概念で整理している。「折り畳み」を「信仰のための都市 (精神性による折り畳み)」「権力の象徴としての都市 (天皇制による折り畳み)」「流動的な都市 (メタボリズム (代謝) による折り畳み)」の3類型に整理し、どの時期においても表出しており、東京は「折り畳み」という‘コード’の組み合わせで持続的に形成されてきていることを捉えた。結語として、縮退を前提とした今後の計画理念には、(1) 空間的な用途複合による多様なライフスタイルによる「マルチハビタット」、(2) 日本固有の文化的起源の再確認、の2点が重要であることを指摘した。

4章は各章を整理と包括的論考であり、以下の知見を得た。

1)「都市形成のモデル化」には、(1) 歴史的位相を計画概念として取り込むこと、(2) アーバンフォームの再構築へ向け固有の文化的起源を糸口とすること、(3) 土地の固有性を評価し、多様な都市的な活動・生活、ランドスケープを包含する計画システムの確立と「パッチワーク」概念を前提にすること、が重要であること。

2) アジアの大都市の計画理念について論考し、(1) 経済社会的な変動が激しさを増す環境下においてもパッチの集合体というモデル (パッチワーク・シティ) により、都市の秩序化を図ることが可能となる。(2) 公民による都市的活動や自然的な動因に柔軟に対応いうるパッチワーク・シティは都市の高度な複合性に持続可能性をもたらす。ことを導き出し、パッチワーク・シティはアジア諸都市において多目的性と時間重層性を兼ね備えた持続可能性を内包する都市空間像であること。

3) アジアの都市では、古来からの多様なアクティビティと変化を受け入れつつ、急速な都市化を支えるインフラ整備に対応可能な新たな都市計画理念が希求されている。本論で、大都市圏東京の歴史的な「出来事」や「折り畳み」の積層によって形成されて来たことは、アジアの諸大都市と類似した特性を持つことに言及し、その将来的な方向性として、地理的・歴史的な位相を基盤に高次の文化集積を生み出す多様で高度にプログラム化された土地利用への計画的な視点が、今後の都市空間デザイン上の方法論であることを示した。

これを要するに、著者は東京都市圏およびアジア大都市圏における都市地域デザインの計画理念と計画概念についての新知見を得たものであり、都市地域計画学ならびに都市地域デザイン学に対してグローバルな貢献をるところ大なるものがある。よって著者は、北海道大学博士 (工学) の学位を授与される資格あるものと認める。