TEMPORAL CONTROL MECHANISMS IN HETEROTOPIAS

A Thesis in
Architecture

by
Susmita Rishi

© 2008 Susmita Rishi

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Master of Architecture

August 2008
The thesis of Susmita Rishi was reviewed and approved* by the following:

Peter Aeschbacher
Assistant Professor of Architecture and Landscape Architecture
Thesis Advisor

Jawaid Haider
Professor of Architecture

Alexandra Staub
Associate Professor of Architecture

Daniel Willis
Professor of Architecture
Head of the Department of Architecture

*Signatures are on file in the Graduate School
ABSTRACT

Cities have been designed and planned from the beginning of civilization. With time, cities change and adapt. Each city is based on a dominant urban model. Each model is in turn based on a system of exceptions and exclusions. The dominant urban actors’ in the city utilize the Heterotopias to segregate those objects, activities and individuals that are considered taboo in order to maintain the “purity” and stability of the dominant urban model. A Heterotopia is that physical realized space which houses the exceptions to the dominant city model. Heterotopias help maintain the city’s stability as a self-organizing system. These places provide shifting sites of reflection and distance within the system that increases the city’s capacity to change and adapt over time. A better understanding of modern heterotopias therefore is essential to a better understanding of how cities change and adapt over time. Present literature is lacking in addressing the means by which the dominant urban actors exert control on the heterotopias in order to maintain the urban system in its present form. This research proposes that dominant urban actors utilize control mechanisms to control the heterotopias and maintain the “purity” of the urban system.

Heterotopias are of three formal types; Heterotopias of Crisis; Heterotopias of Deviance; and Heterotopias of Illusion. The literature is largely centered on historical examples of heterotopias and therefore fails to address modern examples of heterotopias other than modern Heterotopias of Illusion. This thesis offers another narrative that of a modern heterotopia in a utopic, planned city.

1 Urban Actors as described by Shane are the groups, associations etc formed within the city by individuals organized in groups that interact in highly complex sets and form the organizational structure of the city. For further information see [Shane, 2005]
This thesis examines the relationship between time and heterotopias based on the case of the informal markets (apni mandis) in Chandigarh, India. This research utilizes the grounded theory methodology based on logical argumentation to reveal that in a highly planned city like Chandigarh, the unplanned informal markets act as Heterotopias of Deviance. These heterotopias of deviance are further being controlled by a Temporal Control Mechanism; Time is the control mechanism, which is employed to maintain the stability of the city. However, with the growth of the city, there is evidence that with time the heterotopia itself will disappear in its present form due to the lack of space within the masterplan of the city.
# TABLE OF CONTENTS

LIST OF FIGURES.................................................................................................................. vii

ACKNOWLEDGMENTS ............................................................................................................ ix

CHAPTER 1 INTRODUCTION.................................................................................................... 1

1.1 PROBLEM STATEMENT AND RESEARCH QUESTIONS....................................................... 2
1.2 RESEARCH INTENT: OBJECTIVES..................................................................................... 3
1.3 SIGNIFICANCE................................................................................................................... 4
1.4 RESEARCH METHODOLOGY............................................................................................ 4
1.5 SCOPE AND LIMITATIONS............................................................................................... 5

CHAPTER 2 CITIES & CHANGE............................................................................................. 7

2.1 CITIES AND CHANGE...................................................................................................... 8
2.1.1 HETEROTOPIAS AS AGENTS OF CHANGE................................................................. 11
2.1.2 CHANGE AND TYPES OF HETEROTOPIAS............................................................... 14

CHAPTER 3 HETEROTOPIAS- THE SPACES OF DIFFERENCE............................................... 17

3.1 HETEROTOPIAS IN PHILOSOPHY...................................................................................... 17
3.2 ROLE OF HETEROTOPIAS IN URBAN THEORY.............................................................. 20
3.3 CHARACTERISTICS OF HETEROTOPIAS.......................................................................... 25
3.3.1 SIX PRINCIPLES OF HETEROPOLOGY..................................................................... 25
3.3.2 HETEROTOPIAS OF CRISIS, DEVIANCE AND ILLUSION........................................ 28
3.4 CONTROL MECHANISMS IN HETEROTOPIAS............................................................... 32

CHAPTER 4 CHANDIGARH--THE SITE OF TENSION............................................................... 40

4.1 CHANDIGARH.................................................................................................................. 41
4.2 CORBUSIER’S PLAN- THE MACHINE CITY................................................................. 45
4.2.1 ROLE OF CIAM PLANNING PRINCIPLES................................................................. 45
4.2.2 URBAN FORM OF THE CITY..................................................................................... 48
4.2.3 CONTROL AND IMPLEMENTATION OF THE MASTERPLAN.............................. 53
4.3 FORMAL COMMERCIAL MARKETS............................................................................... 55
4.4 INFORMAL PUBLIC MARKETS...................................................................................... 63
4.4.1 THE REHRI MARKETS.............................................................................................. 63
4.4.2 THE APNI MANDIS................................................................................................. 68
CHAPTER 5 CHANDIGARH’S APNI MANDIS

5.1 ESTABLISHING APNI MANDIS AS HETEROTOPIAS
5.2 THE DEVELOPMENT OF APNI MANDIS OVER TIME
  5.2.1 SPECIAL CASE OF SECTOR 15 APNI MANDI
5.3 APNI MANDIS AND TIME AS A CONTROL MECHANISM

CHAPTER 6 TIME AS A CONTROL MECHANISM IN HETEROTOPIAS

6.1 HETEROTOPIAS AND TIME
6.2 CONCLUSIONS

BIBLIOGRAPHY
Fig 1: Heterotopias of Crisis in the City of Faith .................................................................29

Fig 2: Movement of Heterotopias of Deviance outside the city in the Machine City model. .........................................................................................................................36

Fig. 3: Ebenezer Howard’s “The Social City” ........................................................................38

Fig. 4: Mayer-Norwicki plan ..................................................................................................43

Fig. 5: Original Superblock Plan ...................................................................................................44

Fig. 6: City as an organism diagram of Chandigarh ..................................................................47

Fig. 7: Map of Chandigarh showing the first two phases of development .......................49

Fig. 8: Typical Sector plan .....................................................................................................50

Fig. 9: Formal Commercial Markets ......................................................................................56

Fig. 10: Four Storey shop-cum-offices at the City Centre ..................................................57

Fig. 11: Main Piazza in the city centre .....................................................................................57

Fig. 12: The five storey shop cum offices in the Sub-city center ...........................................58

Fig. 13: Shopping Street along the Madhya Marg ................................................................59

Fig. 14: Sector Markets in a Typical Sector .............................................................................61

Fig. 16: Sector 19 shopping complex ......................................................................................62

Fig. 17: Sector 19 small booths in shopping complex ..............................................................63

Fig. 18: A rehri selling vegetables .........................................................................................65

Fig. 19: Burnt Rehri Market ...................................................................................................66

Fig. 20: Sector 18 rehri market now converted to permanent booths ......................................57

Fig. 21: Inside of sector 19 booth market ..............................................................................67

Fig. 21: Sector 15 Apni Mandi ...............................................................................................69
Fig. 22: Hustle and Bustle at the Apni Mandi in the evening. .................................................. 70
Fig. 23: The lot used for Apni Mandi in Sector 15 lying vacant on other days............. 71
Fig. 24: Apni Mandis in 1988. .................................................................................................. 77
Fig. 25: Apni Mandis in 1995. .................................................................................................. 78
Fig. 26: Apni Mandis in 1998. .................................................................................................. 79
Fig. 27: Apni Mandis in 2002 ................................................................. 80
Fig. 28: Apni Mandis in 2005. .............................................................................................. 81
Fig. 29: Apni Mandis in 2007 .............................................................................................. 82
Fig. 30: Graph of Number of Mandis Plotted in a year ..................................................... 85
ACKNOWLEDGEMENTS

This thesis has been a learning experience. I wish to thank my advisor, Professor Peter Aeschbacher. Without his belief in my abilities and guidance, this thesis would never have been possible. I sincerely thank Professor Davis Grahame Shane, who took time out of his busy schedule to meet with me on a number of occasions and provided valuable insight and feedback. I would also like to thank my parents, for always being there and supporting me through this long arduous process.

I would like to acknowledge the important contributions made to this thesis by Arpita- my friend and fellow traveler. Without her showing me the light at the end of the tunnel, I would have been lost long ago. There have been certain Dominant Actors who have had lasting impact and other actors who have contributed to this thesis and moved on. I would like to thank all those who had the patience to listen to me ramble about Heterotopias and Chandigarh and then give me insights and valuable direction.
Cities have been designed and planned from the beginning of civilization. The early cities of Mesopotamia, Egypt and the Indus Valley or the later cities designed during the Garden City movement, grew and adapted to user needs and the changes that come with time. Cities that were designed during the early and mid 1900’s were no different. Although abundant research and studies exist on the failure of the Modern movement, very few actually address cities as growing, living cities, which are inhabited and change with time.

Heterotopias provide shifting sites of reflection and distance within the system that increases the city’s capacity to change and adapt over time. A better understanding of modern heterotopias therefore is essential to a better understanding of how cities change and adapt over time. The lessons learnt from existing cities will inform future city design. This thesis examines cities through the lens of the relationship between the urban system and the Heterotopia. Understanding how this relationship shifts and reverses over time will help develop a better understanding of how cities adapt and change.
1.1 PROBLEM STATEMENT & RESEARCH QUESTIONS

A “Heterotopia” in urban theory is defined as that real realized space which houses exceptions to the dominant city model. Its function is to help maintain the city's stability as a self-organizing system. (Shane, 2005) It is clear from the literature available that heterotopias are created to house the “other”. They are created by dominant urban actors in order to maintain the “purity” and stability of the dominant city model. These heterotopias work on a set of combinatorial keys. It is not apparent however how the heterotopias are controlled. How are the heterotopias prevented from reversing the dominant code of the system? Or what agency is employed by the dominant urban actors to control the heterotopia within an urban system?

This thesis seeks to answer this question by studying the case of the Apni Mandis in Chandigarh as a case of a modern heterotopia in a planned city. Chandigarh, the first planned city in modern India, was Le Corbusier’s only realized city planning project. Over the last five decades citizens have appropriated the city in ways not anticipated by the CIAM planning principles. The informal markets or Apni mandis is one such example of appropriation. Though informal, these markets today share an interesting relationship with the surrounding planned parts of the city. The ‘apni mandis’ are thus a heterotopia as an exception to the surrounding dominant city model where an unplanned informal market is the complete ‘other’. At the same time the markets and their relationship with the planned city around them have been shifting and changing. Starting as unauthorized, unplanned markets, today these have been authorized and adopted by the administration of the city.

1 Urban Actors as described by Shane are the groups, associations etc formed within the city by individuals organized in groups that interact in highly complex sets and form the organizational structure of the city. For further information see [Shane, 2005]
Time in the case of the informal may be thought of at two scales; first is the scale of the everyday, where the markets shift from one location to another, every day of the week and the second is the scale of a period of a few years, where the markets shift from one location in a part of the city to another, as there is no fixed location within the master plan to accommodate these markets. Even though one of the principles of heterotopias is that “Heterotopias are most often linked to slices in time—which is to say that they open what might be termed, for the sake of symmetry, “heterochronies”. [Foucault, 1997] this principle does not fully address the shifting and change that we see in the markets. Also, none of the three categories of heterotopias: deviance, crisis and illusion, address time at different scales, nor do they address the shifting and changing of the heterotopia over time. This thesis investigates this example of a heterotopia in a modernist utopia and answers the question: **What is the role of time in a modern heterotopia?**

### 1.2 Research Intent: Objectives

The objectives of this research were threefold:

1. To study the theory on heterotopia and its different types in order to identify how these are influenced and controlled by various urban actors.
2. To study the relationship between the dominant urban actors and heterotopias and form an understanding as to how the heterotopias are employed to maintain the stability of the urban model.
3. To expand the existing definition of urban heterotopia so that it addresses the relationship between heterotopia and time based on the study of the informal markets.
1.3 SIGNIFICANCE

The primary contribution of this thesis is the expansion of the current understanding of heterotopias and their role in the shifting and growth of a city. By adding to the existing body of knowledge on heterotopias, it is hoped that future researchers will be able to develop a better understanding of the phenomenon.

Another contribution of this thesis is its uniqueness in terms of the emphasis on Chandigarh’s informal markets. There is no literature focusing on the informal markets in Chandigarh. In fact, the academic research and literature on Chandigarh are restricted to studies of the city as an example of modernist planning and as Le Corbusier’s only manifested city planning project. Of those studies that do address the markets in the city, the majority deal with the planned markets.

1.4 RESEARCH METHODOLOGY

In order to achieve the above-mentioned objectives, a qualitative research methodology involving the generation of theory through the Grounded Theory methodology was utilized. Theoretical sampling was used as a process of data collection. “Theoretical sampling is the process of data collection, for generating theory whereby the analyst jointly collects, codes, and analyzes his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges.” [Glaser and Strauss, 1967]

Data collection was done in two stages. First, data from books and articles was collected to form the basis for the theory of heterotopias. This data was analyzed and “local” concepts were developed.
In the second stage, data was collected pertaining to the informal markets. This data was collected during a field visit to Chandigarh India in July 2007. The data was in the form of government documents and brochures. During the field visit, photo documentation of the Apni Mandis was also completed. This data pertains to the scale of time of the everyday. In the final stage, the data analyzed in both the stages was used to inform the substantive theory of modern heterotopias of deviance controlled by temporal control mechanisms.

1.5 SCOPE AND LIMITATIONS

This thesis concentrates on the theories based on Michel Foucault’s philosophy, which are interpretations and does not interpret his work as such. Though Foucault was the first to link Heterotopias with cities, he has numerous other works dealing with specifically power, discipline and other such topics. This thesis is not a critique of his work and as such utilizes his philosophy of heterotopias as a basis on which urban theories of heterotopias are based.

The study is site specific, and is therefore a critical examination of the relationship between the planned city and the citizens that live in it. It focuses on the manifestation of this narrative in the form of the informal markets in Chandigarh. It looks at the city as a Utopia and the markets as its mirror Heterotopia.

This thesis is not a direct critique of the principles of either modernism or utopic planning. It is concerned with the relationship of the ‘Utopia’ to the ‘Heterotopia’ in the sense that Chandigarh was built as a Utopia. It deals with the solutions to one of
the problems that have arisen from one of the many manifestations of Modernist Utopic planning- the informal markets.
The design and creation of cities predates the first written records. “The history of cities spans, and will continue to span, the most pronounced changes in the modes of human habitation that the world has ever seen.”[Spreiregen, 1965]

The first cities displayed both "organic" and "planned" types of urban form. Residential areas often grew by a slow process of accretion, producing complex, and irregular patterns; “organic.” In contrast, precincts devoted to the activities of the elite were often highly planned and regular in form.

Greek cities grew slowly from old villages and had an irregular, organic form, adapting gradually to the accidents of topography and history. Colonial cities, on the other hand, were planned prior to habitation. Consolidation of the Roman Empire was based in extensive city planning exercises. Rome itself displayed the informal complexity created by centuries of organic growth, although particular temple and public districts were highly planned. Many modern European cities such as London and Paris grew out of Roman military and colonial towns, which were laid out on variations of the grid pattern.

Medieval cities were associated with narrow winding streets culminating in a central market square with the church and city hall. Large encircling walls were built
for defense against marauding armies; new walls enclosing more land were built as the city expanded and outgrew its former container.

The emergence of the nation-states between 1600 and 1750 is linked with the Baroque city where the main emphasis shifted to the creation of the monumental. “Ambitious monarchs constructed new palaces, courts, and bureaucratic offices. The grand scale was sought in urban public spaces: long avenues, radial street networks, monumental squares, geometric parks and gardens.” [Ellis, n.d.]

The Industrial revolution attracted more and more people to the cities to work in factories and industrial units. The focus of the industrial city was still the city center with its central business district, factories and warehouses. Railroads were driven into the center of the city. The working class people lived near the centre. With the increase in population, problems of crowding, pollution, and disease in the central city produced a growing desire to escape to a healthier environment in the suburbs. The upper class lived away from the centre in the outer parts of the city.

The Modern movement started with a vision to improve the lot of the working class people in the overcrowded cities. It aimed at changing society and improving the lot of the poor working class. “Work and residence was segregate by type and class, where possible—to some greater efficiency, but more particularly to control the threat of violence and disease.” [Lynch, 1981] Chandigarh, Brasilia, and Islamabad are examples of new cities built under the Modern movement.
2.1 CITIES AND CHANGE

“The outstanding quality of our cities is the rapidity with which they change.” [Spreiregen, 1965] Cities are not static entities, they are growing, living cities, which are inhabited and change with time. Once created or planned, they are in flux. Change is the constant. Whether we examine the early cities of Mesopotamia, Egypt and the Indus valley or the later cities designed during the Modern movement, they grew and adapted to user needs and the changes that come with time. ¹

“Impersonal forces do not transform human settlement. Or they do so only on rare occasions, and these are natural disasters: fire, flood, earthquake, and pestilence. Otherwise, the modification of settlement is a human act, however complex, accomplished for human motives, however obscure or ineffective.” [Lynch, 1981]

Natural forces such as fire, earthquake, and flood; though disastrous are rare agents of change. Urban actors² act as the main catalysts of change in a city. “Cities are built and maintained by a host of agents: families, industrial firms, city bureaus, developers, investors, regulatory and subsidizing agencies, utility companies, and the like... Some of these agents are dominant, leading; others will follow those leaders.” [Lynch, 1981] In this process of maintenance and change, urban actors depend on conceptual city models to guide them. A city model gives urban actors the tools to form an understanding of the city and its component elements and facilitates design decisions. “It orients urban actors in complex situations and at multiple scales.” [Shane, 2005]

¹ For detailed description refer “evolution of cities” in The City Reader, edited by Le Gates and Stout, 1996 as well as History of Cities and City by Cliff Ellis. [Ellis, n.d.]
² Urban Actors as described by Shane are the groups, associations etc formed within the city by individuals organized in groups that interact in highly complex sets and form the organizational structure of the city. For further information see [Shane, 2005]
City models combine normative ideals of what a city should be like with organizational structures and methods of implementation. Various normative city models that act as “stabilizing patterns for large urban systems” have been identified. [Shane, 2005] These models represent a stage in urban development and are almost always in triads. “The three stages associated with the three models are often termed the preindustrial, industrial, and postindustrial.” [Shane, 2005]

The most influential triad of models was described by Kevin Lynch in A theory of Good City Form [1981]. This triad; the City of Faith, the City as a Machine and the City as an Organism (or the Ecological City) are deliberate simplifications. The organization of the city and its structure is based on an assumption of absolute power and logical thinking at the part of the dominant urban actors. In both the City of Faith and the City as a Machine a top-down control by entrenched elites was assumed. In the City as an Organism a more complex system of response of the elected elite to the feedback of the city’s inhabitants was assumed. [Shane. 2005]

Lynch implied that these models succeeded each other through historical time. These models are linked to the three stages; preindustrial—the City of Faith, industrial—the City as Machine, and postindustrial—the City as an Organism or the Ecological City. As a result of the dominant urban actors’ power to pattern the city’s activities in accordance with their normative theory, each urban model mirrors the dominant urban actors’ city theory. This triad of city models formed the basis of a succession of triple models of urban operation in the 1960’s and 1970’s. [Shane. 2005]

---

3 For more on the Normative City models refer to Good City Form by Kevin Lynch (1981) and Recombinant Urbanism Conceptual Modeling in Architecture, Urban Design and City Theory by David Grahame Shane (2005).
2. 1.1 Heterotopias as agents of Change

Lynch’s works as well as other urban-history texts that cite this triad or other triads of normative city models fail, to describe how each model transitions into the next through history. David Grahame Shane, however, has identified heterotopias as a key element in “stabilizing city models and in catalyzing transition from one city model to another”. [Shane, 2005]

“...the novel, unstable, shifting processes developed in heterotopic places of change can transform each of the three dominant normative city models from one to another.” [Shane, 2005]

Heterotopias accommodate exceptional activities and persons, which increases the city’s capacity to change and adapt over time. As the primary places of change, Heterotopias provide shifting sites of reflection and distance within the system.

“Any urban system will have as its basis a set of priorities or preferences that influence its operation. This set of values implies exclusions and biases against certain classes of objects, activities, or individuals that are perceived by the system’s operators as detrimental to their interests.” [Shane, 2005]

Based on its system of biases and exclusions, certain objects, things, relationships, and people, are declared taboo. However, these may not be eliminated from the urban system, as they are necessary or ineradicable for the system. They are thus segregated into heterotopias or this segregation creates heterotopias. “Elements of the city that operate in the gray zone of shifting forms wreak havoc on the normative categories of scientific and stable systems.” [Shane, 2005] Dominant urban actors
employ these heterotopias to keep their favored order as “pure” and consistent as possible. These heterotopic places are necessary for the existence and consistency of the system itself. In some way these places invert the dominant code of the surrounding system “containing those people, objects, or processes deemed ‘other’ by the dominant actors.” [Shane, 2005]

The Heterotopia is a mirroring system built inside the urban model, which helps define the model itself by its existence. In the elaboration of his “heterotopology” Foucault spoke of the miniaturization involved in the creation of heterotopias, as well as their mobility shifting between set points (his perfect heterotopia was the ship “moving from port to port, from brothel to brothel”) and their feed-back capacity in terms of multiple, “mirroring” codes.

Heterotopias were always complex, ambiguous and multi-cellular structures, capable of containing exceptional activities and new urban immigrants because of their flexible codes and their unusual, multiple compartments. Essentially, a heterotopia is a space within the city, a district or enclave. Heterotopias are distinguished from other enclaves or districts by the three “M’s”: the mirror-function, the multiple pockets, and the miniaturization. The mirror function reverses the codes of the surrounding dominant city model, the multiple pockets refers to the ability to house various contradictory norms within the heterotopic site which facilitate mixture and change; and the heterotopic site in itself reflects in miniature the surrounding dominant model with its codes reversed.

---

4 Refer to chapter 3 for more on Foucault’s Heteropology
5 Lynch defined districts as being “medium-to-large sections of the city, conceived of as having two dimensional extent…which are recognizable as having some common identifying character.” [Lynch, 1960]
6 According to Shane, enclaves are specialized districts, which act as centering devices for flow systems. [Shane, 2005]
“The heterotopia is a special form of enclave that contains exceptions to the dominant urban system. It is hybrid, with multiple subcentres and subcompartments, and is differentiated from its surroundings...Heterotopias often handle flows and manage change for the large-scale urban networks in which they are embedded.” [Shane, 2005]

Change is contained in this miniaturized mirror model of the surrounding system.

Any heterotopia is dependent on the surrounding dominant model such that its existence in time is wholly dependent on the organization of society and in consequence the city model at that time. With time, as the dominant city model changes from one normative model to the other, the heterotopias move from within the city to the outside. “Built into this mirroring system is also a concept of ‘site’ 7 and its relationship in time, implying that any heterotopia will be a dissipative structure dependent on a particular organization of society at a particular time.” [Shane, 2005]

Heterotopias allow actor-designers 8 to easily monitor and compare the change within various parts. As their preferences change over time, the heterotopia’s multicellular makeup allows these changes to take place. [Shane, 2005]

The heterotopia helps maintain the stability of the surrounding city model. By containing change in an enclosed space, the city model is kept “pure”. However a threshold is reached when the change within the heterotopia becomes too much to handle and the system flips from one form to the other. This is what leads to change of one city model to another.

7 Sites are defined as “relations of proximity between points or elements” expressed as organizational patterns between elements. Such patterns include top-down hierarchies [“trees”], open linear systems [“grids”], and random spacing systems [“series”]. [Shane, 2005]

8 Actor designers/ Urban Actors are the groups, associations etc formed within the city by individuals organized in groups that interact in highly complex sets and form the organizational structure of the city. [Shane, 2005]
2. 1.2 Change and Types of Heterotopias

The three types of heterotopias defined by Foucault and urban theory i.e. Heterotopia of Crisis, Heterotopia of Deviance and Heterotopia of Illusion are actually three different systems of organization. Each of Lynch’s three normative city models i.e. the city of faith, the machine city and the ecological city, should have a mirroring structure where the exceptions to the surrounding city model are housed, and therefore this links each type of heterotopia with a normative city model.

“We can read the shifting function of heterotopic systems in the light of Foucault’s history of space that corresponds to Kevin Lynch’s three city models (the “City of Faith”, the “City as a Machine” and the “Organic City”, aka Eco-City). In this reading the three sorts of heterotopias Foucault distinguishes can be tied to his three spatial systems or stages in his ‘history of space’ (his lecture stopped short from doing so.): the medieval hierarchic ‘Space of Emplacement’ where the ‘heterotopia of crisis’ is hidden, the modern ‘Space of Extension’ where new urban actors create the ‘heterotopia of deviance’ outside the city initiating an urban network, and finally the network as the ‘System of Relations’, where actors enjoy ‘heterotopias of illusion’ that display shifting, mobile relationships within the network. We commonly call these three urban and informational systems the pre-industrial, the industrial and the post-industrial.” [Shane, 2005]

It is a shift in the heterotopias, from one form to the other that brings about change from one urban system to another. The three types of heterotopias are based on a series of code inversions and recombinations. The structure of each of these is based on the reversal or violation of the logic of the one before it.

Heterotopias of Crisis are associated to “Lynch’s City of Faith; they accommodate change within the fabric of the city, often behind innocuous facades that

---

9 Refer to chapter 3 for more on the types of heterotopias
hide their true content”. [Shane, 2005] The City of Faith or the medieval city was based on hierarchical ensemble. There was a defined outer boundary (city walls) and core, generally at the centre of the city or on the highest point in the topography of the city. In this system of “localization” and “emplacements”, the Heterotopia of Crisis “was an essential stabilizing factor.” [Shane, 2005]

“Then this system was split apart and new hybrids developed that were based on codes of ‘deviance’ and ‘illusion’. Heterotopias of Deviance emerged to accelerate this change; the old ‘enclaves’ were dissolved in the open, nonhierarchical, infinite, grid space of Galileo, where everything was in movement, flowing along stretched and compressed armatures.” [Shane, 2005] The main intention behind the establishing Heterotopias of Deviance was to reform modern society. By shifting these “spaces of deviant behavior” from within the city [where they were placed in the City of Faith], to outside the city, the space within the city could be sorted and shifted into logical enclaves or districts based on their urban function. The city could be thought of as a “machine” with its various rigid districts and enclaves connected by efficient universal modes of transportation and communication [Shane, 2005]

Lynch’s City as a Machine was based on the linear logic of science. Heterotopias of Deviance in this were used as a means to enforce society’s power structures by means of sorting based on “systems of categories and monofunctional subdivisions”; Heterotopias of Illusion reversed this code by enabling the urban actors to move beyond such structures. Heterotopias of Illusion reverse the rigid logic prevalent in the machine city “by being fast-changing and flexible, with a high potential for change and recombination” and are places of escape from the tyranny of production via “fantasies of freedom”. Therefore it can be concluded that not only are
heterotopias essential to maintain the stability of the urban system, they are also important to facilitate the shift from one system to another.
CHAPTER 3

HETEROTOPIAS- THE SPACES OF DIFFERENCE

The discussion in this chapter provides a platform on which the discussion of heterotopias in this thesis is based. In the first section, the philosophy of Heterotopias is discussed. The second section follows with a discussion on the role that the theory of Heterotopias has played in urban theory. An analysis of the characteristics of heterotopias provides a basis for the discussion on control mechanisms in heterotopias in the last section.

3. 1 HETEROTOPIA IN PHILOSOPHY

Heterotopia is a medical term, which means a cell (or group of cells) living nonmalignantly within a distinct host cell or tissue. The Medcyclopedia stresses the exceptional nature of this arrangement, writing that heterotopia (singular, heterotopian) is collections of normal neurons in abnormal locations. [Medcyclopedia, n.d.] It was this mode of the coexistence of “the normal” in “the abnormal” that sparked French Philosopher Michel Foucault’s interest. According to Foucault, the heterotopia exists as something completely “other” residing within the body of the host in a benign relationship; the two systems tolerate each others differences. The study of this “spatial anxiety” led Foucault to conclude that in the present day there is an urge to
create what are called “other spaces”. These exist in relation with all the other spaces, and are imperative for their existence. The “other spaces” are of two types: the first being “utopia”, an imaginary space, it is a space with no real space. In Greek, the word literally means “no place” [Foucault, 1997]

These “utopias” can be defined as models or critiques premised on their fictional nature. As their name literally suggests, they are sites without actual locality. For Foucault however, they are also sites that have a general relation of “direct or inverted analogy” with the “real” space of society. [Genocchio, 1993] “Utopias” are a vision towards which we strive, a “Fantasy” or as Foucault put it the “dream of a ‘good’ place.” In the past when the word Utopia has been used by architects, planners, philosophers etc. it has always described a perfect society, a pure space. In the modern movement especially these spaces or “utopias” were not created to be realized, but in order to function as a kind of an inverted mirror image of our imperfect society, our impure image.

The second “other space” is “heterotopias”– the “real” or non-imaginary utopias. All cultures in the world create their own heterotopias; they thus have varied forms and “no one absolutely universal form of heterotopia would be found.” [Foucault, 1997] Heterotopias are defined as “...absolutely Other, ‘external’ spaces that are to be found, in all societies, in some given social spaces whose functions are different or even opposed to all others.” [Genocchio, 1993]

Heterotopias are not heterotopic simply because one experiences them as utterly different, as arenas of the transmogrification or transcendence of that from which they differ. Heterotopias are not figments of our imagination. Nor is their constitution, unlike that of a triangle or a cube, purely formal or ideal. Heterotopias are
concrete technologies. Heterotopias are real, built spaces. They are rhetorical machines. If the sailing ship is the quintessential heterotopia, the heterotopia “par excellence,” if it has long been the “greatest reservoir of imagination,” this is because of the cargo that, “delivered over to the boundless expanse of the ocean,” it has collected during its stops at one heterotopia to another, from the brothel to the colony, lading from each the fruits of its labor. [Faubion, 2008]

Both the heterotopia and utopia can “mirror” the larger society around them. The world in the mirror is first utopian, since it too is a “placeless place”. The role of feedback and self-observation in the unreal, “virtual space” of the mirror is very important, “that enables me to see myself there when I am absent.............hence the mirror functions as a heterotopia, since it makes the place I occupy, whenever I look at myself in the glass, both absolutely real- it is in fact linked to all the surrounding space and absolutely unreal, for in order to be perceived it has of necessity to pass that virtual point that is situated there.” [Foucault, 1997] The ‘mirrors’ of the utopia and heterotopia give urban actors¹ the chance to identify themselves and their needs in a changing and flowing situation.

¹ Urban Actors as described by Shane are the groups, associations etc formed within the city by individuals organized in groups that interact in highly complex sets and form the organizational structure of the city. For further information see [Shane, 2005]
3.2 THE ROLE OF HETEROTOPIAS IN URBAN THEORY

“The term heterotopia originally comes from the study of anatomy. It is used to refer to parts of the body that are either out of place, missing, extra, or, like tumors, alien. For Foucault places of Otherness are spaces whose existence sets up unsettling juxtapositions of incommensurate ‘objects’ which challenge the way we think, especially the way our thinking is ordered. Heterotopias have a shock effect that derives from their different mode of ordering.” [Hetherington, 1997]

In urban geography, “heterotopia” has been used to define a certain sort of space: a space that is ordered in a way different from those around it. As spaces characterized by alternate modes of spatial ordering, these reveal new possibilities and have the capability for becoming the sites of social change. This idea is borrowed from Louis Marin’s notion of ‘utopics’ in order to define the alternate ordering as a promising although always deferred state, and also from Bruno Latour’s idea of ‘obligatory points of passage’, to suggest how some spaces become important places. Heterotopia is also defined against other accounts of space within social theory: representation space, the margins, paradoxical space and the liminality. These, it is argued, are more problematic, often sharing a romance of the margins, resistance and transgression as the opposite to order, rather than identifying spaces which order in other ways. This theory does not accept the idea that all spaces might be heterotopic, each ordering in different ways from the others. It does though suggest that heterotopias are rare and can be spotted because they stand out against a dull and uniform background. More generally, each heterotopia “stands in contrast to the taken-for-granted mundane idea of social order that exists within society”, or is seen “as juxtaposing another way of acting against that which prevails and dominates.” [Hetherington, 1997]
It is precisely the heterotopia’s difference, its incommensurability with its surroundings which marks it as a place of potential intellectual innovation. This difference is what makes it a space for reordering the order of things, or for reordering the geography of geography. “Heterotopias are always in the process of being made, ordering rather then order. Through their very dynamic, they create themselves as new kinds of places that may later become (at least for a period) obligatory passage points for other places.” Heterotopias are places where the old order of things ‘shattered”, its “syntax destroyed”, where words and things no longer “hold together”, and which is consequently replaced by a new order. That is, heterotopias are places of “paradigm” change, sites of new “styles of scientific reasoning”. They are locations where, for example, it is no longer possible to see place as a Hartshornian “element complex”, but easy to see it as the point of intersection of vertices within a hexagonal geometry. [Barnes, 2004]

The earliest mention of the term ‘heterotopia’, in architectural discourse can be found in the 1970’s, mainly in the works of Demetri Porphyrios, Manfredo Tafuri and Georges Teyssot. The common binding factor in these works is that “heterotopia’ is used to identify, validate and praise works of various architects. [Porphyrios, 1978] [Teyssot, 1980]

Porphyrios develops a formal version of heterotopia during his study of Alvar Aalto. To Porphyrios, Heterotopia is a category of design methodology which is epitomized in Aalto’s work. Aalto’s odd combinations of materials, discontinued volumetric organization etc. challenge what Porphyrios calls ‘homotopic’ modernism.
Therefore Aalto’s work is ‘heterotopic’ because it resists the “homogenizing tendencies of modernism without sacrificing the rigours of rational, typological method.” [Urbach, 1998] [Porphyrios, 1978]

Georges Teyssot and Manfredo Tafuri create a bridge between the Venetian typological analysis of city institutions and Foucault’s focus on the role of institutions in the creation of professional and scientific knowledge. To Teyssot buildings such as hospitals, prisons and asylums illustrate a history of architectural variation and transformation directly linked with changing notions of hygiene, security, privacy and discipline. [Teyssot, 1980] Published in the same issue of A+U, in his article Why Foucault? David Stewart writes “…… ‘heterotopias’ of Michel Foucault: the spaces……, that were characteristic of the resolute ‘modernizing’ of the urban environment that occurred at the dawn of the bourgeois age.” and thus he restricts the meaning to heterotopia as that pertaining to the architectural expression of a particular period. [Stewart, 1980]

Heterotopias help focus on specific places and actors in the city and on specific spaces and flows. Soja has used the philosophical definition of heterotopias to free the study of distinctly different spatial units in postmodern Los Angeles from the “mathematical models and abstract city theories” left over form the modernist movement. The focus is on the closing down of “rust-belt” industrial factory units in central Los Angeles, and at the same time on the “sun-belt” banking, finance corridors opened on the stretch between the city downtown and Santa Monica. [Soja, 1989] [Shane, 2005]

It is clear from the above discussion that “the concept of heterotopia has taken a very weird tack through architectural discourse. Its many iterations however varied,
share a remarkable degree of de-politicization, far from the charged and dynamic concept of spatial relations that Foucault had in mind.” [Urbach, 1998] The concept of ‘heterotopia’ is “an instrument for thinking about conditions of social exclusion and spatial formation.” The salient aspects of heterotopia are that even though it is bounded, it has effects beyond its borders. It represents the fictitious and restrictive aspects of apparent normality by enabling ways of “...thinking and practicing space that loosen the hold of dominant codes, challenging structures of regulation and control...However momentarily, it dissolves, destabilizes and interrupts power.” It maybe argued based on Foucault’s texts on the integral relation between power and resistance that resistance does not come from elsewhere but is present as a result of its entanglement with power. With this idea of power and counter-power we must think about “…heterotopias as architectural spaces that establish real, localized sites of [power and its] resistance.” [Urbach, 1998]

In urban design there are two main theories of heterotopias. The first theory of Heterotopias is based on the assumption that every society produces its specific space—every society, is spatialised in its own unique way. This spatialisation is connected with the individual through spatial practices and representations. The space of the society is formed as an instrument for those in power. Its spatial code isolates and separates fragments of everyday life. Utopia in this case has no place in space or in other words utopias are “analogous places, contrasting places, and the places of what has no place, or no longer has a place— the absolute, the divine, or the possible.” “Real” space is divided into isotopias and heterotopias: “isotopias, or analogous spaces;
heterotopias, or mutually repellent spaces; and utopias, or spaces occupied by the symbolic and the imaginary.” [Lefebvre, 1991]

Isotopias as places of sameness and repetition, and heterotopias as other places, ambivalent places of the other which is at the same time excluded and included have a definitive role—the role of the utopia is however unclear; between presence and absence. Isotopias and heterotopias are located within ideology, within a dominant practice of space, as opposed elements defined by this opposition. This concept demonstrates how the spatialisation of deviance is a product of a division into iso- and heterotopias, defined by hegemony. [Lefebvre, 1991]

Differently from Foucault, who traces certain characteristics in a heterotopia, this theory makes clear that these characteristics are merely based on the division of space into isotopias and heterotopias, always ensuring that space is a product of a given society, a dominant practice, and so are heterotopias. Utopias, the places of fundamental difference, are not in this space.

The second theory is based on the assumption that cities are created through negotiations that employ shared, symbolic intermediaries, creating a commons or shared space for activities. The commons may take the form of an enclave, an armature or a heterotopia and cities are made up of shifting, recombinant relationships between these three elements. Foucault’s Heterotopias are a means to articulate how “…urban systems and fragments change in modern and postmodern urban systems as actors splice and recombine urban elements.” [Shane, 2005]

David Grahame Shane has written extensively about these shifting recombinant relationships. Shane suggests that “as net importers of energy and people, cities have
always existed in a state of imbalance and disequilibrium. To propose a city that exists in a state of perfect state of equilibrium, ecologically or socially, is to propose an impossible utopia.” [Shane, 2005] Heterotopias are what house all exceptions to the dominant city model while facilitating dynamic imbalance and rapid shifts between urban paradigms. “The heterotopia is thus inherently an ambiguous space containing several disparate spaces within a single perimeter (passage through which is controlled by gates) where several actors interact in complex, sometimes indirect ways using codes, images, and ‘mirrors’”. [Shane, 2005]

3.3 CHARACTERISTICS OF HETEROTOPIAS

3.3.1 Six principles of Heteropology

Foucault’s philosophical discussion on heterotopias elaborates six principles of heterotopias or Heteropology. These principles are premises on which the heterotopias work. However, it is not necessary that every heterotopia illustrate each principle.

The first principle is that heterotopias are found in every culture, every human group, although they take varied forms and no single one is ever universal. Two broad categories are however, identified, heterotopias of crisis and heterotopias of deviance. [Foucault, 1997] These categories are discussed further in the next section.
The second principle is that as the history of a society unfolds the function of the heterotopia may change, or it may be used in a completely different fashion; “for each heterotopia has a precise and determined function within a society and the same heterotopia can, according to the synchrony of the culture in which it occurs, have one function or another [Foucault, 1997] Heterotopias reflect their surrounding culture and its rules. It therefore follows that when the rules change, the heterotopic site itself may be required to change function and form.

Thirdly, Heterotopias have the capacity “of juxtaposing in a single real place several spaces, several sites that are themselves incompatible.” [Foucault, 1997] The example one can use here of these “contradictory sites” is the theatre or the cinema, places that can “bring a whole series of places that are foreign to one another” on stage or screen one after another. In the premodern world, Persian gardens and carpets also had this ability to bring together disparate scenes and seasons from the sacred cosmology. [Shane, 2005] The logic of the houses of the people is expressed by this principle. These houses provided meeting space for a large variety of social and democratic associations and “…though organizations such as the reformist cooperatives, mutual aid societies, the inner-classist popular university program, syndicalist producer co-ops, and the Marxist-influenced socialist parties were often ideological adversaries, they were united under one roof.” [Kohn, 2001]

The fourth principle is that Heterotopias are most often linked to slices in time—which is to say that they open what might be termed, for the sake of symmetry, “heterochronies”. There are heterotopic sites of ‘indefinitely accumulating time,’ like
museums—which began in the 17th century as personal collections and expressions—and libraries. The transformation of personal museums and libraries is linked to the modern desire to record human progress and gather information. These modern heterotopic sites are opposed, with their infinite time scale, to the temporary fairs and popular festivals that are absolutely of-the-moment in the “marvelous empty” fairgrounds at the edge of the city. These sites become active temporarily twice a year, filled with “heteroclite objects; wrestlers, snake women, fortune-tellers, and so forth.” [Foucault, 1997]

The fifth principle explains that heterotopias always presuppose a system of opening and closing that both isolates them and makes them penetrable. In general, the heterotopic site is not freely accessible like a public place. [Foucault, 1997] Entry maybe compulsory, as in the case of the barracks or the prison, or it may be regulated by ritualized set of exclusions. Even spaces that appear open, in fact, conceal a curious pattern of exclusion. It is important to note, however, that what is emphasized for heterotopias is true for all allegedly public spaces. “The café, which was a paradigmatic site of Habermas’ bourgeois public space, was a private establishment. Accessibility was regulated by two different mechanisms of class segregation: financial resources and conventional standards of appropriateness. Similarly libraries, journals, reading circles, and the literary salon all had implicit codes of access such as letters of introduction, peer review, or perhaps, the possession of an academic degree.” [Kohn, 2001]
The last trait of heterotopias is that heterotopias have “in relation to the rest of space, a function that takes place between two opposite poles. On the one hand they perform the task of creating a space of illusion that reveals how all of the real space is more illusionary, all the locations within which life is fragmented. On the other hand, they have the function of forming another space, another real space, as perfect, meticulous and well-arranged as ours is disordered, ill-conceived and in a sketchy state.” [Foucault, 1997] In this principle of heteropology, “heterotopias function inside urban systems either as sites of freedom and ‘illusion’ or as sites of ‘compensation’ and discipline. In sites of ‘illusion’, the mirror functions of the heterotopia come into play. Foucault imagines that such heterotopias will reveal the normative sites ‘within which human life is partitioned, as still more illusionary’.” [Shane, 2005]

3.3.2 Heterotopias of Crisis, Deviance and Illusion

“It is evident, though, that heterotopias assume a wide variety of forms, to the extent that a single, absolutely universal form may not exist.” [Foucault, 1997]

Based on this first principle of heteropology, heterotopias are distinguished into three formal types.

The first are the Heterotopia of Crisis: the sacred, forbidden, privileged spaces reserved by primitive societies for those individuals who are going through a crisis in relation to the society in which they live. Foucault gives the example of “adolescents, women during menstrual periods or in labour, the old etc.” These heterotopias of crisis were prevalent in primitive societies but in modern society it is disappearing even though “some vestiges of them are bound to survive.”. [Foucault, 1997] These were
either fixed locale heterotopias for people in crisis as in adolescents, pregnant women etc. or heterotopias without any placement or "geographical markers", such as the "honeymoon trip". [fig.1]

Further, within their boundaries, Heterotopia of Crisis ".....tend not to be very efficient in sorting their inhabitants, the logic of combination remains local and syntagmatic, centered on a single focus or authority. It relies on comparisons to immediate neighbors, on touch and feel, on physical contact, on the interpretation of symptoms as metaphysical signs." [Shane, 2005] Within the city, Heterotopias of Crisis did not need new buildings or spaces but rather easily adapt domestic or other buildings to their uses in the process of forming small-scale and local-niche operations. [Shane, 2005]

The second kind of heterotopia is the Heterotopia of Deviance, where the individuals whose behavior deviates from the average or standard acceptable or whose
behavior is ‘deviant to the required norm’, are kept. Here the examples are those of rest homes, psychiatric clinics and prisons. Old-people’s homes Foucault says, are both heterotopias of deviance and crisis because in a society “where pleasure is a rule, the inactivity of old age constitutes not only a crisis but a deviation.” Even though we may know where these institutions are physically located, they exist as if nowhere, and their inhabitants are nowhere to be seen in our normal, public space. [Foucault, 1997] The Heterotopias of Deviance tend to replace the Heterotopias of Crisis.

These heterotopias “are associated with the great drive to modernize European society, when urban functions often shifted outside the city in order to develop new, specialized morphologies and typologies in the open space of the suburban network……..The linear logic of modern science, in which every action is followed by a reaction, offered an underlying model for improving society through modern science—starting with the management of heterotopias of deviance. Professionals led the way, improving sanitary conditions, public hygiene, sanitation, transportation, health care, housing, hospitals and so on.” [Shane, 2005]

The logic behind doing so was very basic if one considers the unhygienic conditions in industrial cities of the early 19th centuries; the “Black Death” that swept through London, the unsanitary overcrowded conditions of workers’ towns. The Heterotopias of Deviance were used as crucial catalysts to separate the assumed causes of the problems plaguing industrial cities. Communication systems had developed considerably as a result of the industrial revolution and were used as a means of connecting the Heterotopias of Deviance with the fabric of the city.

The third type is Heterotopia of Illusion which “allows actors to monitor and adjust the shifting balance of images and values within an urban system by manipulating symbolic icons within communication systems.” [Shane, 2005] Their capacity to contain flexible, illusory spaces has aided actors in marketing and differentiating their sites in a highly mediated, media rich world. The actor designers in
Heterotopias of Illusion work with images of people, objects, or relationships, not the things themselves. “Heterotopias of Illusion thus allow actors to monitor and adjust their position between a utopic, frozen, Platonic ideal of perfection and a dystopian, chaotic, Aristotelian world in flux.” [Shane, 2005] Differentiation, disjunction and the rapid displacement of images are key elements of these heterotopias, reacting against the universal connectivity and universal relationships of the postmodern, network city. These heterotopias are associated with “Lynch’s Ecological city and reflect the shift from processing material goods to processing symbolic information in communication systems……. Actors in heterotopias of illusion work, first and foremost, with images to create norms and attractors.” [Shane, 2005] Foucault gave Persian gardens, theatres, cinemas, fairgrounds, world’s fairs, and bordellos etc as examples of Heterotopias of Illusion. In all of these examples there is an element of escape, an illusion of time outside itself.

Shane argues that, “Following Foucault’s seminal article, many scholars focused on heterotopias of ‘deviance and discipline’ generally neglecting the heterotopias of ‘illusion’.” [Shane, 2005] Among the exceptions were scholars such as Susan Buck-Morss, who made the connection between Walter Benjamin’s understanding of arcades, department stores and boulevards as places of ‘illusion’ and Foucault’s ‘Heterotopia of Illusion’. [BuckMorss, 1991] Margaret Crawford updated this concept of shopping and ‘illusion’ as an ‘alternate social ordering’ and its organization around shopping-mall armatures in her essay on Jon Jerde’s mall designs. [Shane, 2005]
3.4 CONTROL MECHANISMS IN HETEROTOPIAS

The Actor-designers/ Dominant urban actors in the urban system use the Heterotopia to maintain the stability of the system. These are the three main elements in our discussion. In the process of segregation into the heterotopias, there is a shifting of power or control between different urban actors. While the actors segregated into the heterotopia are creating new orders, objects, things, or relationships, the dominant urban actors are exerting control on the heterotopia itself to prevent it from bringing change in the favored order of the urban system itself. Segregation into the heterotopia is not enough; the heterotopia has to be controlled to prevent it from reversing the order of the system itself.

Urban theory so far explains each heterotopia in terms of a system of “Combinatorial Keys”\(^2\). This theory of Heterotopias leads to urban equations for each of the heterotopias based on these “Combinatorial Keys”.

“For Foucault, all heterotopias have a “compensatory” side, which enforces codes and disciplines within the space, and also an “Illusionary” side that retains traces of the utopian goals the managers of the space hold in high esteem and that justify their codes.” [Shane, 2005]

In the case of heterotopias of crisis these two mixed without difficulty. [Shane, 2005] When the authorities locked up the houses during an epidemic, the “compensatory” side enforced the discipline required to keep the “rest” of the system in its state of order, and there was the need for the “illusionary” side which led to the belief that the “others” could be kept in this case, disease free by the creation of these heterotopias. The combinatory key in this heterotopia was that “the variations were contained within the basic cellular units of the urban system, that is, the housing cells

\(^{2}\) Coined by Shane to explain the relationship between the main influencing elements of a heterotopia, for more refer [Shane, 2005]
at the base of the nesting hierarchy of the city…….The combinatorial system within these domestic-scaled heterotopic cells depended on touch, on bonding things edge-to edge, on working in a “jigsaw”.” [Shane, 2005] By the “Jigsaw” it is meant that not only did the heterotopia within it have pieces which fit into one another, the heterotopias themselves fitted into the whole image of the City of Faith, there was no outward difference in appearance. The urban equation for Heterotopias of Crisis is thus based on the mixture of deviance-suppression codes \( D \) as well as Utopic Illusion codes \( I \), resulting in the expression:

\[
\text{Heterotopia of Crisis} = (D+I)
\]

The parentheses indicate that the heterotopia is contained within the fabric of the city. The deviance-suppression codes were utilized to suppress the diseased and the ill, and segregate them into the heterotopia while the Utopic Illusion codes maintained the “Illusionary” side explained earlier.

While the shift was taking place from the City of Faith to the Machine City, the Heterotopias of Deviance were increasingly used by dominant urban actors to bring about these changes. “The rules of combination governing the modern heterotopias of deviance were extremely orderly, with rigid codes enforced by “compensatory” systems of punishment.” [Shane, 2005] They were used by the dominant urban actors to sort people and things in armatures, studying them separately as individualized groups. With the establishment of the Machine city itself, those enclaves, that were “other” or deviant from the general order being established were placed outside the city itself, as exemplified by Ebenezer Howard’s “The Social City” amongst others. The combinatorary code of the Machine City involved linear sequencing along the pathways or systems of
communication "...sorting elements into narratives, and segregating flow between attractors. Because of advanced communication systems, and remote techniques this sequencing generally did not involve direct touching." [Shane, 2005] Heterotopia of deviance thus, equals 'compensatory' discipline codes (D) dominating (or 'over') illusion codes (I):

$$\text{Heterotopia of Deviance} = \frac{D}{I}$$

This domination maybe explained on the fact that a new utopic state was being defined in the Heterotopias of deviance where the old Illusion codes were rejected. By moving the Heterotopia to outside the city with the use of the discipline codes, the fantasy of Utopia was made all the more real and was no longer an Illusion.

Heterotopias of Illusion are mainly about the creation of an illusion and therefore are dominated by Illusion codes, especially because the actors in these heterotopias work first and foremost with images to create new norms and codes. In the Postmodern Ecological City, these Heterotopias of Illusion are abundant. They need not be connected with one another and are occupied by varied actors. Accelerated multiplication and mirroring for the actors of this city is facilitated by Heterotopias of Illusion. This allows actors to occupy more than one contradictory and complex position at a time. [Shane, 2005] The Code reversal of Heterotopias of Illusion—image over fact, in the midst of the world devoted to material factuality—can be represented by:

$$\text{Heterotopia of Illusion} = \frac{I}{D}$$

where 'I' stands for an illusion of freedom from constraint and 'D', which this illusion dominates, represents deviance or 'compensatory' discipline. Therefore, the
combinatorial code for these heterotopias is a rhizomic\textsuperscript{3} assemblage that accommodates the active engagement of multiple, “non-unified” actors from the top down and the participation of individual consumers from the bottom up.

It is clear from the discussion in this chapter so far that heterotopias are created to house the “other”. They are created by dominant urban actors in order to maintain the “purity” of the dominant city model. These heterotopias work on a set of combinatorial keys. It is not apparent, however, how the heterotopias are controlled and prevented from reversing the order of the dominant urban system.

It is proposed that the control is exerted by a “Control Mechanism” which is somewhat common in its character for all three heterotopias. This control mechanism is a Spatial Control Mechanism utilizing distance and/or boundary, in the sense that by controlling the distance of the heterotopia from the city, the heterotopia is maintained as the “other”. This distance is in the form of a boundary or distance away from the boundary of the city or virtual distance created by illusion.

In the case of the Heterotopias of Crisis, the distance is not so much a physical one as a metaphorically one. The distance is created by the creation of physical boundaries which may not be crossed. The City of Faith or the medieval city was a composite system. The city itself had a physical outer boundary in the form of city walls and a centre in the form of a church etc. In this system, the heterotopias were metaphorically separated by locking up the houses with infected people or by creating heterotopias without any physical placement as in the case of the honeymoon trip.

\textsuperscript{3} The rhizome, conceived metaphorically, can describe any flexible network that unites a variety of materials and people, takes a variety of forms, adapts to its needs of survival in local situations, and provides passage and resources for mobile, nomadic actors. [Shane, 2005]
In the medieval city in times of crisis such as an epidemic, any house would be converted to a sick-house when authorities would seal the house from outside and leave the people inside to die and then later come back to collect the bodies. “At different times there were domestic-scale sick houses, prison houses, work houses, bath houses, and public houses.” [Shane, 2005] By maintaining this metaphorical distance the heterotopia continued to exist as the “segregated other”. While the business of the city went on, the locked houses and its inhabitants could have not existed, they were erased from the fabric of the city life itself. From the outside these
houses had facades like every other house or dwelling in the street, it was their internal setup that distinguished them from their neighboring dwellings. Heterotopias of Crisis therefore did not especially stand out in the city of faith but were rather “woven into its texture.”

When the shift from the City of Faith to the Machine City happened, these heterotopias were considered as part of the city fabric. The ill, the old, the pregnant women were studied and put in their own enclave. An enclave which for the time that the shift was taking place was part of the city, the metaphorical distance was destroyed and the control on the heterotopias themselves, lost. The shift took place and in the Machine City with its rigid codes and enclaves, the “other” was placed away from the city. The distance was no longer metaphorical but real. The prisons, the poorhouses, the hospitals and the infirmaries, were all separated from the city and placed at a distance from the city. The communication systems of the city still connected to these, but the heterotopias were no longer part of the city fabric. [Fig. 2]

An example of this can be found in Ebenezer Howard’s “The Social City”, where six garden cities and the central city were connected by canals and railways, the heterotopias such as the homes for inebriates, convalescent homes; epileptic farms etc were placed outside each of these cities. [fig. 3] The core cities could then be divided into rigid districts according to function. The heterotopias as well as the other districts were connected by communication systems.
In the case of the Heterotopias of Illusion this Control Mechanism is even more metaphorical than the one in the Heterotopias of crisis. A boundary is created within which the illusion functions. As an example, one visits a fair to escape the reality of
everyday life. On a given day the fairground is teeming with activity, with rollercoasters, clowns and women with beards. The very next day the fair moves to another city and what is left is its illusion. Walt Disney’s Disneyland in Anaheim provided a place for escape for post war American families. With its two-third scaled entrance gate, it gave the illusion of children being empowered and parents being giants. Its cowboy themes, frontier land and future land transported the spectator to a new reality by the use of imagery. [Shane, n.d.] There was no relation between the place being experienced and its locality on the map. Texas, Massachusetts or Hawaii are experienced in the same space which may be any of the Disney-realms in the US, UK or Japan. The heterotopia exists in its every flowing shifting phase free from any relation with its locality or the space that it occupies.
CHAPTER 4

CHANDIGARH- THE SITE OF TENSION

The discussion on Temporal Control Mechanisms is based on the Case Study of Apni Mandis in Chandigarh. In order to understand the importance of this case, it is essential to understand the city itself and the formal market system in the city. This chapter provides this context.

This chapter is divided into two sections, the first a discussion on the planning of Chandigarh beginning with the need for the city, appointment of Le Corbusier as the planner and the plan itself; the second is a discussion of the commercial setup (markets) of the city based on the plan, and the rise and fall of the rehri markets and the rise of the Apni Mandis.

The main objective of the first part of this chapter is to establish the dominant actors in the planning of the city and to establish the Machine City as the dominant urban model. The literature on Chandigarh’s planning is mainly architect centric and refers to Le Corbusier as the architect of the city. The role of the Mayer-Norwicki team is equally as important. The first Prime Minister of India, Jawaharlal Nehru, and the government officials, especially A.L. Fletcher [Officer on Special Duty to the government of Punjab], P.N. Thapar [the administrative head of the project] and P.L. Varma [Chief Engineer, Development, East Punjab], all desired a ‘modern’ city. “The city became an important site for the expression and negotiation of their visions of modernity. This process of envisioning and negotiation gradually made the city materialize.” [Perera,
An effort is made in the first section to establish the importance of the decisions of all these actors and the effect it had on the city.

4.1 CHANDIGARH

The seeds of Chandigarh’s conception are found in the partition of India at independence from the British. The eastern Punjab lost its capital Lahore to Pakistan. The immediate task was to provide shelter to those rendered homeless from west Punjab. It was decided not to relocate the functions of a new capital in an existing town, but rather to create a new capital. [Kalia, 2002] In Chandigarh, the decisions about the size and the location of the city were made before the planners or architects took over. [Perera, 2004] Chandigarh was conceived in a time of crisis caused by the creation of a separate Pakistan and the Indian leaders saw the new city as a potential symbol of the creative strength of the new republic. [Evenson, 1966] The decision makers (Nehru and Govt. Officials) took three major considerations into account in selecting a site: security against Pakistan, adequate space and the potential to replace the material and psychological loss of Lahore. The 115 Km² site chosen in March 1948 is at the foothills of the Shivalik Range of the Himalayas, and is bounded by two rivers. [Perera, 2004]

Even though both Nehru and the Punjab officials were concurrent on the creation of a “modern” city, their aspirations clashed, with the latter inclined towards a “European modernity”. “The officials did not believe that the city of their imagination could be created by ‘Indians’ or Indianized Westerners. Varma and P.N. Thapar wanted to visit Europe to find a suitable architect.” [Perera, 2004] However, this approach was
rejected by Nehru and he instead suggested two Western planners already working in India, Otto Koenigsberger and Mayer. “Nehru believed both were familiar with the country and might be able to create a city of his imagination. At this time, his power was too much for Punjab officials to challenge and Mayer was given the job.” [Perera, 2004] Even though India had inherited a sophisticated administrative system from the British, there were almost no technical schools or colleges. “There were no Indian architects who were also sufficiently experienced urban planners.” [Chdh. Research Group, 1992]

Initially, Mayer proposed two schemes: one in which most all the work would be done by Mayer and his associates in New York; and a second in which the detailed work was to be done in India in collaboration with Indian architects. The second scheme was approved as this was seen as an opportunity to provide valuable experience to the architects in India.

Mayer’s masterplan was influenced heavily by the English Garden Movement, including the Greenbelt Towns of the 1930’s, and the superblock development of Baldwin Hills. The masterplan was fan-shaped, spreading out between the two river beds (fig.4) The government buildings and Punjab University were located in a narrow section in the north, where the one of the rivers forked; a large business district was created at the center of the city, with a much smaller industrial area to the south-east. Mayer rejected the rigor of a geometric grid in favor of a pattern of sweeping curves. The city was to be built in two phases and eventually house a population of 500,000.

The plan’s biggest feature was the Urban Village or district measuring 1350 by 900 meters, which was composed of three superblocks. The neighborhood unit or superblock, was the Basic unit employed in making the fabric of Chandigarh, is a
planning device developed largely in the 1920’s through an effort to create a residential environment separated from the movement of rapid high-volume motor traffic. [Evenson, 1966] Each superblock was designed to be self-sufficient with a small market, schools and open spaces. It was to accommodate 1150 families (fig. 5).

Fig. 4: Mayer-Norwicki plan source [Bahga & Bahga, 2000]

Mayer saw the superblock as being particularly suited to India, where he saw most people as being either villagers or city dwellers of recent village origin. In developing the overall street plan, “Not everyone in the Indian government shared Nehru’s enthusiasm for him[Mayer].............Nehru held fast to his position until the death of Norwicki in an air crash in 1950, at which point he let the Punjabi officials visit Europe in search of an architect.” [Kalia, 2002] “This highlights the significant role played by Norwicki. Despite scholar’s constant reference to ‘the Mayer plan’, it was largely elaborated and detailed by Norwicki, who also designed the buildings. Among
the foreign-born designers working on Chandigarh, he demonstrated the greatest
sensitivity to India, and his work was the most place- and culture-specific.” [Perera,
2004] He viewed the city as having two main functions: the first being the provision of
everyday work and food and the second, that of leisure. He believed the city’s most
important function was leisure; the city had to offer opportunities for recreation.
Norwicki suggested a continuous park system linking all the parts of the city. His
sketches for the superblock excited the Indian officials and convinced them of the
viability of the Mayer-Norwicki plan.

Fig. 5: Original Superblock Plan. source [Chd. Research Group, 1992]
4.2 CORBUSIER’S PLAN– THE MACHINE CITY

After Norwicki’s death in a plane crash in 1950, Mayer withdrew from the project and in November 1950 began the search for a new team of architects. After many disappointments, Thapar and Verma were recommended to approach Le Corbusier, first by the French Minister of Reconstruction and subsequently by Le Corbusier’s cousin, Pierre Jeanneret. Le Corbusier is said to have had serious doubts about accepting the commission, however he accepted after architect-couple Edwin Maxwell Fry and Jane Beverly Drew joined the team. [Kalia, 2002]

Le Corbusier first visited the site in February 1951. As the general consultant to the new capital, he was assigned to either make modifications to the Mayer plan or to prepare a new masterplan. Le Corbusier, who had seen all his previous city planning projects unrealised, supported the idea of a completely new plan. “Early in 1951, he prepared a new plan in a matter of weeks, based on his own concept of sectors (although he did incorporate some of the features from the original plan)”[Antoniou, 2003] Le Corbusier appointed his cousin Pierre Jeanneret as his site representative and chief architect to the capital project.

4.2.1 Role of CIAM Planning Principles

The ideology of CIAM played a major role in the planning of the new city. All four members of the capital project– Le Corbusier, Pierre Jeanneret, Maxwell Fry and Jane Drew– were members of CIAM1. Le Corbusier wrote often to Nehru outlining the

---

1 The Congrès International d’Architecture Moderne (CIAM) or International Congress of Modern Architecture was a highly influential organization that was not only engaged in formalizing the architectural principles of the Modern Movement, but also saw architecture as an economic and
ideals of CIAM. “Separating the city’s key features is central to modernist planning; the functions were to be organized so that each was a mutually exclusive component within the city.” [Perera, 2004] In his document For the Establishment of an Immediate Statute of the Land, Corbusier described his vision for Chandigarh and elaborated the four functions which were based on The Athens Charter of CIAM.

“II The Four Functions

The CIAM ‘Charter of Athens’

The force of this charter lies in giving the first place to the dwelling: the environment of living– the family under the rule of ‘24 solar hours’.

The second place is given to ‘Working’ which is the daily act of human obligation.

The third is the culture of body and spirit on the one hand and an intellectual leisure on the other.

When all these goals have received their definite containers, it is possible to give to each of them its respective rightful place and at this moment can occur the problem of realizing the contacts: that is circulation!” [Le Corbusier, 1959]

He further explained that each of these four functions asked “for precise locations on the grounds of the city” and that each would have to be “contained in one container i.e. one building.” According to Corbusier, “Modern life has to locate all its activities in containers of conforming sizes– unite de grandeur conform.” Further, “the masterplan essentially consisted of the provision of a physical framework based on the predetermination of the precise locations of the assumed functions, and the built forms in which these were to be contained.” [Sarin, 1982]
The four functions in their containers gave physical shape to Corbusier’s “City as an Organism” paradigm in Chandigarh (Fig. 6). He envisioned, the Capitol complex at the top as the intellect, the commercial centre its heart, and the educational belt and the industrial area its limbs. The roads are the blood vessels or circulatory system, and the green belts are the lungs of the city.

Fig. 6: City as an organism diagram of Chandigarh. source author

Corbusier’s and CIAM’s solution to the problem of urban congestion rested on two physical scales; the separation of the functions of automobile traffic and greater pedestrian movement. “As the socio-economic conditions and the living conditions of
the Indians ruled out the idea of vertical planning, Le Corbusier had to decide on a horizontal plan more or less on the pattern of the postwar garden town” [Kalai, 2002]

4.2.2 Urban Form of the City

The urban form of Chandigarh was designed as a “tidy chequer-board pattern, adapted to the particular attributes of the site, resulting in distinctive distribution of functions and a hierarchy of roads.” [Antoniou, 2003] Corbusier converted Mayer’s curvilinear road system into a grid-iron pattern of roads; the main roads running north-east, south-west and north-west, south-east [Fig. 7]. “The essence of the plan lies in preserving the true functions of seven types of roads, called ‘the 7V’s’ (les sept voies) by Le Corbusier, and their expected operation in relation to the ‘sectors’ .” [Sarin, 1982]

This system of roads symbolizes “the structure of a tree, hierarchically and progressively branching out from the stem in accordance with the quantum of life-juices to be carried.” [Bahga & Bahga, 2000] The V1’s were the highways which connected the city to the country and became V2’s on entering the city. The V3’s are the fast moving traffic roads. The V4 roads bisected the long side of each sector, were irregular and meant for slow moving traffic. These “Bazaar Streets” were lined with shops on the south side; ensuring shade for pedestrians and minimizing road crossing. The “loop road” V5’s intersected the V4’s and distributed traffic within the sector. The V6’s represented roads or paths leading up to the houses, and the V7’s represented a strip of parkland that contained the public amenities such as schools, community centers, open spaces, pedestrian paths and connected with the next sector, making it
possible to walk throughout the city on foot. “Comparing the seven Vs to the “blood stream” function of the “respiratory system in biology,” Le Corbusier believed that they created “order” in the city.” [Kalia, 2002]

Fig. 7: Map of Chandigarh showing the first two phases of development. source [Chd. Research Group, 1992]
The neighborhood unit called “sector” was designed to be 800 meters by 1200 meters (Fig. 8). It was bound by fast moving traffic with only four entries into its interior and was to be a self-contained unit with shops, schools, places of recreation and worship.

The city was originally designed to be built in two phases; the first phase was composed of 22 low-density sectors covering over 9000 acres and the second had 17 sectors of much higher density. In 1995 another seven sectors were added to the masterplan as phase 3 of development. [Bullivant, 2007] The first phase was planned as 5-quarter and 17-full sectors, besides the industrial area and the Capitol. The second phase was planned with all sectors being the full size and with a sub-city center.

\[for more on the “sector” refer [Evenson, 1966]\]
as an added feature. The sectors are designed for three densities of 25, 50 and 75 persons per acre and divided along social class lines. The density increases towards the south of the city. The third phase was planned to accommodate the maximum density.

The density difference meant that larger lots of land were planned for the northern sectors and led to income segregation. “Those allowed to stay in Chandigarh were, by design, subjected to severe income stratification. The wealthiest residents and most prominent government officials were placed in sectors adjacent to the capitol in spacious houses built on large lots, with the residential sectors becoming increasingly poor moving away from it. In addition to income segregation, the location of average residents far from activity centers made it difficult for them to maintain formal employment, particularly in a city where the public transportation is inefficient.” [Perera, 2004]

Work as a function was addressed in four areas in the first phase and then a fifth added in the second phase; The Capitol in the North; The educational belt on the West; The industrial area on the East; The city centre in the centre and eventually the sub-city centre. The capitol complex forms the visual and symbolic focal point of the city at the end of the processional way (V2-Jan Marg or the People’s Avenue). The city centre is centrally located at the intersection of the two main axes, the v2’s- Jan Marg and Madhya Marg (the Middle Avenue). A sprawling green space, planned as a zone of solitude and cultural activities called the “Leisure Valley”, extends northeast and southwest through the city. This is placed in the area around the smaller of the two rivers. It starts at the northeast, near the capitol at the Rajendra Park. A man-made
lake where the water from the two seasonal rivers is trapped flanks the park and is called the Sukhna Lake. [Kalia, 2002]

“All studies about Mayer and Le Corbusier state that the city as a complex phenomenon, where many things happen simultaneously and where many possibilities still have to be created- the city as a meeting point- never crossed their minds. To Mayer and Le Corbusier the city was a machine, all parts of which had to function in a well-oiled way.” [Bhalotra, 1993] Perera amongst scores of other authors is in agreement with this assessment and writes:

“For Le Corbusier, the garden city was a ‘pre-Machine Age utopia’. He supported urbanization and a city ‘free from the inhibiting restraints’ of the past. The overall ideology, to which Corbusier subscribed, which James Holston calls ‘architectural modernism’, was developed in the manifestoes of the Congrès International d’Architecture Moderne (CIAM). Modernists believed that the transformation of the built environment could instigate social change and that ‘modern architecture and planning are the means to create new forms of collective association, personal habit, and daily life.’ Moreover, separating the city’s key functions is central to modernist planning; the functions were to be organized so that each was a mutually exclusive component within the city.” [Perera, 2004]

Critics of Le Corbusier also argue that his plan was not based on any substantive study of the Indian society. [Sagar, 1999] As mentioned earlier he was very active in familiarizing the Indian officials with the “architecture appropriate to modern civilization”, rather then familiarizing himself with Indian conditions. His understanding of India was restricted to it being a country where the majority of the population lived in the villages. This along with the CIAM principles discussed earlier led to a plan that is “based in the belief that forty villages put together make a city”. [Bhalotra, 1993] The biggest failure at the same time of the city is attributed to the fact that a complete section of people has not been accommodated. “Even the actors of this stage-play
were predetermined; there was no room in the city for the very people who built it.” [Sarin, 1982]

The city was thus built with the notion of changing society itself, of modernizing society, without much understanding of the existing society in itself.

“For Corbusier, the city was not a place where inhabitants determined its role in their daily lives; rather, the city determined the roles of its inhabitants. Corbusier’s intent was to create particular subject positions through design which would transform the inhabitants into modern subjects who could fill these positions.” [Perera, 2004]

This was rooted in the modernist belief that the transformation of the built environment could instigate social change and that “modern architecture and planning are the means to create new forms of collective association and personal habit and daily life.” [Perera, 2004]

4.2.3 Control and Implementation of the Masterplan

“A planned city presupposes the existence of an authority or an organization sufficiently effective to secure the site, marshal the resources for its growth, and exercise continued control until it reaches a viable size. After that, the maintenance of a planned city is also on a regulated basis.” [Kalia, 2002] Two laws were passed to ensure the planned growth of Chandigarh: the Capital of Punjab Act 1952, controlled development and regulation; and Punjab New Capital [Periphery Control] Act of 1952, protected the sacrosanctity of the masterplan. The purpose of the periphery control is to set limits to growth up to a certain point or to promote growth in a certain area so that a certain constructed volume is realized. In the case of Chandigarh, these two laws and numerous ordinances that came after them lay out the Urban Controls in
Chandigarh at three levels. The first is the Periphery Control; the second the Masterplan which comprises of Land use control and reservations, circulation pattern, physical form of the city (density, texture, grain), design of large public area (total concept given), design of small private areas (elements include– form of built up and open areas; architectural features of elevation/frontage, i.e. heights of buildings, position of walls, fences, fenestration, material etc.); and the third is Architectural Controls which includes such things as “Full Architectural Controls”, “Systems of Construction and Architectural Treatment of Exteriors Controls” etc. [CCA, 2001]

Anu Sabhlok writes “The Chandigarh administration has been a very strong enforcing agency for all new development. Chandigarh is the only city in India where the architectural section in the administration has an upper hand over the engineering and public works department.”[Sabhlok, 2001] Everything from the placement of dustbins and their design, the trees to be planted, the design of the manhole cover to the design of public buildings, facades of houses and the overall land-use is governed by these urban controls which are enforced by the administration.

3 For more on urban controls in Chandigarh refer [CCA, 2001]
4.3 FORMAL COMMERCIAL MARKETS

The Formal Markets in the city are arranged in a three-tier system. The main commercial area is the city centre, which is followed by the sub-city centre and then the sector markets. In addition to these there are also shopping streets along the two main processional ways i.e. the two V2’s– Jan Marg or the People’s Avenue and Madhya Marg [the Middle Avenue]. (Fig. 9)

Sector 17 in the masterplan was reserved for the central business district and civic centre [Fig. 10]. The sector was divided into two parts with the northern part being the hub of the commercial and civic functions in the city and the southern part dedicated to the district administration. Motor traffic is restricted to the outer loop road, which opens into parking areas on the outer edges of the complex. The main plaza is reserved for pedestrian movement. Four wide pedestrian ways lead into the main chowk or piazza [Fig. 11]. The buildings in the commercial centre designed by Le Corbusier are very similar to the ones designed for the Bazaar streets with a windowless brick façade and the only illumination in the interior coming from two inset verandahs. The only difference being that the upper two floors were used for offices instead of residential purposes. There is no residential component to this sector. The shops on the lower floor are recessed 12 feet behind a verandah, which provides protection from the rain and sun. The square itself is uncovered and therefore not used much during the days in summer and nights during the winter.
Fig. 9: Formal Commercial Markets source author
Fig. 10: Four Storey shop-cum-offices at the City Centre

Fig. 11: Main Piazza in the city centre
With the growth of the city, the city centre became too small to function as the centre of the whole city. “It is impossible to develop sector 17 more intensively, however, because to do so would compromise the spatial concept that underlies the design of the city centre, and because the traffic density would become too great.” [Anon., 1992] It was decided to design a sub-city centre. The sub-city centre occupies half a sector; namely sector 34. It has been designed along the same lines as the city centre, with pedestrian piazzas in the centre with roads and parking areas on the periphery. Some structural changes were made to the buildings, with the main material being Reinforced Cement Concrete. The height of the buildings has been increased from four to five storeys [Fig. 12]. The lowest floor is intended for large showrooms with the upper four storeys housing offices.

Fig. 12: The five storey shop cum offices in the Sub-city center. source [Bahga & Bahga, 2000]
Along with the development of sector 17 as the commercial district, the original masterplan also proposed to establish the Madhya Marg (V2) as a street carrying on one side a line of wholesale establishments and on the other side a series of office buildings, this would give the street a commercial character till it intersected the other V2- Jan Marg after which the commercial character was eliminated. These shopping establishments were designed as three storey shop-cum-offices with a blank brick façade broken with a single square window on the third storey [Fig. 13]. The upper storeys were designed to enable the creation of offices big enough for wholesale establishments. A verandah similar to the ones used in the city centre screens the lower showrooms from the sun and rain. A walled courtyard at the back has been provided for service and storage. These shops may be accessed through slow-traffic roads which run parallel to the Madhya Marg.

Fig. 13: Shopping Street along the Madhya Marg source [Bahga & Bahga, 2000]

The Neighborhood Shopping Centers or the Bazaar Streets are located along the V4 roads, which bisect the sector along its longer edge [Fig. 14] [Fig. 15]. The markets of one sector are connected to the market of the next sector across the V3,
forming a continuous ribbon of commercial activity. These markets were designed on the southern side of the V4 streets to give respite to the shoppers from the summer sun and also to minimize the necessity to cross the street. Two kinds of shops were designed for these markets. The first are the bigger shop cum flats, which are three storey buildings with shops on the lower floor and residential accommodation on the upper two floors. The shop cum flat system was developed on the premise that most shopkeepers in traditional situations preferred to live near the shop itself. A continuous verandah, 12 feet deep runs in front of the shops providing shade and shelter from inclement weather. The second kinds of shops are the small booth, which are single storey shops provided to cater to the needs for smaller shops (Fig. 15). To ensure architectural unity and a uniform street picture, strict architectural controls are applied to these “shopping complexes”.

Each shopping street was intended to serve its sector hereby making each sector self-sufficient. The Administration was however unable to control what function each shop served and therefore most of these shopping streets today serve the city at large. There were no checks or controls in place to coordinate the functions that each shop would serve, and therefore different sector markets became specialized areas catering to one particular function, as an example the sector 11 sector-market is known for its cloth showrooms. This creates problems with parking and traffic. Also with the change in lifestyles and the narrow bay design of the shops the shop cum flat experiment failed and the administration has allowed the use of the upper floors as offices etc.
Fig. 14: Sector Markets in a Typical Sector

The creation of the one-sided shopping street was at the time of its creation considered a refreshing change from the hustle and bustle of traditional Indian shopping space. However, Norma Evenson writes about the market areas in Chandigarh,

“Although rationally conceived, the bazaar areas of Chandigarh tend to lack the excitement and color of the traditional bazaar streets of older Indian towns, a condition partly attributable to the restricting of the shops to one side of a rather wide motor road. In older cities, the bazaar streets are narrow, often tortuous pedestrian ways, with open shops on both sides of the street producing an atmosphere of colorful congestion. In the bazaar the sense of urbanity intensifies, and all the life of the town seems to be distilled and concentrated amid the noise of the peddlers, the profusion of goods, and the movement of the crowds. The last thing one needs in a bazaar is excessive open space or, God forbid,
grass. The atmosphere of the Chandigarh bazaar street as it has been developed reproduces much of the antiseptic vacancy of an American suburban shopping centre, lacking only the twenty-acre parking lots to complete the illusion.” [Evenson, 1966]

Bazaars in India are meeting places, places where contact is made, where humanity is celebrated; one meets and greets neighbors, the shopkeeper, and the milkman, asks after their family, discusses their problems. “The typically Indian bazaar, a shopping street full of all kinds of activities, where there is space for alternative thought, where news it being exchanged, is missing in Chandigarh. Here shopping is just the act of spending money and taking a product home in return.” [Bhalotra, 1993]

Fig. 15: Sector 19 shopping complex (photo: author)
4.4 INFORMAL PUBLIC MARKETS

4.4.1 The Rehri Markets

Some of the first residents of the new on the site were refugees and construction workers. The lack of infrastructure as well as their low economic status gave rise to the “non-plan commercial centers”. [Sarin, 1982] The need for basic goods and services by the first residents provided opportunities for small enterprises requiring very little investment. The first of these centers developed near the bus stand in Bajwara.
As more and more residents came in and development began to take place, informal hawkers appeared. These hawkers on bicycles or *Rehri*¹ provided daily necessities such as fresh fruit and vegetables, snacks, etc. to the early settlers (Fig. 17). Some of the earliest sectors to be settled were sector 22 and 23. As the low income population of these sectors began to grow, “.... many of them started congregating either near the rapidly developing shopping streets of these sectors, or on open spaces adjacent to high-density residential areas.” [Sarin, 1982] Such areas of congregation began to function as non-plan markets and became focal points of attracting large numbers of people. As the number of these *rehris* and markets increased, they were viewed by the administration as an enforcement problem. The enforcement staff was asked to prevent and discourage the use of land by these non-plan markets. This was executed by the regular confiscation of *rehris* plying in these “Rehri Markets”.

In 1971, 75% of all *rehriwallas* sold fresh fruit and vegetables. [Prakash, 1972] “From the beginning, retail distribution of fruit and vegetables was almost totally monopolized by *rehriwallas.*" [Sarin, 1982] Indians, especially North Indians, are predominantly vegetarian and rely mainly on fresh seasonal produce. These *rehris* were the easiest source of fresh fruit and vegetables that could be bought fresh everyday. The informality of the market itself was associated with the freshness of the produce as it was informal enough not to be packaged and processed. The vegetable and fruit sellers of the rehris were among the first traders to organize into a union. In 1959 “made a representation to the Estate Office demanding the demarcation of a

---

¹ Rehri is a wooden board platform mounted on a chassis of 4 bicycle wheels held together by steel rods and strips framing. For more refer [Prakash, 1972]
number of sites from which they could function without constant harassment.” [Sarin, 1982] In the same year some areas were earmarked for the parking of rehris.

With the development of the city, more and more rehri markets were legalized. As in the case of sector 19 where a big rehri market established itself, though not earmarked in the masterplan for this purpose, it had to recognized by the administration and the area designate to the parking of rehris.

The informal nature of these rehris however made them susceptible to fire and other such disasters [Fig. 18]. The rehri markets would often catch fire leading to major loss of life and property. Beginning the 1980's the administration began
constructing brick ‘booth markets’ divided into very small booths and provided with electricity and water and built to ensure safety standards (Fig. 19). As late as 2001, rehri markets were removed and replaced with ‘booth markets’. These booths were allotted to the traders from the rehri market that existed there. However as soon as these markets became booths and formalized, the character of goods sold in these changed. Video game saloons, hair parlors, garment sellers etc replaced the vegetable and fruit sellers (Fig. 20). There are no formal studies available on why or how the booth markets converted to non-produce selling markets. It maybe speculated that once the markets became formalized into booths, they became the same as the other formal markets in the city.

Fig. 18: Burnt Rehri Market
Fig. 19: Sector 18 rehri market now converted to permanent booths [photo: author]

Fig. 20: Inside of sector 19 booth market. [photo: author]
4.4.2 The Apni Mandis

The traditional market system with the rehri markets, was however unfavorable for farmers as major share of consumer rupee was pocketed by the traders. The farmers would get a low price for their produce whereas the consumers had to pay higher price for poor quality products available in the markets. Also though the produce was local, it was still sometimes weeks old. In 1987, “farmers’ market” was started with a view to give boost to the small farmers around cities so as to provide direct access to the consumers, by eliminating the middlemen as well as to address the demand for fresh produce. It is also known as the “Apni Mandi” because it belongs to both the farmers and the consumers who can mutually help each other. In Chandigarh these ‘Apni Mandis” were the answer to the problem of diminishing Rehri Markets [Fig. 21]. This pilot project started in Chandigarh was so successful that today it has been implemented in a majority of Indian states. [PSMB, n.d.]

As discussed earlier, the masterplan is envisioned in such a way that no space on the plan is left empty or undesignated. Each and every lot of land has a defined purpose. There is no informal space within the masterplan. This means that bar for some areas such as the Circus ground in sector 17; there is absolutely no space where informal activities can take place. However the whole city did not develop at once and therefore the V7 strips of land running through the sector were generally the last spaces to be developed. These apni mandis started in these very sector parks and open spaces, where on different days of the week, farmers would come in with their produce and set up market. For some hours every week, the character of the open space, which is mostly sector parks, is converted into a bustling produce market, where the people from the surrounding sectors buy their weekly groceries. The first
“Apni Mandi” was started in sector 15. An open area which was designated for a park space which hadn’t been developed yet was utilized for this purpose. Every Wednesday the farmers would come in with their carts and trucks and sell fresh produce to the consumers from the surrounding areas. This market was so popular that there were demands for more markets to be setup by the people of the city. These led to the setting up of more markets. Today there are 12 “Apni Mandi’s” that take place in the city [Fig. 22].

---

Fig. 21: Sector 15 Apni Mandi [photo: author]
The ‘Apni Mandis’ have been adopted by the administration, so much so that the Municipal Council now has a committee, which oversees its operations. The land is leased at the rate of Rs. 500/day to the administrating committee. Only farmers from the areas surrounding the city are allowed to take part in this “Apni Mandi” system. The markets themselves are still informal in the sense that their spatial expression is informal, there is no formal structure to define where the market takes place, except for an open tract of land, where on other days the neighborhood children play cricket (Fig. 23).
Fig. 23: The lot used for Apni Mandi in Sector 15 lying vacant on other days [photo: author]
The discussion so far has dealt with the philosophy and theory of heterotopias, the control mechanisms in heterotopias, the case of Chandigarh- the machine city, the commercial setup of the city and the informal markets in the city. This chapter is a discussion on the Apni Mandis as heterotopias in the Utopic city of Chandigarh, the development of the Apni Mandis over time and Time as a control mechanism in Apni Mandis as Heterotopias of Deviance.

5.1 ESTABLISHING APNI MANDIS AS HETEROTOPIAS

The city of Chandigarh is an example of a planned machine city. The set of priorities and preferences that influence the operation of the urban system is a formal planned approach.

Heterotopias are places of exclusion where the exceptions to the dominant urban system are allowed to grow and manifest themselves. The Apni Mandis and the rehri markets before them are then examples of Heterotopias. The commercial setup, (section 4.3) like the city, is formal and planned. The unplanned, informal market system then is an exception to this urban model; the "Other".

By catering to the inherent need for informal markets where fresh seasonal produce is available throughout the year, these markets are fulfilling a need, thus facilitating the adaptation of the city by its citizens; a need, which was not catered to, in
the existing urban system. At the same time these spaces are segregated into pockets, so that the heterotopia is contained within multicellular units throughout the city.

The apni mandis exhibit three of the six principles of Foucault’s heterotopology. Firstly, though the Apni Mandis started as informal markets, they were adopted by the administration. The character of the Mandis remained informal with no permanent structures erected to house them. However, they are formalized in their being adopted by the administration and the administration allocating land to the functioning of these. So in order to conform to the surrounding culture or urban model the markets were formalized, they are now “technically” formal. With time therefore the Mandis changed and adapted to reflect the formal character of the surrounding city model. This is a reflection of the principle whereby a heterotopia constructed for one purpose can ‘function in a very different fashion’ as its history unfolds. Heterotopias reflect their surrounding culture and its rules, therefore when these rules change, the heterotopic site itself maybe required to change function or form.

Secondly, the Mandis share some similarities with the temporary quality of fairs. Though there is a very important element missing; fairs and circuses are exemplifications of Heterotopias of Illusion where time ceases to exist. The Apni Mandis however do not create any such illusion. Their temporality is linked to the market taking place in one spot only once a week. On other days what is left is the illusion of their existence. It may therefore be surmised that even though as heterotopias, the Apni Mandis deal with slices of time they do so in a fashion very different from the examples encountered in literature so far.
Thirdly, the heterotopic system of the Apni Mandis is hinged on two keys, first that the farmer must be from the surrounding area and second that he must sell produce listed in the act. Only those that follow the system maybe allowed to sell at the market, the rest are not allowed entry. Access to these markets is limited to farmers from the surrounding areas of the city who may sell their produce here¹, any other sellers are not allowed. The farmers are issued I.D cards, based on what vegetables and fruits they produce and where their farms are situated. “The farmers registered for participation in the apni mandis are to be issued identity cards by the Secretary, Market Committee...Secretary, Market Committee will have the particulars verified before issuing the identity cards particularly the fact that the farmer is himself the land owner and cultivator or a tenant cultivator.”² Only those farmers possessing I.D card of the surrounding area are allowed to sell their produce in a particular market. Therefore, the presupposed system of opening and closing is hinged on who has the I.D. card and who doesn’t.

Further, the commodities that are sold in the market are also a system of inclusion and exclusion. It is stated, “The scheme would apply to commodities listed in the schedule of agricultural produce under the Punjab Agricultural Produce Markets Act. 1961.”³ Heterotopias always presuppose a system of opening and closing that both isolates them and makes them penetrable. The heterotopic site is not freely accessible like a public place. Entry maybe compulsory, as in the case of the barracks or the prison, or it may be regulated by a ritualized set of exclusions. [Shane, 2005] The Apni Mandis create their own system of opening and closing.

¹ Refer memo no: (931 Teh/ Enf) Dated: Chandigarh, the 14-1- 1988.
According to the urban theory of Heterotopias, each type of heterotopia is based on a city model prevalent in a particular age. The Heterotopias of Crisis are associated with premodern or primitive cities; deviance with modern and illusion with post modern. The Apni Mandis are not Heterotopias of Crisis. Heterotopias of Crisis are sacred forbidden spaces reserved for individuals who are in a state of crisis in relation to the society in which they live. The Apni Mandis are not in crisis with the society neither are these sacred nor forbidden space. The “crisis” if any at all is for the planned city, and the social setup. However similar to the Heterotopias of Crisis these are located within the fabric of the city.

Chandigarh is a modern city based on the CIAM principles; therefore the informal markets are Heterotopias of Deviance. The Heterotopias of Deviance were used to segregate the spaces, which contained those people whose behavior was deviant to the required norm. The required norm conforms to the planned formal city and the informal markets are deviant from that by being unplanned. Heterotopias of Deviance were also used as a means to enforce society’s power structures by means of sorting based on “systems of categories and monofunctional subdivisions.” [Shane, 2005] The power structure in this case represents the values and aspirations of the dominant urban actors in the planning and design of the city; Albert Mayer and Matthew Norwicki (the first plan); Le Corbusier, Jane Drew and Maxwell Fry (the second plan); Punjabi officials such as P.N. Thapar, P.L. Verma and Prime Minister Jawaharlal Nehru and presently the administration with its various offices, planners and architects. As discussed in section 4.1, the aspiration was to create and maintain a modern planned city, and therefore the informal markets are sorted based on its
being unplanned into these Heterotopias of Deviance which is contained within the fabric of the city.

5.2 THE DEVELOPMENT OF APNI MANDIS OVER TIME

Apni Mandis and time can be discussed at two scales. The first is the scale of the everyday. On a day-to-day basis, the mandis are temporal. The mandis since their inception were meant to take place at one site once a week only. The rest of the week the site is left empty. The maintenance of the site itself is the responsibility of the Mandi Board only on the day of the market. On other days the site belongs to and is the responsibility of the administration or whosoever owns the site. This movement of the markets from one place to another during the week is the weekly scale of time at which the markets function.

The bigger scale of time is the annual scale. Since inception of the Mandis in 1987, the number of Mandis has been fluctuating. Once the Mandis were adopted by the administration, land was allotted to hold Mandis in various sectors. This land is however not allotted for a fixed time period. The land is allotted on an understanding that the permission may be retracted whenever the land is needed for other purposes.\(^4\)

The number of mandis in 1988 was 5\(^5\) (Fig. 24); in 1995 this number had increased to 10\(^6\) (Fig. 25), it remained steady in 1998 at 10\(^7\) (Fig. 26), in 2002 the number was 8\(^8\) (Fig. 27), 11\(^9\) in 2005 (Fig. 28), and 11\(^10\) in 2007 (Fig. 29).

\(^4\) Refer letter no: 56/GP/95
\(^5\) Data based on D.O. No. Enf/Horti.1316
Fig. 24: Apni Mandis in 1988 *source* author.

6 Data based on brochure: Punjab Mandi Board’s Apni Mandi, 1995 printed by: Vivek Novelties, Mohali Punjab.

7 Data based on [Krishen, 1999]

8 Data based on Minutes of the meeting of the Apni Mandi Committee held 11.4.2002 at 3:00p.m. in the Committee room of the corporation.

9 Data based on Apni Mandi held on 25.5.2005 at 3:30 p.m. in the Committee room.

10 Data based on Brochure handout by the Punjab State Mandi Board 2007.
Fig. 25: Apni Mandis in 1995 source author
Fig. 26: Apni Mandis in 1998 source author
Fig. 27: Apni Mandis in 2002 source author
Fig. 28: Apni Mandis in 2005 source author
Once the pilot Mandi was started in sector 15, the number of mandis was increased based on need. The need identification was done based on letters received...
by the committee. As an example, in a letter [memo no: JC/MC/2002/Enf/1171] request was made by residents to start a market in Sector 52. The matter was discussed in the Apni Mandi Committee meeting\textsuperscript{11} of 04.07.02 and the decision was taken to hold the market in the sector in the committee meeting\textsuperscript{12} of 11.04.02.

5.2.1 Special Case of Sector 15 Apni Mandi

The first Mandi was started in sector 15 in 1988. This sector falls in Phase—I of development of Chandigarh. The case of this Mandi is unique as out of all the mandis that take place in the city, this is the only Mandi that now has a designated place in the masterplan. In 1999\textsuperscript{13}, the Administration decided to develop the sector park on part of which the Mandi used to take place. A notice was issued to the governing body of the Apni Mandis to stop holding mandis on the said land. This decision was opposed by the residents\textsuperscript{14} of the surrounding sectors vehemently. A number of letters were sent to the administration in this regard. In view of this the Administration decided to designate the part of the lot which was being utilized for the Apni Mandi as a site for the Apni Mandi permanently. So different from the other Apni Mandis, the Apni Mandi in sector 15 is a part of the masterplan.

\textsuperscript{11} Refer Minutes of the meeting of the apni Mandi committee held on 04.07.02
\textsuperscript{12} Refer Minutes of the meeting of the Apni Mandi Committee held 11.4.2002 at 3:00p.m. in the Committee room of the corporation.
\textsuperscript{13} Data based on Minutes of the meeting of the Apni Mandi Committee held 07.2.1999 at 3:00p.m. in the Committee room.
\textsuperscript{14} Refer letter no: 35/GP/99, 42/GP/99 and 43/GP/99
5. 3 APNI MANDIS AND TIME AS A CONTROL MECHANISM

Maximum change and shifting in the Apni Mandis are seen on the annual scale. A further examination of the data stated for this scale reveals that even though the number of Mandis remains somewhat constant, there is a shift in the number of mandis in the northern sectors. In 1988 there was a total of 5 apni mandis of which 2 (Fig. 24) were in the northern sectors. Of the 10 markets in 1995, as many as 4 (fig. 25) were in the northern sectors, this number decreased to 3 (fig. 26) in 1998, 1(fig. 27) in 2002 and stays constant at 1 (fig.28) in 2005 and (fig. 29) 2007. Moreover the comparison of the maps shows that there is a movement of the markets from within the city to outside the city as well as to the South of the city. (fig. 30)

As stated earlier, the city was originally designed to be built in two phases; the first phase was composed of 22 low-density sectors and the second had 17 sectors of much higher density. Beginning in early 1951, most of Phase-I had been completed by 1965. [UNESCO, 2006] The northern sectors fall under the first phase of development. Phase–II of the city was started in 1967 [Kalia, 2002]. In 1995 another seven sectors were added to the masterplan as phase 3 of development. [Bullivant, 2007]
Fig. 30: Graph of Number of Mandis Plotted in a year. Source: Author.
The movement of the markets is attributed to the fact that with time Phase-I and Phase-II of city are now almost fully developed. As the city continues to develop, less and less vacant land is available for the markets to be able to take place. The fact that the markets are moved when the land that is allocated to them is needed for its intended purpose is apparent from Memo no: Addl. CMA/Anpi Mandi/2003/1817. The letter states that “The present Apni Mandi site in Sector 40/D where an Apni Mandi held on every Tuesday is being used for the construction of shop-cum-flats. Thus, the Apni Mandi is to be temporarily held at the vacant site between Daddu Majra and Sector 38[w] (Vijay Colony).” Similar ordinances to move the markets in the northern sectors to either a southern sector or to stop holding the market were responsible for the movement of the Mandis.

The Apni Mandis have been established as a Heterotopia of Deviance in Section 5.1. What is unique about them is however that even though these are Heterotopias of Deviance, these are contained within the fabric of the city. A system of entering and exiting controls the farmers. A boundary is created around the heterotopia, but the boundary is porous and allows the citizens to enter and exit based on their needs (whether they need fresh produce etc.). In this case, the dominant urban actors (the administration and planners) allot land to the markets but the land allotted is meant for other purposes as per the masterplan. As time goes on and the city develops, the land is needed for construction of its intended purpose and the market is moved to another site. Although land is allotted to the markets, it’s not permanent. With time the markets shift from one site to another. The temporary nature of the markets is maintained and even though an illusion of being part of the urban model of the city is
created, the markets are not allowed to become part of it. Maintaining their temporary nature prevents this.

Distance as a control mechanism, which the dominant urban actors employ to control the Heterotopia of Deviance, has been identified earlier [section 3.4]. However from the discussion above it is apparent that distance, as a control mechanism is not being utilized in this case. The Heterotopia is contained within the fabric of the city, the boundary is porous and there is no Illusion of placelessness. However Time is a very important factor. By maintaining the temporal nature of the Heterotopia, the Heterotopia is being prevented from changing the formal order of the surrounding system. This is also preventing the heterotopia from becoming part of the system. The temporal nature of the Heterotopia is created by the Dominant Urban Actors [who control the allotment of land to the Mandis].

Therefore, Time is being utilized as a control mechanism to maintain the Heterotopia from becoming part of the dominant urban model and thereby making it impure. Distance is not being utilized as a control mechanism as the markets are segregated within the city and not outside it. It therefore maybe concluded that in this case of a modern Heterotopia of Deviance a new control mechanism is observed. In a modern Heterotopia of Deviance, dominant urban actors utilize Temporal Control Mechanisms to maintain the purity of the system.

In the case of the Sector 15 Apni Mandi, a different transformation is seen. The dominant urban actors were unable in this case to control the heterotopia with time, as it could not be moved to another location. It was therefore formalized even further and given a permanent place in the masterplan. The Heterotopia was adopted into the
dominant urban model and became part of it. It still remains a heterotopia because it maintains all the other characteristics that made it a heterotopia; however by becoming a part of the masterplan a code reversal has taken place. Here the sector 15 Apni Mandi is clearly exhibiting the second principle of Heteropology. There is no change in its function but there is a change in its form.

The Heterotopia of Deviance has now become a Heterotopia of Illusion. Its formal adoption into the masterplan meant that it was no longer unplanned, but now a part of the planned formal model. Its deviance from that model ceases to continue. However in its character it is still informal therefore it continues to hold the Illusion of deviance. Within its boundaries it continues to allude to a deviance from the dominant urban model.

The Heterotopia of Deviance shifted to a Heterotopia of Illusion. With this shift it maybe concluded that there are two possibilities evident for the future of these Apni Mandis in Chandigarh. The first possibility is that with time all the existing markets are formalized, and become Heterotopias of Illusion. The change from deviance to Illusion will lead to a code reversal. With the code reversal it follows that the urban model will change from the existing form to another form. The second is that with use of the Temporal Control Mechanism the dominant urban actors control the Heterotopias of Deviance to the extent that with the growing lack of space the heterotopias themselves disappear.
In this chapter there is a discussion on the relation between time and heterotopias based on the discussion so far in the previous chapters. This discussion is followed by an enumeration of the conclusions that may be drawn based on this research.

6. 1 HETEROTOPIAS AND TIME

Heterotopias and Time have a complex relationship. Time is always a factor for heterotopias. It is on the scale of time that the existence, progress and change from one type to another of heterotopias are measured.

The second principle of Heteropology explains the change in the way a heterotopia may function over time. With time a heterotopia may function in a totally different fashion form the one for which it was constructed. The change in the norm of the existing urban system brings a change in the form and location of the heterotopia. This is best illustrated in the case of a cemetery which from the heart of the medieval city to outside the borders of the eighteenth century city. The cemetery still existed as a heterotopia but its form and location had changed with time.

The most explicit link between Heterotopia and Time is established by the fourth principle of Heteropology. It links Heterotopias to precise “slices in time”. Certain Heterotopias such as museums and libraries act as accumulators of time. These are
used to record human progress and gather information and seek to freeze time in the form of period rooms and books.

The three types of heterotopias are all linked with time. The Heterotopias of Illusion however share the most overt relationship. By creating places of the infinite time scale, they destroy the presence of time. Time and space can be manipulated in theatres and cinemas using stage sets, film and montage, offering different scenes in fast-changing sequences. “In the cinema, flashbacks and jump cuts enabled time itself to be edited.” These types of heterotopias allow “the occupation of more than one contradictory and complex position at a time.” [Shane, 2005] Time is accelerated in Heterotopias of Illusion such as stock exchanges and markets. Commodity prices can fluctuate rapidly, the same product has a different price from minute to minute based on the global flows of information and their interpretation. [Shane, 2005]

It is over time and not instantaneously that Heterotopias facilitate change and hybridization in an urban system. Over history one form of the normative city model has changed to the next. The shift of the Heterotopia from one form to another over time brings about a code reversal in the surrounding urban system. This code reversal leads to the change from one form of city model to the next.

Other then as a scale of measurement it is clear from this research that time is also employed by dominant urban actors as a Control Mechanism. In the case of the Apni Mandis time is employed both as a scale of measurement as well as a Control Mechanism. The sector 15 Apni Mandi illustrates the change of one form of heterotopia into another. The shift of the Heterotopia of Deviance to a Heterotopia of Illusion has taken place over time. The dominant urban actors on the other hand control the Heterotopia of Deviance by creating and illusion of permanence in time.
It is therefore proposed that the relation between a modern Heterotopia of Deviance and time is twofold; the first as a scale of measurement of change and the second as a Temporal Control Mechanism.

6.2 CONCLUSIONS

The creation and design of cities predates the existence of recorded history. Once created, all cities change, grow and adapt to user needs. Urban actors act as the main catalysts in this process of change and appropriation and depend on conceptual city models to orient and guide them. These conceptual city models combine normative ideals with organizational structures and methods of implementation and are almost always in triads. Each phase in these triads represents a stage in urban development; preindustrial, industrial and post industrial. One of the most influential triads; the City of faith, the City as a Machine and the City as an Organism was proposed by Kevin Lynch. These models succeed each other through time. This succession of one city model to the next in the triad is catalyzed by Heterotopias.

Heterotopias in urban theory are real realized spaces which house exceptions to the dominant city model. Dominant urban actors employ heterotopias to keep their favored order as “pure’ and consistent as possible. Any urban system has as its basis a set of priorities and preference which imply exclusions and biases against certain classes of objects, activities and individuals. These exceptional objects, activities and individuals are however ineradicable from the system and segregated into heterotopias. By containing change in an enclosed space, the city model is kept “pure”.

91
Heterotopias prevent the reversal of the dominant code or norm thereby stabilizing the city model, by housing the exceptions.

There are three formal categories of heterotopias; Heterotopia of Crisis, Heterotopia of Deviance and Heterotopia of Illusion. It is shift in the heterotopias, from one form to the other that catalyses change from one urban system to another. As systems of organization, each category of heterotopia is associated with a city model; Heterotopia of Crisis with The City of Faith, Heterotopia of Deviance with City as a Machine and Heterotopia of Illusion with The Ecological City. The three types of heterotopias are based on a series of code inversions and recombinations. The structure of each of these is based on the reversal or violation of the logic of the one before it. There is first a reversal in the code of the heterotopia itself, i.e. there is a shift in the form of heterotopia, which facilitates change from one city model to the next.

In serving its dual functions of stabilizing the city model and catalysising change from one city model to the next, the Heterotopia first stabilizes the model, until a threshold is reached and the Heterotopia changes form. Dominant Urban actors exert control on the Heterotopia to keep it in its present form and prevent its inversion. In this process, Dominant Urban Actors employ “Control Mechanisms” to control the Heterotopia and maintain the purity of the urban model.

Spatial Control Mechanism utilizing distance and/or boundary is first type of control mechanism identified. In this control mechanism, Dominant Urban Actors create a boundary or distance between the heterotopia and the surrounding model. By maintaining this boundary or distance, the heterotopia is controlled and prevented from overturning the norm of the urban system. In Heterotopias of Crisis, distance is created by the creation of physical boundaries which may not be crossed as in the
case of houses within which ill people were kept in medieval cities. The Heterotopia is contained within the fabric of the city. Heterotopias of Deviance are controlled by the creation of real distance between the city and the Heterotopia. The Heterotopia is outside the city itself. This is illustrated in the case of poorhouses etc, placed outside the city in Ebenezer Howard’s Social City among other examples. Heterotopias of Illusion function within a boundary which maybe metaphorical or real. In the example of Disneyland, the Illusion of placelessness and timelessness is created within the walls of the park itself.

The case of Chandigarh is one of a utopic city planned on the CIAM planning principles. Despite the presence of a well developed, three tier formal market system, informal markets are observed. These informal markets are called Apni Mandis and provide fresh produce to the city, which lacks the informal infrastructure needed for the purpose. These markets thus house the “other” informal, unplanned in an otherwise planned formal system. By catering to the inherent need for informal markets where fresh produce is available, these markets are fulfilling a need, thus facilitating the appropriation of the city by its citizens. The markets are at the same time segregated into pockets. Apni Mandis are therefore Heterotopias in a modern utopic Machine city. The required norm of the city conforms to the planned formal city. The deviance of the unplanned from the planned identifies these as modern Heterotopias of Deviance.

The number of Apni Mandis fluctuated over the years, however, one predominant phenomenon is observed; the movement of the Apni Mandis towards the South of the city. This movement is based on the lack of space for the markets to take
place as development is completed in the North of the city. The Dominant Urban Actors within the city system maintain the markets as temporary. This is facilitated by providing only temporary sites for the markets to take place. When these sites are needed for development of its original intended purpose in the masterplan, the markets are moved to a new site. This prevents the markets from having a permanent impact on the urban system of the city. However, an Illusion is created that the markets are part of the urban system itself by allowing the markets to take place. The Dominant urban Actors are therefore employing time as a Control Mechanism to keep the dominant urban system “pure”. Therefore, in a modern Heterotopia of Deviance, Temporal Control Mechanism is employed by Dominant Urban Actors to maintain the order of the urban system.

In the case of one particular Apni Mandi i.e. the Sector 15 Apni Mandi, the market was formalized and the masterplan changed. This Apni Mandi shifted from a Heterotopia of Deviance to a Heterotopia of Illusion. The Apni Mandi as part of the masterplan maintains its informal character; however, its unplanned character is lost once it becomes part of the planned city. Within its boundaries this Apni Mandi alludes to being unplanned. It is concluded that the case in which the Temporal Control Mechanism is not utilized by the Dominant Urban Actors, the Heterotopia shift from one form to the next.

The conclusions drawn from this thesis are important contributions to forming an understanding the role of Heterotopias in stabilizing an urban system and facilitating the transition from one city model to another. This understanding is
essential for the design of flexible informal spaces, where heterotopias may be accommodated in future cities. However, there is a need to study other manifestations of heterotopias within the city of Chandigarh to further inform this discussion and conclusions. Also the study of other modern cities, based on other urban models, will be essential to forming a more holistic image of the contribution of Heterotopias in city stabilization and change. These provide interesting opportunities for future research.
Bibliography

Anon. 1992, *Capitol Complex* in Chandigarh: forty years after Le Corbusier, Architectura & Natura [ANG Documents], Amsterdam, Netherlands

Anon. 1963, *The changing face of Chandigarh* in Design volume 7 1963


Bhalotra, Ashok. 1993, *A modern city kidnapped by its inhabitants; Chandigarh between ideals and reality* in Journal issue 10 1993


Chandigarh Research Group, Faculty of Architecture, Delft University of Technology 1992. *Birth and Development of Chandigarh* in Chandigarh: forty years after Le Corbusier, Architectura & Natura [ANG Documents], Amsterdam, Netherlands


Kumar, Anil. 1992, Chandigarh: A Contemporary City for Traditional People in Chandigarh: forty years after Le Corbusier, Architectura & Natura [ANQ Documents], Amsterdam, Netherlands.

Le Corbusier, 1959. For the establishment of an immediate statute of the land. Delivered 18 December 1959, [AFLC]


Lynch, Kevin 1984, Good City Form, MIT Press Cambridge MA London UK
References:

Malik, Bipin Kumar. 2004, *City planning and realities - A case study of Chandigarh* prepared for International Conference on “City Futures” at University of Illinois, Chicago USA (8-10 July, 2004)


Prakash, Aditya. *Rehri- The Mobile Shop of India* in Ekistics issue 0013-2942 10/34


Shane, David Grahame 2005, *Recombinant Urbanism: conceptual modeling in architecture, urban design, and city theory,* Wiley, Hoboken


