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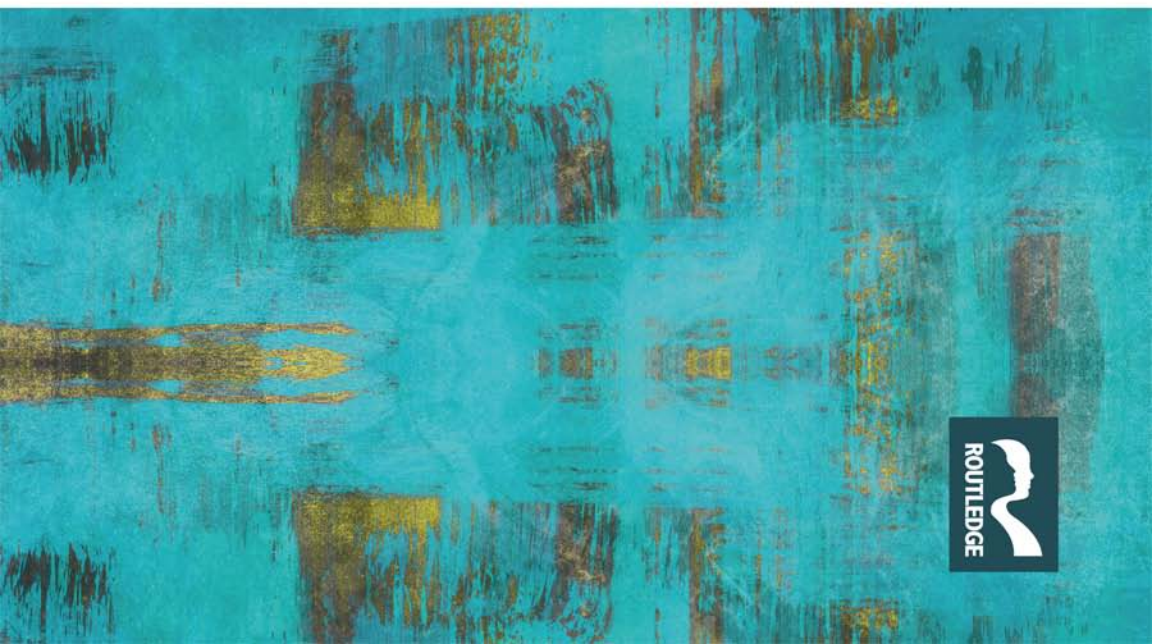
DELHI'S CHANGING BUILT ENVIRONMENT

Piyush Tiwari and Jyoti Rao



Delhi's Changing Built Environment

The rapid expansion, urban form and development of the built environment in the world's second most populous city, Delhi, has been the consequence of social, political, economic, planning and architectural traditions that have shaped the city over thousands of years. Whilst seamless at times, these traditions have often resulted in the fragmented development of the city's built environment. This book charts the political, economic and social forces that drove development in India generally and in Delhi in particular, and investigates the drivers and constituents of Delhi's urban landscape. The book provides a lens through which to examine the development path of a mega-city, which can be used as a guide in the development of emerging urban centres. Furthermore, the strengths and weaknesses of Delhi's built environment are critically analysed, with consideration to the role of the market, finance and policy over time. This book not only provides valuable insight into the physical evolution of Delhi and its surrounds, but it also asks broader questions about how people, power and politics interact with urban environments. It is essential reading for planners, architects, urbanists and social historians.

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Ik roz apni rooh se poocha, ke dilli kya hai.
To yun Jawab me keh gayi,
Ye duniya maano jism hai aur dilli uski jaan

– Mirza Ghalib

[One day I asked my soul, what is Delhi and it replied- if world is the body then Delhi is its soul.]

This book is a tribute to all the great people, past and present, who made Delhi and its soul.

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> Delhi has been an epitome of India's history with its succession of glory and disaster and with its great capacity to absorb many cultures and yet remain itself. It is a gem with many facets, some bright and some darkened by age, presenting the course of India's life and thought during the ages.
>
> —Pandit Jawahar Lal Nehru, 1958

1.1 Introduction

Built environment is a dynamic intervention of changing human needs, wants, thoughts, actions, power, whims and fancies into the natural environment that creates a vibrant mosaic of urban form, materials, architectural design and space. At times these interventions are grand, the impact of which is positive on the quality of life for generations. At other times, human actions are shortsighted and result in sub-optimal spaces for human activities and also negatively impact the environments. Delhi and its surrounds offer a cradle for remarkable civilisations and cultural confluences that have impacted the built environment over many centuries. The richness of the city's built environment is reflected in its continuity through time despite merging of cultures and emergence of new 'Delhi' culture not once, not twice but many times. Sometimes this has left fissures and discontinuities too in the urban fabric of the city, which becomes a disjointed piece. Delhi is said to be a city of eight cities, which took birth, blossomed and perished as the empires that gave birth to them perished. Though the importance of one city declined with the emergence of another, this did not mean that the older city degenerated to brink. Rather the old merged with the new – the young and dynamic. The new inherited the features of the old. While reinventing, many features, forms, shape and materials of the old were carried forward from the old to the new creating a unique style. The visible built environment of modern-day Delhi and its surrounds is a continuum of more than 1,500 years of human actions that is reflected in its buildings, urban form, urban systems and materials. This does not mean that civilisations did not exist before that, or they did not influence the built environment in Delhi and its surrounds. As would be discussed later, civilisations have existed approximately since 1500 BC, but the scope of this book is limited to the discussion of the built environment of the period through which traces of reasonable size and shape exist to this date.

The built environment of a city is influenced by its political, economic and social systems that evolve over a period of time. These form the context within which cities take shape. In this introduction to *Delhi's Changing Built Environment*, we would begin with an introduction to this context within which we will examine the built environment. It may be highlighted here that the book is not a historical treatise of Delhi, but it uses historical events to understand the political, social and economic forces that shaped the land and built space. Before we do that, we need to define what is built environment, and this is dealt with in Section 1.2. This is followed by a discussion on the positioning of the book within a multi-disciplinary context in Section 1.3. Section 1.4 discusses a workable time period to discuss political and social evolution of Delhi and its surrounds. The chronology of eight cities that make up Delhi is discussed. The political, economic and social contexts within which the built environment of Delhi and surrounds evolved are discussed in Section 1.5. Section 1.6 briefly gives an overview of chapters in the book.

1.2 What is built environment?

Bartuska (2007) defines built environment as "everything humanly made, arranged or maintained to fulfil human purposes (needs, wants and values) to mediate the overall environment with results that affect the environmental context". The needs that built environmental fulfils are psychological and social. In addition, the built environment is an expression of personal and collective values. These values are subjective as they deal with beliefs, opinions and attitudes. These attitudes find expression in built environment. As an example, the eight cities of Delhi are a reflection of rulers' attitude towards religion, polity and society. Given that human purposes are manifold and they are dynamic over time, changes that people make to their environment are "extensive expression of past and present cultures" (ibid). The resulting cities are the most complex human systems that are ever created, with numerous dynamic linkages over space between humans and their activities.

Bartuska (2007) identifies seven components of built environment. Products such as materials (bricks and mortar, concrete and steel, wood, polymers and plastics, machines and tools etc.) are the most fundamental component of the built environment. These are used to perform specific tasks. The use and availability of products is as much a function of political, social and economic contexts as the technology. The second component is the interiors. These are the spaces "defined by an arranged grouping or products and generally enclosed within a structure" (ibid). Spaces such as living room, workroom, private room, auditoriums, offices, religious places etc. are created to perform activities and mediate external forces. The third component is structures, "planned groupings of spaces defined by and constructed of products" (ibid). Structures are a combination of related activities. Examples are housing, offices, temples and churches, schools, bridges, tunnels. Landscapes are the fourth component of built environment comprising "exterior areas and/or settings for planned groupings of spaces

and structures" (ibid). The fifth component of the built environment is cities, "grouping of structures and landscapes of varying sizes and complexities generally clustered together to define a community for economic, social, cultural and/or environmental reasons" (ibid). Regions, the sixth component of the built environment, are "groupings of cities and landscapes of various sizes and complexities" which are "generally defined by common political, social, economic and/or environmental characteristics" (ibid). The last component of built environment is the earth, encompassing all other components.

To examine the built environment of Delhi and its surrounds, we reclassify six components of built environment discussed earlier (leaving the last component, earth, from discussion as it encompasses everything and is not part of our scope for discussion) in two themes (products, interiors and structures are discussed under the theme "continuities and discontinuities in design", landscape, cities and regions are discussed under the theme "urban form and imageability") to help in forming a workable structure for this book (Figure 1.1).

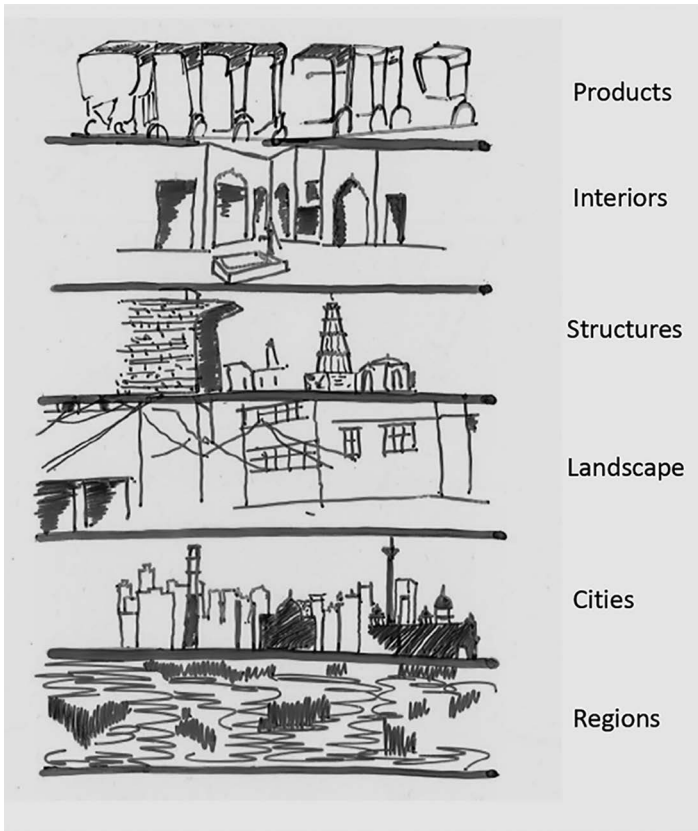

Figure 1.1 Components of a built environment
Source: Authors

1.3 An institutional pyramid

Existing and archaeological evidences pertaining to built environment and its components have been studied by different disciplines to develop theories, but these, merely as a tool, are less than satisfactory utilisations of these materials. Archaeologists, who are concerned with studying human history through excavation of sites and analysis of artifacts, in the absence of their own theoretical strand, have tended to use the materials excavated to explain social life using social theories. As articulated by Harrington (2005), "social theory can be defined as the study of scientific ways of thinking about social life. It encompasses ideas about how societies change and develop, about methods of explaining social behaviour, about power and social structure, class, gender and ethnicity, modernity and 'civilisation, revolutions and utopias, and numerous other concepts and problems in social life'". A number of disciplines such as economics, history, sociology and jurisprudence have emerged to explain social life using scientific approaches based on the philosophical paradigm of post-positivism. The social sciences "are concerned with meanings, values, beliefs, intentions and ideas realised by human social behaviour and in socially created institutions, events and symbolic objects such as texts and images" (Harrington, 2005). The archaeological evidences and present built environment comprising landscape, structures and products have been seen as providing the 'data' or 'evidences' to understand social life using social theories. This also is a recent development.

The focus of architecture and built environment disciplines has been on the design and production of buildings, which has lacked concern on social determinants except as "background considerations related to site planning, public health and communal prosperity" until the twentieth-century departure from such a trend to some extent (Scaff, 1995). Since then, even though theories of architecture have acknowledged the "reciprocal influence between social forces and the organisation of space", ironically, "the theories of social and political life have little to say about architecture and community design" (Scaff, 1995). The absence of reflection on humanity's built environment is a serious shortcoming of social theories. This also reflects the differences in guiding conceptions for social theory and architecture. While social theory searches for "analytic epistemologies" and "grounded explanations", architecture theory is based on "normative compositional design knowledge" (Scaff, 1995). Over the past two decades, there have been attempts to engage social theory and architecture with the objective to find a vocabulary that is available to all (Scaff, 1995). The discourse, however, is still fragmented.

Criticising the narrow perspective of utilising archaeological materials as evidences for social interpretation, Fletcher (1995) argues that materials play a large-scale, slow behavioural role, which affects the viability of human communities. Besides human communities determining the structures and products of built environment, a reverse causality is equally probable, which poses limits on the activities that a settlement can perform given its built environment and limits on the size of settlements given the reach of social communication. To understand built

environment of a city and its influences over space and time, we need a framework that integrates principles of social theory and related disciplines, architecture and planning. It may, however, be emphasised here that the objective of this section is not to derive a theory addressing these disciplinary shortcomings, which in itself is a work of diligence, but to determine a framework that could borrow principles from various disciplines to identify influences that can explain the built environment as it presents itself in present times.

Figure 1.2 presents an institutional pyramid to assist in understanding the evolution of built environment in Delhi and its surrounds. The pyramid is a generalised version, which allows discussion on the built environment at the city or regional level and is influenced by frameworks from Keogh and D'Arcy (1994) for property and Squires and Heurkens (2015) for property development. There are five layers of the pyramid, which are interlinked with each other. These layers influence each other in multiple ways. However, the distance between the layers reduces the degree of direct influence on each other. The bottom layer is the environments from which built environment evolves. These are the values, beliefs and norms of a society, which are reflected through its political, social, economic and legal institutions. These together form the governance structure, which influence all other layers of the pyramid. Moving up on the pyramid are the markets. Markets comprise of drivers and structures. What drives the demand and supply of

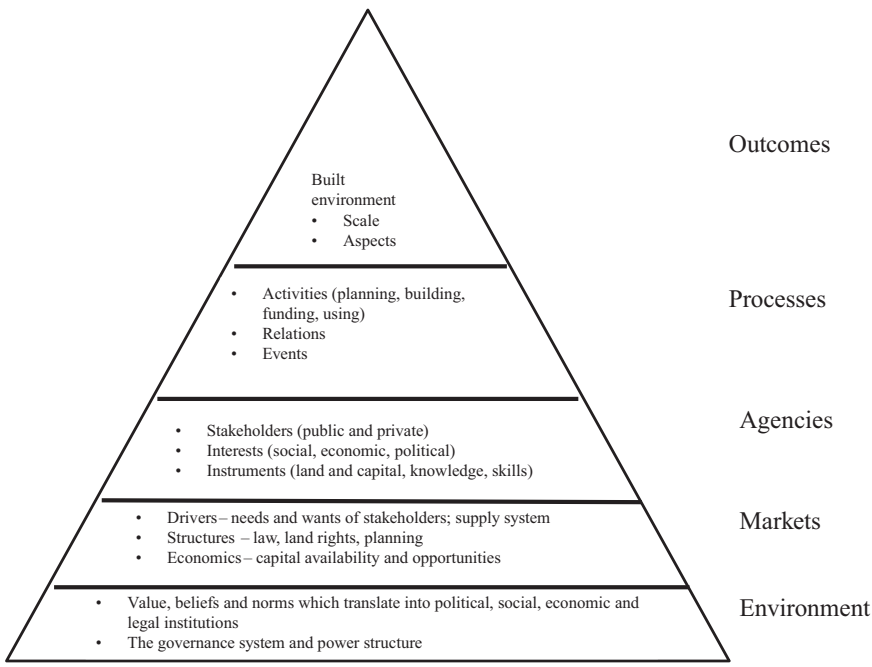

Figure 1.2 Institutional pyramid for the built environment

Source: Authors

built environment? Activities (e.g. education, business, residential, recreational, governance, storage of commodities, transportation, water storage systems) that take place in a city determine the demand and supply for the nature of space that is required. Some activities are strategic in nature (e.g. defence and security), which demand corresponding spaces (e.g. fortifications). The market structures such as the legal and planning systems and property rights etc. provide a mechanism for stakeholders to respond to market drivers in a holistic way. The capital availability and opportunities to deploy them among competing requirements provide what optimally would be built. The third layer is the agencies. These are the stakeholders who are involved in the conversion of natural environment into built environment. Operating with the social, political and economic interests, they utilise capital, land, knowledge and skills to develop built space. The fourth layer is the processes. These are the activities that take place in the development and use of the built environment such as planning, building, funding and using the built space. Processes that take place to shape the built environment are also determined by the relationships between those who perform these activities. Some or all of these activities are performed either by government and/or private sector. All these layers form the basis for what we see as the scale and aspects of built environment at the neighbourhood, city, regional, national and global levels.

The evolution of built environment as mentioned earlier is dynamic. Each of these layers has its own timeline of transformation. Environment, for example, takes relatively long time to change. This requires values, beliefs, norms of a society to change. This could happen with the change in political ideologies which change the norms for society and legal systems. If the new inherits elements of past, there is a continuity; otherwise fractures appear. In case of Delhi and its surrounds, history has witnessed many such transitions, which provides an interesting lens to see how these have impacted on the built environment. Transition time for markets is shorter than the environments, as these could change within the same environment over time. Agencies and processes have much shorter timeline in their transition as these respond to needs and priorities of society on a much regular basis. Outcomes reflect the impact of these different timelines. *Delhi's Changing Built Environment*, while examining the transformation of built environment, attempts to explain the forces that caused them. These forces are broadly the changes to the bottom four layers of the institutional pyramid.

1.4 Delhi and its surrounds

What have been the influences on Delhi and its surrounds that have left what we see as Delhi? Carl W. Ernst (p. 6) expresses that the "'influence' is nothing but a rather physical metaphor suggesting a flowing in of a substance into an empty vessel". This is rather a narrow perspective to apply to a city, which are metaphors of aspirations and ambitions of people who have lived or continue to live there. Understanding the transition and transformation of a cityscape is mired with complexities that transcend not only through time but also through the politics,

society, culture and economics that contextualise the existence of a city. This becomes more complicated when the influences are also international as, then, a broad range of cultural manifestations emanating from another land – language, literature, concepts of governments, religious organisations, music and architecture, start to shape the space. Does the foreign start to collide with the native, or do these merge and create a unique identity? A city becomes a canvas of ideas, which gets imprinted on the spatial fabric as urban form and structures. It expands, it transforms, it assimilates and it becomes the crucible of human energy.

Delhi and its surrounds, as would be discussed in later sections, are in the words of Khosla and Rai (2005), 'the imagined conceptions of the rulers' and how the bureaucracies that were associated with these rulers implanted those imaginations on ground. Continuities of bureaucracies across regimes attempted to provide continuity in the built environment, sometimes seamless but at other times with rough edges. Evidences of these spatial interventions are the monuments and buildings spread all over the landscape of Delhi and its surrounds. The lattice of roads, streets, parks, canals and the River Yamuna that connects and intersects these monuments forms a mesmerising space.

Historians have often described 'seven cities of Delhi'. Others, by including New Delhi, have argued that an appropriate characterisation of Delhi is a city of 'eight cities'. This, of course, does not include the cities prior to 1100 AD for which built evidences are anecdotal though historical accounts and archaeological artefacts have been recovered.

Delhi has a long history, which despite occasional dislocation has shown a remarkable continuity and has the unique distinction of having been India's capital longer than any other city. Figure 1.3 depicts the eight cities whose footprints have dotted the landscape for more than a millennium.

Each of these cities grew around the palace-fortress of a particular dynasty, and every dynasty wished to have new headquarters that would be an epitome of prestige. Even the rulers of the same dynasty had these ambitions and realised them if they had the means to do so. With each successive reign, some distinctive architectural features were added or some change in urban morphology occurred.

The 'surrounds' are viewed as a dynamic boundary of the city to which it expands. It is ever expanding spatial expansion of existing city caused by the forces such as demographics, economics, planning, policy and the market. In the case of Delhi, 'surrounds' have changed over time as each new city formed.

1.5 The dynamics of political, economic and social context

Within the limitations of available information, this section recreates the social, economic and political profile of the ancient cities in North India, which also include Delhi. The historians acknowledge the dearth of appropriate archaeological explorations, which limit our understanding of the physical form of ancient Indian cities (Thapar, 2002, p. 119). However, it may be imagined how these cities would have reflected, in their built form, the social stratification, economic wealth and political supremacy and instability.

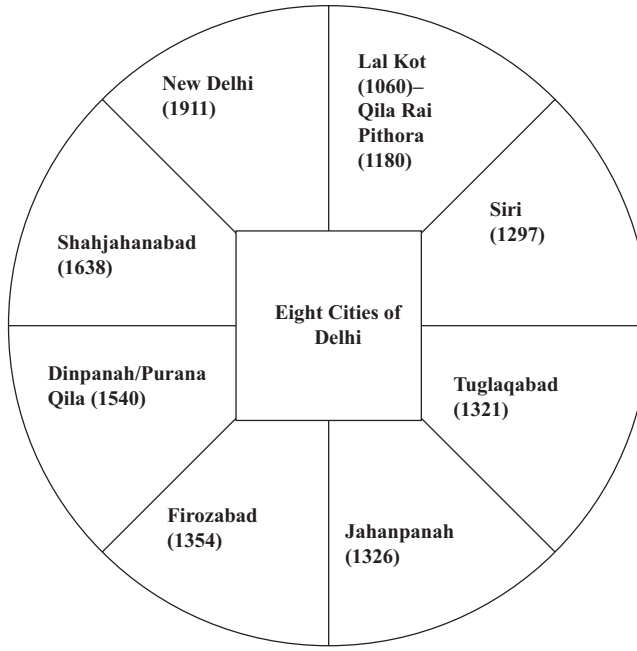

Figure 1.3 The time wheel of empires and the cities that they created
Source: Authors

1.5.1 Pre-1100 AD Delhi

The administrative boundaries of cities and states as we see now have undergone several changes over time. To explain more, historically cities like Delhi have formed part of bigger kingdom, of which the political structure and administrative boundary changed promptly due to chronic invasions and expansions, respectively. Therefore, it is important to study Delhi in association with the empire of which it has formed a part at different points in time. The study of the evolution of the Indian society tells that the formation of political institution is a complex phenomenon triggered by the demand for social organisation, economic facilitation and religion propagation. The following section discusses each of these drivers, in the context of North India, which together gave rise to political organisation.

First urbanisation in India – Indus Valley Civilisation

The northern region of India boasts of housing the Indus Valley Civilisation[1] as the 'first urbanisation' of India (Thapar, 1987) that dates back to 2500 BC.[2] There are continuous archaeological progressions found in the region which are indicative of the shift from the early form of village economy up till mature form

of settlement in Indus Civilisation (Ratnagar, 2002). The general laws of history and archaeology suggest that "urbanism is not possible without a state level of political organisation" (Ratnagar, 2002, p. 8) and there is acute curiosity about polity of Indus civilisation. However, the reason why Indus Civilisation took a particular form, in reference to its mature economy and urbanisation, could not be explained properly due to the dearth of information, and little is known about the political structure of the civilisation, methods of mobilising surplus and ways in which the relationships were established and managed with other regions.

The Indus Civilisation started declining in the later second millennium BC (Ratnagar, 2002). Once again, the changes in political and economic systems are proposed by Ratnagar (2002) as possible reasons for the desertion of settlements in the Indus Valley Civilisation. The other reasons for decline, although weakly explained, include the flooding of the Indus River, lowered sea level, deforestation, tectonic movements, increased aridity and desertification, invasion by Aryans and similar others (ibid). Lack of information and unclear understanding of Indus civilisation has also created confusions about successor cultures of this mature civilisation (ibid). Geographical differences between the Indus and Ganges valleys, such as changing river courses, and climate change towards dryness in the Indus Valley are also brought forward as reasons for shifting of settlements into the Ganges (Thapar, 2002).

'Aryan' invasion?

The rise of 'Aryans' in the early first millennium BC was a simultaneous phenomenon to the decline of the Indus Valley Civilisation. The earlier hypothesis suggested that Aryans were foreign tribes who invaded North India and destroyed the established civilisation of Indus. However, this theory of invasion by Aryans is discarded by later historians who claim that there are no archaeological evidences which support the theory of large-scale conquest by a foreign culture (Thapar, 2002, referring to Possehl, Jarrige, Srivastava K.M, 1979, and Renfrew). Even the meaning of the word 'Aryan' is at times interpreted in a fashion that it supports the theory of foreignness. Thapar (2002) emphasises on the literal meaning of the term "Aryan", as mentioned in the Rig Veda, to be the people who are of respectable status and can use the Sanskrit language correctly, perform rituals and worship the right gods. Thapar (2002) insists that even though the Harappan culture was different from the Aryan society described in the Vedic literature, this does not necessarily infer that Aryans were foreign invaders. "The notion of Aryans being a physical people of a distinct biological race who moved *en masse* and imposed their language on others through conquest, has generally been discarded" (Thapar, 2002, pp. 95–96). Instead, the geographical progression from Indus in the west to Ganges in the east is often attributed to advancement achieved in iron technology, including the use of iron ploughshare for cultivation, which made possible clearance of flat and swampy plains of the River Ganges (Allchin & Allchin, 1968).

Beginning of settlement in Delhi with the 'second urbanisation' (or Ganges Civilisation)

The Aryan settlement in North India emerged and developed between 1500 BC and 500 BC on the other side of the watershed,[3] along the River Ganges, and is often referred as 'second urbanisation' or 'second civilisation' or 'Gangentic civilisation' in the Indian history (Thapar, 2002). As mentioned earlier, early historians believed that this new civilisation, established by Aryans, was independent of the Indus civilisation. Ratnagar (2002) strongly challenges the notion of this latter settlement developing in vacuum, disconnected from the former. Works by archaeologists A. Ghosh and B. B. Lal also reveal the possibilities of the succession of Indus civilisation, as post-urban phenomena, towards eastern side at Hakra, Sutlej-Yamuna divide, Punjab, Ganga-Yamuna Doab, Kathiawad and north Gujarat and even the Tapi valley (Ratnagar, 2002). Allchin and Allchin (1968) recognise the new evidences which indicate the extension of Harappan culture into the western Ganges basin (or Doab) stretching from present-day Delhi to Allahabad (in Uttar Pradesh, India). Similar discussions are presented by Thapar (1987), who writes that fresh evidences are found to indicate that the later civilisation bears many impressions of the Indus civilisation in spite of the difference in physical location. In a comparative way, Thapar (1987) writes about the technological advancement of this new urbanisation which was based on the use of iron, domestication of horses, the extension of plough in agriculture and a much more sophisticated market economy, thus indicating a progress ahead of the 'first urbanisation'. In conclusion, after the decline of the Harappan cities, many archaeological cultures succeeded them in various parts of North India (Thapar, 2002). Some of these cultures had overlapping elements of the Late Harappan civilisation, and many successor cultures had an independent genesis of their own (Thapar, 2002).

The pace of second urbanisation

The second civilisation of Ganges is usually divided into three geographical parts – western, central and eastern regions, which also correspond to distinct cultures that evolved over time, as settlements progressed from the west to the east (Allchin & Allchin, 1968). The western region covers Harappa in the Punjab, dry beds of the River Ghaggar in Rajasthan and the western part of Ganges-Yamuna river plains, between Delhi and Allahabad, called the Doab (Allchin & Allchin, 1968); the central region starts from the junction of the Rivers Ganges and Yamuna in Allahabad and covers eastern Uttar Pradesh and parts of Bihar state; and the eastern region is the delta of the Rivers Ganges and Brahmaputra, covering West Bengal (Allchin & Allchin, 1968).

It is important to mention the sites of historical importance in each of these regions. For example in the western region, including Doab, are located Kurukshetra and Hastinapur of Mahabharata,[4] Panipat, Indraprastha (or the Purana Qila mound at Delhi), Sonipat, Mathura and Bairat (Allchin & Allchin,