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Symbolic Urban Landscape: Science City, Kolkata

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(All photographs are taken by the author, taken on 23 August 2012, except 1,2,9 and 10, which were taken in 2010

Preface

The Centre for Urban Economic Studies is publishing the discussion papers since 1992. It covers various aspects of researches concerning the urban life – economic, historical, geographic and political among others. One can get an idea about the variety from the list given in the last page.

It is often said that God created the country and man the city. Even if we disagree with the whole statement, it must be admitted that different types of spaces are created in the urban areas to serve different purposes, other than the basic needs. This creation of 'space' depends on many things like the production system of the capitalist economy, the global links, the transfer of technology and others. The Science City in the eastern periphery of Kolkata, is once such creation of 'space' in the globalised era. It is primarily a green open space in which structures are created for recreation along with dissemination of popular scientific knowledge. The author starts with the theoretical concepts of 'space' and juxtaposes it with the concepts of 'power' and analyses whether this complex can be treated as a geo-symbol of the globalised era.

SYMBOLIC URBAN LANDSCAPE: SCIENCE CITY, KOLKATA

ABSTRACT

Neil Smith (2008) summarises some geographical concepts of space: "Our concern here is with geographical space(s)…the space of human activity, from architectural space at a lower scale up to the scale of the entire surface of the earth… Since the early 1960s, the conceptualization of geographical space has been the object of considerable discussion. Two particular conceptions of space have been highlighted: absolute space and relative space". 'Absolute' space is 'a distinct, physical and eminently real or empirical entity in itself' and 'relative' space is a relation between events or an aspect of events and therefore bound to time and process (Blaut 1961). David Harvey (1973) feels that the 'proper conceptualisation of space is resolved through human practice with respect to it'. Harvey (1973) uses the term 'relational' space where it is in objects which can be said to exist insofar as they contain relationships to other objects. Space is a social construct. Henri Lefebvre (1974,1998) stated that the study of space includes the space of social practice, the space occupied by sensory phenomena, including products of the imagination such as symbols and utopias. (Social) space is a (social) product. The first implication of this statement is that (physical) natural space is disappearing. The second implication is that every society produces its own space. Edward W. Soja (1996 reprint 1997) elaborates on Lefebvre's famous triad: spatial practice or perceived space (materialised, socially produced empirical space), representations of space or conceived space (dominant and dominating space and representations of power, ideology, control and surveillance) and spaces of representation or lived space (dominated or subjugated spaces).

Denis Cosgrove (1998) defines landscape as "a way of seeing that has its own history, but a history that can be understood only as a wider history of economy and society, that has its own assumptions and consequences, but assumptions and consequences whose origins and implications extend well beyond the use and perception of land; that has its own techniques of expression, but techniques which it shares with other areas of cultural practice". Landscapes are pictorial images and their history is bound up with the inscription of environmental images by varied media on varied surfaces (Cosgrove and Daniels eds 1988). Mike Crang (1998) discusses the concept of landscape as a palimpsest. Landscape is a symbolic system – the manner in which it is shaped reflects the beliefs of the inhabitants and the meanings invested in it (Crang 1998). Similarly, Joel Bonnemaisòn (2000 English translation 2005) discusses the significance of symbolic landscapes in the forms of geosymbols and icons.

As far as the interaction and interrelation between media and urban landscapes are concerned, an excellent example is Science City, Kolkata, India. Recently, a number of spatial constructs which may be called symbolic landscapes of spectacle have emerged in East Kolkata in the Eastern Metropolitan Bypass area, previously a part of wetlands and garbage dumping grounds. The most famous one, Science City, was constructed by Development Consultants Limited. It has become a

byword for fantasy shows symbolised by its huge dinosaur sculpture near the entrance: the visual global impact of Steven Spielberg's 'Jurassic Park' of 1993. It is the nearest to a theme park or 'Disneyland' anywhere in Kolkata and distinctly a landscape of spectacle and symbolic scientific cultural power. It is a major attraction for Kolkata residents and visitors. Sophisticated forms of media equipment and technology are used to transfer visitors into symbolic spaces, ranging from the evolution park with its dinosaurs to astrovision in the space theatre. There are major convention centre facilities, and the main auditorium is used for theatre, music, ballet, opera and symphony orchestra events while there are spaces for seminars and lectures (Chatterji forthcoming).

The paper draws on field visits to Science City in 2010 and 2012, when the author interviewed the Director and saw the various parts of the landscape of spectacle and power. The globalisation of the urban landscape of Kolkata is best exemplified by the global media impact that has fostered the creation of this dynamic urban spatial construct.

1.11 INTRODUCTION:

The following paper traces the evolution of the symbolic urban landscape of the megacity of Kolkata, India in the era of globalisation and liberalisation of the Indian economy post-1991, and focuses on the landscape of spectacle and theme parks as seen in Science City, Kolkata, as a symbol of power and cultural domination over urban space. An overview of relevant concepts and definitions is followed by a study of the impact of scientific media on urban landscapes, a brief section on the spatial setting of postcolonial Kolkata and a detailed analysis of Science City.

1.22. THEORETICAL BASIS

2.1

1.2.1 SPACE

Neil Smith (2008) summarises some geographical concepts of space: "Our concern here is with geographical space(s)...the space of human activity, from architectural space at a lower scale up to the scale of the entire surface of the earth...Since the early 1960s, the conceptualization of geographical space has been the object of considerable discussion. Two particular conceptions of space have been highlighted: absolute space and relative space". 'Absolute' space is a 'distinct, physical and eminently real or empirical entity in itself 'and 'relative' space is a relation between events or an aspect of events and therefore bound to time and process (Blaut 1961). David Harvey (1973) feels that the 'proper conceptualisation of space is resolved through human practice with respect to it'. It may be queried how the various human practices create and use the distinct conceptualisations of space. Harvey (1973) uses the term 'relational' space where it is in objects which can be said to exist insofar as they contain relationships to other objects and thus spatial analysis becomes social analysis and social analysis becomes spatial analysis. Space is a social construct (Harvey 1996). Henri Lefebvre states that it is necessary to study the space of social practice, the space occupied by sensory phenomena, including products of the imagination such as symbols and utopias. (Social) space is a (social) product. The first implication of this statement is that (physical) natural space is disappearing. The second implication is that every society produces its own space.

Edward W. Soja elaborates on Lefebvre's famous triad: spatial practice or perceived space (materialised, socially produced empirical space), representations of space or conceived space (dominant and dominating space and representations of power, ideology, control and surveillance) and spaces of representation or lived space (dominated or subjugated spaces). It is interesting to consider dominated space or space which is transformed or mediated by technology and practice. Such dominance has deep roots in history, for its origins coincide with those of political power. Military architecture, fortifications and ramparts, dams and irrigation systems are examples of dominated space. Such spaces are works of construction. In order to dominate space, technology introduces a new form into a pre-existing space, such as a motorway slicing its way through pristine terrain (Chatterji 2000, 2003, 2007).

According to Johnston et al (2003), studies of the relationship between power, knowledge and geography have completely changed contemporary conceptions of space. Allen (1997,1999) has discussed 'spatial assemblages of power'. Harvey (1996) implies a somewhat varied concept of relative space: the new approach developed a relational concept of space in which space is 'folded into' social relations through practical activities. Some geographers undertook the production of 'material, concrete spaces' while others were more interested in the production of 'symbolic, imagined spaces' (Johnston et al 2003).

Space is not a centre with margins; rather it is a road with a beginning and an infinite end, further on. The landscape reproduces this image and society arranges itself upon it. Cultural space is wrought on the basis of representations. As such, cultural space is a space of belief in common values structured by 'iconography' and geosymbols. Iconography is an expression and matrix of a people's vision of the world. Cultural space is the foundation of territory and the basis of human space. Every region and political or cultural system is based on a dynamic cultural space, the product of icons and geosymbols. Cultural space is a geosymbolic space laden with emotions and meanings – a sanctuary like territory. Space is a region, an organised system, a structure, a model, a subjective experience which varies according to social class, type of employment or cultural identity. When cultural space and subjective space coincide, there is a strong attachment to place, love of country and territory and strong patriotism (Bonnemaison 2000).

Vaastu Sastra is the ancient Hindu philosophy of space and building. It rests on the premise that the earth is a living organism from which other living creatures and organisms emerge. The life force and energy within the earth is called *vastu* while the plane or support is *vaastu*. The tradition studies *akasham, kaala and shakti* (space, time and energy). Man inhabits *akasham* or space. He is linked by his *shakti* or energy to other energy forms. He is part of a movement, a cycle of life and death called *kaala* (time). Space, time and energy exist in their free, unlimited or absolute state: an abstraction. To make space available in a comprehensible way, it should be defined or limited. Time may be made meaningful if held within the constraints of past, present and future: the time of being, becoming and dying. The human being has evolved a form out of the movement of energy in space. The temple is the logical centre of a human collective wherein the individual gathers his or her spiritual sustenance; it ties individuals at a social level. The home or individual dwelling, which represents the physical well-being of people, also nurtures the spirit of the occupants; they evolve their personal strength here. No space is separated from other space in exclusivity.

With regard to cosmology, any physical space can be perceived in its connections with primary energies. The eight directions, the heavens above and the earth below are significant influences on the nature of growth and prosperity. The *mandala* is a representation of the cosmos through geometric forms whereby living space is laid out in a variety of patterns. Important directions are given for critical action within and without in the nodes and joints of the *mandala*. The outer circle or square holds the gatekeepers; whereas, the inner the formless energies. Cosmology plays a significant role in

the manifestation of forms in space. The form of the cosmos is recreated on earth for humans to inhabit. Each direction has a presiding '*deva*', its symbol, colour and element. The directions that a building may face, the energies that will enter and enrich the inner spaces and the connection between the building and its environment are part of cosmology (Ananth 1998 cited in Chatterji 2007).

1.2.22.1 LANDSCAPE

Denis Cosgrove has defined landscape as "a way of seeing that has its own history" which has to be understood as part of a wider history of economy and society, that has its own assumptions and consequences whose origins and implications extend beyond the use and perception of land and that has its own techniques of expression which it shares with other areas of cultural practice. Landscape is not merely the visible world, but also a construction. It is a way of seeing the world, a social product and an ideological concept. All landscapes are symbolic and undergo change because they are expressions of society, itself making history through time (Cosgrove 1984). Landscape images play a major role in social and environmental relationships. Social relations incorporate relations of power and authority; this dimension is present in landscape images, their creation, endurance and meaning. The landscape way of seeing implies authority over space (Cosgrove 1989). Cosgrove and Daniels (1988) define landscape as a cultural image, a pictorial way of representing or symbolising surroundings. Stephen Daniels (1994) writes that landscapes are signifiers of national identity and pictorial codes expressing the affinity of a colonial power with distant images of home: this is evident in colonial architecture in India, particularly in colonial settlements such as the hill stations (Chatterji 1997 2003).

Landscapes are pictorial images and their history is bound up with the inscription of environmental images by varied media on varied surfaces. A geography of landscape is a geography of images and a study of ways of seeing and representing (Cosgrove and Daniels 1988). Mike Crang (1998) discusses the concept of landscape as a palimpsest. The term 'palimpsest' derives from medieval writing blocks. It refers to where an original inscription would be erased and another written over it, again and again. The earlier inscriptions were never fully erased, so that over time the result was a composite, a palimpsest representing the sum of all erasures and over-writing. Landscape is a symbolic system – the manner in which it is shaped reflects the beliefs of the inhabitants and the meanings invested in it (Crang 1998). Similarly, Joel Bonnemaison discusses the significance of symbolic landscapes in the form of geosymbols and icons.

Sharon Zukin (1991) states that landscape not only denotes the usual geographical meaning of "physical surroundings" but also "an ensemble" of material and social practices and their social representation. In a broad sense, landscape connotes the entire panorama to be seen: the landscape of the powerful – cathedrals, factories and skyscrapers – and that of the subordinate – village chapels, shanty towns and tenements (Zukin 1991). Harvey (1996) mentions that the contemporary city has many layers as a physical artefact. It forms a palimpsest, a composite landscape made up of different built forms superimposed upon each other with the passage of time. In some cases, the earliest layers are of truly ancient origin, rooted in early civilisations whose imprints can be discerned beneath the

current urban fabric. However, even cities of relatively recent date comprise distinctive layers accumulated at different phases of urban growth engendered by industrialisation, colonial conquest, neo-colonial domination, wave after wave of migration, real-estate speculation and modernisation. Migratory layers that occupy the expanding shanty towns of cities in developing countries rapidly spawn physical layers of increasing permanent occupancy.

Dora Drexler writes in 2005 that "(l)andscape is not only the complex system of environmental elements such as air, water, soil etc. Landscape is also a mental institution, a symbol". D. W. Meinig (1979) writes that "we regard all landscapes as symbolic, as expressions of cultural values, social behavior, and individual actions worked upon particular localities over a span of time". The study of every landscape "may be undertaken as formal history, methodically defining the making of the landscape from the past to the present" (as quoted in Backhaus 2009 in Backhaus and Murungi eds 2009). Landscapes of power have assumed considerable importance in contemporary times (see Mitchell ed 1994). The term 'landscape' is inextricably linked to the exercise of power in various forms. Imperialism usually refers to political, economic and military projects aimed at conquest and domination; much recent work has discussed imperialism as a way of thinking and a set of attitudes (Wylie 2007). Symbolic landscapes are evident in towns and cities in India, ranging from the landscapes of power and spectacle evident in the Taj Mahal (Agra), the Rashtrapati Bhavan (New Delhi) and the Victoria Memorial (Kolkata) to the new forms of street décor and sculpture such as the new statue of Mother Teresa outside the National Library in Kolkata. Red Road in Kolkata, and Rajpath in New Delhi focusing on India Gate, are landscapes that symbolise a new national identity with victorious processions on Republic Day each January (Chatterji 2012).

1.2.32.2 POWER, CULTURE AND KNOWLEDGE: THE IMPACT ON LANDSCAPE:

Power has been defined as an ability to achieve desired ends through a variety of means: through force, physical violence or non-violence, through manipulation, persuasion, consensus and authority. It may be 'legitimised' by virtue of tradition, charisma or institutionalisation at high levels. As a social relation, power operates at all levels, from households to the international economy. It is rarely symmetrical, the power of one element over another being greater than that of the second element over the first. This asymmetry is the basis of most modes of production. In the case of capitalism, power is unequally distributed due to the uneven distribution of the means of production and the consequent ability to control the prices of commodities. Those with the greatest power have the greatest impact on the organisation of production, including spatial organisation and the distribution of benefits. Economic power is reflected in social relations of class. Power involved economic and social control, ensuring the 'right' people in the 'right' geographical places. Traditionally, the state possesses power seen in territorial expression and military force expressed within geographical boundaries (Johnston et al , Chatterji 1997 2007).

Foucault (ed. Gordon 1980) questioned whether power is always subordinate or answerable to the economy. Taking into consideration the assertion that power is a 'relation of force' one answer to

queries regarding the mechanisms and exercise of power is that power represses, it is an 'organ of repression'. Also, Foucault felt that if power is the deployment and concrete expression of relations of force, should it not be analysed in terms of 'struggle, conflict and war'? He proceeded to state that power should not be considered an individual's or group's domination over others but that it must be analysed as something that circulates in 'the forms of a chain' through a 'net-like organisation' Individuals circulate 'between its threads', constantly undergoing and exercising power: they are the 'vehicles of power'. Up to the seventeenth century in Europe, power was exercised in terms of the relationship between sovereign and subject. From the seventeenth century onwards, a new form of power emerged, constantly exercised through surveillance, an 'invention' of bourgeois society. It was disciplinary power, which subsequently formed the ground for the democratisation of sovereignty. Once it was necessary to exercise discipline through domination while disguising its exercise of power, a new legal apparatus was required for the theory of sovereignty. 'Modern society' from the nineteenth century until contemporary times has, simultaneously, a legislation or organisation based on public right and a 'grid of disciplinary coercions' to ensure the cohesion of this social body. The powers of modern society are evident through a public right of sovereignty as well as a disciplinary mechanism.

Foucault also stated that defining the effects of power as repression and considering power as carrying the force of a prohibition was wholly negative, narrow and skeletal as a concept of power. Power is accepted because it does not only weigh on people as a force saying "no", but "produces things", "induces pleasure, forms knowledge, produces discourse". It should be considered a 'productive network' running through the whole 'social body'. Power relations extend beyond the limits of the State, and the State cannot occupy all actual power relations, being able to operate only on the basis of other already existing power relations. The State is 'superstructural' in relation to power networks involving 'the body, sexuality, the family, kinship, knowledge, technology' and other aspects. He commented that the State 'consists in the codification' of a host of power relations which makes it possible to function. Power relations are mixed with other relations such as production, kinship and family: such relations do not assume the sole form of prohibition and punishment but multiple forms. Their interconnections demarcate general conditions of domination, organised in a strategic form. Domination should not be assumed to be a structure of 'dominators' on the one hand and the 'dominated' on the other, but rather a 'multiform production' of domination relations which may be partially integrated into 'overall strategies'. There are no resistances of power without resistances, formed where power relations are exercised and resistances to power exist to a greater extent by coinciding in the same place as power (Foucault ed Gordon 1980).

Society is organised as describable in the abstract but simultaneously embedded in space in the material world. Social organisation is often highly structured and hierarchical, needing to be closely related in space. Power is ultimately concerned with resources: as these are finite, they have to be divided in different proportions. More power in certain cases means less in other related cases. The consequences are seen in hierarchical structures, control, surveillance, decision-making processes and varied consumption. Power relations are always present in space (Markus 1993).

Yeoh (1996) states that power in a generalised sense means transformative capacity or the capability to intervene in a set of events in order to alter them. Colonial powers have attempted to impose their image of -order on colonial society by assigning them to the realm of disorder and chaos and rendering them socially and symbolically invisible. Chatterji (1997-4, - 2007) mentions that- power won India for the British, and enabled them to rule her effectively, to impose their imprint on the landscape and create new settlements as a form of cultural juxtaposition to serve as centres from which to meet political, economic and social needs. Various sorts of dominating power came into interplay, whether political and military, economic or social and cultural.

According to Burgin (1996), the particular sense of the term culture as it first established the horizon of cultural studies in Britain originated in the late eighteenth and nineteenth centuries when the influence of industrialisation and democracy led to a concept of 'culture' as separate and 'above' civil society. In the early nineteenth century, Coleridge elevated 'culture' over civilisation. Following him, Matthew Arnold defined culture as 'the best which has been thought and said' in his book Culture and Anarchy of 1869. Arnold believed that "only culture, the source of 'sweetness and light,' now stood in the way of anarchy. For Arnold this 'sweetness and light' was most potently distilled in great works of literature" (Burgin 1996). Clement Greenberg (1939) saw culture threatened by a deadly double: kitsch or popular commercial art and literature or 'ersatz culture' as opposed to 'genuine culture' or 'art and literature of a high order'. A Marxist analysis of the term implies that "there are two cultures- the official culture of the economically and politically dominant class, and the elided culture of the dominated" and "(c) ontemporary visual culture - the combined product of 'the media' and a variety of other spheres of image production – can no longer be seen as simply 'reflecting' or 'communicating the world in which we live: it contributes to the making of this world. Individuals and nations act in accordance with beliefs, values and desires that increasingly are formed and informed, inflected and refracted, through images: from television, advertising, cinema, newspapers, magazines, videotapes, CD-ROM, the Internet..."(Burgin 1996).

The word 'culture' is used by Said in two senses. Firstly, it signifies practices such as the 'arts of description, communication and representation' that are relatively free of the economic, political and social realms and constituted into aesthetic forms, a major aim of which is pleasure. They include popular and specialised knowledge about different parts of the world. Secondly, culture as a concept has a refining aspect constituting the best known and thought by each society. Culture is a 'sort of theatre' for the encounters between different political and ideological causes, which leads to the veneration of one's own culture while seeing it detached from the 'everyday world'.

Culture is conceived of as a way of life that includes 'ideas, attitudes, languages, institutions, and structures of power' and cultural practices such as 'artistic forms, texts, cannons, architecture, mass-produced commodities' (Nelson, Treichler and Grossberg in Grossberg, Nelson and Treichler ed 1992). The 'culture industry' works via a sort of 'political economy of culture' which transforms practices, ideas, activities and productions, among others, into a 'representation of culture'.

Invisible cultural traits lead to the construction of areas of preferential communication among speakers of the same language, heirs to the same history or followers of a particular faith. Cultural traits are often turned into very visible signs, such as toponymies and geosymbols that demarcate a territory with a diversity of significant monuments, statues, wayside crosses and other signs, and these signs are more important than the functions. Culture may be equated with the human environment, everything that, beyond the fulfilment of biological functions, gives shape, meaning and contents to human life and activity. Human environments involve the geographical milieu: nature shaped by culture or symbolic reality and reality as perceived by the senses. Culture is a system of attitudes, beliefs and symbols. Culture as a term includes material civilisation as well as the civilisation of the mind. It is transmitted.

Knowledge has been the means of creating and sustaining innovation and information-generation over centuries but the importance of knowledge in the information age of telecommunications, the Internet and multi-media has never been as vital as in the late twentieth and twenty-first centuries (see Castells 1998). To quote Thomas A. Markus (1993), "the production metropolis was mature by 1850 and had become differentiated by function and stratified by class. Steam power and the railways had liberated industry from rural, water-powered sites…(t)here were (earlier) a handful of building types. The most ancient, religious buildings and houses, ranging from the palace to the rural hovel, represented levels of sacred and secular power. This was extended into the public sphere in theatres and concert rooms, monasteries, colleges, schools, libraries, almshouses and guest houses. For leisure and travel there were clubs and inns. Buildings for production were modest – farms, mills, warehouses, for exchange the markets, bazars and shops. In the guildhalls, 'bourses' and exchanges were the roots of town halls. Some papal, religious, civil and military infirmaries, prisons…and institutions were of substantial size…By 1850 there had been a typological explosion: a host of new industrial buildings, railway stations, town halls, baths and wash-houses, highly specialised urban markets; libraries, art galleries and museums; civic universities, schools and secular colleges; vastly expanded prisons and hospitals out of which grew asylums and workhouses, hotels and offices. Not only did buildings house new technological processes, but they were products of new technologies". Markus (1993) draws parallels with contemporary times when power varies not according to steam power but levels of information technology. He elaborates on how museums and art galleries represent in space theories about nature, industry and art.

A form of spatial repository of knowledge which promotes the reproduction of scientific knowledge is the science museum. Dr. Ian Blatchford, Director, London Science Museum visited Kolkata and made a presentation at the National Library in March 2012. An art historian by training, he discussed the differences between artistic and scientific conceptions of reproducing knowledge in space and also mentioned how the two streams may be combined, for example, in a recent exhibition about the history of computing, which attracted young and old. England has all the original inventions of the Industrial Revolution era as well as the finest medical collections. The history of medicine, research, logic, belief and art find their focus there. He elaborated on how old buildings associated with great

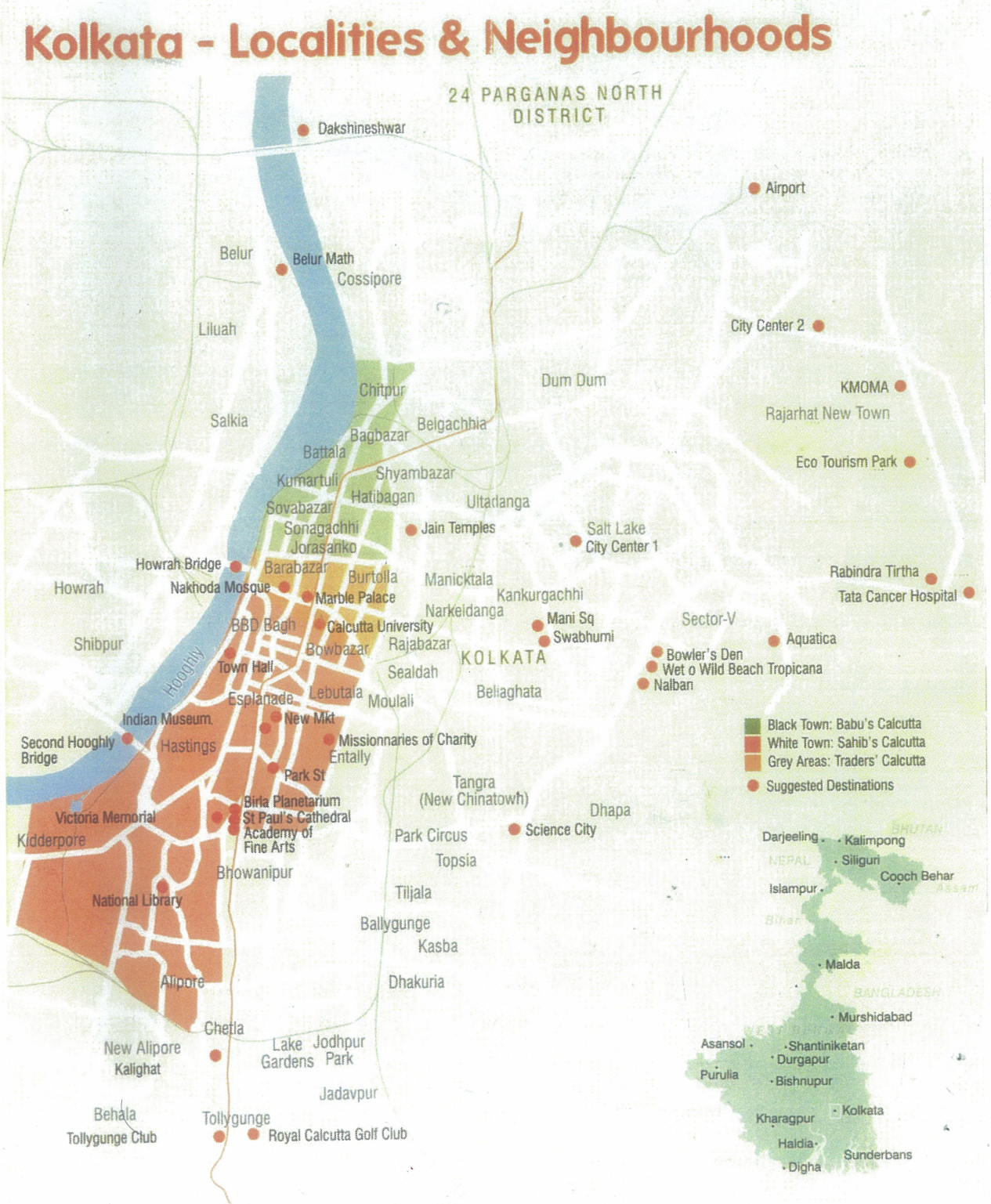
scientists and their inventions which have been turned into museums were attracting much attention in the U.K. They are experimenting with a maritime gallery. The York railway museum and Manchester industrial museum are very popular. He praised the Indian Museum at Kolkata and spatial marvels like Science City.

1.2.43 GLOBALISATION, MEDIA AND THE URBAN LANDSCAPE:

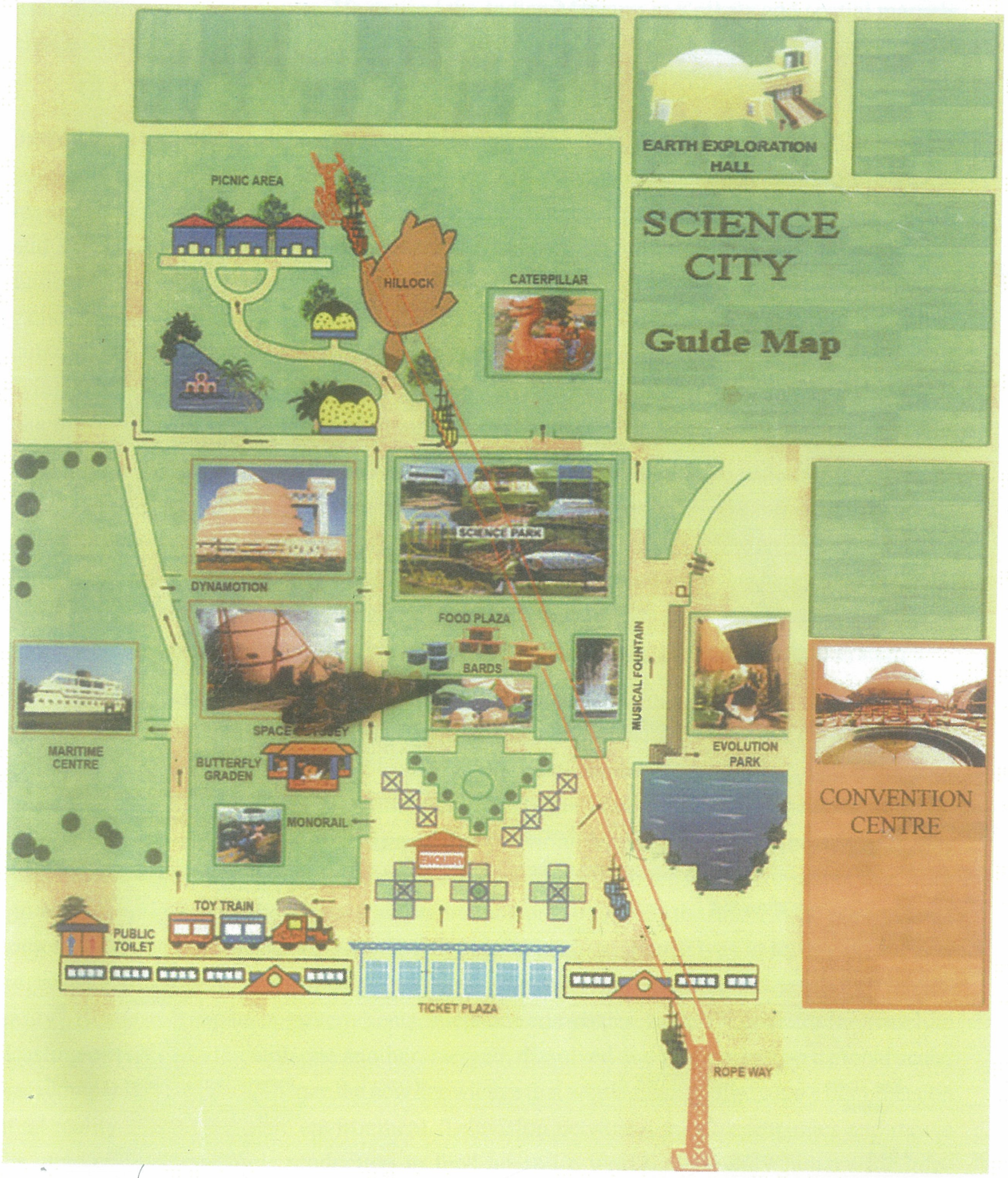
David Harvey (2000) comments that the term 'globalisation' has increasingly replaced other more politically loaded terms like 'imperialism', 'colonialism' and 'neocolonialism' as a way to organise thoughts and chart political possibilities. He views globalisation as a process, as a condition. Capitalism time and time again reorganises geographical landscapes, "a produced space of transport and communications, of infrastructures and territorial organisations, that facilitates capital accumulation during one phase of its history only to have to be torn down and reconfigured to make way for further accumulation at a later stage. Globalisation is more likely to be a new phase of exactly this same underlying process of the capitalist production of space" and the process of globalisation is a process of production of uneven temporal and geographical development (Harvey 2000)

Two central dimensions of the multi-faceted processes of globalisation are technology and social change. In the era of globalisation, the major terms are network, knowledge and information society. The major linkages are between scientific and technological factors, including information and communication technology, modes of operating and the transgression of diverse social boundaries, particularly those of state territory. McGrew (1992) defines globalisation as "the multiplicity of linkages and interconnections between the states and societies which make up the modern world system".

Victor Burgin (1996) and Manuel Castells (1998) expand on the significance of television in international terms, followed by the Internet. To quote Castells, "in the second half of the 1990s a new electronic communication system started to be formed out of the merger of globalized, customized mass media and computer-mediated communication...(T)he new system is characterised by the integration of different media and by its interactive potential. Multimedia, as the new system was hastily labeled, extendss the realm of electronic communication into the whole domain of life, from home to work, from schools to hospitals, from entertainment to travel. By the mid-1990s, governments and companies around the world were in a frantic race to position themselves in setting up the new system, considered to be a tool of power, potential source of huge profits, and symbol of hyper-modernity" Business companies, governments, telephone companies, cable TV operators and satellite broadcasting operations vied with one another, merged, dissolved and re-emerged on a global scale. Software companies started to generate the new knowledge that would release "the fantasy of immersion in virtual reality in the electronic environment. Television networks, music companies and movie studios were cranking up their production to feed an entire world supposedly hungry for info-entertainment and audio-visual product lines...Entrepreneurial creators, such as Steven Spielberg, seem to have understood that, in the new system, because of the potential diversity of contents, the message is the message: it is the ability to differentiate a product that yields the greatest competitive



Map 1 : Location of Science City



Map 2 :Guide Map of Science City

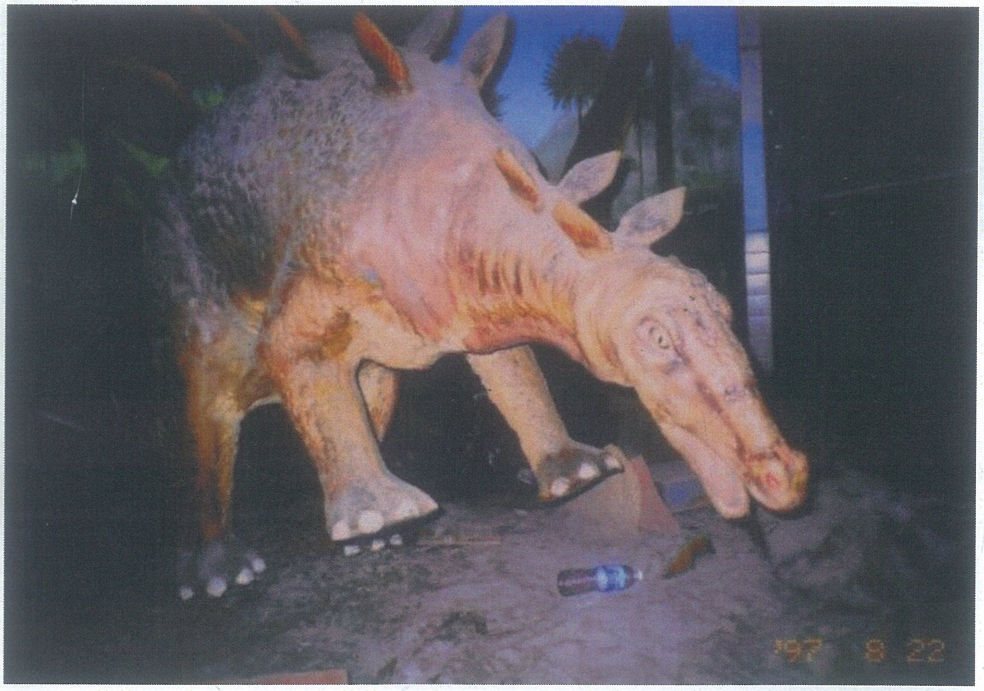
Pic 1 : T. Rex at entrance to Science City

Pic 2 : Ceramic Mural

Pic 3 : Entrance to Evolution Park Theme Tour

Pic 4 : Coca Cola and Tea Vending Machines

Pic 5 : Dimetrodon in Evolution Park Theme Tour

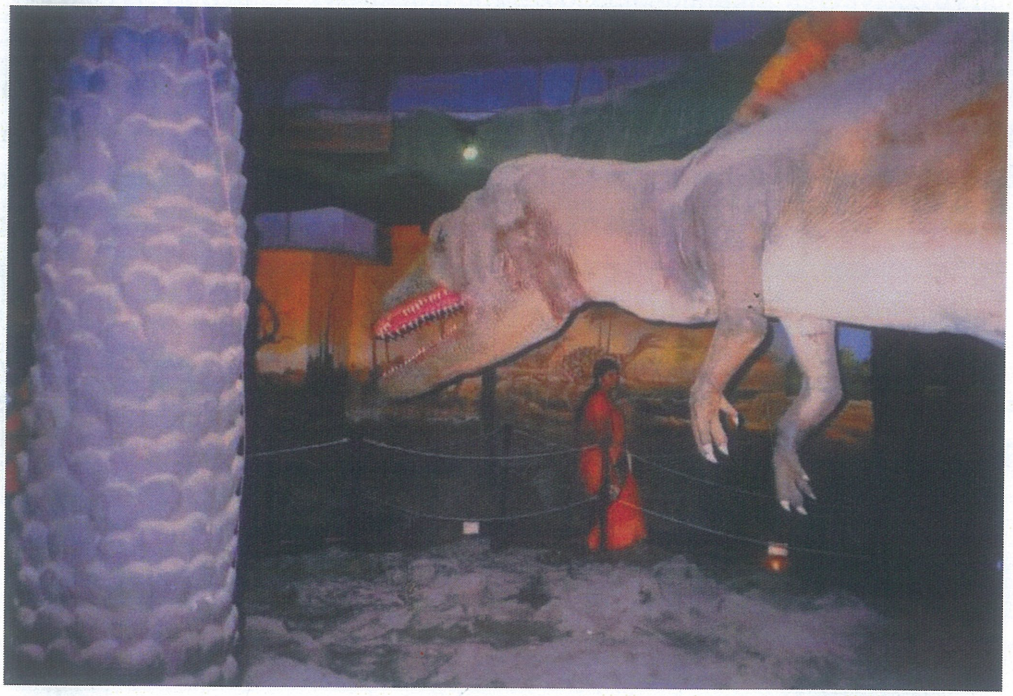


Pic 6 : Tuojiangosaurus in Evolution Park Theme Tour

Pic 7 : Sceledosaurus in Evolution Park Theme Tour

Pic 8 : View of Main Auditorium of Convention Centre

Pic 9 : Landscape, Science City



Pic 10 : Spinosaurus in Evolution Park Theme Tour

Pic 11 : T. Rex, Science City and new urban construction

potential. Thus, any conglomerate with enough financial resources could have access to multimedia technology and, in an increasingly deregulated context, could access almost any market. But whoever controls Bogart's films or the capacity to generate the new electronic Marilyn or the next Jurassic Park episode will be in the position to supply the much-needed commodity to whichever communication support" (Castells 1998)

With this perspective, the later part of the paper

1.3 THE HYPOTHESIS AND OBJECTIVES OF THE PAPER:

(a) Set against the background of the above theoretical basis, the paper proceeds to would analyse Science City, Kolkata as a symbolic landscape of power, whether economic, spatial or socio-cultural; and

(b) Would Aevaluate its role as a source of scientific knowledge and media-based global geosymbol for the dissemination of scientific education among Kolkata residents and national and international visitors.

1.4.13.2 THE NATURAL LANDSCAPE OF EAST KOLKATA:

According to Dhrubajyoti Ghosh (2002), "(w)ithin five kilometres from the eastern edge of Calcutta, one of the most densely populated megacities of India, an amazing spectacle takes a visitor by surprise: very large, shallow ponds with sparkling water lie under an eerie silence. But the importance of these 'bheris' (as they are known), goes far beyond their natural beauty". About a century ago, these low-lying areas were flourishing centres of brackish-water fish farms. The wetlands were fed by the tides of the Bay of Bengal. The natural process of delta-building, aggravated by human activity, led the tidal flow to dry up and thousands of fisherfolk were confronted by no incomes. In the 1930s, it was discovered that the domestic wastewater from Kolkata could provide alternative sources of water for fisheries. There was an initial controversy: wastewater was polluted with organic matter and fish would die. They did not, and this magnificent eco-system was discovered in the 1980s, a natural kidney for the city organic wastewater. Organic sewage was treated by bacteria in the natural eco-system and thereafter produced large quantities of fish food on which local varieties thrived. The system has been so stable that despite efforts by developers, the area still supports the largest ensemble of wastewater fish ponds in the world, amounting to nearly 250 ponds covering approximately 3,500 hectares. There has been a major wetland conservation effort known all over the world and supported by the United Nations. "Thus the natural beauty of the wetlands conceals outstanding feats of nature and wise local programs that form the bedrock of sustainable development".

1.4.23.3 THE HUMAN IMPACT:

Initially part of the Salt Water Lake area, the dumping ground of Dhapa is in a low basin located about five miles east Kolkata. Its origin may be traced to th seriousness of city authorities searching for a wasteland at a safe distance where it was possible to deposit and destroy the city's refuse and rubbish (Chattopadhyaya 1990). Dhapa is the oldest and major dumping ground for Kolkata's garbage.

The Calcutta/ Kolkata Municipal Corporation acquired the 'Dhapa Square Mile' in 1865 and constructed embankments to exclude tidal waters from the Salt Lakes. The dumping is done in lagoons in Dhapa into which it has been divided. The lagoons are almost filled up with garbage. The lagoons are 'dumped' to the height of the embankments. Trucks dump the refuse material at predetermined sites inside Dhapa, which is subsequently spread out by a bulldozer. In 1989, there were only about 400 acres of land available for garbage disposal at Dhapa, the rest being filled up or occupied. Initially linked to the city proper by railway, there was no effective planning of roads in Dhapa until recently (Nair 1989).

The wetlands on the eastern fringe of Kolkata, known as the Salt Lakes, have been reclaimed for urban settlements. In Kolkata, flooding has increased after many water bodies have been filled up for residential land and housing and the worst-affected areas invariably lie west of the Eastern Metropolitan Bypass, which is virtually a dyke cutting into the natural spill basin of the former Salt Lake swamps. Recently, a number of specimens of what might be called symbolic landscapes of spectacle and power have emerged in the eastern part of the city in the Bypass area. The most famous one is Science City.

1.53.4 SYMBOLIC LANDSCAPE: SCIENCE CITY, KOLKATA:

As far as the interaction and interrelation between media and urban landscapes are concerned, an excellent example is Science City in east Kolkata. Constructed by Development Consultants Limited, it has become a byword for scientific real-and-imagined fantasy shows symbolised by the huge dinosaur sculpture near the entrance. It is the nearest to a theme park or 'Disneyland' anywhere in Kolkata. According to the official brochure, "(t)he Science City, one of its kind in India, inaugurated on 1 July, 1997 has been developed...by the National Council of Science Museums in 50 acres of land...(I)t is one of the largest and finest in the world, presenting Science and technology in a stimulating and engaging environment that is truly educational and enjoyable for people of all ages". The land on which Science City was constructed was originally part of the Dhapa dumping ground: the garbage dump of Kolkata for 200 years. 44.6 acres were given to the National Council of Science Museums by the Kolkata Municipal Corporation in 1994. In the first phase of construction, that is, from 1994 to mid-1997, construction costs amounted to about Rs. 50 crores. Science City is now self-sufficient, and earns over Rs. 10 crores annually. The entry fee, a nominal Rs. 25, is going to be raised (Interview, Dr. Arijit Dutta Choudhury, Director, 23 August 2012).

Among the most popular exhibits are the dinosaurs. In 1993, Hollywood director Steven Spielberg's film "Jurassic Park" took the world by storm.

The film, based on the book by Michael Crichton, set off an entire scientific revolution. Spielberg used CGI or computers to generate dinosaurs and the entire film stressed on the impact of science and knowledge on media and virtual reality. Universal spent $65 million on the marketing campaign, including video games, toys and novels and advertising ranged from signs on buses to T-shirts depicting dinosaurs. The film generated $81.7 million by the first week and has since only been outpaced by "Titanic" (Wikipedia 2012).

Across the globe in the mid-1990s, a group of Indian scientists deliberated on how they could arouse interest in the new science museum, Science City, coming up on a part of Dhapa. According to Dr. Arijit Dutta Choudhury, their efforts were underway when "Jurassic Park" was released. The interest in dinosaurs led to the construction of the Tyrannosaurus Rex (T Rex) on display at the entrance to Science City. The T Rex is about 25 feet in height and weighs approximately 400 kilograms. It has become a Kolkata icon (Interview and personal communication, August 2012).

At Science City, sophisticated forms of media equipment and technology are used to transfer visitors into symbolic spaces, ranging from the evolution park with its dinosaurs to astrovision in the space theatre. There are major convention facilities. The main auditorium is used for theatre and musical events while there are spaces for seminars and lectures. The following section is a detailed account of the cultural landscape of Science City.

According to official brochures, Science City "has, over the years, become a place for memorable experience…and enjoyment for both…young and…old". With regard to "Dynamotion – the paradise of science in action", the brochures sum up the experience as follows: "Scientific phenomena can be appreciated and understood when (they) can be seen happening. This large spiral shaped building offers an exciting journey to the world of science. The aquamobile, a plethora of interactive exhibits on physical science and the energy ball exhibit complement(s) the building of unique architecture. Here, one can create music while walking on the floor piano, make soap bubbles float in air, manoeuvre the floating ball, make a large dish float in air or peep into a well of infinite depths. Such exhibits…stimulate the intrinsic and extrinsic faculty of visitors and keep them engrossed in the scientific process of discovery". The new panel based exhibition named the Power of Ten explains the dimensions, both macro and micro, of the universe. By merely looking at the display, it is possible to compare the size of the objects and the viewer proceeds from higher to lower scales of measurement. The section named "Illusions" reveals some apparently impossible looking pictures and visuals. It is possible to see how motion and placement make a difference in visual perception and one can experiment here with the help of computer based activity. "Life in Water" may be viewed in a 40-tank aquarium with the aquatic life of exotic varieties in their natural underwater environment, which provides an opportunity to witness the behaviour and food habits of fish. The "Space Odyssey" involves "a thinking voyage to the universe". The facility houses a Space Theatre, Time Machine, 3D Theatre, a variety of exhibits on space science, a spinning platform, mirror magic and an interactive multimedia kiosk on the solar system. The Time Machine is a motion stimulator synchronising an audio-visual presentation with the motion of the capsule. The stimulator capsule accommodates 30 persons and has six degrees of motion, making horizontal pitches, longitudinal rolls and vertical lifts. The 'fascinating and amusing' section named "Mirror Magic" explains the physical principles behind images via participatory exhibits. A mirror maze puzzles visitors. In the 3D Theatre, digital technology offers immense avenues to present images of extraordinary variety. In this theatre, polaroid-based stereo projection creates three-dimensional effects. The show creates an impressive experience with the help of special polaroid spectacles. Through the Astrovision 70 large format film projection system in the domed Space Theatre,

viewers are wrapped with images of unsurpassed sizes which inculcate a great sense of involvement. It is a unique experience. The theatre also presents planetarium shows using the GSS Helios star field projection system housed within it. There is a butterfly enclave where visitors can see many varieties of live butterflies flitting about, sipping nectar and laying eggs. The Maritime Centre is a permanent pavilion developed in collaboration with the Kolkata Port Trust depicting India's remarkable maritime history and activities. It is housed in a building shaped like a ship encompassing an area of 700 square metres. The Music Fountain is a fully computerised fountain with water jets synchronised with music and lights ideal for relaxation. The Picnic Garden is an area where visitors can relax over picnic lunches. The Outdoor Science Park consists of the Children's Play Corner, Caterpillar Ride, Gravity Coaster, Musical Fountain, Road Train, Cable Cars, Monorail Cycle, Butterfly Nursery and many exhibits in physical science. It offers an ideal space to learn more about the environment. The climax zone in Science City is the Evolution Park which has a theme tour. How life came into existence and diversified over millions of years has always intrigued scientists. The Evolution Theme Park Tour spread over 1,300 square metres is a journey back into the early age of evolution of life on earth. The recreated nearly realistic ambience radiates knowledge about the evolutionary phases of life and glimpses of the gigantic extinct animals of the past, mostly dinosaurs. The exhibition is divided into seven period settings and concludes with the advent of modern man. In the Earth Exploration Hall, visitors can learn more about our planet from various aspects: creation and evolution, location in the solar system, geology, geography, ecology, demography, biodiversity and other aspects. Environment and ecology, global climatic change and natural disasters are highlighted. The gallery is a dome-shaped building about 25 metres in diameter (National Council of Science Museums "Science City...taking science to millions"). There is a nano-lab teaching nanotechnology to interested students.

Science City is a major convention centre. The main auditorium is multipurpose in nature and ideal for conventions, annual general meetings, theatricals and music performances, ballet, opera, symphony orchestras and other similar events. It has a sophisticated sound system, a large stage 27 metres by 16 metres suitable for 100 performers at a time together with cyclorama, 18 bar stage craft, vertical stage movement and modern stage light control, projection facilities and sufficient green room space for 50 men and 50 women. The fully air-conditioned centre seats 2,232 people, has an orchestra pit for ballet and opera performances, films, slides, large screen video and overhead transparency projection as well as multimedia presentations. A registration counter, good toilet facilities, ramp and an open air façade with fountains and greenery as well as space to display banners, posters and charts are conspicuous. The mini auditorium is a multipurpose mini-theatre which is fully air-conditioned and has a stage 15 metres by 10 metres suitable for 30 performers with a large green room and seating space for 392, cyclorama, stage craft and stage light control and projection facilities, a registration counter, ramp, toilets and space to display visuals. The Seminar and Lecture hall complex houses eight fully air-conditioned halls on two floors with a large lobby, registration counters, a pantry and projection facilities. Four halls have a capacity of 40 each while there are two conference halls with a capacity 30 each. Outdoor and indoor exhibition spaces are available within the Convention Centre

complex. 25,000 square metres of developed ground, 250 square metres of indoor space and 1,700 square metres in the basement of the main auditorium are available for exhibitions and events. To quote the convention centre brochure: "Are you looking for (an) international standard convention centre for holding a conference, symposium, seminar, meeting, workshop, a cultural extravaganza or an exhibition? It is right here in Science City, a landmark in Kolkata metropolis, most conveniently located, close to the airport and major attractions of the city…The convention facility at Science City is ideally suited to professional gatherings, cultural meets and shows, trade exhibitions, corporate annual meetings…The facility is adjunct to India's largest Science Centre, the only such combination in India (National Council of Science Museums "Science City Convention Centre"). The Science City Guide Map indicates a basic grid pattern of layout with various exhibits and centres located within parallel spaces (see maps and plates).

From 2008 to 2009, 1,393,141 people visited Science City of whom 62,614 were students in organised school groups. 621 shows of the Helios planetarium, 1,680 shows of Astrovision in the Space Centre and 13,477 public demonstrations were conducted for visitors. 146 conferences and cultural events were held in the Main Auditorium, 124 programmes in the Mini Auditorium, 147 seminars in the Seminar Halls and 48 exhibitions in the open grounds that year (National Council of Science Museums Activity Report 2008-2009 Science City Kolkata 17). According to Dr. T. K. Ganguly, former Director, Science City was created because the authorities wanted to make a place for science popularisation which would be a place for learning through fun and enjoyment. It was to be a place for the whole family with large outdoor facilities (Interview, 25 February 2010). Dr. Arijit Dutta Choudhury, current Director, felt that the difference between Science City and other museums lies in the fact that the latter display inanimate artefacts in showcases whereas the visitor to Science City keeps moving with the experience due to simulation, 3D and other techniques. Since 1997, it has not taken any grants from the India Government and is completely self-funding. He stated that the former dumping ground has now become one of the most important parts of Kolkata, with the main activity zone of the city shifting east to the Bypass and Salt Lake area. Why the stress on dinosaurs? He acknowledged the influence of Spielberg's "Jurassic Park" on scientists in the 1990s (Interview, 2 March 2010). Dr. Dutta Choudhury further commented that the shows are all science-based, focusing on technology, environment, physical and life science. Multimedia is evident in the 3D Theatre, which uses digital technology, in the earth exploration hall and the science films are specially imported and shown in the domed theatres (Interview, 23 August 2012)

Outside the Director's office and across a stretch of open ground is a 96 feet wide and 60 feet high ceramic mural depicting Knowledge, as "Science and Technology are the only weapons which can remove superstitions from…society" (Personal communication with Dr. Dutta Choudhury, 1 September 2012). As the author moved around the grounds, an exciting landscape of cable cars overhead, coca cola and coffee kiosks, unusually shaped buildings and landscaped gardens presented themselves to her eyes. Entering the Evolution Park Theme Tour through the huge-fanged mouth of a Dimetrodon dinosaur model, she saw the animated Diplodocus, a herbivore dinosaur, followed by

the Tuojiangosaurus, Dimetrodon, Scelidosaurus, Spinosaurus (see plates) and other exhibits including a Mammoth and Neanderthal man. The interior was dark, with dim lights and muted roars from the exhibits. It was a fascinating experience, only tempered by the fact that the T Rex at the entrance has been somewhat marginalised by the construction of a new flyover nearby, which is yet another instance of dominated space. A Science Exploration Hall is being constructed within Science City.

1.64 CONCLUSION

"Knowledge is power" wrote Sir Francis Bacon in 1597. Later writers and authorities have deliberated upon this concept, prominent among contemporary philosophers being Foucault. Science City, Kolkata is a spatial expression of the power of knowledge being a dominating imprint on a former salt lake-cum-dumping ground. It is both a creation of scientific knowledge and a spatial scientific repository generating knowledge and culture. It is a prime example of dominated space, and the impact of scientific media-based knowledge may be seen from images ranging from dinosaurs to the 3D Theatre, Astrovision and scientific films. However, Dr. Dutta Choudhury commented that it was not an overall impact of Hollywood movies, but inspired by international science museums: it is a global scientific cultural landscape, and a geosymbol of Kolkata.

Utopias are sites with no real place, but rather present society itself in a perfected form, as evident in concepts of the ideal city (Harvey 2000). They are fundamentally unreal places (Soja 1997~~157~~). More real are what Foucault defines as heterotopias:

"There are also, probably in every culture, in every civilisation, real places – places that do exist and that are formed in the veryfoundlings of society – which are something like counter-sites, a kind of effectively enacted utopia in which the real sites, all the other real sites that can be found in the culture, are simultaneously represented, contested and inverted. Places of this kind are outside of all places, even though it may be possible to indicate their location in reality" and "(r)eal places that contain all other places, represented, contested, inverted in all their lived simultaneities and juxtaposition, each standing clear, absolutely different from all the sites they reflect and speak about" (Foucault 1986 as quoted in Soja 1997).

Foucault attempts a description of these heterotopias or other, different places. Firstly, heterotopias occur in all cultures and every human group, although they take varied forms and have absolutely no universal model. They may include privileged, sacred or forbidden places and sites that have been disappearing in society. Secondly, heterotopias can change in function and meaning over time, according to the particular "synchrony" of the culture in which they are found. Thirdly, the heterotopias may juxtapose in one real place several different spaces, "several sites that are in themselves incompatible" or foreign to one another. Here he considers places where many different spaces converge and become entangled, using as his models theatrical stages and oriental gardens, subsequently sprawling zoological gardens and thereafter other spaces containing all places and spaces with allusions ranging from Parisian arcades, to world fairs, exhibitions and Disneyworld. Fourthly, heterotopias are linked to slices of time that Foucault refers to as heterochronies. Such intersection and phasing of

space and time permits the heterotopia to function at full capacity, based on an ability to arrive at an absolute break with traditional experiences of time and temporality. The modern world has many specialised sites that record such crossroads of space and time. There are heterotopias of indefinitely accumulating time, such as museums and libraries where time builds up in an attempt to establish a "general archive", or a place of all times that is outside time and inaccessible to its ravages. In opposition to such heterotopias are the more fleeting, transitory and precarious spaces of time, such as the festival sites, fairgrounds and vacation or leisure villages. Foucault conceives that both forms are increasingly converging in compressed, packaged, "invented" environments that both abolish and preserve time and seem to be both temporary and permanent. Fifthly, heterotopias always presuppose a system of opening and closing that makes them simultaneously both isolated and penetrable, different from what is usually conceived of as more freely accessible public space, regulating entry and exit, assuming qualities of human territoriality, with its conscious and subconscious surveillance of presence and absence, demarcation of behaviours and boundaries and definition of what is the inside and the outside, implicit in which are the workings of disciplinary power controlling space and time. The sixth and final point is that heterotopias have an even more comprehensive function in relation to all the space outside them. Such an external, almost wraparound function unfolds between two extreme poles. Either the role creates a space of illusion that exposes all real spaces or the role is to create another 'other' real space, as perfect, as meticulous, as well arranged as ours is messy, ill constructed and jumbled – the latter would be the heterotopia of compensation, like certain colonies (Soja 1997 159-162). Foucault's concept of heterotopia might well be appropriate in the case of Science City, which is, to quote Soja (1997), a "real-and-imagined place". It is also a global geosymbol, and the globalisation of the new urban landscape of Kolkata is perhaps best exemplified by the global media and technological impact that has fostered the creation of this dynamic urban spatial construct: a true symbolic landscape of power and spectacle, designed to impress, educate and entertain.

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