Abraham Akkerman

Phenomenology of the Winter-City

Myth in the Rise and Decline of Built Environments

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To Amitai, Ashira, Kerem, Roni, and Bnayah

Preface

This monograph is an attempt to see the history of city form and the history of ideas within a single context of mutual and ongoing interaction. Recognizing the primordial sources of this feedback progression as originating in human development and the environment, not the least climate and sky patterns since the Upper Paleolithic era, myth becomes a focal concern in this study, as it should be. This, I believe, leads to some profound questions on the phenomenology of the city and on the notion of *place* in the winter city of North America, in particular. The seeds of these questions have been sown by the philosopher Herbert Spencer, by the geographer Carl Sauer, and by the cultural critic Walter Benjamin, a century ago. But ideas on mind-environment interaction can certainly be traced to the eighteenth century's physical geography of Immanuel Kant. A wide scope of issues, ranging from geography to psychoanalysis, were addressed in this study as aspects necessary, as well as illuminating, to the history and phenomenology of the built environment. The humanistic focus this study attempts to bring to considerations of city form yields recognition of the major role myth and allegory have played in built environments and in urban planning through history, as they still do to this very day.

I am most indebted to my colleagues and friends at the University of Saskatchewan, my intellectual home for the last three decades. I have greatly benefitted from the insight and the countless discussions with faculty and students, too numerous to list, in the Department of Geography and Planning, in the Department of Philosophy, and in the University Program in Classical, Medieval and Renaissance Studies. Singled out among the many individuals without whose input this study would never be as comprehensive as it attempts to be are John McConnell, Bill Barr, and Robert Bone of the Department of Geography and Planning, Sarah Hoffman and Eric Dayton of the Department of Philosophy, Priscilla Settee of the Department of Indigenous Studies, and Frank Klaassen of the Department of History. My years spent in the planning profession at the Planning and Building Department (now, Planning and Policy Services), City of Edmonton, were an invaluable experience, and my thanks go to my colleagues and friends there, first and foremost, Robert Higgins and Tim Ford.

The unrelenting and inspiring questions of my two children, Zak and Ariela, since their early childhood, have been the most precious source of muse and whim. To their children this book is dedicated.

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Chapter 1
Introduction: Intertwining Consciousness, Human Body and the Environment

1.1 Urban Alienation, from René Descartes to Andrei Bely

In Book II of his *Meditations*, René Descartes asked a question that in time came to be known for its notoriety: “What do I see from the window beyond hats and cloaks that might cover artificial machines, whose motions might be determined by springs?” (Descartes 1641/1924: 232). In his question, Descartes was juxtaposing perception against judgment, and to some commentators, even posing question regarding the existence of other minds (Matthews 1986). It is commonplace that the settings of Descartes’ question are a scene whereby “there are men crossing the square in the rain underneath the hats and cloaks which are alone visible from an upper window” (Baker 2000: 625).

Descartes’ question has two environmental contexts: The one is the urban milieu at the commencement of strong urbanization in Western Europe between the late sixteenth and mid-seventeenth century, as Renaissance was transiting into the Baroque, a period usually known as Mannerism (see Chap. 8, Sects. 8.5 and 8.6). The second context is the apparent inclement weather due to which Descartes observes from his upper floor only hats and cloaks, instead of people, leading him to ask his notorious question (see Chap. 6, Sect. 6.3).

Quarter of a millennium later, and some 2000 miles to the north-east, in late czarist Russia, Andrei Bely, picturing a scene from revolutionary St. Petersburg, describes

> the human myriapod as flowing [on Nevsky Prospect …]; it would crawl as it crawled; and it crawled as it crawled: ones, twos, fours; and couple after couple: bowler hats, feathers, service caps; service caps, service caps, feathers; tricorne, top hat, service cap; shawl, umbrella, feather. Now it all disappeared: they turned off the prospect; above the stone buildings in the sky towards them rushed ragged clouds with hanging band of rain. (Bely 1913: 82)

Whereas Descartes may have been questioning the authenticity of human beings appearing as images of hats and coats that humans are wearing, Bely in fact suggests

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there is nothing authentic about the people on Nevsky Prospect, as they seem to be not much more than a compendium of what they are wearing: the various hats, shawls and umbrellas. But why would Descartes ask whether actual people or machines are underneath clothes that humans are wearing? And why would Andrei Bely, some three centuries later, view actual people as nothing more than a compendium of what they *are* wearing? Most of us don't ask the kind of Descartes' notorious question. Yet, in the eyes of most of us, as Shakespeare said in *Hamlet*, "the apparel oft proclaims the man." But if so, Descartes' notorious question could have been asked ever since people started wearing clothes…

The seeds of alienation may have been planted millennia ago, indeed, but it is modernity that seems to have given a good reason to ask Descartes' notorious question. In truth, the two environmental contexts of the notorious question mark also the 300-year transition from Cartesian skepticism onto Existentialist thought. This was a time when Renaissance urbanization had turned into early industrialization of seventeenth century's Enlightenment, and to the Industrial Revolution of the eighteenth and nineteenth centuries. One of the most profound human aspects of this 300-year transition was the commencement of rapid population increase in cities, and with it, inevitably, the emergence of the human multitude, the crowd. Whereas in the mediaeval town the stranger was a newcomer and an aberration within a society where most people knew each other, in the emerging metropolis of early modernity, strangers became the mainstream, and familiarity of *the other* had gradually become an exception (see Chap. 13).

1.2 Climate as an Urban Concern

In the scenes described by Descartes and Bely, elements of the environment that impact the observer's mood are the streetscape, people in it, and the weather. All three elements define the contemporaneous urban settings in which Descartes and Bely were respectively immersed. The urban settings and the emotion of alienation they evoke might be quite indispensable to truly and comprehensively grasp the arguments conveyed by each of the authors.

Such a consideration of urban streetscapes, crowds and weather is quite at variance with much of contemporary urban thought. As urban heat islands, for example, cities have been of increasing concern to mainstream environmental science due to their impact upon global climate (O'Hare et al. 2013: 79–82). But as a query of the occurrence and situation of humans at the beginning of the third millennium, the contexts of both city-form and weather draw another kind of unease, a disquiet that is due to our own proclivities, urban alienation being the more acute among them.

Compounding the emergence of strangeness among people had been the context of inclement weather, and half-a-millennium cooling period dubbed the Little Ice Age (Matthes 1939). The 200 years between Descartes and the early emergence of revolutionary violence in Europe, a sequel of which is described in Bely's *Petersburg*, was the last and coolest period of the LIA, a cooling event often ascribed to the period, 1350–1850. The impact of the LIA on the state of mind of people has been little investigated, but in popular belief for a long time, inclement weather has been associated with melancholy and other mood disorders. The two instances described by Descartes and Bely reflect the state of mind of these two observers, but not only theirs.

The description of the two urban scenes by Descartes and Bely suggests that, increasingly, people's perception of human beings within the growing urban milieu has been colored by alienation. Whether physical climate or urban micro-climate have additional impact on the pathology of human interaction in large cities is not a question that could be easily brushed aside. Even slight spikes in temperature and precipitation have been viewed as increasing the risk of personal violence and social upheaval throughout human history (Hsiang et al. 2013). Could continual cooling during half-a-millennium of the LIA have no effect on mood and attitudes?

One may leave aside, for now, the fact that it is through alienation and detachment that people in large cities today look at each other: as objects of fashion, envy or economic advantage. A much more encompassing suggestion is that the 300-year period between Descartes and Bely might be viewed as a very short segment of a trajectory of human evolution through its varying environments commencing in pre-history.

And without a doubt, construction of shelter and disposition of built environments have been determined, in no small measure, by climate. In his short treatise, On *Airs*, *Waters and Places*, the physician Hippocrates (c. 460–377 BCE) classified cities by their exposure to winds and the observed effect on the health of their inhabitants. The Athenian philosopher Xenophon (c. 430–350 BCE), in his entertaining treatise on household management, *Oeconomicus*, discussed the orientation of houses in relation to thermal comfort (*Oeconomicus* IX 4–5). And Aristotle saw the climate of a city at par with the city's defense needs:

> Those cities are healthier which slope toward the east and toward the winds that blow from the direction of the rising sun; second are those sloping in the direction the north wind blows, as these have better winters […] With a view to military activities, [a city] ought to be ready of exit for the citizens themselves but difficult for their adversaries to approach and besiege. It should have available above all a multitude of pools and springs of its own; but failing this, a way has been discovered to construct great and ample receptacles for rain water, so that they will never run short when they are cut off from their territory by war. (*Politics* VII, 11)

In Aristotle's judgment houses in the city's outskirts could be grouped irregularly, in the fashion of five spots of a die, while larger thoroughfares and open spaces would be preserved for the centre protected from both elements of nature and the violence of intruders (see note 60, Lord 2013: 206).

Since archaic times and early antiquity, the Middle Ages and through the Renaissance, aspects of climate, much as all other atmospheric phenomena, have been considered celestial attributes. Wind directions have received their own names, becoming an important design consideration in architecture and the design of new towns.

Climate impact on mind has been accepted as something of a fact, at least in popular belief over the last several hundreds of years. It was during the second half of LIA that the belief that some people can cause weather anomalies through magic and witchcraft, had led to incredible suffering, torture and deaths of hundreds of women, often herbalists, condemned as witches throughout the Middle Ages and the Renaissance.

1.3 Weather as Backdrop to a Cognitive Loop

Even in much of traditional geography, climate is still considered largely the "link that connects the forms of the natural landscape," to quote a century-old article by Carl O. Sauer, the founder of cultural geography. In the same article, however, the renowned geographer had put forward the notion of cultural landscape as the dynamic impact of humans upon their environment:

> The works of man express themselves in the cultural landscape. There may be a succession of these landscapes with a succession of cultures. They are derived in each case from the natural landscape, man expressing his place in nature as a distinct agent of modification. Of special significance is that climax of culture which we call civilization. The cultural landscape then is subject to change either by development of a culture or by a replacement of cultures. (Sauer 1925)

Sauer's notion of cultural geography was itself a pebble from an intellectual mosaic set by Herbert Spencer's *Principles of Psychology* (1855) in England and by pragmatism of the late nineteenth century that followed, introduced by Charles S. Peirce, in America.

To Spencer "all vital phenomena are directly or indirectly in *correspondence* with phenomena in the environment […] The assimilative process going on in a plant, and the reasoning by which a man of science makes a discovery, alike exhibit the adjustment of inner relations to outer relations" (Spencer 1855: 482). Spencer's views on 'correspondence,' suggest individual adjustment to environmental conditions, and thereby, a one-way impact from the environment upon the individual. This and other aspects of his social Darwinism earned him considerable criticism, not the least from Charles Peirce. Yet remarkably, in viewing the environment both seem to be in agreement. To Peirce "*existence* means reaction with the environment, and so is a dynamic character" (Peirce 1934: 352).

Sauer's cultural geography ultimately appears as a complement to pragmatism expressed later in the first half of the twentieth century by John Dewey, thus:

> Our position is simply that since man as an organism has evolved among other organisms in an evolution that we call natural, we are willing under hypothesis to treat all of his behavings, including his most advanced knowings, as activities not of himself alone, nor even primarily his, but as a process of the full situation of organism-environment [*sic.*]

It might not be a gross extrapolation to say that the founding notion of American pragmatism on the environment implies a stance purporting environment as the carrier of impact upon consciousness. This very idea, however, begs a reflective question turned on itself. While pragmatism had emerged from the mist of nineteenth century's New England, on the European continent, north of the Alps, entirely different philosophical doctrines were taking hold at the same time. Was the environment a player in such divergent ways of thinking? Later, in Chap. 14, Sect. 14.7 some of this enigma will be addressed.

Whereas Spencer, Peirce and Dewey consider the impact of the environment upon the individual as one-directional, Sauer's notion of cultural geography points to the reverse direction of human impact upon the environment. And only a few years after Sauer wrote in America his essay on cultural geography, Walter Benjamin, in an urban survey of Paris and Berlin, had suggested that city-form evolves through mutual interaction with changing myths of Ideal City. In the second half of the twentieth century, this view has been followed in geography by the attention to mind-environment interaction by David Lowenthal (1975, 1994).

The view that thoughts and ideas, including philosophical reflection, emerge through the perpetual, dynamic process of mind-environment feedback seems consistent with the earlier reflection on Descartes and Bely. An early stage of such a feedback progression had occurred during the Iron Age Cold Epoch (900 BCE–300 BCE) where observations of identical sky patterns along with the coincidental and widespread use of the wheel, can explain the simultaneous emergence of advanced civilizations during antiquity (800 BCE–200 BCE), as Chap. 9, Sect. 9.5 suggests.

Similarly, the cold period of the late LIA was an important backdrop in the interaction between mind and the environment that reached its unique intellectual climax in marking the launch of the scientific and industrial revolutions into modernity. The purported progression from Cartesian skepticism to modern Existentialism becomes then a case in point illustrating a more specific and more volatile feedback: one between mind and the *built* environment in Europe north of the Alps, with the climate as an important backdrop. Chapter 12 elaborates on this issue.

In North America less than 20 % of people lived in large cities at mid nineteenth century. Presently more than 85% of us live in large cities. If we look at psychocultural patterns of the contemporary city as manifesting a composite of humans, shells and infrastructure within the contemporary urban milieu, the spatio-temporal context of climate must surely be accounted for as well. After all, the weather and the sky are almost the last remnants of nature left within such urban milieu. Truly *natural* environment within the city is usually negligible, even though planners like giving urban features bodily labels: arteries; heart of city; decay.

Yet if one were to look at the city as a living body one might ask whether such labels are meaningful in any way, or just empty gimmicks. For if they are empty gimmicks then the body to which they ostensibly belong is a fraud, a Body without Organs, to use a hyperbole of Giles Deleuze (see Chap. 11, Sect. 11.6). In a city that no longer provides a meaning to its ardent inhabitants, the weather – in a *winter*-city, in particular – though frequently harsh, is one of its last authentic vestiges. Such observation remains valid even under conditions of increasing climate change due to human interference. Nevertheless, the planners' anthropomorphic labels are telling it all: the built environment has increasingly become a projection of an anthropomorphic urban planning myth. More on this in Chaps. 10, 11, and 12.

European civilizations of antiquity, only a few centuries past their zenith, were followed by a thousand years of the dark ages. But violence associated with the demise of the Western Roman Empire, on the heels of the Iron Age Cold Epoch, pales against the murderous brutality of twentieth century Europe, on the heels of the LIA. We are now living through postmodernity, less than two centuries past the end of LIA and in the midst of a significant climate change. The coming era will receive its own label from those that will follow – and pass judgment on us.

1.4 Myth and the Mind-City Composite

In a 1924 speech to the Architectural Association in London Winston Churchill had popularized the notion of mind-city interaction by remarking, "we make buildings and afterwards the buildings make us" (Duffy 1974). The Canadian cultural critic Marshall McLuhan had paraphrased, pointing to our communication media: "We shape our tools and then our tools shape us" (McLuhan 1964:58–59). But it was Erwin Panofsky who showed that a feedback loop between mind and the built environment actually took place in the case of Gothic architecture and scholastic thought (Panofsky 1957). It is of more than a fleeting interest, in this regard, that late Gothic architecture and religious thought had marked the onset of LIA in Europe. The historic terminus of the LIA had an analogous cognitive framework, albeit with some disquieting consequences: The amalgam of narcissistic myth and documented personality disorders in architects and planners such as Le Corbusier, Frank Lloyd Wright or Robert Moses (see Chap. 12, Sect. 12.7) has carved its own sad mark upon some of twentieth century's urban planning phantasmagoria in the midst of which millions of people have been fated to live (Westin 2014: 95–138).

In his 1930s survey of Paris and Berlin Walter Benjamin put forward the idea that mind-city interaction is a universal feedback between the urban environment and consciousness, or more specifically, between actual streetscapes and notions of the Ideal City. Pointedly, Benjamin's survey was focused mainly on the architectural novelty of the time, sheltered shopping arcades, rather than on streets or open-air urban spaces. It was Benjamin's observing this new urban feature that led him to suggest that civilization re-creates its own environments through ideal images of earlier ages. It is, Benjamin writes in his unfinished work, *The Arcades Project*, within this cognitive loop that twentieth century city-form had emerged:

> In the dream in which every epoch sees in images the epoch that follows, the latter appears wedded to elements of ur-history […]. Its experiences, which have their storage place in the unconscious of the collective, produce, in their interpenetration with the new, the *utopia* that has left its trace behind in a thousand configurations of life from permanent buildings to ephemeral fashions. (Benjamin 1933/1972: 46–47)

Utopia, a nascent concept of an ideal city as an “unconscious of the collective” is juxtaposed by Benjamin through the reality of the street, an urban void whose significance for urban planning and design is traceable to antiquity. The interaction between urban fabric of the daily life, and the myth of the Ideal City, as collective unconscious, has recurrently produced over millennia newly emerging concepts of an ideal city, much as it has produced also new appearances and configurations of real streetscapes (see Chap. 10, Sect. 10.5).

Domed streets in Western Europe, north of the Alps, were early twentieth century’s culmination of this feedback progression. It was the shopping arcade, as a street sheltered by a ceiling of cast-iron and plate-glass that has transformed a city walk from a daily experience of exposure to elements into a shielded comfort of pleasurable strolling during harsh weather. This transformation had marked only the beginning of a twentieth-century trend that has gradually minimized open-air exposure of people in the winter-city as one aspect of the ouster of authentic nature. In North American winter-cities, in recent years in particular, the impact of lack of sunlight upon mood has been established as more than a conjecture or long-lasting lore. While urban dwellers most everywhere never even see a nightly sky studded with stars, free of light-pollution, residents of shielded American and Canadian winter-cities often also don’t receive even the modicum of sunlight during the short days of the cold season (Chap. 15).

If predilections of people are grounded in deep-rooted myths, as Carl Jung had suggested in his concept of the collective unconscious, one ought to consider the environment itself as an overriding context. Magic rites of early civilizations were connected with the founding of cities: In the northern Mediterranean these were Etruscan cities and early Greek colonies, as well as Roman towns. The deified heroes of Greek mythology had strong association with the sky, the earth or the sea, many of them were said to be founders of cities, and streets within newly founded urban communities came to be called after deities. Ample evidence from ancient Greece, but also from pre-historic cities in the Indus Valley, suggests that planned cities were built on schemes corresponding to various *environmental* attributes, celestial apparitions being the more important among them. Ancient urban plans were grounded in practical concerns as much as they were guided by cosmogonic myth (see Chap. 7, Sect. 7.3).

Greek creation myth perpetuates a link between the earth and the sky in the tale of Pandora, the first woman and a source of trouble to mankind. Pandora is the embodiment of unification of the Earth with the sky, having been moulded from earth on the order of Zeus, the god of the sky, and sent to mankind as a punishment for the theft of fire by Prometheus the Titan. Prometheus who gave the stolen fire to mankind, is punished as well, chained to a rock in the Causcasus where each day an eagle feeds on his liver.

In many areas throughout the Mediterranean heavenly or sacred rocks are found, associated mythologies sometimes linking them with meteorites, and thus, with the sky and also with fire (Burke 1986 219). At Delphi, near the Gulf of Corinth in central Greece, the stone of *omphalos*, the navel of the world, is the meeting place of two eagles, sent out each day by Zeus in opposite directions, east and west (see

Chap. 9, Sect. 9.2). The *omphalos* at Delphi marks the shrine where since early antiquity the god Apollo was believed to speak through a priestess, the oracular site going back perhaps millennia (see Chap. 5, Sect. 5.6). And it was the Delphi priestess, the *Pythia*, who had guided the founding of new cities in ancient Greece.

1.5 Civilization and the Fading of Environmental Myths

The famous Greek legend associated with Pandora offers a bodily, gender outlook that binds the sky and the earth. Myths stemming from the theme of a sacred stone as the world's navel, *Axis mundi*, offer a feminine meaning to a founding notion of the built environment. From pre-history to antiquity, cities and larger settlements have been built round a central open place, intended for ritual or civic purposes. This too seems to be a case of feminine embodiment in space (Chap. 3). Other feminine aspects are inherent in the primordial city-form, from early antiquity the early Middle Ages, but increasingly diminished or absent in the contemporary North American winter-city.

Since antiquity, cities have also often radiated from a central place adorned by a focal monument or lined with a cathedral or civic buildings of significance, on a plan ordered to cardinal directions. In his novel, *Ulysses*, James Joyce dubs the tallest building in Dublin the stone of *omphalos*, as a link between the earth and the sky. In this later stage, the *Axis mundi* attains a masculine symbolism.

In the way of a masculine sky myth, contemporary cities have retained more than meets eye from many features of ancient cities. The contemporary city has perpetuated archaic sky symbolism in the orientation of its streets and in the ever increasing height of its skyscrapers. Yet, to the extent that the nightly starry sky has all but vanished from the industrial and postindustrial city, the object of this urban symbolism has been diminished, or it disappeared altogether.

The perceptual link of humans with their immediate built environment as well as with the sky has been severely affected in the industrial metropolis, once famously called "a memorial to an inordinate capacity to create ugliness, a sandstone excretion cemented with smoke and grime" (McHarg 1971: 1). While air-quality in cities and cleanliness on streets have vastly improved since the days of this discerning one-liner by Ian McHarg, the Scottish architect and naturalist, suburban sprawl and associated traffic congestion in cities, along with traffic hazards, crime, and other urban ills, have set back the overall urban quality of life. The automobile, in fact, has been viewed as disruptive of our evolutionary traits nurtured by walking (Regal 2004: 120), as well as fostering urban alienation (Chap. 15). Barely noticed in the transformed industrial and postindustrial ambience, the stars have disappeared from the city's nightly sky.

While Benjamin's unfinished work had addressed the dynamic relation between the urban environment and minds within it, a link between the body and the *lived* space is the subject matter of the phenomenology of Maurice Merleau-Ponty (see Chap. 2). In Merleau-Ponty's phenomenological inquiry the place of the human body within its environment is the perceptual foundation from which the notion of lived space emerges (Merleau-Ponty 1962: 440). "The body is our general medium for having a world," writes Maurice Merleau-Ponty in his *Phenomenology of Perception*. The immediate urban meaning to such statement, is that towers but also all edifices are projections of masculinity in the built environment, while voids are, similarly, projections of femininity (see Chap. 11, Sect. 11.2 and Chap. 14, Sect. 14.6).

The postulation itself of continuing and mutual interaction between human bodies and minds with their built environment may be less contentious than the proposition that the origin of mind-environment interaction ought to be sought in a perceptual link between the *absolutely immediate*, the human body itself, and the *unreachably distant* of our own three-dimensional spatiality, the sky (Chap. 13). There is nothing physically more immediate to *me* than my own body, from which a link can be presupposed with primordial bodily paradigms, Jung's Anima and Animus (Jung 1966: 188–211), while sky myth "represents the summation of the psychological knowledge of antiquity" (Jung 1962: 142; also Chaps. 2 and 3).

Perhaps perceived as the least of contemporary urban ills, light-pollution makes it impossible to gaze at nightly skies due to the abundance of artificial lighting. Yet it has been the nightly sky that has accompanied humanity on its journey through millennia to the industrial age. Obviously, light pollution is entirely consistent with urban life of the industrial and postindustrial age. To that extent, this relatively unnoticed depravity from millennia past, as well as from the hundreds of years of early urbanization, alludes to a measure of inevitability in the loss of a guileless evolutionary trait of our civilization: That of fantasy and mythmaking nurtured by outer nature rather than by a personality disorder from within (see Chaps. 11 and 14, Sect. 14.2).

In many respects the quintessence of resourcefulness and imagination that it is, the postindustrial city has been also personification of the taming and suppression of nature (Akkerman and Cornfeld 2010). Largely a manifestation of Cartesian science and technology, the industrial and postindustrial city, the largest artifact ever created by humans, has been guided by Descartes' other notorious statement (Discourse VI):

> [K]nowing the force and action of fire, water, air, the stars, the heavens, and all the other bodies which surround us, as distinctly as we know the different skills of our artisans, we can use them in the same way for all the purposes to which they are suited, and so make ourselves the masters and possessors, as it were, of nature. This is to be desired […] for the invention of an infinity of artifacts […] (Olscamp 2001: 50)

There could hardly be a better description of the Cartesian impact of science and technology on urban minds than one by Descartes' fellow Frenchman, Jean-Paul Sartre, some 300 years later:

> They come out of their offices after their day of work, they look at the houses and squares with satisfaction, they think it's their city, a good, solid bourgeois city. They aren't afraid, they feel at home. All they have ever seen is trained water running from taps, light which fills bulbs when you turn on the switch, half-breed, bastard trees held up with crutches. They have proof, a hundred times a day, that everything happens mechanically, that the

> world obeys fixed, unchangeable laws. In a vacuum all bodies fall at the same rate of speed, the public park is closed at 4 p.m. in winter, at 6 p.m. in summer, lead melts at 335 degrees centigrade, the last streetcar leaves Hotel de Ville at 11.05 p.m. They are peaceful, a little morose, they think about Tomorrow, that is to say, simply, a new today; cities have only one day at their disposal and every morning it comes back exactly the same. (Sartre 1933/2007: 158).

1.6 The Thread of the Present Study

Scanning the table of contents of the present study one may ask: What has urban alienation to do with Upper Paleolithic Venus figurines, or with the various notions of the Ideal City? And what do these have to do with Plato's 'Myth of Er', Jaspers' Axial Age, and the North American winter-city? The commonality binding these apparently disparate subjects is the centrality of *myth* in a cognitive chain of northwardly impact upon human beings and the built environments or the material culture they have created. Human bodies, as well as the weather, the atmosphere and the sky have been the primordial consideration that had sparked a chain of interaction between the built environment and minds within it. This study is an attempt to show how myth within this chain of interaction has led to the emergence of modern city-form, and how myth is still today ingrained in the winter-city in particular.

Winter-cities of North America are considered to be those along the 45th parallel and north of it that often endure, in spite of possible global warming, very cold winter periods. On the other side of the historic chain of cognition that has led to present-day winter-cities, as well as to contemporary city-forms across much of the world, are Upper Paleolithic Venus figurines that have been found, largely, within or near a geographic strip, here referred to as the Diluvial belt, roughly enveloping the 45th parallel north, across Eurasia. It is also approximately within the Diluvial belt that most Neolithic cup-and-ring marks have been found. Extending the Diluvial belt to North America, most medicine wheels can be located within it as well (Chap. 2).

The environmental chain of events, extending millennia, between prehistoric stonework and North America's winter-cities is multifold. An important link in this chain is classical antiquity geographically distributed within, or in close proximity to the Diluvial belt, between the Tropic of Cancer and the 45th parallel.

The proximity in the geographic latitudes betrays an important common feature in mythmaking. This feature is the emanation of sky patterns that appeared correspondingly similar to human observers at these latitudes. First and foremost among these patterns was the stationary North Star, an unchanging pivot of the nightly sky round which the heavens seem to rotate each night. Together with the widespread use of the wheel, in transportation or in pottery and fabric weaving, is it surprise that people tried to explain the nightly rotation of the sky through transcendent celestial agents? It is the latitude between approximately the Tropic of Cancer and the 45th parallel, where the North Star appears in the field of casual vision of a chance human observer, weather and topography allowing. The number of circumpolar stars, those that never set below the horizon throughout a night, increase with higher northern latitudes. But north of the Diluvial belt the North Star approaches the zenith right overhead, not being amenable to casual view, while south of the Tropic of Cancer the North Star is too close to the horizon, with a diminishing number of circumpolar stars to observe.

These considerations are of further interest when considering the period 800–200 BCE, called Axial Age by Karl Jaspers. Axial Age was claimed by Jaspers to have given rise to a simultaneous moral awakening across ancient civilizations. Jaspers likely was not aware that the period 900–300 BCE spanned a neoglaciation cooling event, usually referred to as the Iron Age Cold Epoch. It was during this time, naturally, that more intensive use of agriculture and settlement construction would be required, and the wheel would have been an immensely important technological advance making all aspects of labor more efficient. The moral awakening, observed by Jaspers, could be a fair interpretation of the religious and social codes of Axial Age civilizations. But it was through human resourcefulness and imagination that Axial Age civilizations have produced their religions in the first place. Material culture related to the wheel, and illustrious humans designing, manufacturing and operating it, were the subjects of a mental projection upon the clockwork universe, creating myths of a transcendent operator.

Essential in the secular explanation of Axial Age civilizations is the North Star. The North Star was instrumental as a nightly beacon already to hominins and early humans ‘Out of Africa’ and it continued to be so for hunters and gatherers throughout the Late Pleistocene. Upper Paleolithic Venus figurines were likely earthbound goddess images, perhaps contrasting corresponding masculine deity images in the sky – the sun or the North Star. The prevalence of the Venuses along the 45th parallel throughout Eurasia could be thus explained as a juxtaposition of male and female deity symbols.

Similarly, Neolithic cup-and-ring marks, concentric circles carved on rocks, as well as numerous medicine-wheels in the Great Plains of North America, endorse the image of the rotating sky. Frequently extended straight line from the centre of a cup-and-ring mark, or similarly extended straight ‘avenue’ from the centre of a medicine-wheel, conceivably represent the axle round which the heavenly canopy was believed to rotate. If so, the myth of *Axis mundi* has been perhaps the longest-lasting environmental allegory in all human history and prehistory.

Fashioning a satisfactory, *masculine*, explanation for the rotation of the nightly sky, or the diurnal and annual journey of the sun across the sky, cognitive *embodiment*, the projection of gender myth upon the built environment had also led to the first, deliberately designed settlements (see Chap. 9). *Axis mundi* is central, albeit not explicit, in Plato’s ‘Myth of Er’ a trance-like description of deities spinning the celestial spheres, shown to correspond to the plan of Ecbatana, a city in Media, Persia, and corresponding also to Plato’s own vision of his ideal city of Atlantis (Chap. 7, Sect. 7.5; Chap. 9, Sect. 9.2). During the Renaissance Neo-Platonic images of ideal cities came to be implemented in planned New Towns, at least one of which was near Descartes’ whereabouts on November 10, 1619, the date of his vision equating the streetscapes of a New Town with his notion of Clear and Distinct Ideas. Contrasted with tortuous Romanesque streetscapes shrouded in an autumn fog, and likely evoking in him the notion of methodical doubt, orthogonal streetscape plans of Renaissance New Towns exuded certainty, visibility and predictability. The orthogonal Renaissance streetscape would have carried major impact upon Descartes' advent of coordinate geometry, while the contrast with Romanesque streetscapes would have been the backdrop to his attempt to establish a systematic, rationalist philosophy and science (Chap. 12).

Descartes exemplifies a case in the evolution of the mind-city composite. An important link in this evolution is the seemingly consistent association, at least on the European continent since antiquity, between mental illness or mood disorder, and the city, as many chapters of this book show. Descartes' alienation, emerging from his notorious description of cloaks and hats, is only one illustration of mood disorder historically associated with the urban environment.

An important backdrop to Cartesian philosophy and science, as cornerstones of modernity, had been the half-millennial LIA cooling event. Inevitably, one may ask, is there, then, resemblance between the industrial and scientific revolutions of the LIA, and the Axial Age advances of the Iron Age Cold Epoch? And if so, should we also draw a parallel into our own, post-LIA future from the millennium-long period of the dark ages in Europe that followed the Axial Age? (Chap. 11, Sect. 11.7). One important analogy with Axial Age made here is the almost simultaneous emergence of Existentialism and Marxism at the end of the LIA. Mood disorder within European built form of the nineteenth century had affected Søren Kierkegaard, Friedrich Nietzsche and others, and there is a good reason to believe that it was weather-related. Some disconcerting parallels are, in fact, drawn here between the environmental conditions of nineteenth century's urban Europe, north of the Alps, and contemporary North American winter-cities (Chap. 14).

An ominous message from that comparison is in the near-simultaneity of the anguish emanating from Existentialism, and the violence embraced by Marxism. "Those who cannot remember the past are condemned to repeat it," said George Santayana. If nothing else, this study is a footnote to Santayana.

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Part I

Winter and the North in the Emergence of Civic Space

Chapter 2
Human Posture and the Nightly Sky: Cosmos in Prehistoric Myth

2.1 Introduction and Summary

E.O. Wilson, the founder of sociobiology, has pointed out that religion and its rituals are the product of evolution. This chapter extends Wilson's proposition in arguing that celestial sky patterns, the North Star and the circumpolar stars in particular, have been indispensable in the creation of myth. The nightly pattern of sky firmament seemingly rotating round the North Star had been vital to the cerebral progression of anatomically modern humans and in the evolution of their communities and settlements.

As permanent and fixed beacons in the northern sky, the North Stars over millennia had 'guided', so to speak, early humans out of Africa, humanity's ancestral land, northward to the vicinity of the Arctic Circle, in the Eurasian region between the Baltic Sea in west and the Chukotka Peninsula and the Bering Sea in the East. Between approximately 22,000 years Before Present and 17,000 years BP the last major glaciation of the Pleistocene occurred. This was a periodic event marking also the last Pleistocene glaciation period. At each such event the Earth's water froze in the great ice sheets covering North America and Europe, causing their expansion, and a corresponding drop in sea levels. A land bridge linking Chukotka, Siberia, and Alaska, North America, formed following falling sea levels and remained a contiguous land connection between Chukotka and Alaska until about 11,000 BP. Much of the initial human settlement of the Americas is thought to have occurred during this time, as hunter bands of humans following big-game animals began crossing the Beringia land bridge.

Mainly through the myth of the world axle, associated with the North Star, in an anthropomorphic gender projection the sky had become an object of masculine attribution to North-Hemispheric peoples during this transitioning epoch. Upper Paleolithic Venus figurines, the feminine Earthmother complement of the masculine sky myth, can be easily mapped as distributed along a Eurasian geographic band

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where North Stars along with circumpolar stars, through precessions of the equinoxes, would be effortlessly visible.

Later Neolithic cup-and-ring stone carvings and round enclosures in Europe, as well as medicine-wheels through the Great Plains, manifest the myth of the world axle along the geographic band of the Upper Paleolithic Venuses, extended to North America, and here referred to as the Diluvial belt. Upper Paleolithic Venus figurines and Neolithic cup-and-ring marks are two distinct types of prehistoric stone art, that are brought into a single focus of triple causal nexus, the other two causal actors being the Neolithic observations of the nightly sky, and gender.

The world axle on cup-and-ring marks or medicine wheels is often represented by a linear groove that leads to the centre of the cup-and-ring mark, or the medicine wheel, whereby the centre itself is often hollow, as in a celestial void that might represent femininity. This chapter focuses on the link between gender, prehistoric stone art and Neolithic observations of bright stars in the vicinity of the north celestial pole. This triple causal nexus would lead to Neolithic round enclosures in Europe, and to American medicine wheels, as the community loci where rituals and early civic procedures would take place. This is how the sky became not only the source of myth, religion and rituals, but progressively also an important instrument in the evolution of civic communities and their settlements.

2.2 North Stars of the Late Pleistocene: The Mythical Beacons

Casual and ongoing observation of the sky in humans is facilitated through upright posture and bipedal gait. Human posture and gait may have been as constructive to human cerebral evolution as was tool-making. Such a proposition has been put forward with the discovery in Kenya of cranial fossils, at the turn of the century, suggesting that *Homo erectus* had not evolved from *Homo habilis*, as believed previously, but the two species had coexisted as separate lineages (Spoor et al. 2007). To the Roman poet Ovid (43 BCE–c. 18 CE), the erect man was in fact the only creature that could imperturbably raise its eyes towards the sky.

> On earth the brute creation bends its gaze,
> but man was given a lofty countenance
> and was commanded to behold the skies;
> and with an upright face may view the stars. (*Metamorphoses* 1: 76)

While neither upright posture nor bipedal motion are exclusive to humans, upright posture *and* bipedal motion are nearly unique human capacities. Barring chimpanzees, who are able to, and occasionally do walk on two, and penguins, humans are indeed the only species who, due to their rare deportment, are able to *casually* turn their eyes skyward while walking, topography allowing, without much lifting of their heads.

Celestial observations and the mental ability to sort and assimilate them were the source of beliefs and superstitions, and seem to have emerged independently of the ability to make tools, and quite possibly, even preceded and inspired *some* tool-making. The progression, according to a mainstream supposition, from *H. erectus* to our very own ancestor, the *H. sapiens*, some 300,000 years ago, lends support to the view that posture and gait, along with some observational opportunities in the nightly sky, had guided not only cerebral progress and tool-making but ultimately, during the Late Pleistocene and the Neolithic, also human migrations and early colonization.

A transgenerational observational tradition across millennia of the Late Pleistocene, c. 125,000 years Before Present – 12,000 years BP (or c. 10,000 BCE) evolved at certain geographical latitudes and topographic conditions. Hominins and early modern humans, north of the Equator, on plateaus where no forests or mountains would hamper their nightly view of the sky could watch the North Star as the pivot round which the rest of the sky revolves each calm night. Sporadic observation of the nightly sky, thus, may have started with *H. erectus*, or *H. ergaster*, setting in motion migration northward, as if toward the permanent beacon in the sky. End of the Pleistocene was marked by sharp temperature swings that had commenced about 50,000 BCE, the onset of the Upper Paleolithic. With the dawn of global warming, about 16,000 BCE, the North Star was Deneb (Alpha Cygni), within 5° of the celestial North Pole at that time. Slowly during the next four millennia the brilliant star Vega (Alpha Lyrae) had become the North Star. The appearance of Deneb and Vega at the end of the Pleistocene happened to coincide with the retreat of glaciers. A prominently visible pole star in the nightly sky would have marked direction for those bands of hunters and gatherers who did not become sedentary through agriculture or domestication of animals.

During precession of the equinoxes, a period of about 25,800 years, the Earth's axis oscillates pointing to different parts of the sky, resulting in the North Star of today being Polaris, as it was also 26,000 years BP. Even though it never comes closer than 5° off the north celestial pole, the brilliant Vega at 40,000 BP and at 14,000 BP *was* the North Star. With its exceptional brightness (0.03 apparent magnitude, as measured in observational astronomy), Vega is the fifth brightest in the entire sky. In contrast, Polaris is only the 45th brightest star in the nightly sky.

During the Upper Paleolithic, approximately 50,000 BP–18,000 BP, hunters and gatherers depended on the North Star for navigation. Seeking varying proportions of leafy vegetables, fruits, nuts, insects, meat, fish, and shellfish, they were lured northward by the North Star during summers of abundance of game and fish. In higher latitudes during the Late Pleistocene they and their communities became trapped by the winter cold, and could no longer seek natural shelter. Now they had to gather not only food, but also firewood, and animal bones and hide for their tools and clothes. They also could not always rely on caves but occasionally had to construct their own shelter. Through the menace of the natural environment, not the least the winter cold, lightning, wind, rain, ice and snow, construction of sturdy shelter, further north of the Tropic of Cancer, and towards the North Polar Circle became existential necessity. Observational skill as well as tool-making enabled communities of early modern humans to build shelter, in a survival effort to counter the whims of the environment (Wygal and Heidenreich 2014).

Inevitably, the sky, and its bright stars in particular, had been instrumental, if not indispensable, in the creation of myth. Recently, a conjecture has been made linking the nightly sky with prehistoric rock-art as a cognitive projection of gender, among other things (Christian 2014: 26). This chapter focuses on the link between gender, prehistoric stone art and Neolithic observations of bright stars in the vicinity of the north celestial pole. Two distinct types of prehistoric stone art, Upper Paleolithic Venus figurines and Neolithic cup-and-ring marks, are brought into a single context within such triple causal nexus.

2.3 Art and Mind of the Upper Paleolithic: The Eurasian Venuses

It is commonplace that domestication of plants and animals during prehistory had yielded food surpluses that allowed for free time, and thus facilitated the advent of writing and counting. But whereas writing and counting is traced to the end of the Neolithic, 5300 BCE–3500 BCE and later, it was millennia earlier in the Upper Paleolithic when first artistic expressions took place.

Emergence of art in the Upper Paleolithic was likely due to the increase and variety of tools used to build shelter or to manufacture implements for living. End-scrapers and chisels became widespread and work with flint was improved and refined. Different types of raw materials other than stone, including bone, antler, and ivory, came to be used, although little of it survived to this day. Uncovered Upper Paleolithic art consists of decorated bone, ivory, and antler objects, shell and ivory jewelry, and ivory figurines of animals and birds. Remains of flutes made out of bone indicate also that the onset of music creation had occurred at the turn of the Upper Paleolithic (Haviland et al. 2011).

Paleolithic paintings or carvings on rocks or on cave walls most often represent a hunter's experience of animals or other hunters, and are found distributed throughout the world. The oldest such paintings, from about 15,000 BCE, are at Lascaux caves, Vézère Valley, in southwestern France. Three-dimensional stone art from the Upper Paleolithic constitutes, however, almost exclusively female Venus figurines, and only occasionally some art depicting lions, rhinoceroses, feline, bear, bison and mammoths (Sandars 1995: 115–118). The prevalence of the Venus figurines, furthermore, is throughout a Eurasian geographical belt following roughly the 45th parallel, from central Siberia to the Atlantic coast. Karel Absolon, a major personality behind the unearthing of one of the figurines, dubbed the Venus statuettes 'Diluvial,' (Absolon 1949) and hereinafter a reference to the Eurasian geographical belt of the Venus findings will be as *Diluvial belt*, extended also across the Atlantic and onto North America's Great Plains.

Many of the extant hundred or so Upper Paleolithic Venus statuettes could be attributed to the Gravettian toolmaking culture, 30,000–20,000 BCE, with the widely accepted notion of C.G. Jung that the statuettes represent the Earthmother, a goddess (Jung 1951 182). The sites of the most notable Venus figurines, from east to west, are:

Lake Baikal, Siberia, region of the Mal‘ta-Buret’ culture, 24,000 BCE–15,000 BCE;
Zaraysk, south of Moscow, 20,000 BCE;
Kostienki, Borshevo District, Voronezh Region, central Russia, 23,000–20,000 BCE;
Avdeeva, near Kursk, some 300 km from Kostienki, 21,000–20,000 BCE;
Gagarino, Lipetskaya Region, Russia, some 200 km from Kostienki, 22,000–18,000 BCE;
Moravany, Slovakia, 21,000 BCE;
Dolní Věstonice, southern Moravia, Czech Republic, 29,000–25,000 BCE;
Petřkovice, northern Moravia, Czech Republic, 23,000 BCE;
Willendorf, near Krems, Lower Austria, 28,000–25,000 BCE;
Galgenberg, Lower Austria (near Willendorf), 28,000 BCE;
Savignano, Modena, northern Italy, 25,000 BCE–20,000 BCE;
Grimaldi Caves, Balzi Rossi, northwestern Italy, 18,000 BCE;
Parabita, south of Italy, 15,000 BCE;
Monruz, near Neuchâtel, Switzerland, 11,000–15,000 BCE;
Engen, Konstanz, southern Germany (near Monruz), 11,000–15,000 BCE;
Schelklingen, near Ulm, Swabia, southern Germany, 38,000–33,000 BCE;
Gönnersdorf, near Neuwied, west-central Germany, 13,000–10,000 BCE;
Cave of Laussel, Dordogne, southwestern France, 23,000 BCE;
Cave of Lespugue, Pyrenee Mountains, southwestern France, 24,000–22,000 BCE;
Cave at Brassempouy, Landes, southwestern France, 23,000 BCE.

In the late twentieth century an explanation of the Venuses’ *features* and the geographic distribution of their sites had been put forward by Marija Gimbutas. On the view of Gimbutas a prevailing early matriarchal society and attendant gynocentric religion existed within the Eurasian axis, and was represented, precisely, by the Venus statuettes (Gimbutas 2001: 203–217). Even if there is a measure of exaggeration in her notion of prevailing matriarchy, as criticism of Gimbutas has it, the Venus statuettes are very much in line with Jung’s notion of the myth of Great Mother goddess, or the Earthmother (also Jung 1954: 75).

Another view advanced recently by Dale Guthrie suggests the Venus figurines were sculpted by men for their own sexual arousal or pleasure, as well as representing the patroness of fertility and crop abundance (Guthrie 2005: 152–3, 321–4). Such explanation seems to also address the geographical delineation of the Venuses’ sites, as well as the frequently exaggerated breasts and hips of the figurines. In more southerly locations, and certainly closer to the Equator, anatomically modern humans were likely almost nude for parts of the year, even during the late Ice Age.

In such locations, then, there would be little need to depict nude female bodies even for men desiring sex. In Siberia, the Urals and in Europe north of the Alps, humans and certainly women, would be clad all year round during the late Pleistocene, some of the men thus expressing their own sexual drive through sculpting nude females emphasizing or exaggerating body parts that were the particular focus of their desires.

The third hypothesis put forward regarding the Venus statuettes is that they are self-representations of women in the Upper Paleolithic (McDermott 1996: 227). Perhaps a synthesis of all three views is the closest to the passion and thought behind the figurines. But the last view presented, as if the statuettes are self-portraits or self-representations, seems particularly intriguing in light of the fact that all Venus figurines are consistently faceless. It is worth noting, in this regard, a remark by Maurice Merleau-Ponty made in his *Phenomenology of Perception*:

> My head is presented to my sight only to the extent of my nose end and the boundaries my eye-sockets […] My visible body is certainly an object as far as its parts far removed from my head are concerned, but as we come nearer to the eyes, it becomes divorced from objects, and reserves among them a quasi-space to which they have no access […] (Merleau-Ponty 1962/1994: 78–9).

Location of the Venus figurines within the Diluvial belt, at roughly 45° northern latitude, could be also timed to between 38,000 BCE and 10,000 BCE, a period spanning the last precessional cycle of the Pleistocene. Most of the Venus sites listed had figurines carbon-dated to the peak period of the three bright North Stars, between 24,000 BCE and 11,000 BCE, with Deneb and Vega peaking at about 16,000 BCE and 12,000 BCE, respectively, and with Polaris peaking at about 24,000 BCE.

In most, if not all, north-hemispheric mythologies the sky has the attributes of masculinity (e.g. Griffin-Pierce 1992: 174–195; Leeming 2010: 332), the North Star in some North American Native myth, in fact, being a male (Archer 2000: 8). The sky has a masculine attribute also in Taoist religion (Li and Wong 1994: 24). Against the masculine sky, represented during day by the sun (also often masculine in north-hemispheric mythologies) and the North Star during night, the Venus figurine represents the Earthmother as a fitting complement. An earthbound goddess myth, represented by the Venus figurines, may have thus accompanied a masculine sky myth.

2.4 North Stars of the Holocene: The Mythical Pivots

Reinforcing the presupposition of a feminine *earthbound* goddess myth, are late Neolithic cup-and-ring carvings expressing what might be a *masculine* sky myth. Cup-and-ring carvings, often of several concentric circles, uncovered in their hundreds across mainly Atlantic coast of Europe and the British Isles, have been interpreted as depicting rotation of the nightly sky round the north celestial pole

(Castleden 1987: 74). The masculine feature is conferred by a linear channel running from the center of the rings, seemingly depicting an axle, or axis of rotation of the nightly sky.

Whereas the vast majority of the Upper Paleolithic *female figurines* originated in the Diluvial belt, a region stretching from Siberia through central Europe to France, many cup-and-ring rock engravings of later periods, the Bronze Age and early Iron Age, were unearthed in the Western-European part of this very same region.

The relation of the cup-and-ring marks to the north celestial pole is noticeable. A strikingly brilliant pole star, stationary in the northern sky throughout the night and throughout the year, across the entirety of a human life and over generations, would have set off myth about a nightly beacon in the sky. At about 12,000 BCE Vega, observed from the vicinity of the Equator and elsewhere north thereof, appeared as a brilliant, unmoving pivot with the nightly sky revolving round it. To the naked eye and without much observational skill, Vega would come into view at a constant, stationary celestial location, with the entire firmament seemingly spinning around it throughout a night.

It is the auspicious feature of the Pole Star, that the angle at which the Pole Star appears to a viewer on earth, i.e. its altitude above the horizon, equals the latitude of the viewer's location. Up to about 45° northern latitude, then, the North Star appears within an ordinary field of vision of any human being in a casual upright position, provided the field of vision has no topographic or terrain obstacles. Humans in upright posture, who are at the latitude of about 45°, need not significantly lift their heads in order for the pole star to come into their view. In latitudes of about 60° or higher the pole star begins to approach the zenith, and in order to see it, one must lift one's head. This becomes progressively strenuous with closer proximity to the pole where the Pole Star is exactly overhead, and thus becomes also useless for navigation.

Indeed, mythology of the Inuit, though involving stars and asterisms, does not employ the North Star at all (MacDonald 1998: 169–173; Dunne 2011: 252). Polaris for the Inuit is known as "Nuuttuittuq" but in myth "the North Star […] appears to have been unknown to the peoples of the North" (VMC 2014). Even in more contemporary Inuit legends there is no mention of the North Star (MacDonald 1998: 59–62). In contrast, the North Polynesian people, for example, still refer to Vega as the year-star (Smith 1919). At about 20° latitude north, the North Star in Northern Polynesia has been always within a convenient view, just above the horizon. Similarly, in the ancestral mythology of America's Great Plains First Nations, the North Star plays a prominent role (Dorsey 1997: 134–137; Archer 2000: 8–12).

It was the coincidence of Vega and Deneb as North Stars that had marked the end of Pleistocene epoch characterized by an initial global warming during the period 18,000 BP–12,000 BP. As opposed to preceding variably frigid age of the Pleistocene, the warmer temperatures allowed people to gradually turn from hunting and gathering to agriculture in forest gardening and to domesticating animals and farming. Forest gardening, the oldest method of food production using low-maintenance woodlands, allowed for the frequent harvesting of fruit and nuts from trees and herbs, and of vines and perennial vegetables from shrubs. Elsewhere, wild grains were also increasingly available. Grain, fruit and vegetable harvesting enabled nomadic bands of hunters and gatherers to store some of the food produced as surplus for the winter season, and thus facilitated the founding of sedentary communities of humans in permanent settlements. In South-American jungles or in the South-African bush, or in lash Mediterranean areas, pastoralist communities could not be familiar with the pole star, due to high vegetation surrounding them. In some coastal areas or on the plains and plateaus of the Fertile Crescent, and of the Great Plains of North-America, on the other hand, the North Star would be visible through each night, weather permitting.

From about 18,000 BP to about 10,000 BP, thus, on shores of seas and lakes facing the north, in highlands, and expansive plains north of the Equator, an inescapable observation would have been made time and again during each starry night in the course of the entire year, and by multitudes of humans. Throughout this period of some six millennia the nightly sky along and north of the Equator had a salient feature in the nightly rotation of the firmament round seemingly permanent location in the nightly sky of the incumbent north stars: the star Deneb, at 18,000 BP, and then Vega, at 14,000 BP. For people north of the Equator the opportunity to continually observe the pole star each clear night lasted the entire year, as long as the view was not hampered by weather, topography or high vegetation. Additionally, not only were Deneb and Vega the incumbent north stars during this period, but together with the star Altair (Alpha Aquilae) they also are the bright vertices forming a prominent asterism in the nightly sky, known as the Summer Triangle.

The periodic retreat of glaciers allowed nomadic hunters and gatherers to find new sources of fish, game and arable or pasturable land (Richerson et al. 2001: 387). The North Star would have been instrumental in guiding nomadic human communities to northward regions of the Earth to seek such new sources of livelihood. Communities of reindeer hunters in Europe, known as the Hamburg culture, had arrived to the southern shores of the Baltic Sea at approximately 15,500 BP (Riede 2011: 251–264). The prehistoric ancestors of the Yupik and the Inuit peoples of the northern parts of Siberia and of North America, may have arrived at Chukotka Peninsula in the northeastern extremity of Asia, around the same time, towards end of the Pleistocene (Bonatto and Salzano 1997: 1866). The beacon of the North Star along with the retreat of glaciers could help explain the northwardly movement of people both in the west of Europe and in the steppes of eastern Siberia. The masculine myth associated with the North Star, that had guided during the latter part of the Pleistocene the production of the Diluvial Venus figurines, had also guided, during this period, humans to vicinity of the Arctic Circle region between the Baltic Sea, and the Chukotka Peninsula near the Bering Strait.

A land bridge to Alaska formed following falling sea levels and remained a contiguous land connection between Chukotka, Siberia, and Alaska, North America, until about 11,000 BP (Elias et al. 1996). Much of the initial human settlement of the Americas is thought to have occurred during this time, as hunter bands of humans following big-game animals began crossing the Beringia land bridge (Morritt 2011: 178).

2.5 Pole Stars and Hemispheric Paradigms of the Nightly Skies

By the onset of the Holocene humans along the Diluvial belt would have recognized the importance of the North Star as the permanent beacon in the sky always pointing northward towards the source of cold winds as well as game and birds flying south before the onset of the winter. At around 3000 BCE, however, the North Star was no longer a magical brilliant beacon in the nightly sky. The North Star at the time was the faint Alpha Draconis, barely visible to the naked eye during the period when the cup-and-ring stone art was being produced, most commonly between 4000 BCE and 2000 BCE. It is more likely that the almost invisible Alpha Draconis substituted for a void in the nightly sky round which the firmament was revolving. Millennia old tradition based on previous observations of the sky, and the attendant myths, had very likely resulted in perpetuation of careful nightly sky observations which ultimately inspired the uniform pattern across the northern hemisphere of stone carvings of concentric circles. Consistent with the void represented by the almost invisible North Star, many cup-and-ring stone carvings, in addition to concentric circles, contain a centermost depression, also suggesting a pivotal void round which the firmament revolves.

Not only cup-and-ring carvings, but a plethora of Neolithic round enclosures throughout central and Western Europe, the British Isles, and the Great Plains of North America seem to suggest consistent observational opportunity, for some of the northern hemisphere's human inhabitants, to witness the revolving nightly firmament. Most prehistoric circular enclosures as well as Neolithic modules of early urban communities had occurred in the northern hemisphere, often associated with burial and fertility rituals, and sometimes astronomically aligned to the solstices (Mann 2011: 143–146).

By about 18,000 BP both northern and southern hemispheres were largely inhabited by humans. Nevertheless, any brief survey shows that the *earliest* civilizations, those of the chalcolithic and Iron Age, evolved in the northern hemisphere along a Eurasian band between, approximately, the 20th and the 45th parallel northern latitude. Classical Antiquity had emerged within this band, between China, the Indus Valley, Mesopotamia and the Near East, and Classical Greece and Rome, in the relatively recent period, 800 BCE–200 BCE. Karl Jaspers had referred to the north-hemispheric civilizations of this Eurasian band as Axial Age Civilizations (Jaspers 1953; Schwarz 1975). The congruity with the Diluvial belt of the Upper Paleolithic is not accidental. Extending the Diluvial belt through the Americas, the main urbanizing civilizations prior to the first millennium BCE, would include also the Maya and the Olmec (later the Aztec).

The northern hemisphere is 60.7 % water and 39.3 % land. The southern hemisphere is about 80.9 % water and 19.1 % land. The land area north of the Tropic of Cancer and south of the North Polar Circle is about twice the entire land area south of the Equator, excluding Antarctica. Correspondingly, at least three urbanizing cultures can be identified in South America, south of the Equator, and prior to the first millennium BCE, all of them with a clear view of the entire southern skies.

Norte Chico, a Peruvian civilization that existed between 3500 BCE and 1800 BCE had occupied Pacific Ocean coastal areas, and adjacent vast arid plains (Solis 2006: 28). Its people, unlike those in the interior regions of the continent, would have had mostly clear view of the southern skies, including the south polar star. Similarly, people of the Wankarani culture in the southern Altiplano highlands of Bolivia, which had emerged c. 1800 BCE, would have the entire southern sky in their field of vision. Their communities were characterized by dwellings of a round groundplan (Fox 2007), adjacent also to hilltops that two millennia later would sport concentric irrigation rings, or defense walls, dating to the more recent Inca period (Janusek 2004: 31–49).

The third South American civilization of interest is the Chavín culture, a river valley people that had emerged c. 1300 BCE, at a river confluence, over 3000 m above sea level, in a coastal highlands region north of the Norte Chico expanse. Chavin was a stratified society possibly dominated by priesthood elite, supported by highly ornate architecture, sculpture and ceramic wares (Kanō 1979: 13–20). The nightly sky impact seems to be evident in “stamped circular dots on these wares [as] another sign of Chavin influence” (Quilter 2013: 158).

At around 4000 BCE the 0.5 magnitude star Achernar (Alpha Eridani) came within about 8° of the southern celestial pole, and the human inhabitants of the Andes would likely discern the Southern Star at the very onset of their civilizations, at mid fourth millennium BCE. But the Andes highlands strip along the pacific coast of South America appears to be the sole geographic location of early urbanizing civilizations south of the Equator.

In the *northern* hemisphere it was likely due to fortuitous topography that early modern humans within the Diluvial belt had the prime opportunity to juxtapose, for much of the precessional cycle, the comforting constancy of a pole star with the spinning of the surrounding celestial sphere. The frequently brilliant pole star of the orthern hemisphere, and the nightly sky revolving about it, likely constituted the initial navigational beacon of migrating bands of humans, and later guidance for the construction of some early settlements in the North.

Similarly, one could suggest at least three reasons as to why the southern celestial pole played no major role in migration southward or in the emergence of first south hemispheric cultures, save perhaps those in the Pacific Andes strip. Due to abundance of vegetation, including rain forest, in a wide band along the Tropic of Capricorn, humans south of the Equator could seldom see the horizon above which the South Pole star might be visible. The second explanation is that much of the population throughout the Southern Hemisphere constituted pastoralist society, perhaps also with a somewhat lesser need for regimentation against prowling bands of other humans then their northern counterparts. More favorable climatic conditions than north of the Equator made it less necessary to store food for inclement seasons, and to create administration and infrastructure for its distribution. Identifying the celestial South Pole, as a fixed point in the nightly sky, even if it were clearly visible, had no utility to pastoralist communities surrounded by abundance of food sources.

The third explanation for the lesser role of the South Star is grounded in observational difficulty for the naked eye to identify the celestial South Pole. The two incumbent southern pole stars, Canopus and Achernar, both appear situated within the Milky Way, studded with medium bright stars. Achernar in fact is within the Milky Way Galaxy. But the brightness of the two stars loses much of its effectiveness on the background of the Milky Way which also is brighter in the Southern Hemisphere than it is in the northern hemisphere. To humans of the early Holocene the celestial South Pole would be as difficult to discern, due to the brightness of the Milky Way, as it would be to the naked eye observer today when there is no clearly visible star in the vicinity of the South Pole. In addition, the prominence of the southern pole stars throughout the precessional cycle is further diminished by the presence of numerous stars of first-order brightness magnitude that are nowhere near the southern celestial pole.

It is somewhat instructive that possibly the oldest astronomical observatory known on the Southern Hemisphere, is at Chankillo, Peru, 300 BCE; the second oldest is at Chichén Itzá, built by the southern Maya people in the Yucatan, Mexico (just north of the Equator), 900 CE. The third oldest is Machu Picchu in Peru, fifteenth century, CE. By comparison, Neolithic sites in the northern hemisphere, believed to be astronomical observatories, date possibly to as early as 4800 BCE (Malville et al. 1998: 488).

The difficulty to discern with the naked eye the southern Pole Star, however, certainly does not imply lack of interest in star gazing on the part of early inhabitants of the Southern Hemisphere. Common, still today, across the Andes is the belief in a quartered cosmos whereby the Milky Way bisects the night sky in one season and in another season it bisects it in a perpendicular fashion (Urton 1981). The South Hemispheric nightly skies offer some magnificent asterisms, the Southern Cross constellation being one, but in the formative millennia of the early Holocene, none of these constituted a stationary feature of the nightly sky.

2.6 The Myth of *Axis mundi*: A View from Neolithic Cup-and-Ring Carvings

It seems that the early interest in the skies, albeit universal across the world, may have been mainly in the northern hemisphere anchored in the Pole Star, as the cup marks attest. In contrast to the cup marks and round enclosures, almost exclusive to the North, carvings of animals and men on the walls of caves have been uncovered on both hemispheres.

On a few occasions, carved images of humans and animals show a human *with* an animal face. Such is the case at the cave of Lascaux (Witzel 2012: 381), southern France, and also at uKhahlamba/Drakensberg Park, South Africa. The cave paintings at Lascaux are from about 15,000 BCE and the Drakensberg paintings are from about 1000 BCE. In the cave of Lascaux, among hundreds of paintings of animals, perhaps the one most renowned piece of art consists of three painted figures: a bull, a bird on a pole, and a dying man with a birdlike face. The cave painting at Drakensberg shows "a reclining, antelope-headed man surrounded by imaginary beasts, or an insect-like humanoid covered with wild decorations" (Jaroff 1997).

It has been pointed out in recent years that some of the Lascaux cave art appears to project asterisms visible at the time continually throughout the year (Rappenglück 1999). A suggestion has even been made asserting that the alignment of the three painted figures from Lascaux corresponds to that of the Summer Triangle, visible throughout the year from southern France 17,000 years ago when the art was produced (Sheehan 2010: 61).

In a comment not unlike that of Guthrie's argument regarding the Neolithic Venus figurines, the philosopher Georges Bataille says:

> Therefore we have to believe that the human beings of the Upper Paleolithic had a religion […] This well-founded relationship allows us to assess the meaning that the paintings in our caves might have had for those who painted them. It is reasonable to believe that the human beings in the Vézère Valley […] painted the animals that they hunted in the hope that in making them appear on the cave wall, they would bring them to appear before their weapons. (Bataille 2005: 160)

To Merleau-Ponty "the first sketches on the walls of caves set forth the world as 'to be painted' or 'to be sketched' and called for an indefinite future of painting, so that they speak to us and we answer them by metamorphoses in which they collaborate with us" (Merleau-Ponty 1964: 60). The wall paintings at Lascaux and Drakensberg, on Earth's opposite hemispheres, millennia and thousands of miles apart, suggest universality and metamorphosis of a ritual, perhaps of a shamanic nature. Ritual of this character is one that has evolved over time into mournful drama performances in a public space: In Greek theatre's tragedies, at mediaeval public executions in city squares.

E.O. Wilson has pointed out that religion and its rituals are features of the evolutionary process of humans (Wilson 1978: 169–194). The identical ritual patterns of the cave paintings at Lascaux and Drakensberg may suggest so. Furthermore, as against the earthbound cave art of animals and humans, the Neolithic cup and ring marks ought to be considered, too, within a possible religious context. As a presumed *sky ritual*, "rock surfaces decorated with extensive areas of cup-and-ring marks are among the most enigmatic aspects of Bronze Age religion [such as], sun worship, or indeed associated with other forms of astronomical observation" (Ritchie and Ritchie 1991: 72). Across North America, medicine wheels – stone circular enclosures used for ceremonial and healing purposes – have been built in their hundreds by ancestral First Nations people. If there was a ritual associated with the cup-and-ring marks, it could have surrounded the scenography for a dramatic performance, much as in the case of medicine wheels, or concentric stone rings on the British Isles.

About the same time as the cup-and-ring art had been produced, concentric rings of monumental menhirs on the empty Salisbury Plain in England were being laid out in a vast megalith known today as Stonehenge, believed to have been built over the period of at least 500 years, commencing about 3000 BCE. Concentric stone rings, extant in their hundreds, albeit less towering than Stonehenge, were built across England and Scotland, often at or beneath hilltops, and across the plains of central Europe. In Israel, concentric stone rings were built some 8,000 years ago at the north-western seashore of Atlit-Yam, and on Gilgal Refaim plain on the Golan Heights. Common to many of the hundreds of sites of concentric rings is their positioning in a geographic latitude comfortable enough for continuous nightly view of the North Star, unrestricted by landscape or woods.

Cup and ring art often consists of concentric circles etched into concave rock depressions, just several centimetres in diameter, frequently also with a carved straight line leading out from the centre. Similarly, at Stonehenge, as well as at some other lithic sites such as Avebury, Wiltshire, southwestern England, a straight path, an "avenue" lined with standing stones, leads into the circular enclosure. In some cases standing stones with carvings of cup-and-ring marks forge "directing axes of movement into and out of the valley and funneling observers towards significant burial or ceremonial monuments" (Jones 2011: 89). Straight 'avenues' directed to the heart of a circle are also evident at many of the medicine-wheels of the Great Plains.

If the cup-and-ring carving and the lithic circular enclosures are representations of the rotating sky, then the centres of the rings and of the lithic enclosures represent the celestial pole. If so, the straight line originating at the centre of the concentric rings, or leading into the lithic enclosure, would most likely signify the imaginary axle, the *Axis mundi*, leading into a central hollow round which the nightly firmament revolves. Such an interpretation suggests also the projection of both masculinity *and femininity* onto the stonework or the lithic enclosure. The Neolithic round enclosure and the medicine-wheel were a community locus of utmost significance where rituals and civic procedures would take place. As possible conceptual versions of the Venus figurines and the cup-and-ring carvings, lithic round enclosures may imply gender paradigms projected not only upon the universe but also extended onto communal space of some early human settlements.

Whereas the feminine paradigm of the Venus figurine draws on the human body as an entity *absolutely immediate* to the human subject, the masculine and the feminine aspects of cup-and-ring marks arise from the nightly sky as a domain *unreachably distant*. The first paradigm could be seen as corresponding to the phenomenology of Maurice Merleau-Ponty whereby "the body is our general medium for having a world" (Merleau-Ponty 2004 123). The second paradigm, that of the *unreachably distant*, has been perhaps stated best by the contemporary storyteller, Neil Gaiman. To Ovid's poetic observation, more than 2000 years ago, Gaiman has responded with a question: "Are we human because we gaze at the stars, or do we gaze at them because we are human?"

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Chapter 3
The North, *Axis mundi* and Gender Myths in the Rise of Civic Space

3.1 Introduction and Summary

A hundred years ago, in his notion of cultural geography, Carl Sauer had extended Herbert Spencer's consideration of mind–environment interaction, alluding to a spatio-temporal continuum in which changes through human intervention in the physical environment feed back onto human cognition, only to result, yet again, in next round of environmental change that feeds back onto cognition. Independent of Sauer, Walter Benjamin, had pointed out that the same feedback process occurs between the built environment and minds within it.

The inevitable question arising relates to the initial, archaic source of the mind-environment cognitive loop continuum. Cup-marks and medicine wheels suggest that such initial source was the sun-disk and the nightly sky. Amidst ever changing, unpredictable and perilous surroundings, humans throughout the Pleistocene till the onset of the Agricultural Revolution of the Neolithic must have found considerable comfort, and inspiration in myth, in the constant and perpetual patterns the nightly sky had provided as the sole cognitive source of permanency, predictability and assurance.

With the onset of the Neolithic revolution, permanent settlements with durable structures were built. Through sky myths related to the *Axis mundi*, humans made multiple inventions, or improvements, of the wheel and ample evidence suggests that ritual places and early settlements were designed respectful of celestial myths emanating from careful observation of the sky.

The star-studded firmament, an integral constituent of millennia-long cognitive development in humans, all but disappeared, abruptly through the past hundred years of industrial and postindustrial revolutions and in the vastly expanding accelerated urbanization. In winter-cities this cognitive deficit has been exacerbated due to the almost permanent voluntary shelter people have been seeking from inclement weather, and the lack of open-air civic places.

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3.2 Cup Marks and Medicine Wheels

Usually several inches in diameter, cup-and-ring marks are found in their hundreds through the British Isles and along some of the Atlantic coastal strip of western Europe. The Neolithic rock art of several concentric circles, often engraved on standing stones, is at sites near coastlines or close to high places. The cup marks are usually sited at or near areas where millennia ago, unobstructed by topography and, presumably, free of high vegetation, the northern nightly sky could be seen all the way to the horizon. Such is the case at the Neolithic site of Kilmartin Glen, Argyll, Scotland, for example, where cup-and-ring marks decorate a henge monument, and some of the standing stones and burial cairns.

Dated to about the same time as the European cup-and-ring marks, and half-way across the world, sacred hoops, commonly known as medicine wheels, are distributed throughout the Great Plains of North America, set in circular patterns round a central cairn, also at or near high places, for the most part. Laid out on the ground often with spokes oriented to cardinal directions, or with lines of stones radiating from the centre, the oldest medicine wheels were built during the Middle Plains Archaic period, 3000–1000 BCE, by ancestral First Nations of North America's Great Plains, such as the Oxbow people in Saskatchewan and in the neighboring southwestern Manitoba and Alberta (Nero and McCorquodale 1958; Brumley 1988). There are hundreds of medicine wheels throughout the Great Plains, most of them no more than a few centuries old, but some are believed to be even older than 3000 BCE (Mirau 1995). Medicine wheels are sometimes built in concentric rings, and are typically between 10 and 20 m in diameter, larger wheels, up to about 25 m in diameter.

The Great Plains stone-works share with the cup-and-ring marks of the European Atlantic region not only their circular attributes and the timing of their prehistoric creation, but also some geographic features. Both medicine wheels and the cup marks are usually sited within or close to the Diluvial belt (see Chap. 2), i.e. along the 45 parallel, approximately, and near or at areas with a field of vision spanning almost the entire sky, or its portion to the northern horizon. Astronomical alignment in the most renowned of sacred hoops, the Bighorn Medicine Wheel, Wyoming, and in many other medicine wheels elsewhere, has been claimed in the past (Eddy 1974; Kehoe and Kehoe 1979, 1987), only to be disputed later (Haack 1987a, b). But alignment of many medicine wheels suggests that, to the very least, northerly direction played a role in their construction (Eddy 1979; Williamson 1987: 199–217).

Abundance of the ancient circular stone art on both sides of the Atlantic, at approximately the same geographic latitude, at or near high places, and at shorelines on the eastern Atlantic, could hardly be a random coincidence. Herein emerges further affinity of medicine wheels with cup-and-ring marks. A forthright interpretation of the cup-and-ring marks is that they are imprints of bright circumpolar stars revolving round a pivot – the north celestial pole – much as images of the nightly skies photographed through extended exposure (Castleden 1987: 74). Similar qualification could be applied to ancient medicine wheels, particularly to those that also include concentric rings.

At any location on the northern hemisphere, altitude above horizon of the north celestial pole, or a star nearby, is identical to the geographic latitude of the observer's location. Thus at 45° latitude north, the north celestial pole is at 45° above horizon, a comfortable angle to view for a person sitting, standing or walking. Furthermore, observer of the northern sky throughout a night at this latitude would witness a fairly large number of circumpolar stars, those that in the course of their rotation through the night never disappear below the horizon. At least the brightest of the circumpolar stars would have caught the attention of a keen Neolithic observer (see also Chap. 2, Sect. 2.4).

At latitudes closer to the equator the north celestial pole is closer to the horizon, and thus the number of circumpolar stars diminishes. On the other hand, at latitudes close to the North Polar Circle, the north celestial pole is overhead, close to zenith, and is not amenable to casual view. The incidence of cup-marks as well as medicine wheels diminishes, indeed, with proximity to the equator and to the North Polar Circle.

The interpretation of the cup-and-ring marks as imprints of the rotating circumpolar firmament is strengthened by an additional feature in many of the marks. Cup-and-ring marks often have a single linear channel, a straight line carved from the centre and leading outside the perimeter of the mark. The linear channel appears to chart the "axle of the world," the *Axis mundi*, round which the celestial sphere rotates. If, instead of a channel, an actual pole was initially extruding from a cup-mark's centre, such pole or gnomon would have not survived millennia of environmental disturbance or human interference. The absence of a groove or a channel in a cup-mark, therefore, does not necessarily invalidate its interpretation as a carved image of a rotating firmament.

3.3 Landscapes of Minds: A Cognitive Feedback

Careful observations of celestial movements and patterns, as projected onto the cup-and-ring marks, and very likely also onto medicine wheels, were, no doubt, a seminal force in the production of myths. Amidst ever changing, unpredictable and perilous surroundings, humans throughout the Pleistocene till the onset of the Agricultural Revolution of the Neolithic must have found considerable comfort, and inspiration in myth, in the constant and perpetual patterns the nightly sky had provided as the sole cognitive source of permanency, predictability and assurance.

Axis mundi and the rotating sky, the moon and the sun, would have become an indispensable source in the formation of allegories, particularly those involving rotary motion and disks. The myth of *Axis mundi* had possibly inspired the invention of the potter's wheel and the cart wheel, in Mesopotamia, the Caucasus, southeastern Europe or China during the late Neolithic (Moorey 1994: 146). At least in some of these regions the wheel, as milestone in the early technological progress of humankind, is indebted to the opportunity to continually witness disks and rotating patterns of the sky. With the onset of the Neolithic revolution, permanent settlements with durable structures were built. Sky myths related to the *Axis mundi*, had guided the design of ritual places and early settlements were designed respectful of celestial myths emanating from careful observation of the sky.

Throughout the prehistoric periods of the Ice Age and the Stone Age, and indeed, throughout much of human history, the sky was also an immense source of artistic imagination, imitation and creativity. Archaic sky myths, undoubtedly, would be determined by visual opportunities afforded by landscape features facilitating, or preventing, broad visual field of the sky. Through earth- and sky-myths an ongoing mutual impact loop had emerged between landscapes and the mind. Sky patterns, and the myth of *Axis mundi*, in particular, had set in motion this feedback through the idea of visual perfection: the circle and the straight line.

The interaction within the narrower framework of landscape, namely, the *built* environment, and the mind has been addressed repeatedly over the last hundred years. In his article "The morphology of landscape," Carl O. Sauer advanced the concept of a cultural landscape as the imposition of culture upon nature (Sauer 1925). Culture, as defined by the shared myths, beliefs and behavioral standards, manifests itself in human intervention upon natural landscape, yielding the built environment.

A fledgling contention of a feedback progression that mutates minds as well as their built environments through time is the foundational premise implicit in the work of Walter Benjamin. The notion that continuous and mutual impact between contemporaneous built environment, on the one hand, and humans within it, on the other hand, ought to be counted also as a force behind the evolution of urban civilizations, is an outlook that had emerged from twentieth century psychoanalytic survey of urban edifices and spaces of Paris and Berlin, Benjamin's unfinished *Arcades Project* (Benjamin 1933/1999). Benjamin's work provides the earliest articulation to the claim of a universal interaction pattern between mind and the built environment, as a dynamic, evolutionary progression of civilization through history, where myth plays continually a major constructive role.

Benjamin, however, did not address the primordial, initial impulse of the mind-environment interaction. Immanuel Kant, less known as a geographer than a philosopher, may have alluded to such a foundational impetus some 250 years ago. Identifying the nightly sky as the driving force behind human aspiration, in his *Critique of Practical Reason* he formulated his own epitaph now inscribed on his tombstone at Kaliningrad:

> Two things fill the mind with ever new and increasing admiration and awe, the more often and steadily we reflect upon them: the starry heavens above me and the moral law within me. (*Critique of Practical Reason* 5: 161)

Celestial patterns, however, were not always easily observable to all of earth's inhabitants. The period 18,000 BP–12,000 BP had marked the onset of the current, Holocene epoch, a highly unusual period of stable temperature characterized by an initial global warming. Forest gardening, the oldest method of food production using low-maintenance woodlands, allowed for the frequent harvesting of fruit and nuts from trees and herbs, and of vines and perennial vegetables from shrubs. In South-American jungles, in lash Mediterranean areas, or in some of the Fertile Crescent pastoralist communities would not be familiar with the pole star, mainly due to the high vegetation surrounding them.

Observation of celestial movements and patterns was, undoubtedly, a seminal force in the production of sky myths (Lancaster Brown 2000: 264–266). Observational traditions relating to the pivot of the northern skies, and the bright stars rotating in its vicinity, more than likely, presented a mythical inspiration to follow. Over many millennia, throughout landscapes facilitating such observation, the sky would become a source of whimsical allegories (Garnham 2004: 18–21). Observation of the solar disk at dusk or dawn, and of bright stars revolving round a pivot during clear nights, along with attendant mythology, would provide the impetus for the design and carving of cup marks, the design and construction of round enclosures, and possibly also of medicine wheels, as material impressions of the rotating nightly sky, or the annual journey of the sun across the sky. Although miniscule in the context of a large scale landscape, the cup-and-ring marks and medicine wheels appear, for the most part, as human projections of celestial patterns in the vastness of the sky. The critical aspect of such interpretation rests in frequent alignment to cardinal directions of Neolithic round enclosures and settlements in Europe (Whittle 1987), a likely result of the same discernment that had led to the carving of cup-and-ring marks and to the construction of at least some of the medicine wheels.

3.4 From the Sun Disk to Wheeled Carts: Sky Myths and Ritual Landscapes

The revolving nightly sky has an obvious affinity with the circle and its material manifestation – the cart wheel or the potter's wheel. During the day, conceptual kinship similar to the nightly revolving sky could be sought in the sun's daily crossing of the firmament. Clearly visible even during midday as a disk in reflection in water, the sun traversing the celestial sphere, too, was at the inception of the idea of the wheel, while the wheel's further extension, the wheeled cart, yielded a new myth, one of the sun chariot later appearing, for example, in Hindu as well as Egyptian and Greek mythologies (Cooper 2013: 99–112).

The first two-wheeled carts were used in Mesopotamia at about 3000 BCE and two-wheel chariots towed by drawing animals, were successfully used in combat in about 2800 BCE (Lay 1992 28). The earliest *known* specimens of two-spoked and four-spoked wheels are from 2000 BCE in north-western Asia and the Caucasus, and in Europe in the mid-second millennium BCE (Anthony 2007: 371–412). The wheel, however, is thought to have been invented independently in several regions much earlier. Subsequent to the invention of the wheel, numerous applications had occurred, and with them, myths surrounding the construction and use of wheeled or circular objects. At the close of the Neolithic, during the Chalcolithic Age (or the Copper Age, generally and approximately, 4500–3500 BCE) and the later Bronze Age (c. 3300–1200 BCE) in much of Europe, this led to various usages of the wheel, from spindles to chariots.

The influence the wheeled cart had upon existing settlement patterns through the construction of roads and the transport of building material had further sustained the mind-environment impact-loop. Evidence of brick-paved streets has been found in the early human settlements of c. 4000 BCE at Harrapa and Mohenjo-daro of the Indus Valley Civilization (Ratnagar 2007: 138), and although it is likely that wheels and wheeled traffic came before paved roads, a reasoned presumption is that ongoing consideration of mutual utility led to continual improvements in the construction of both roads and carts. Wheeled carts were primarily an important warfare tool (Weir 2006: 35–36), but as subsidiary implements they also expedited progress at the closure of the Neolithic revolution (Bogaard 2004: 31–33).

Evidence of early wheeled traffic, along with the spoked wheel and the wheeled chariot, appears usually at different places than cup-and-ring marks, ceremonial round enclosures or medicine wheels, but they all emerge as features introduced into the Neolithic landscapes and settlements through the idea of perfection expressed in the circle. The link between the observation of the solar disk traversing the sky, the revolving nightly sky, and the manufacture of the spoked wheel and the wheeled cart, would have occurred through this idea.

Also the notion of a straight line, as an axle associated with wheel, would have emerged at this time. Carbon-dated to c, 3500 BCE is a ceramic vase with a depiction of a wagon of four wheels and two axles, excavated at Bronocice, near Cracow in south eastern Poland, about 50° latitude north (Anthony 2007: 67). From the same region in Central Europe is the oldest extant wooden wheel, about 145 cm in diameter, and its axle, about 120 cm in length (Velušček et al. 2009). Carbon-dated to the period 3350–3100 BCE, they were excavated near Ljubljana, Slovenia, about 46° latitude north.

The idea of the disk and its axle would be articulated in various sun chariot myths, later recorded in writing or sculpture during the Bronze Age and the Iron Age (c. 1200–200 BCE). Natural landscapes, of course, usually do not involve circles or straight lines. It was, however, the specific advantage of high places or shorelines facing the north that had afforded observations of sky patterns, which in turn brought about the idea of perfection in the circle *and* the straight line. Man-made artifacts or landscape alterations were largely based on these two spatial concepts of perfection, most concisely expressed in the prophet Isaiah's pronouncement, "and the crooked shall be made straight, and the rough places a plain" (*Isaiah* 40:4).

An early *literary* reference to chariot mythology is the Biblical episode of Josiah (c. 649–609 BCE), King of Judah, instructing one of his officials at the entrance courtyard of the Temple of Solomon, to destroy chariots ordered by his grandfather, King Manasseh (r. 687–642 BCE), due to their pagan symbolism (II *Kings* 23:11). Explicit link of chariots with the sun appears in *Homeric Hymn* 31 (seventh or sixth century BCE), and in the Seventh *Olympian Ode* by the Ancient Greek poet Pindar

(522 – c. 443 BCE), where Helios the sun god is said to drive a golden chariot pulled by fire-darting steeds.

Mythical representations of *Axis mundi* had culminated in images of structures of revolving straight lines, often perpendicular to each other such as in mills. In an episode from the Hindu religious cosmogony tales, *Puranas* (c. 250 BCE), gods are using Mount Mandara as a churning rod round which the serpent Vasuki is coiled. Gods grasping the serpent's tail and demons holding its head, twist Mount Mandara back and forth (van Buitenen 1973: 73). In the *Hagiga* Tractate of the Talmud (c. 300 CE), seven heavenly spheres are listed, possibly against the five known planets, with the sun and the moon added. The third of the spheres, Shehakim, is 'that in which millstones stand and grind *manna* for the righteous' (*Hagiga* 12b).

A Nordic Bronze Age statue of a horse and a large bronze disk, placed on a cart of spoked wheels, uncovered in 1902 at Trundholm, Denmark, is on display in the National Museum of Denmark. A sixth century BCE statue of the Celtic sky-and-thunder god Taranis holding a thunderbolt and a spoked wheel, was uncovered in north-eastern France, and is now on display at the Musée de St. Germain-en-Laye.

Along the application of the wheel in construction and warfare, as symbols of masculinity, was its other use as a whorl, the disk of a spindle for spinning fibers into threads to make fabrics. In these other applications, the wheel, even though representing mechanistic prowess, is no longer an exclusively masculine symbol. The whorl, as a round clay disk balancing a spindle has been used since the late Neolithic for spinning and twisting wool, flax, cotton or other fibers into yarn. The spinning of fabrics has been usually associated with women due to its domestic placement and its implication in the clothing and care of members, particularly the very young, within the clan, the household or the family.

Other than its obvious founding in practical utility, the repeated invention of wheels and whorls in the late Neolithic, would have also followed observations in the environment and the inevitable association with myth. There could hardly be a more likely source in myth to the invention of the wheel than the *Axis mundi*, the sky thus having been at the birth of technological progress and the built environment. In the 'Myth of Er', at the end of the *Republic*, written about 360 BCE, Plato describes a vision of the universe where the various celestial spheres are presented as cosmic whorls, spun round an *Axis mundi*, as a world's spindle, by the goddess Necessity and her three daughters (*Republic* 616c, 617b). *Axis mundi* had been also represented in Chinese geomantic myth of *feng-shui* (Roth and Clark 2014: 458). Similarly, the tenth century Nordic and Siberian myths connect the turning of the cosmos via a 'mill-handle' with the regulation of seasons (Tolley 2009: 302).

3.5 The Primordial Civic Space

The impact of the myth of *Axis mundi* upon Neolithic settlements had been manifest through occasional alignment to cardinal directions, and through the use of wheels, in transportation in particular. But perhaps the most significant impact that *axis* *mundi* had carried upon early settlements had been the creation of the embryonic civic space through public ritual.

Such early civic expression in a public ceremony could be detected also in rituals associated with the medicine wheel. If modern-tradition ceremonies associated with the medicine wheel are any indication of its ancient origin and purpose, then there appears to be additional important parallel with other Neolithic roundels on the British Isles and the European Continent. Judging from traditional Canadian and American Native rituals surrounding the sun dance, archaic medicine wheels may have been used for public and religious ceremonies associated with seasonal bison hunt (Mirau 1995). The sun dance of the North American Native peoples had involved controversial, and now discontinued, ritual of body piercing. Such evident cultic link between the human body and the sun, or the sky, betrays a profound disposition.

Religion and public ritual, at the founding of civic space, are indisputable extensions of myth. Conventional notions of public rituals or of some social customs, in turn, are not only associated with the social environment but also with features of contemporaneous natural and built environments. It goes almost without saying that all three types of environment mentioned are near the earth surface. This, however, is likely not the case with regard to the original source in myth of public rituals or social conventions. Cerebral evolution through a mind-environment feedback, begs the question of the possible *origins* of this progression of mutual impact. Kant's epitaph is the clue. For such origins could be sought in qualities that are closer to, as well as much further from the human agent or observer than the earth's *surface*. The very nearest such origin is the observer's body itself – in skin and flesh – and his or her immediate physical, or human-physiological, vicinity.

Much as one's own body is one's very closest environment, the very furthest to casual human perception are celestial objects featured in naked eye observations. The postulation itself of continuing and mutual interaction between mind and the environment may be less contentious than the proposition that the origin of mind-environment interaction ought to be sought in a perceptual link between the absolutely immediate, the human body, and the unreachably distant of our own three-dimensional spatiality – the sky. The construction of round enclosures where fertility rituals were performed immediately following winter solstices, appears to be an expression of such a primordial link, one that had formed an initial stage of mind-environment interaction, leading to the first notion of a deliberately designed space intended for public use.

During the Neolithic in Europe and on the British Isles, ceremonies involving the slaughter of animals for food or sacrifice, along with fertility rites, took place in round enclosures delineated by ditches or megaliths. Many megaliths on the British Iles were constructed so as to mark public ceremonies of renewal and rites associated with winter or summer solstices symbolizing the foundational features of human existence: fertility, survival and death (Tilley 2010: 285–292). Round enclosures found throughout central Europe are believed to have been associated with similar purpose (Milisauskas 2011). Just such primordial trait has been also attributed to the Great Plains medicine wheels (Warburton and Duke 1995). Even as suggestions of sophisticated astronomical alignment in medicine wheels have been repeatedly contested, no less important feature common to medicine wheels and to European round enclosures of the Neolithic, is the nascent formation of civic space that they offer.

Throughout the twentieth century some 150 Neolithic circular or oval ditches with evidence of palisades forming round enclosures have been unearthed in the Central-European part of the Diluvial belt, between approximately the 45th and the 55th parallels, mainly in eastern Germany and in the Czech Republic. Dating to the fourth millennium BCE the enclosures, usually with a diameter of 50–100 m, are sometimes configured with up to three concentric ditches delineating their perimeter. Widely renowned is the Goseck Ring, a circular enclosure near Leipzig, Germany, its construction dated to 4900 BCE. Excavations at the Goseck Ring uncovered four concentric circles formed by ditches, a mound, and remnants of at least two contiguous wooden palisades with three gates, facing southeast, southwest, and north. During the winter solstice the sun observed from the enclosure's centre, would be seen rising and setting through the southeast and southwest gates (Roth and Clark 2014: 175–177; Starling 1983). The open space of enclosures, such as Goseck, likely constituted a ritual feature, but commercial or possibly also some early-theatrical uses may have been associated with it too. Above all, however, the enclosure was a community gathering place: a public *place* of a budding civic character.

Similar such public places were stone circles on the British Isles and along the Continental coast, thought to have served a ritual or ceremonial purpose related to solar alignments. During the Late Neolithic and Early Bronze Age some of the sites were also used as cemeteries, with burials within and around the circle (Burl 2000: 13). Currently in Britain alone close to a thousand stone circles have been recorded many more having been destroyed throughout modern times (Burl 2000: 9).

3.6 The Feminine Nature of the Neolithic Ritual Place

Three concentric stone circles surround a Neolithic henge monument carrying the name of a nearby village, Avebury, in southern Wiltshire. The external circle, the largest in Europe, measures over 300 m in diameter. The initial construction of the monumental stone work at Avebury is dated to about 2600 BCE, and construction had continued over the next period of several hundred years while used as a public ritual place. The site's cultic purpose may have been the performance of rituals to assuage sinister forces that threatened the people's survival through disease and hunger (Burl 1979: 4–30). Similar but smaller ritual round enclosure of Neolithic standing stones are at Stannon in Cornwall, and at Callanish, Scotland, where in the latter site they form a cruciform stone pattern (Burl 2005: 32–36, 150–151).

At Carrowmore, Co. Sligo, Ireland, Neolithic stone circles consisting of up to 40 boulders are believed to have originally surrounded satellite tombs which had encircled a major burial mound at the centre. The burial mound, Listoghil, dated to about 3500 BCE, is a chambered tomb that had been aligned so that, presently, one of its chambers is illuminated by sunrise in mid-October and mid-February (Meehan 2012).

Many other instances of chambered tombs are found on the British Isles, although mostly without boulder circles. The Neolithic chambered tomb Maeshowe on the Mainland Island, Orkney, Scotland, believed to date to about 2800 BCE, is aligned so that the rear wall of its central chamber is illuminated close to the winter solstice (Hedges 1984: 160). At Newgrange, Co. Meath, Ireland, a circular tomb mound of about 80 m in diameter, built c. 3200 BCE, is famed for its stone passageway and an interior chamber, both illuminated by the rising sun, also close to the winter solstice.

Some of the capstones inside the Newgrange monument, similar to the Scottish site at Kilmartin Glen, are decorated with spiral patterns and cup and ring marks. Landscapes surrounding settlements afforded familiarity with the nearby countryside, and to ardent stargazers also observation points at higher elevations. But stargazing could not have been just a pastime. It became an important calendric venture enabling the community to prepare for a forthcoming season, the winter in particular. A mark of the winter, prominent particularly in high latitudes, is of course the year’s shortest day, the day during which the winter solstice occurs.

People of the Neolithic, at the onset of the current Holocene geological age, enjoyed warmer temperatures than their ancestors in preceding frigid Ice Age, the Pleistocene. This allowed people to gradually turn from hunting and gathering to agriculture or forest gardening, and to domesticating animals and farming. It was this, fairly rapid switch from hunting and gathering into agriculture and sedentary reorganization of living and working environments that has given the Neolithic Revolution its alias as the Agricultural Revolution (Milisauskas 2011). With the onset of the Neolithic, sedentary lifestyle, now replacing hunting and gathering, came to accompany the advent of agriculture and the domestication of animals. Grain, fruit and vegetable harvesting enabled people to store some of the food produced as surplus for the winter season, and thus facilitated the founding of communities of humans in permanent settlements.

Physical prowess of the human male may have been thus of diminishing significance during the agricultural revolution, when hunting ceased to be an absolute necessity. At Çatalhöyük, an urban settlement from 7000 BCE in the Anatolia region of present-day Turkey, abundance of excavated goddess statuettes point to egalitarian, and perhaps even matriarchal, culture. Noteworthy is that, in contrast with other urban pre-historic sites such as Mohenjo-daro or Jericho, at Çatalhöyük there were no urban voids to speak of. All outdoor activities seem to have been carried at rooftops of connected huts, entrances to which were through holes in the sealing (Mills 2014: 149–157). The peculiar urban feature could be related to a possible matriarchal society due to its emphasis on open space rather than on edifices with spaces between them.

With accumulated experience over generations, masculine strength would be diverted into the construction of shelter for the winter, and in the construction of entire settlements, rather than in hunting. Repeated observations of the nightly northern sky rotating round a celestial pivot, permanent throughout the entirety of a human life, has forever allied it with navigation, initially associated with hunting, and thus also, as yet another link, with masculinity. Similarly too the sun through its strength has been often linked to masculinity (Campbell 2008: 41–57). With the premeditated construction of settlements the celestial features associated with masculinity would have been now projected into alignment of streets or the walled perimeter of a settlement.

The new gender division of labour would have been evident in Neolithic communities, particularly in respect of seasons, the winter in particular. In cooler climates and higher latitudes, communities of humans in the northern hemisphere would face starvation during the winter months. Families, tribes or larger communities had no certainty they could survive the winter, and the winter solstice would mark the last occasion when fresh meat was available. Most domestic cattle were slaughtered immediately prior to this time so they would not have to be fed during the winter.

In food preparation and preservation for the winter, women metered and prepared food reserves during the preceding months of the summer and fall. In planning for the winter, preparation of hide for warm clothing and preservation of sufficient amounts of food for the clan was needed as well. Many of the chores relating to food preparation and preservation, as well as yarning of fabrics, would have been now a millennia old domain of women. Along with the care for the young, shelter had become a clan's home, and women had become associated with domestication (Naumov 2013).

The community context of the winter solstice thus attained a prominent feminine feature. This feature was reemphasized in the time immediately following the winter solstice, marking the inception of sun's renewed ascent in the sky. The additional feminine quality thus was the birth or rebirth of a new year or a solar deity. These associations had led to public festivals timed to the winter solstice, expressed in feasting and fertility rites. The absence of any defensive configuration in the Neolithic circular structures, whether stonework or round ditches, attests, as well, to their public nature and feminine attainment.

During the ensuing Iron Age and early antiquity, days surrounding the winter solstice became the mythical birth dates of a number of fertility gods: Mithra, Adonis, Dionysus, Osiris, Baal and later, the Roman god, Saturn. The late Jewish festival of Chanukkah, as well as the celebration of Christmas, were likely introduced to counter the festivities surrounding the mythical birthing of pagan deities, or associated celebrations such as the Roman festival of lights, Saturnalia, during the same time.

3.7 *Axis mundi* as the Earth's Navel

Only some 30 km south of Avebury is Stonehenge, a ring of megaliths from the third millennium BCE, delineating a monumental burial ground. Archaeological evidence near Stonehenge has shown that animals had been slaughtered there around 9 months after their spring birth. Several thousand people are believed to have gathered at or near Stonehenge for what were mid-winter and mid-summer festivals. According to Aubrey Burl, Stonehenge is also among Neolithic sites where celebrations of marriage of the Great Goddess the Earthmother, and the Sky god took place (Burl 2000: 8).

Feminine Neolithic expressions in the built environment had stemmed from a correspondingly feminine meaning given to the *Axis mundi*. As opposed to the masculine nuance of the world's axle, tomb mounds and standing stones associated with Neolithic rituals offer an alternate meaning to *Axis mundi*, one of a feminine emphasis: a link between heaven and earth as an umbilical cord, as the earth's navel.

To be sure, Neolithic stone-works as communal places configured to pathways of the sun are known from several southerly locations, perhaps the most renowned being those on Malta and in Egypt. But they too may have involved a feminine symbolism. Alignment with solstices is apparent in a complex of three temples on a sloped site at Mnajdra, Malta, dated to 3600–3200 BCE. One of the doorways of the lower temple is adorned by megaliths whose edges are illuminated by sunlight during times surrounding the summer and winter solstices. Artifacts recovered within the temple suggest that it was used as a cultic site promoting, among other things, fertility and healing (Gimbutas 1999: 55–62). Calendric purpose was possibly served by Neolithic standing stones ordered in six circular, outward radiating alignments "like spokes on a wheel," at Nabta Playa, Egypt (Bauval and Brophy 2011: 86–92).

The universality of patterns in Neolithic communal places lends credence to claims of astronomical alignment in Canadian and American medicine wheels. But unlike the case of the British and European round enclosures, no overwhelming evidence exists that medicine wheels have ever been aligned to solstices (Kelley and Milone 2011: 205–210). Rather, they may constitute, precisely, the alternate meaning of *Axis mundi* as the earth's navel.

The aligned meanings of the mythical *Axis mundi* as marking an earthly site for its link as an umbilical cord between the heaven and the earth, appears also among other of America's ancestral peoples. 'Navel' is the meaning of Cuzco, the name of the capital of the Inka Empire; in Arizona Baboquivari Peak Mountain is regarded by the O'odham Nation as the navel of the world. Elsewhere, a reference to Easter Island has been, too, as the navel of the earth (Routledge 1919/2007: 209).

On flat plains near rivers in Mesopotamia, designed artificial mounds with stairwells leading to open-air sacrificial platforms were erected as temples. In Babylon a ziggurat was built at the centre of the city, as the city of Babylon itself was considered, by the Babylonians, the centre and the 'navel' of the world. King Nebuchadnezzar II (605–562 BCE; r. 634–562 BCE), for example, was hailed for repairing the central Babylon ziggurat, initially built and heightened by kings Hammurabi (1810–1750 BCE; r. 1792–1750 BCE) and Nebuchadnezzar I (r. 1125–1104 BCE). Access to the sacrificial platform of the ziggurat was limited to the priests, and the stairwells leading to the top were guarded (Gnuse 2014: 25).

In Ancient Greece the stone of *omphalos* at Delphi had been considered "to be the centre of the habitable earth, and was called the Navel of earth" (Strabo 9, 3: 6; 1856: 117–118). Such a motif, Marguerite Rigoglioso has suggested, "rendered this oracular location as the 'womb' of the earth itself, the central point from which creation is thought to have emerged" (Rigoglioso 2009: 184). Navel is the meaning in Hebrew for Tabor, a mountain in Israel (Joshua 19:22; Judges 4: 6), and Mt. Gerizim in Samaria was called the center of the earth in the Bible (Judges 9:37). The rock at the heart of Solomon's Temple in Jerusalem was the Foundation Stone because, according to the Talmud (*Yoma* 54B), "from it the world was founded […] For it was taught: Rabbi Eliezer says, 'The world was created from its centre'." Jacob's ladder, a link between the heaven and the earth (*Genesis* 28:10–19), according to tradition, was also at this location (Heschel 2006: 93).

Some Neolithic standing stones in West Yorkshire have cup-and-ring marks with linear channels or groves carved from the centre in the form of a ladder (Cowling 1940). Remarkable prehistoric ladder-like carvings of linear channels in cup-and-ring marks are, for example, on the Panorama Stone, Rombald's Moor, opposite St Mary's Church, near Bradford, West Yorkshire. If the linear channel represents the world's axis, then the ladder has a very pronounced significance: a means to ascend and descend between the heaven and the earth. Such meaning appears to be ascribed in the Bible to Jacob's ladder:

> Jacob left Beersheba, and went toward Haran. He came to the place and stayed there that night, because the sun had set. Taking one of the stones of the place, he put it under his head and lay down in that place to sleep. And he dreamed, and behold, there was a ladder set up on the earth, and the top of it reached to heaven; and behold, the angels of God were ascending and descending on it! […]Then Jacob awoke from his sleep and said, "Surely the Lord is in this place; and I did not know it." And he was afraid, and said, "This is none other than the house of God, and this is the gate of heaven." Early the next morning Jacob took the stone he had placed under his head and set it up as a pillar and poured oil on top of it. (*Genesis* 28: 10–20)

The Bible here describes a remarkable event, Jacob's dream, where a site designated to become the place of a significant public ritual attains simultaneously both meanings of *Axis mundi*: while Jacob's ladder is suggestive of the axle of the world, akin to the Neolithic cup-and-ring carvings on the Panorama Stone in West Yorkshire, the stone of Jacob, according to Jewish sources, is none other than Foundation Stone of the Temple, the navel of the earth:

> Therefore, [the stone] has been called the *Even Shetiyah*, since [the stone] is the navel of the earth from there all of the Earth was extended from there, and the Temple of the Lord stands upon [the stone of Jacob], as Scripture states, "And this stone, which I have placed as a pillar, will be the house of God" (Gen 28:22) [sic]. (Sacks 2009: 146)

The events surrounding Jacob's dream could be dated to about 1600 BCE. Only some 700 km to the north, the oldest known megaliths, dated to as early as the beginning of the Neolithic, are at Göbekli Tepe in southeastern Anatolia, Turkey. The standing stones at Göbekli Tepe delineate ceremonial ritual space, and have been dated to the period between the tenth and the eighth millennium BCE. And adjacent to the same region as the site of Jacob's dream, at Golan Heights, still extant is the Gilgal Refaim stonework of concentric rings, dated to about 3600 BCE.

3.8 *Axis mundi* and Winter

Constructed throughout the Neolithic and later, many thousands of megaliths are still extant today across Asia, Africa, Europe and the Americas, some being expression of a magical link between the sky and the earth, and some possibly also representing prevailing myth of marriage between the Sky Father and the Earthmother. Throughout the continental United States and Canada, stone cairns mark indigenous peoples' game-driving "lanes" leading to buffalo jumps, some of which may date to 12,000 years ago.

Standing stones and cairns have been built in the region of the Arctic Circle, dominated by permanently frozen soil with only a very few natural landmarks. Known by their Inuit name, *inuksuit* (singular, *inuksuk*) the standing stones are still used by the Inuit and other peoples of the Arctic region of North America and Europe, from Alaska to Greenland, as navigation beacons along portage and canoe routes, or as drive lanes at caribou kill sites (Callois 1976; Brink 2005).

Whereas the *Axis mundi* as the world's axle appears to have usually a masculine connotation, and directional affinity with the circumpolar northern sky, its other meaning, as the earth's navel, implies feminine character and a generic link between the sky and the earth. Both meanings of the *Axis mundi* were significant to the initial impetus of interaction between mind and the environment. As the axle of the world, *Axis mundi* was the mythical concept of perfection behind the repeated inventions of the wheel. Earth's "navel," on the other hand, has been related to communal rituals, particularly those of life-cycle: fertility, survival, marriage, and death. Both meanings of *Axis mundi* had affected changes in the landscape, and in the built environment: Axle and wheel brought about growth and expansion of settlements, while myths of the earth's navel, initially manifest in mounds or standing stones for ritual performances, transmuted into a specifically delineated sacred space.

North Stars, as both beacons and pivots in the nightly sky, may have been in fact instrumental in early human migrations "Out of Africa" northward. The repeated appearance of North Stars would have been among the earliest myths that prevailed through the late Pleistocene to the Neolithic, ultimately metamorphosing to the myth of *Axis mundi*. Megalithic round enclosures such as Stonehenge or Avebury seem to be projections upon the landscape of both meanings of *Axis mundi*. It is the joint symbolism of these two meanings, as the world's axle and as the earth's navel, both behind the emergence of the public ritual place, as a budding civic space.

The feedback between landscape and mind, followed by landscape *alteration* along with subsequent new cognitive stimuli, has continued to the present day, extended over the history of civilization through built environments. Given the present postindustrial age disposition of urban dwellers in winter-cities to stay in a warm shell during the cold season, the coming together of Neolithic communities, and celebrating in open-air in the midst of a winter, is entirely prodigious. To those of us who make our homes in winter-cities the Neolithic round enclosure is, thus, an important message from our prehistoric forerunners. The full meaning of their Neolithic round enclosure for the winter-city of the twenty first century is simple and unambiguous: The civic place is not a shelter, and It ought to be an open, publicly accessible space. Ancient public space defined by communal rituals taking place in the open-air within the Neolithic round enclosure, in the midst of winter, surely constitutes a primordial disposition that ought not to be ignored by contemporary winter-city urban design of civic spaces.

Not the least in significance is the other archaic message from the Neolithic round enclosure. As an origin of cognitive feedback between the mind and the built environment, the roots of the Neolithic enclosure are beyond any landscape: They are in the sky patterns and in the myths surrounding them. In recognizing the significance of the nightly sky to human cerebral development, one cannot ignore the abrupt change triggered by twentieth century's urbanization. Throughout antiquity, the Middle Ages and early modernity, there was no significant difference in casual views of the nightly skies between the countryside and the city. With incandescent street lights and round-the-clock business in rapidly expanding cities, this opportunity has quickly disappeared. Smog and light pollution of cities over the last 100 years brought a sudden end to this vital and millennia-long lasting source of imagination and creativity in humans.

An opportunity for a child to observe a starry evening sky could quite possibly be as vital to her development as her early childhood education and care. Over millennia the nightly sky had been very likely instrumental in the cognitive progress of humans, it was indispensable in the creation of myth, and it was vital for the invention of wheel technology; it could still be so in the cerebral development of our children. But observation of nightly sky patterns in the city has come almost suddenly to an end over the last century, presently absent from the cognitive feedback loop of the mind and the built environment. The deprivation of casual view of a starry firmament in our cities may be more profound than a mere aesthetic deficit.

For winter-cities the message is resounding: At a time when lack of winter sunlight exposure has been shown to be a direct culprit of mood disorder (Friedman 2007), there could hardly be better evidence that short days and cold climate must not be overcome by indoor stay, and that public good can be served by careful and attentive design of open civic spaces in our winter-cities. "Let us love winter, for it is the spring of genius," wrote Pietro Aretino in the sixteenth century. In the planning and design of our winter-cities, half a millennium later, we may wish to recall Aretino's saying as well as Kant's epitaph, in reflecting on the astounding attitude to winter and to the sky by our Neolithic ancestors.

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Chapter 4
Winter Acumen and Mood Disorder: Apollo, Dionysus and Foucault's *History of Madness*

4.1 Introduction and Summary

Through the hundreds of thousands of years of exploration and big-game hunting during the Late Pleistocene, and through warfare, and the construction of fortified settlements during the Neolithic, the myth of the Hero was forged as a universal masculine paradigm. Addressing the requisite for defense, the Hero was also at the overt beginnings of early cities during the late Neolithic.

During the Neolithic, domestication of plants and agriculture had led to food surpluses, to the need to conserve and store food, grains and cerelas, and the necessity to safeguard them. Cereals were grown in western Mesopotamia as early as 9000 BP and fig trees were planted in the Jordan Valley as early as 11,000 BP. Walled citadels found in cities of the Harappan civilization in the Indus Valley, some six millennia later, may have been used for storage of grains and cereals.

Armed conflicts commenced with continually increasing population and improving hunting weapons. From the late Neolithic and the Bronze Age in Europe, c. 6000–1200 BCE, fortified places of refuge or defended settlements became increasingly common. During the Bronze and Iron Ages the founding and walling of large settlements and cities, often through deliberate design, was said to occur due to the benefaction of sky deities or at the guidance and the immense strength of deified heroes.

Association of early cities with sky deities is epitomized in Eridu, built c. 5400 BCE, one of the founding cities that presaged the Sumer civilization in southern Mesopotamia. Said to have been created by gods and to be the home to the great water god Enki, a creation deity, and to Enlil, the Lord Wind and ruler of the cosmos, at the urban core of Eridu was a temple for Enki and Enlil.

The chief place of worship to Enlil was in the city of Nippur. The Enlil temple and the city of Nippur around it were founded c. 2500 BCE. Annotated, partial plan of Nippur showing the principal temple of Enlil is incised onto a fragment of clay tablet measuring 18×21 cm, from c. 1500 BCE. Storehouses, a garden and also the

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adjacent river Euphrates and connecting canals next to the temple, are shown in the plan. From the plan it emerges that Nippur was a walled city, and the temple quarter shown on the tablet was enclosed within its own walls, forming a citadel on an irregular square plan, with sides roughly 800 m long. The temple proper, according to the plan on the clay fragment consisted of an outer and inner court surrounded by double walls, with a ziggurat. Given such formidable defenses, it is little surprise that during the Seleucid period (312–63 BCE) the ancient temple area was turned into a fortress.

The first evidence to the paradigmatic association between a city and its deified hero is in inscriptions from c. 2100 BCE, found at Tummul, another temple in Nippur, hailing king Gilgamesh for restoring, c. 2700 BCE, the Nippur shrine of the goddess Ninlil, the divine spouse of Enlil. In the *Epic of Gilgamesh*, from c. 2100 BCE, the king is presented as a deified hero of superhuman strength who builds the city walls of Uruk with colossal masonry to defend his people. The mythical heroic link within cities continues throughout history in Ideal City concepts from Plato to modernity: from fabled Atlantis on through Celtic hillforts and Renaissance ideal cities, to *master* plans of modern city planning.

In classical Greece the patronage over city-walls and colonies was expressed in a mythical link with the sun-god Apollo, or Sol for the Romans. Throughout classical antiquity, the Oracle of Delphi, a priestess at the temple of Apollo, would dispense divinations for the founding of new colonies. The trance-induced messages of the Oracle were likely brought about by narcotic gases escaping from a rock crevice into the temple's cellar where the priestess was confined. The hallucinogenic blabber of the priestess, possibly edited by the attending male priests, was regarded throughout the entire Mediterranean antiquity as a highly authoritative prophecy. In truth, it points to an unholy association of myth with deliberately induced mood or mental disorder in the ancient Greek city. And so, while masculine heroism came to be associated with power and prudence, femininity in ancient Greece was relegated to the domain of frenzy and insanity.

One of the venues to the latter association were the Dionysian Mysteries, a set of rituals of ancient Greece and Rome which used intoxicants along with trance-inducing dance and music to remove, for a few days, inhibitions and social constraints among the marginalized fringes of society, in particular. Manifesting this link was the *thiasus* procession during the City Dionysia festival, ostensibly liberating women by returning them to a natural state by casting off of a constraining social guise in prelude to adopting a new, more authentic mask in the comedy or tragedy performance of the Greek theatre. In the *thiasus* inebriated women were made to march to the Theatre of Athens in openings of drama performances.

Mood or mental disorder, identified by Michel Foucault as a major trait of medieval, Renaissance and modern cities of Europe, ought to be thus seen as ingrained in European urban antiquity as well. In the following chapters Foucault's observation is further extended showing how mood or mental disorder continued to be sporadically entrenched within the north-hemispheric city-form into modernity, particularly in winter-cities along and north of the 45th parallel.

4.2 The Hero Myth and Masculinity

Retreating glaciers at the end of the Ice Age made new northern lands attractive for fruit and vegetable gathering, the purview of mainly women, as well as for hunting, largely the domain of men. In a repeating pattern during the summer months the northern star, as a constant beacon in the nightly sky, led bands of humans, to progressively higher latitudes of land previously covered by glaciers. Forays into new lands would undoubtedly depend on some preceding exploration by the strongest and the bravest within a community. Over millennia of human migration 'Out of Africa' masculinity came to be allied with strength and exploration skills as well as with bravery.

Human migrations to Europe's northerly regions and eastwards to Asia during the Pleistocene were behind the Hero and other masculinity myths. Enshrined in the human mind as a universal masculine paradigm the Hero myth was expounded by Joseph Campbell in the 1960s (Campbell 1968: 175–219). The initial concept of a universal hero myth was first developed by Lord Raglan (FitzRoy Richard Somerset 1885–1964) in his book, *The Hero, A Study in Tradition, Myth and Drama* (1936). The book outlined 22 common traits of the mythic hero archetype shared by heroic characters in parables and legends across world cultures. According to Campbell, the Hero is as universal as other masculine archetypes of the collective unconscious, uncovered and elaborated upon some 50 years earlier by Carl Jung: The Wise Old Man, the Magician and the Trickster (Jung and Hull 1990: 3–41).

Notwithstanding the numerous female-heroine figures, the myth of the hero is *paradigmatically* masculine. The universality of gender archetypes, in myth and in behavioural patterns, however, did not preclude sporadic switching of roles, mainly in the way of auxiliary support. Men occasionally took part in gathering plants, firewood and insects, while women may have at times assumed the masculine standard of procuring small game animals, or assisting men in driving herds of larger game, such as mammoths and deer, off cliffs. Gender imprints of the mind, Jung's Anima and Animus, had continued to evolve during the Neolithic, and through the ages to modernity, as did myths of the hero or the heroine. But efficacious exploration of new lands, or successful encounter with a big game animal would be the initial, masculine impetuses to the emergence of the Hero myth.

The development of the throwing-spears, projectile points and hammerstones, together with ambush techniques were used solely for hunting as they did not lend themselves to Paleolithic intergroup violence. Bands of hunters avoided encroaching on each other's territory, and given the relatively empty expanses, they preferred to move on to new lands rather than coming into conflict with one another. Migrating alongside big-game animals, bands of hunter-gatherers through much of the late Pleistocene, c. 50,000–12,000 BP, moved across Eurasia towards north-eastern Siberia and its extreme edge, the Bering Sea. At about 18,000 BP hunter-gatherer groups in northern Siberia reached the area of a land-and-ice bridge across the Bering Sea to Alaska. Human bands continued following the animals crossing into Alaska during the remaining six or seven millennia, c. 18,000–12,000 BP. Then sea levels rose again allowing only for a sporadic crossing from Eurasia into North America across the occasionally frozen Bering Strait.

Orientation beacons on permanently frozen soil with only a very few natural landmarks were needed at Beringia, and humans built standing stones and cairns in the Arctic and the subarctic ever since, possibly for millennia. Even much later, cairns have been used by the Inuit in the region of the Arctic Circle to delineate drive lanes at caribou kill sites. Throughout the Arctic region of America the *inuksuit* standing stones, other than used for navigation along portage and canoe routes, sometimes also mark a gateway into the mythical land of the *Inummariit*, the hero with supreme survival skills (Collings 2014: 317–324).

Throughout the continental United States and Canada, there are still today stone cairns marking drive-lanes through which game was lured to buffalo jumps (Wolf 2003: 27). In the Head-Smashed-In Buffalo Jump site in Alberta, dated to about 4000 BCE, young "buffalo runners," early ancestors of the Blackfoot, dressed as coyotes and wolfs, lured bison, in a scene not much unlike those across the oceans, depicted at Lascaux, France, or at Drakensberg, South Africa (Chap. 3, Sect. 3.6). At Head-Smashed-In Buffalo Jump the bison were lured from their grazing area at Porcupine Hills into a 3 km long drive lanes delineated by hundreds of cairns. At the end of the lane, at full gallop, the bison would fall off a 10 m deep cliff into a valley where, injured and immobilized, they were killed for food or for other purposes. This included tool making from the bone, or using the hide for dwellings and clothing. Abundance of food, shelter and supplies allowed the people to devote time to endeavors ranging from craftsmanship and making weapons to rituals, including those associated with the Hero myth.

Weapons against other humans were not used in a systematic fashion possibly until the Neolithic. Among the first documented pieces of evidence of organized violence among humans, using weapons is the Talheim Death Pit in Germany, where remains of 34 bodies dated to about 5000 BCE are the first known signs of warfare in Neolithic Europe. Consistent with such observation has been the uncovering of defensive forts dated to a millennium later in nearby Slovakia (Pavúk 1991).

By comparison, one of the earliest defensive fortifications that imply warfare in ancient America is a hilltop enclosure dated to c. 100 BCE (Gibbon and Ames 1998: 287). The first documented evidence of warfare in North America is a site along the Missouri River in South Dakota, known as Crow Creek. A vicious massacre between bands of American Native peoples had occurred at the site, but is dated to 1325 CE, just 700 years ago and millennia after Talheim (Zimmerman and Bradley 1993).

The Hero myth had been a major force among Indian tribes of North America who, in more recent history, often fought each other fiercely over territory. On the Great Plains enemies of the Blackfoot First Nation people, for example, included the Cheyenne, the Crow and the Sioux. But organized violence among the Native peoples of North America seems to have occurred significantly later than in Europe. The most likely reason was the much higher population density in Europe, with obvious consequences for competition over resources.

A major part of combat tradition of the Native American Hero was counting coup, winning the highest honor in intertribal battle. Counting coup was achieved not by killing an enemy warrior, but by the skillful encounter with him, touching him, in a sign of humiliation, or stealing enemy's weapons or horses. Risk of injury or death, while escaping unharmed, was a condition to count coup (McGinnis 2007: 49–51), and warriors of Great Plains tribes would congregate after a battle in ceremonious assemblies to recount their acts of bravery, to count coup.

4.3 Early Settlements and Their Heroes: From Neolithic Walls to Bronze Age Citadels

During American prehistory the vastness of North American plains and the sheer size of the continent, had supported a population of Paleo-Indians that was very small. Resources were plentiful and there was little need for domestication of plants or most animals. Europe, on the other hand, given its relatively small area, had from the Neolithic and until early modernity the highest human population density of all other world regions, with the exception of the Fertile Crescent. In fact, competition for land resources throughout the Americas was lesser than in Europe or the Fertile Crescent for millennia.

Increasing population density and depleting renewable resources was an incentive to explore and settle land at Eurasia's higher geographic latitudes, but it also brought to focus competition for fertile, habitable or defendable land. During the Pleistocene the Hero myth became associated with exploration, survival and hunting. Then, during the Neolithic, the Hero came to be associated also with warfare. As human communities became sedentary danger increasingly came from marauding bands of other humans. With the construction of fortified settlements as defense against armed intruders the Hero transformed to the defender of his people and the protector of the human race.

With the onset and progress of the Agricultural Revolution, accumulation of wealth and storable food in sedentary communities throughout the Fertile Crescent and later in Europe, led to the need for defensive structures such as ditches or walls on the perimeters of settlements. The earliest fortifications, large walls primarily, originated in the Fertile Crescent. The oldest wall of which remnants are still extant is one that surrounded the mountainside temple of Göbekli Tepe (10th–8th millennium BCE). The purpose may have not been defense against human intruders, but ritual, or protection of stored grain against animals. The latter interpretation takes into consideration the nearby site Karaca Dağ, from which some cultivated grains had originated (Heun et al. 1997). Protection of granaries seems to be also the reason for walls at many communities of the Harappan Bronze Age civilization in the Indus Valley later in the period 3300–1900 BCE (Pruthi 2004: 137–178).

With abundance of surplus crops, and the ability to conserve and store them, Neolithic settlements in the Fertile crescent grew into Bronze Age cities. The Sumerian city of Uruk (the Biblical Erech, *Genesis* 10: 10) was built c. 4000 BCE, and according to the *Epic of Gilgamesh*, written c. 2100 BCE, King Gilgamesh during his rule c. 2700 had surrounded the city by a series of intricate and beautiful walls (Dalley 2000: 40). Wall inscriptions at Uruk, hailing Gilgamesh, would have been the earliest association between a city and its deified hero.

As opposed to the city's temple, the sacred place of communion with deities overlooking the wellbeing of the city from the sky, the city's ruler as its deified hero often expressed his own power in the construction of his citadel and walls. In Babylon, shortly after assuming the throne in 1792 BCE, king Hammurabi (1810–1750 BCE) undertook a series of public works that included expanding and heightening the city walls (Arnold 2005: 4). More than a millennium later, the Greek historian Herodotus of Halicarnassus (484–425 BCE) wrote thus of Babylon:

> The city stands on a broad plain, and is an exact square, a hundred and twenty furlongs in length each way, so that the entire circuit is four hundred and eighty furlongs. While such is its size, in magnificence there is no other city that approaches to it. It is surrounded, in the first place, by a broad and deep moat, full of water, behind which rises a wall fifty royal cubits in width, and two hundred in height.[…] On the top, along the edges of the wall, they constructed buildings of a single chamber facing one another, leaving between them room for a four-horse chariot to turn. In the circuit of the wall are a hundred gates, all of brass, with brazen lintels and side-posts. (*History* I: 178)

In ancient Athens the Long Walls were two parallel stone structures which ran from the Acropolis down to the seaport of Piraeus, protecting the port as well as the city's centre and the fortified citadel at Acropolis. In Athens, as in much of the rest of ancient Greece, the Acropolis ('peak of the city') was a hilltop stronghold and place of refuge in time of peril. It contained the shrine to deities and a royal palace, as well as storage of weapons and food. At least to some extent, the citadel of the Greek Acropolis may have been inspired by Babylon of a millennium earlier. Reporting his observations from a supposed visit to Babylon, Herodotus writes thus of the citadel built by kings Hammurabi and Nebuchadnezzer:

> The outer wall is the main defense of the city. There is, however, a second inner wall, of less thickness than the first, but very little inferior to it in strength. The centre of each division of the town was occupied by a fortress. In the one stood the palace of the kings, surrounded by a wall of great strength and size: in the other was the sacred precinct of Jupiter Belus, a square enclosure two furlongs each way, with gates of solid brass; which was also remaining in my time. In the middle of the precinct there was a tower of solid masonry, a furlong in length and breadth, upon which was raised a second tower, and on that a third, and so on up to eight. The ascent to the top is on the outside, by a path which winds round all the towers. (*History* I: 181)

Some of the oldest known structures which have served as citadels were built by the Indus Valley Civilization, one tower apparently almost 12 m tall (Thapar 1975). At least some of these tall structures are thought to have been granaries. At the other end of the early history line of walls and citadels, a comprehensive development of defensive structures throughout Europe beyond Greece and Italy had commenced in the Bronze Age, primarily through the construction of hillforts.

4.4 Iron Age Hillforts, Colonies and Deified Heroes

In Europe, the vast majority of fortified settlements in the Iron Age were small, often with not much more than 50–100 inhabitants, such as those common through Britain. Greece and Italy were more densely populated than the rest of Europe, and settlements there were larger. The fortified Neolithic city of Sesklo in Greece had reached 4,000 inhabitants during the 6th millennium BCE. Settlements of the Bronze Age Urnfield culture of Central Europe (1300–750 BCE) had sometimes fortified only part of their perimeter, aligning its outer limits with river-bends or swamps as a natural defense. Navigation skill, masculine strength, and bravery had transformed into planning, construction and defense of settlements, with the Hero myth in attendance.

Perseus a deified hero defeating monsters and giving rise to the myth of Greece's 12 Olympian gods, was also the legendary founder of Mycenae in the north-eastern Peloponnese, about 90 km southwest of Athens, at the time, a secondary centre of the Mycenaean civilization. Mycenae was a military stronghold which dominated much of southern Greece during the Mycenaean Period of ancient Greece, from about 1600 BCE to about 1100 BCE. At its peak in 1350 BCE, Mycenae citadel and the town below had a population of 30,000 and an area of 32 ha (Thomas and Conant 1999: 1–31).

Huge limestone boulders were used in the construction of the Cyclopean Walls of Mycenae during mid-fourteenth century BCE. Ancient tradition held that it was the Cyclops who built these walls, as it was thought impossible for men to move the oversized rocks, and only the mythical Cyclopes had the strength to move the enormous boulders. In Greek mythology the Cyclops were a race of giants, each with a single eye in the middle of his forehead (Hurwit 1999: 337).

Associated with hillforts during the late Bronze and early Iron Age, roughly 1100–800 BCE, on the British Isles and through central and western European areas occupied by the Celts, was the Hero myth of the Celts (Harding 2012: 91–118). Navan Fort in County Armagh, Northern Ireland, was said to be founded by the goddess Macha in the seventh century BCE, and had been the capital of Conchobar mac Nessa, the mythical king of Ulster. Numerous other mythical heroes of Gaelic Ireland are associated with Navan Fort. Archaelogical excavation at Navan Fort uncovered large circular enclosure delineated by an embankment and a possible moat. Remains of a mound of earth and stones, possibly raised over graves, are at the centre of the enclosure (Harding 2012: 95–112). At least one large round building is believed to have been on the site which in its entirety seems to recall European Neolithic round enclosures (Koch and Minard 2012: 320).

In the south of France Lugdunum, now Lyon, was a Celtic hillfort on the site of which the Roman senator Lucius Munatius Plancus founded in 43 BCE what were to become one of the most important cities in the Roman Empire, the capital of the Roman province of Gallia (Toorians 2008). Lugdunum was named after the Celtic solar god Lugus, or after a legendary hero, Lugh, victorious youth skilled in spear and sling fighting, who became the High King of Ireland (Eastwood 2012: 55).

Hillforts had been the urban source of defensive settlements at mounds or high places, preferably with sudden and sharp elevation rise, from which many Iron Age cities had sprung. Optimal deployment of terrain and topography in Iron Age urban planning could be identified in hillforts (Dyer 2003: 14–46). Fortification usually followed contours of the mound, consisting of one or more lines of ramparts, with palisades or defensive walls, and external ditches.

Associated with the need for defense of their communities was also the drive of chieftains to rule adjacent or surrounding territories. This was also the case for Iron Age hillforts throughout Britain and continental Europe intended for security as well as for projection of control over a adjoining countryside. An Iron Age hillfort within the town of Amesbury, Wiltshire, anachronically named Vespasian's Camp, is located less than 3 km from the Neolithic site of Stonehenge. Built on a hill, now inside the town, next to the Stonehenge Avenue, Vespasian's Camp is only one of several other hillforts located nearby. From north to south the hillfort is 730 m in overall length, 374 m wide at the southern end, and 100 m wide at the northern end, spanning an area of some 15 ha. The initial construction of the hillfort is believed to have occurred during the late Bronze Age (1100–800 BCE) with later construction in the early Iron Age (700–350 BCE).

Arising through the masculine outlook of warfare or territorial domination had been the myth of the Citadel, identified by Giambattista Vico in his *Scienza Nuova* (Vico 1744/1968: IV- 982). The archetypal Citadel is the biblical Tower of Babel, a masculine enterprise of supremacy: A manifestation of an attempt to mimic God, and to reach to heaven. Erich Auerbach had pointed out Vico's predilection linking the myth of the Citadel with Plato's ideal city (Auerbach 1949: 110–118), and by implication, with the history of urban planning. In contrast, the primordial parable of the Garden of Eden, with its possibly very earliest version in the *Epic of Gilgamesh*, found a much lesser expression through the history of planning and building of cities.

4.5 Apollo as Patron of Walls and Colonies, and the Delphi Cult

Open urban spaces could be somewhat seen as sprouting from a Garden parable. Among the British hillforts there are, indeed, some that involve the more feminine element of an open, communal space. At least some of the British hillforts appear to be close to, or have some affinity with the antecedent Neolithic stone circles. Such appears to be the case of Wandlebury, near Cambridge, inhabited already in the Bronze Age, designed in concentric ditches surrounding a central open space (Garret 2004: 2). It was only during the Iron Age, c. 500 BCE, that the existing settlement of Wandlebury was turned into a hillfort by having its concentric ditches and walls fortified by hardened clay or mud, to keep ramparts of heavy timber pales in place (Harding 2012: 306).

Further urban Iron Age link to Neolithic stone circles, is possibly implied by Diodorus Siculus, a Greek historian (90–30 BCE), in *Bibliotheca historica*. Diodorus reports on a book by the historian and philosopher Hecataeus of Abdera (fl. 4th cent. BCE), named *On the Hyperboreans*:

> In the ocean, opposite Celtica, there is an island, not smaller than Sicily, and inhabited by the Hyperboreans; the soil is excellent, and the climate temperate. There is a beautiful grove sacred to Apollo (the sun-god Baal), and a splendid temple, of a circular form, and ornamented with many offerings. (*Bibliotheca historica* ii.47.1–2 in Skelton 1968)

Kinship of Apollo with the Mesopotamian sun-god Ba'al, purported by Diodorus in the quoted passage, had led to a further intriguing conjecture. In 1865 the suggestion had been made by the Swedish zoologist and antiquary, Sven Nilsson, that the island in Diodorus' quote is Britain, and that the circular temple is Stonehenge (Nilsson 1865).

The solstice festival at Stonehenge certainly supports an association with a sun-god. One of the most ancient and widely worshiped Celtic deities was known in England and Wales as Belenus, the radiant god of light and healing (Artisson 2008, 117), and the similarity in sound with Ba'al suggests affinity between the two (Watson 1831: 125).

Further supporting Nilsson's hypothesis is the abundance of hillforts in the vicinity of Stonehenge which could be explained by Apollo's link to colonization. The classical Greek poet Callimachus of Cyrene (c. 310–240 BCE) in his Hymn to Apollo addresses the god as Phoebus, hailing him as a patron and founder of cities:

> Men who plan cities are followers of
> Phoebus, for Phoebus rejoices in the
> founding of cities, and Phoebus himself
> lays the foundations. (Quoted by Paxso 2012: 213)

The likelihood that Belus was a sun-god akin to, or identical with Apollo, and Apollo's standing as the patron of colonization as well as his purported link with the north and the winter, appear also in conjunction with the god Dionysus. As the Greek god of fertility, Dionysus, was said to have "shared the home of his half-brother Apollo, residing at Delphi on Mount Parnassus during winter months, when Apollo was among the Hyperboreans" (March 2014: 164; Bridgman 2005: 35).

At Delphi, near the 'center of the world' marked by the stone of *omphalos* in the Temple of Apollo, the oracle of Delphi would exclaim prophecies while in a state of trance. The site in the temple dedicated to the oracle, had been assigned in the eighth century BCE, and a priestess, always referred to as the Pythia, assumed the lifelong role of the oracle (Malkin 1987: 17–91). The oracular power of the Pythia during her trance, the *Theia Mania*, is recalled by Cicero (106–43 BCE) in his treatise, *On Divination*, where he asks rhetorically: "And when was there ever an instance of Greece sending any colony to Aeolia, Ionia, Asia, Sicily or Italy, without consulting the Pythian or Dodonaean oracle, or that of Jupiter Hammon?" (*On Divination* I in

Bohn 1853: 143). According to Alexander John Graham, historian of ancient Greek colonization, Delphi oracles maintained, in fact, a tradition of ongoing association with colonial expeditions, and it was through this connection that the oracle became ultimately also the arbiter in all things colonial (Graham 1999: 26).

Guy Bradley points out that, during the Iron Age, at least on the Italian peninsula, hillforts and cities, *poleis*, evolved almost simultaneously (Bradley 2000: 61). But whereas new colonies were founded on oracular advice, Iron Age hillforts in Italy and in large parts of Europe were founded through warfare, invasion and as military defense posts.

The fundamental distinction between hillforts and *poleis* follows from difference in their respective purposes. It seems fair to say that the *polis* grew and evolved somewhat in a radiating manner round the *agora*, the central civic place, the market and the community hub, descendant of the Neolithic round enclosure (Hansen 1997). For inland cities there was seldom an imminent danger of invasion or unwanted intrusion, and the defense of the city needed not be the paramount concern most of the time. The main purpose of the polis was to enable commerce, politics and open-air ritual to take place in a primordial civic space.

Hillforts, on the other hand, were built as strongholds, as citadels defined by their delineation through ramparts or palisades, and the temple or the fortress in their midst. In Celtic central Europe, hillforts were the launching grounds of warriors and centers of tribal power, from which surrounding territory was controlled.

Whereas the important civic functions within the *polis* focused on open spaces of the agora, the theatre and the acropolis, in the hillfort the foremost importance was given to walls, to edifices housing the chieftain, and to storage of food and weaponry. Frequency and length of inclement seasons in Europe north of the Alps, would keep the chieftain and the storekeepers indoors, with the likely outcome of some mood disorder, depression and violent outbursts. In later Norse mythology this is exemplified by human Giant heroes in the fabled land of Jotunheim, ruled from the stronghold Utgard. The ruler of Jotunheim, at Utgard, is the angry and fearsome Skrymir, known also as Utgarda-Loki, capable to defeat and to humiliate even Thor, the god of lightning, thunder and storms (Grimes 2010: 88).

4.6 Procession of Dionysus and Open-Air Ritual Performances in Greece

The Utgarda-Loki is an example of a terrifying and violent chieftain living in a stronghold. The accommodating weather for much of the year in the Greek polis, in contrast, was conducive to outdoor interaction, and due to continual daylight exposure, possibly a lesser incidence of weather-related mood disorder.

The qualification of the *polis* as abundant with open-air urban space, however, is far from suggesting that its inhabitants were subject to lesser incidence of mood or mental disorder induced by means other than sunlight deprivation. Ritual madness and religious ecstasy were associated with the half-brother of Apollo, the bisexual god Dionysus, patron of the grape harvest, winemaking and wine, of fertility and theatre. Cult and rituals associated with Dionysus possibly date to the period 1500–1100 BCE in Mycenaean Greece and Minoan Crete (Kerenyi 1976: 53–72). In fact, annual festivals dedicated to Dionysus were the driving force behind the rise of the Greek theatre. The adulation of Dionysus during the Dionysia festivals was savage, marked by *thiasus* processions where *maenads*, inebriated women revelers in ecstatic frenzy, would tear apart live animals and consume them raw, on site. Often dressed in fawn skins, dancing while carrying a *thyrsus*, a long stick wrapped in ivy or vine leaves and tipped with a pinecone dripping honey, the *maenads* would form the *thiasus* procession that were to welcome the said arrival of Dionysus. Ithyphallic creatures, the satyrs, were also part of these processions (Morraw 2013).

The evident obscenities occurring at the *thiasus* pageant allude to a long-held tradition. Although the origins of the *thiasus* are unknown, it is easy to imagine that one suitable archaic venue for such or similar procession would be Avebury's Kennet Avenue lined with male and female sexual symbols of standing stones facing each other (Mann 2011: 239–242). The affinity between what may have been two fairly similar sexual processions, millennia apart, suggests deep Neolithic origins of the *thiasus*.

It is illuminating to note, in this regard, Georges Bataille's observation of one of the most remarkable of Lascaux paintings, referred to earlier (Chap. 2, Sect. 2.6):

> A man, dead as far as one can tell, is stretched out, prostrate in front of a heavy, immobile, threatening animal. This animal is a bison, and the threat it poses is all the more grave because it is dying: it is wounded and under its open belly its entrails are spilling out. Apparently it is this outstretched man who struck down the dying animal with his spear. But the man is not quite a man; his head, a bird's head, ends in a beak. Nothing in this whole image justifies this paradoxical fact that the man's sex is erect.
>
> Because of this, the scene has an erotic character; this is obvious, clearly emphasized, but it is inexplicable.
>
> Thus, in this barely accessible crevice stands revealed – but obscurely – a drama forgotten for so many millennia: it re-emerges, but it does not leave behind its obscurity. It is revealed, but nevertheless it is veiled.
>
> From the very moment it is revealed, it is veiled.
>
> But in these closed depths a paradoxical accord is signed, an accord all the more grave in that it is signed in this inaccessible obscurity. This essential and paradoxical accord is between death and eroticism. (Bataille 1981: 51–52)

The bird-man, much as the many other cave paintings of humans with animal heads, seems to suggest that animal masks, likely the gutted heads of real birds or animals, were part of the hunting ritual, one that the Great Plains buffalo runners dressed as coyotes performed, at different times and different places, half-way around the world (sec. 2). The ritual, a *drama* that Bataille believes was forgotten over millennia, had been reenacted at the *thiasus* procession at Athens. The *thiasus* culminated with actual drama performances in an open space which, from the fifth century onwards, was the Theater of Dionysus at Athens. It was here where the great tragedies of Aeschylus (c. 525–456 BCE), Sophocles (c. 497–406 BCE) and Euripides (c. 480–406 BCE) were played for the very first time.

The music of the theatre's chorus expressed the tragedy's Dionysian feature, while Apollonian constituents of the tragic play were found in the dialogue, the precursor of rational philosophical discourse. To Friedrich Nietzsche the theatrical tragedy in ancient Greece was the highest form of art due to this amalgam of both Dionysian and Apollonian elements into a wholesome performance, affording the audience the full range of values and feelings defining the human condition (Young 1994: 25–57). It is for this synthesis of the sensual and the frenzied with the rational and the weighty that "the amalgamation and necessary conjunction of Dionysus with Apollo in the shrine at Delphi symbolizes, for Nietzsche, an acceptance by the Greek priesthood […] of a belief in the two-fold and contradictory existence of suffering and joy as the basis for life" (Murray 1999: 34).

It has become customary to suggest in various contexts that both the Apollonian and the Dionysian impulses need to be celebrated and kept in a state of balance. The suggestion has been made that the Dionysian, as the frenzied, irrational, and feminine compulsion, and the Apollonian, as the calculating, rational and masculine trait, are projected onto the environmental archetypes of the Garden and the Citadel (Akkerman 2009). As if in juxtaposition to Nietzsche's Dionysian and Apollonian, two environmental paradigms are offered in the stories of the Garden of Eden and of the Tower of Babel.

4.7 Induced Insanity in Antiquity: Extending Foucault's *History of Madness*

Apollo's contrast with Dionysus appears to almost parallel that with the Pythia in his temple at Delphi. For not only was Dionysus implicated in inebriation and temporary insanity, but so was the Pythia. A study led by Jelle de Boer, a geologist, reports on two intersecting faults directly underneath the Delphic temple (De Boer et al. 2001). Consistent with this finding, the study also noted that hallucinogenic gases from a spring nearby, ethylene in particular, were trapped within the temple rock. "Ethylene inhalation is a serious contender for explaining the trance and behavior of the Pythia," said Diane Harris-Cline, a classics professor at the George Washington University in Washington, D.C. "Combined with social expectations, a woman in a confined space could be induced to spout off oracles," she said to the *National Geographic News* (Roach 2001).

The oracular chamber was a vaulted cell beneath the floor of the temple's sanctuary (Middleton 1888: 282–322). There is a good reason to believe that women chosen to become the Pythia were young and vulnerable, easily coerced to spend lengthy time in the temple's subterranean cell, particularly in the 4 months between the winter solstice and the vernal equinox. In all cultures that had employed shamanism, common practice has been consumption of hallucinogenic substances inducing a trance to communicate with the spirit world. Similarly too, according to de Boer, a trance in the Pythia was induced by the high concentrations of the narcotic gas that she would be exposed to.

Commemorating Dionysus' 'birthday,' the annual rural Dionysia festival took place shortly after the winter solstice. The Great Dionysia festival took place during the vernal equinox, upon Apollo's supposed return to his Delphic temple, and the subsequent illusory departure of Dionysus from Delphi. A parallel could be drawn between the *Theia Mania* trance of the Pythia at Delphi and the inflamed frenzy of the *maenads* at Dionysia. The frenzied religious ritual of the Dionysia, as well as the ensuing secular theatrical drama, both of which may have sprung during the Neolithic, had helped delineate secular and religious spaces in Athens, and delimit a unique period between the winter solstice and the spring equinox for the Pythia at Delphi. One may assume that during the winter when Dionysus was believed to be present at the temple, the oracle would be prompted to intensify her state of trance in confines of the underground cell, with little ventilation.

Narcotic inhalation of the Pythia much as the *thiasus* processions of women dozed with alcohol may have had its origins, indeed, in the depths of the Neolithic. But it is clear that such abusive tradition, targeting women in particular, was tolerated by the society, and more than likely cultivated and organized by the religious establishment of classical Greece. Two thousand years later, Michel Foucault in his *History of Madness* pointed out, "the hospital of Bethlehem [Bedlam insane asylum in London] exhibited lunatics for a penny, every Sunday […] the annual revenue from these exhibitions amounted to almost four hundred pounds" (Foucault 1988: 68).

And while the Pythia was confined in her subterranean cell, deprived of sunlight and subject to hallucinogens, the hero-boy of the Great Plains Indians was roaming, about the same time, the Prairie under its big sky, tricking bison. The contrast is meaningful, also due to implication of the solar myth. In age-old Native American legends the hero myth is retold time and again in various versions as "the bringing of a golden treasure from the sky-world by a wonderful boy who became a teacher of mankind – a son of the Sun bringing to earth knowledge of the Medicine of Heaven" (Alexander 2005: 113). The Pythia, too, was the mouthpiece of the sun-god, ostensibly for the benefit of mankind, but at a price of considerable suffering.

While the Pythia, or the intoxicated *maenads* of the *thiasus* procession, may have endured induced insanity only temporarily, the very occurrence and lasting sponsorship of such a tradition points to a continuing trend in society's attitude to insanity or mood disorder. The growth of population, urbanization, and adverse climate conditions through later periods in history, had not mitigated such attitudes, but quite to the contrary, had exacerbated them.

The thousands of inmates Foucault describes in nineteenth century's London were often chained and forced into conditions that today would be considered criminal abuse if applied to farm animals. Quite obviously, under conditions of such agony, the state of mind of most of these asylum inmates could have only worsened. Foucault's message in his book, thus, goes beyond the suffering of people locked up for mental illness, and points to a long-lasting historical trend in society and authority: Throughout the ages, human suffering has often been deliberately induced by persons in power and authority. And even though Foucault's accusing finger is pointed at early European modernity, his observation appears to extend across the ages. The suffering of the Pythia, and intoxication forced upon the women of the *thiasus*, to fulfill rules and expectations of contemporaneous establishment, suggest not only the conservation of some Neolithic practices, but also a commencement of a long-lasting trend in the official sanctioning of depravity.

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Chapter 5
Hero Under the Weather: Mood Disorder and the Emergence of Civic Space

5.1 Introduction and Summary

In the carving of streetscapes in ancient Greece, slowly accreting cities but also new colonies, more often than not, disregarded atmospheric patterns, such as wind directions, as the subtle critique of Hippocrates in his short fifth century BCE treatise, *On*, *Airs*, *Waters and Places*, suggests. But against the chaotic streetscapes of the old Greek cities, a city of Miletus, disposed on a rigorous plan of a strict grid pattern, had emerged in 442 BCE. It is hardly coincidence that an orderly, harmonious plan was applied onto the city of Miletus, the home of the pre-Socratic philosophical school of Thales, by then some 300 years old.

The contrast between the muddled streetscapes of its civic antecedents, and Miletus' orderly plan, evokes a parallel contrast between confusing mythologies originating in the Greek mainland and the systematic approach to observation and explanation in pre-Socratic science and philosophy in Ionia, on the geographic fringe of classical Greece. The gist of pre-Socratic philosophy, somewhat oversimplified, might be judged as a discourse on constancy versus change, and uniformity versus variety. Without presumptions of some constancy and uniformity, no reasoning is possible. Yet the underlying feature of daily experience is not constancy, but change, and it is not uniformity, but variety of things that we experience. The first attempt to explain constancy and change in a comprehensive framework was made by Anaxagoras of Clazomenae (c. 500–428 BCE) the father of Greek atomistic theory.

Viewing the underlying substance of the world as a primordial mixture of an infinite number of infinitesimally small seeds, all different from one another and held together by ether and air, Anaxagoras drew analogies from atmospheric observations to explain variety in the surrounding world. Undoubtedly, it was also due to relatively extended warm seasons in the Mediterranean climate, that open-air urban spaces, the agora and the forum, have remained an important part of the Greek, and later Roman, civic infrastructure.

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After the fall of the Western Roman Empire in the 460s and through early Middle Ages open-air urban spaces were used by the early Church for theatrical performances, initially to counter pagan religion, and later to entice devotion of illiterate public to Christianity. Over time, however, comedians and traveling performers turned the idea of a theatre on its head, often lampooning clergy.

The central character in their open-air marketplace performances was not the deified hero but the antihero. Rising from a secular open urban space, often a place of contempt, the irreverent character of the antihero had come to counter the Hero-worship. Through mocking satire in public performances the antihero stimulated open, uninhibited discourse in the community. In progression barely noticed the antihero and the profane urban open space had thus also planted the seeds of civic debate and evolvement toward civil society.

Weakness of mind or mild retardation, real or fake, came to be used through the antihero character of the clown or the town's fool, as a naïve lampoon of clergy or secular authority. Somewhat superficially, thus, the town's fool had carried the Socratic tradition of criticism, stirred by daemons, against establishment and accepted conventions.

While the town's fool may have exhibited some inanity, medieval royalty have suffered from very real and frequent mood disorders, possibly triggered by extended sunlight deprivation, in a pattern not unlike that of mental disorder among Roman emperors. While the feudal overlords or the church clergy enjoyed relative comfort of their abodes, the common folk, endured often inclement weather in the open space of their work or free time, but also a longer lifespan. The Hippocratic association of wind-directions with good or ill health, enhanced by detailed Vitruvian specification of different winds, had led to medieval superstitions associating atmospheric events with spirits, as well as with bodily humours, black and yellow bile, phlegm and blood. each corresponding to one of four temperaments.

5.2 Logos vs. Mythos: Early Beliefs on Earth, Atmosphere and the State of Mind

Throughout the ancient world and into early modernity insanity, or even retardation, had been believed to reflect imbalance between four bodily humours (Scull 2015: 16–47). The belief, tracing to Hippocrates, identified four major types of state of mind or mood: Sanguine, choleric, melancholic, and phlegmatic. The humours were four types of bodily fluids, blood, yellow bile, black bile, and phlegm, corresponding, respectively, to the four seasons, spring, summer, autumn and winter, and to the reputed primordial components of the world, the fabled Four Elements, air, fire, earth and water. Each prevailing state of mind was believed to correspond to a bodily humour with its attendant geographic attributes: Sanguine to blood, spring and air; choleric to yellow bile, summer, and fire; melancholic to black bile, autumn, and earth; and phlegmatic to phlegm, winter, and water. Insanity was explained by the dominance of one of the humours over the other three.

As opposed to lasting insanity in an individual, temporary insanity was sometimes believed to lead to shamanic ascendancy. Celebrating freedom of passion through intoxication and induced insanity, the *City* Dionysia festivals became established in Athens, during the sixth century BCE to become calendric as well as a respected urban feature of Athens and the surrounding region of Attica (Brockett and Hildy 2003: 18–20). At the same time in Ionia, on the west coast of Asia Minor (today's Turkey), an entirely different human pursuit of freedom took place. Less than 500 km to the east of Athens, Ionia is a strip of mountainous coastland, some 150 km long and only about 30 km wide. Here liberty from the bondage of superstition was pursued in the founding of early Greek philosophy.

The uniqueness of Ionian philosophy, usually referred to as pre-Socratic, was in its attempt to supplant myth by a cogent premise. This premise, in this first European system of secular thought, was grounded in the proposition that seeming chaos in nature conceals a cosmic order amenable to discovery by reason (Kirk and Raven 1957: 73). The backdrop of this unique intellectual attitude was the Greek settlement and later colonization of eastern Mediterranean and western Anatolia.

Colonization of western Anatolia commenced with the founding of the ports of Smyrna and Mytilene in the eleventh century BCE, following which some dozen Greek cities had emerged in Ionia. The layout of these cities and early colonies did not lend itself to much orderliness, let alone to cosmos-like uniformity and, judging from the subtle criticism of Hippocrates of Kos in the fourth century BCE, even the placement of new colonies had much to be desired. In his short treatise *On Airs*, *Waters*, *and Places*, Hippocrates identified some parameters which, based on current beliefs and observations, would be optimal for the placement of settlements. Two millennia later, Andrea Palladio warned about the mistakes in streetscapes disregarding wind directions. With a wink to twentieth century's planners of North American winter-cities, Palladio wrote in the sixteenth century:

> But when laying out streets one must ensure very carefully (as Vitruvius teaches us in Book I, chapter 6) that they do not follow the direction of any wind so that one does not suffer furious and violent gusts along them but the winds are dispersed, mollified,, weakened and enfeebled, contributing to the greater healthiness of the inhabitants; one should avoid the mistake made by those who, in ancient times, laid out the streets of Mytilene on the island of Lesbos. (*Quattro* III, 2)

Some ill-conceived cityscapes notwithstanding, the mental activity of competitive commerce by Ionian Greeks led to the adoption of reasoning as the ultimate yardstick in an approach to global explanation. Long absences from their native deities freed Ionian traders from the burden of indigenous superstitions, and led them to adopt the Eastern intellectual disposition seeking a more universal account for natural phenomena. It is this attitude that ultimately reduced myth in its stature as an explanation among Ionian thinkers, and gave rise to Western philosophy.

5.3 Miletus and Its School of Pre-Socratic Philosophy

Along with commerce with Egypt to the south, and with Babylonia in the East, the Ionian Greeks traded also ideas. Through cultural cross-fertilization Ionian science and philosophy arose early in the seventh century BCE, mainly in the school of Thales (624–546 BCE) and his followers Anaximander (610–546 BCE) and Anaximenes (585–528 BCE), centred on the Ionian city of Miletus prior to the conquest of Ionia, in 547 BCE, by Cyrus the Great of Persia. Subsequent revolt of the Ionians had led to a larger conflagration between Athenian Greece and Persia, allied with Sparta, the major Greek rival of Athens. The conflict brought utter destruction to the city of Miletus in 493 BCE, but with the defeat of Persia by Athens in 479 BCE, it was rebuilt in 442 BCE.

In sharp contrast to the disorderly accretion of its urban predecessors, the new Miletus was disposed on a rigid grid plan, attributed by some to Hippodamus of Miletus. The contrast between the muddled streetscapes of its civic antecedents, and the orderly plan of Miletus, evokes a parallel contrast between confusing mythologies originating in the Greek mainland and the systematic approach to observation and explanation in pre-Socratic science and philosophy in Ionia, on the geographic fringe of classical Greece.

The gist of pre-Socratic philosophy, somewhat oversimplified, might be judged as a discourse on constancy versus change, and uniformity versus variety. Without presumptions of some constancy and uniformity, no reasoning is possible. Yet the underlying feature of daily experience is not constancy, but change, and it is not uniformity, but variety of things that we experience. The first attempt to explain constancy and change in a comprehensive framework was made by Anaxagoras of Clazomenae (c. 500–428 BCE) the father of Greek atomistic theory.

Viewing the underlying substance of the world as a primordial mixture of an infinite number of infinitesimally small seeds, all different from one another and held together by ether and air, Anaxagoras conjectured that objects came into being when Mind caused the mixture to rotate, and thus separate into different entities. The proto-atomistic theory of Anaxagoras possibly was a response to his immediate predecessors, Heraclitus of Ephesus (535–475 BCE) and Parmenides of Elea (515–460 BCE) the one postulating reality as an ongoing change, the other embracing static constancy of oneness.

The Milesian school of Thales, of which Anaxagoras was a leading student and scholar, rejected the mythical and religious beliefs in anthropomorphic gods. Instead, it introduced the notion of substance, first as water, then, as air, and concerned itself with geometric form and analysis. Given Thales' merchant voyages at sea, primarily to Egypt, it is possible he contemplated the notion of the earth as a sphere, or a semi-sphere. But by most accounts Thales is said to have believed in earth being a round disc floating on water (Couprie 2011: 66). The opinion that the Earth rests on water, in the account of Aristotle, "is the most ancient explanation which has come down to us, and is attributed to Thales of Miletus" (*De Caelo* 294 a28–30).

Thales' 'flat earth' notion may have been related to his engagement with cartography. Thales is said to have proposed to the Pan-Ionian Assembly "to make one common place of counsel, which should be in Teos, for that was the centre of Ionia" (Herodotus I: 170). In recent times this has led to the opinion that "it [was] clearly a map which suggested to Thales the suitability of Teos" (Métraux 1978: 203–237). Queries about the shape of the earth continued in the Milesian School Thales founded, with his most renowned successors Anaximander (c. 610–545 BCE) and Anaximenes (d. c. 528 BCE) breaking grounds in early scientific inquiry free of myth.

Anaximander is believed to be the author of the first Greek world map, the first Greek celestial globe, and a spherical model of the heavens in the centre of which the earth was placed (Kahn 1994: 82). Anaximander saw the earth as a cylinder, a scroll-like column. Similar to Thales, such concept of the earth seems to be consistent with Anaximander's cartographic pursuit, whereby a cylinder-like earth reminds of a scroll that can be unrolled and flattened on a surface (Burnet 1964: 77). Whereas Anaximander saw the cylindrical earth as floating, unsupported, at the centre of the universe (Kahn 1994: 84), his student Anaximenes held that the earth is a flat surface floating, unsupported, in the air, presumably also at the centre of the universe. Atmosphere and the air were clearly of a focal interest to Anaximenes, and he posited that air is the ultimate substance of the universe, change in any given physical state being the result of its thinning or condensation.

The apparently regressive concepts of the earth reinforce the presumption that the Milesian school pursued also geometry, which may have included land surveying as well as map-making. Two centuries later, the geographer Agathemerus gave further account of Milesian map-making:

> Anaximander of Miletus was the first to depict the inhabited earth on a chart. After him Hecataeus of Miletus, a much travelled man, made it more precise so as to be a thing of wonder […] Now the ancients drew the inhabited earth as round, with Hellas in the middle, and Delphi in the middle of Hellas, since it holds the navel of the earth. (Kahn 1994: 82)

Hecataeus of Miletu (550–476 BCE) corrected and enlarged Anaximander's map of the earth, which he then used in his two books, *Asia* and *Europa*, the latter giving account of Celtic tribes near Massilia (Marseille) and in southern Germany. In his other book, *Genealogia*, he gave a systematic overview of myths, ridiculing Greek religious practices on the mainland (Shotwell 1939: 172).

5.4 Antiquity's Intellectual Hero: Socrates Between the Agora and the Daemons

The attitude to myth throughout history, including modern era, has often remained far from the critical approach of Hecataeus of Miletus. In 1841, a series of six lectures published as a book entitled, *On Heroes*, *Hero-Worship*, *and The Heroic in History*, Thomas Carlyle had introduced the absolutist notion that the course of human history and civilization has been due to exceptional leadership of male individuals in religion, warfare, politics, letters, arts and science. Frequently celebrated by protagonists of authoritarian political movements later in the nineteenth and twentieth centuries, Carlyle and his hero worship had been viewed by Ernst Cassirer (1946), in *The Myth of the State*, as contributing to twentieth-century fascism.

Carlyle's Hero mythology notion had met its first fierce opposition in the work of Herbert Spencer, *The Study of Sociology* (1896) where he made an argument for social and environmental context of Great Men's acts of discovery, creativity or leadership. Spencer's criticism was further articulated in his lecture 'Great Men and Their Environment' where his ultimate point was made, on the heels of Charles Darwin's evolutionary theory, that environments and individuals shape each other reciprocally.

Nowhere in the study of antiquity is the contrast between the attitudes of Carlyle and Spencer more evident than in the case of Ancient Greece and Rome. Spencer's argument for mind-environment reciprocal impact progression could be made for Greek and Roman antiquity much as it would apply to the mutual feedback between minds within their built environments, as proposed later in the twentieth century by Walter Benjamin in his *Arcades Project*.

The Ancient Greeks and Romans both began their political histories as city-states, and their ensuing cultural and political identities were shaped at virtually the same time. The Olympic Games of 776 BCE, introduced for the first time the concept of pan-Hellenism as a shared cultural experience of ancient Greeks (Roberts 2004: 171–222), while foundation myth of the city of Rome, had led to the founding in 753 BCE of the Roman Kingdom. But whereas the Greeks had defined their shared culture through clusters of city-states dispersed throughout the north-eastern Mediterranean, and relatively isolated from one another, Roman Kingdom, and later Empire, grew from a single civic centre – the city of Rome.

In 510 BCE the people of Athens deposed their king, granting equal rights to all male citizens in a drive for ensuing reforms. At about the same time, c. 509 BCE, monarchy was overthrown in Rome, and following the revolt the Roman Republic, *Res publica Romana*, had been founded. The further development of the Roman and Greek political and cultural identities, however, was quite different, significantly influenced by geography.

While the irregular coastline and the mountainous terrain of Greece isolated the various Greek city-states from one another, the city of Rome was located on a plain in the central part of the Italian peninsula. Rome was thus exposed to migration of people from the north, the Po River region, occupied by ancient Etruscan tribes, and from the south, mainly Sicily, which the Romans had called, Magna Graecia, as it had been colonized by the Greeks since the eighth century BCE. Foundations for the Roman Empire, thus, were laid during almost half-a-millennium of reception and inclusiveness of the Roman Republic, with the two primary ethnic and cultural influences being the Etruscans in the north, and the Greeks in the south and the east. The Romans showed particular taste for the wild, the orgiastic and the ecstatic in Greek religion transforming the Greek Dionysia Festivals and the Dionysian

Mysteries onto Bacchanalia, a winefest celebrating Bacchus, their own version of the Greek god Dionysus.

On the Greek mainland and the Peloponnesian peninsula a very different trend took place at the same time. Mutual geographical isolation had yielded fierce exclusiveness and competition among the Greek city-states, Athens and Sparta first and foremost. It was in this political climate that philosophy was brought to Athens by Anaxagoras of Clazomenae, exposed to Eastern ideas as a student of the Ionian School and as a former soldier in the Persian army. His own student was the fifth century philosopher Archelaus, said to have been the teacher of Socrates (470–399 BCE), the intellectual hero of the Greek classical tradition (Diogenes Laërtius ii. 23).

As a self-appointed questioner of virtue, Socrates publically queried the wise and the powerful of Athens, while openly declaring his opposition to Athenian democracy, and his admiration for Sparta, a chief adversary who served Athens a humiliating defeat at the Peloponnesian War (431–404 BCE). The public argumentation took place in the open air, at the Agora of Athens or at nearby streets (Johnson 2011: 31). The Agora was thus turning into a place of civic exchange of ideas, inclusive of questions touching the very core of Athens' political elites.

Not surprisingly, in the impoverished and degraded Athens Socrates was put on trial by the very same political elites. In the account of his pupil, Plato, Socrates was accused of corrupting the minds of the youth and of impiety against "the gods of the state" (*Apology* 24–27). Condemned to death Socrates refused to retract his views or to escape from his jail cell, and proceeded to carry out his own execution, by drinking poison hemlock.

With his martyrdom, Socrates became an iconic figure and the progenitor of western philosophy. Apart from his views on politics, Socrates was accused of not believing "in gods in whom the city believes, but in other *daimonia* that are novel" (*Apology* 24b), ostensibly showing Socrates' impiety. In *Phaedrus* (2.406 and 5.193) by Plato, Socrates' student, reference is made to "divine madness", the sort of insanity conferred by the gods to give humans poetry, love, and philosophy. Socrates had made several references to his personal spirit, the *daimonion*, an inner voice Socrates heard each time he was about to make a mistake. It stands to reason that his fellow-citizens on the jury that convicted him, had viewed Socrates' *daimonion* as rejection of the state religion. Today, similar reporting of a guiding inner voice would be classified as command hallucination often associated with schizophrenia (Beck-Sander et al. 1997).

5.5 Under the Weather in the Palace: The Emperors Between Delusion and Perversion

Judging from *The Clouds*, a comedy lampooning Socrates, written by Aristophanes for the 423 BCE City Dionysia, Socrates had some early interest in meteorology. This is consistent with Socrates' association with Anaxagoras of Clezomenae whose interest was in physical science, and Socrates' military career. Socrates is known to have fought in the battle of Delium, in northern Greece, in 424 BCE where he was said to have protected, in the midst of battle, a wounded commander, the general Alcibiades who were to become a prominent Athenian statesman. Socrates' own fate might have been different had Alcibiades not been assassinated in 404 BCE, 4 years prior to the trial.

The immediate impact of the trial and execution of Socrates upon Athens was insignificant, and the once all-important Greek city-state continued its economic decline and physical deterioration (Mossé 1973: 21–49). In 338 BCE the armies of Philip II, the king of Macedon, defeated an alliance of Greek city-states, including Athens and Thebes, effectively ending Athenian independence, and bringing the frequently antagonistic Greek city-states under a single, imperial control.

Philip's son Alexander the Great, was tutored in his youth by Plato's student, Aristotle. Succeeding his father, Philip II, to the throne in 336 BCE, at the age of 20, Alexander continued to consolidate control over the whole of Greece by enforcing a federation of Greek city-states. To the west, the Roman Republic at this time was embroiled in a series of external conflicts and civil wars, but the two regional superpowers, evidently, avoided each other at this time. Alexander spent the remaining years of his short life on an unprecedented military campaign through Asia and northeast Africa, while Rome had successfully expanded into central and southern Italian peninsula.

By the age of 30 Alexander commanded one of the largest empires of antiquity, stretching from the Peloponnese to Egypt and into northwest India. Remaining undefeated in battle Alexander is considered one of history's most successful military commanders, an unquestioned hero of both Greeks and Macedonians (Yenne 2010: 159). The darker side of Alexander's brilliance was his attention deficit disorder, possibly bipolar disorder, and a low grade manic depression from which he suffered since his boyhood (Worthington 2014: 32).

Alexander's empire imploded with his death in 323 BCE, following which 40 years of war ensued between Alexander's chieftains, the *Diadochi*, in a struggle for succession. By 277 BCE the former Macedonian empire was dismembered, transforming into four independent territories, each with a varying degree of Hellenic influence:

- The Ptolemaic Kingdom of Egypt (305–30 BCE) ruled by Ptolemy I Soter and his dynasty until the death of Queen Cleopatra and the subsequent conquest by Rome;
- Seleucid Empire of Babylonia and Central Asia (312–63 BCE) founded by Seleucus I Nicator, until gradually vanishing under pressure from Persia and Rome;
- The Kingdom of Macedon (277–148 BCE), initially founded as an imperial attempt by Antigonus I, weakened by a series of military conflicts, and following its defeat in battle in 148 BCE, becoming a Roman province;

- The Kingdom of Pergamon (282–133 BCE) founded by Philetaerus, a chieftain of Antigonus I, gradually taking control of much of Anatolia, and Thrace to the east, ultimately bequeathed to Rome by Pergamon's last ruler, Attalus III.

During the second century BCE the Roman Republic had continued its armed expansion that resulted in the projection of Roman Power northward and to the west, toward Gaul. By 148 BCE the Romans had also the Peloponnesian peninsula of Greece, along with the western portions of the former empire of Alexander the Great firmly under control. This further intensified the influence of Greek culture and religion on Rome.

The Roman Republic projected its power across the Mediterranean throughout North Africa, and its victory in 149 BCE over Carthage, a vast North African republican state, led to its formal transformation as the Roman Empire. On the one hand the Roman Empire became the most powerful economic, cultural, political and military force in the world of its time. At its height under Emperor Trajan (53–117 CE, r. 98–117 CE) it covered 5 million square kilometers and controlled over 70 million people, more than one fifth of the world's entire population. On the other hand, as the leading Roman poet Horace wrote, "Conquered Greece took captive her savage conqueror and brought her arts into rustic Latium" (*Epistles* 2.1 lines 156–157).

Encouragement of temporal insanity of crowds through mass intoxication, in Dionysian Mysteries was transformed onto the Bacchanalia Festival, with a similar controversial celebration taking place during the Saturnalia festival of lights, just prior to the winter solstice. The practice may have served the purpose, mainly of the Roman elite, of giving temporary carnal discharge to counter discontent among underprivileged classes.

In contrast to temporary insanity during festivals, endorsed by the establishment, the Roman ruling elite seems to have endured mental disorder at a consistent pattern of frequency, with higher incidence than might be expected among commoners. The most striking examples:

- Tiberius (42 BCE–37 CE), Roman emperor, 14–37 CE, paraphiliac who sexually abused children and babies;
- Caligula (12 CE – 41CE), Roman emperor, 37–41 CE. nephew of Tiberius, suffered from paranoia and narcissism, believing that he was a god and that the god of the sea was plotting against him;
- Nero (37–68 CE) Roman Emperor, 54–68 CE, nephew of Caligula, suffered from the same disorders as his uncle along with histrionic personality disorder;
- Commodus (161–192 CE) Roman Emperor, 180–192 CE, also co-emperor with his father Marcus Aurelius from 177 until his father's death in 180, suffered from narcissistic and histrionic personality disorders.
- Elagabalus (203–222 CE), Roman Emperor at the age of 14, from 218 to 222 CE, prostituted himself in the imperial palace to the condemnation of the Senate, and of the common people alike.

The almost contemporaneous rulers among the *diadochi*'s dynasties, in comparison, are not known for mental afflictions. Members of the Ptolemaic dynasty in Egypt are suspected to have suffered a rare physical disorder (Ashrafian 2005), but nowhere are there reports of deviant behavior or mental disorder among members of the *diadochi*. With the possible exception of dementia in a consul named Lucius Lucullus (118–57 BCE), other consuls of the Roman Republic, the immediate forerunner of the Empire, are also not known for severe mental disorders as those of the later Emperors.

Comfort and luxury of neither their Republican forerunners, nor their royal contemporaries anywhere, could compare with the palatial opulence of the Roman Emperors. Lavish accommodation of the sort enjoyed by the Emperors did not exist among the *diadochi*, nor among the Roman consuls, and certainly were far from the living conditions of the common people. Herein possibly lies the explanation to the sharp contrast in the mental disposition of the imperial ruling elite against the rest. The cool of the palatial interior during hot summers, or its heated shelter during the winter, compounded with the fear of assassination, had kept the Emperors indoors much of the time. Their possible preexisting mental disability, or disposition toward one, would be compounded by consistent lack of sunlight, and dormant mental disorder may have been triggered by continuous indoor stay.

5.6 Irreverence in the Open-Air: Theatre, the Market Place, and the Rise of the Antihero

Related to festivals and public celebrations in Rome, much as in Greece, were theatrical performances. Theatre structure, as an open-air outdoor space, was among the prominent aspects of material culture that was imparted to Rome by the Greeks. In addressing stage design for theatrical scenes, the Roman architect and engineer, Marcus Vitruvius Polio writes in Book V of his *Ten Books of Architecture*:

> There are three kinds of scenes, one called the tragic, second, the comic, third, the satyric. Their decorations are different and unlike each other in scheme. Tragic scenes are delineated with columns, pediments, statues, and other objects suited to kings; comic scenes exhibit private dwellings, with balconies and views representing rows of windows, after the manner of ordinary dwellings; satyric scenes are decorated with trees, caverns, mountains, and other rustic objects delineated in landscape style. (Vitruvius V 6:9).

If one were to attach a particular seasonal image to each of the three Vitruvian scenes, the tragic scene, identified as kingly due to its introverted palatial imagery, would best fit a cold winter season, perhaps even extreme summer heat. It is very clear from Vitruvius' description that people in this scene are mainly within the palaces, the melancholy of tragedy being associated with such a configuration. The comic scene, on the other hand, has balconies and open windows, suggesting a late spring or early autumn day with dwellers talking to each other, or shouting, from edifice openings. Finally, the satyric scene, likely involves satyrs, i.e., actors representing ithyphallic creatures such as those of the Dionysia Festivals and the Bacchanalia. The season might well correspond to the time around the vernal equinox, when Great Dionysia festivals used to take place, suggesting through the natural setting of the scene, freedom, and lack of inhibition and social constraints.

Reflected in the Hippocratic outlook associating wind directions with good or ill health, the Greeks had 12 *Anemoi* wind deities, largely adopted by the Romans, each deity corresponding to a different direction. In time, through popular superstition, these came to be associated with spirits, as were many other atmospheric events. Through the Vitruvian scenes, past pagan traditions and existing superstitions, theatre was set to embark also on a religious path. With the decline of the Roman Empire in the fifth century, and the rise of Christianity in Europe, theatre was ready to become the tool of choice for early Church indoctrination.

The gradual decline of the Roman Empire had started during the second century but was temporarily halted by a geopolitical division of the Empire that had commenced under Emperor Diocletian (r. 284–305) in 285. The Empire's eastern half became a separate political entity ruled by Constantine I (r. 306–337), seated in a new capital, Constantinople. By 476 the Western Roman Empire collapsed under the combined pressures of invasion, civil war, plague, corruption and economic depression. The eastern part that came to be known as the Byzantine Empire continued in its political and religious hegemony for a millennium until it was conquered by the Turkish Ottoman Empire in 1453.

From the fifth century, Western Europe was plunged into a period of general disorder that lasted until the ninth century. Faced with the problem of convincing a largely illiterate population of the superiority of a new religion, churches in the Early Middle Ages began staging dramatized versions of biblical stories, usually on days previously marked for pagan festivities (Young 1926, 1930). The theatrical performances were staged, and often performed by priests at market places or in front of churches. A Christian adaptation of the Roman Saturnalia festival was the secular Feast of Fools, a popular carnival during the Middle Ages, held on January 1 or shortly thereafter. A mock bishop or a pope parodied religious rituals while, for a day, lowly servants exchanged place with high officials.

Prominent among medieval dramatists is Hrotsvitha of Gandersheim (c. 935–973), a woman of nobility who became a nun in northern Germany, the author of religious dramas as well as six comedies. Modeled after plays of Publius Terentius, a first century Roman playwright, her six comedies constituted a shift away from religious drama, focusing rather on ordinary human pursuits such as love and marriage. The increasing popularity of open-air secular performances contributed to the weakening of Church authority. By the thirteenth century festivals such as the Feast of Fools had become a lampoon of Christian morality, mocking religious heroes, and subsequently triggering attempts by the Church to prohibit them.

As the Church fought back against having its power and authority slip away, the theatre has now been presented as a diabolical plot to undermine Christianity. Traveling acting troupes came to be viewed with distrust by the ecclesiastic authority, discouraged or often prohibited to enter jurisdictions (Allain 1997: 128). On the one hand, actors throughout much of Europe had suffered considerable persecution, were denied Christian rites of marriage and burial in the Church attempt to ostracize or excommunicate them. On the other hand, the medieval theatre gave the marginalized, the homeless and the underprivileged an opportunity to assert themselves.

Small nomadic bands of performers traveled around Europe staging theatrical scenes wherever they could find an audience (Brockett and Hildy 2003: 75). Occasionally, thus, market places would become the stages of bawdy comedies, frequently with sexual innuendos and "overtly crude references concerning everything from digestion to various bodily excretions" (Downs and Wright 2012: 279) The open-air space of the medieval theatre had thus become the profane, condemned counterpart of the solemn, sacred church edifice. With frequent interlocutions by audiences, through the much-attended theatrical town performances, the market place came to be a venue of public entertainment but also of open, uninhibited public discourse.

A prevalent antihero role became the town's fool, a marginalized, weak-minded individual whose own depravity was applauded by the community, and who thus unwittingly contributed to its social fabric (Oliver 1989). At the level of European nobility and ruling class this antihero stature was taken on by the medieval and Renaissance court jester, a comedian either employed to entertain a ruler or other nobility, or was an itinerant performer who entertained common folk at fairs and markets sponsored by the nobility. Much of the entertainment was performed in a comic style and many jesters made contemporary jokes in word or song about people or events well known to their audiences. The town market-place, thus, became a forum of spontaneous discourse and exchange of opinions on current issues. In a small way, thus, the town's fool had carried the Socratic tradition of open-air discourse against establishment and accepted conventions.

While the town's fool may have exhibited inanity, royalty have suffered from very real and frequent mood disorders, possibly triggered by extended sunlight deprivation (see Chap. 6, Sect. 6.3), in a pattern not unlike that of mental disorder among Roman emperors. While the feudal overlords enjoyed relative comfort of their abodes, the common folk, endured often inclement weather in the open space of their work or free time, but with it also soundness of mind and often a longer lifespan.

It was, indeed, the antihero of the medieval times who heralded the demand for and the advent of egalitarian citizenship later during the Enlightenment, delineating a place of contempt within, or outside, the city walls as a place of budding civic discourse. In *Thus Spake Zarathustra*, Friedrich Nietzsche features a conversation between the prophet Zarathustra (Zoroaster), at a city's gate, and the city's fool. In a Biblical narrative full of expletives, the city's fool shows Zarathustra that he, and not the city's newspapers, is a genuine messenger of truth. In Nietzsche's nineteenth century city, there was no *assigned* place or a medium to authenticity: a messenger of truth becomes the shunned, eccentric and ridiculed antihero, and a place of authenticity is the shunned space of depravity outside the city's gate (see Chap. 13).

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Chapter 6
Psychocultural Aspects of Weather and Place: The Little Ice Age

6.1 Introduction and Summary

European Middle Ages were an extended period of fluctuating but mostly above-average warm temperatures that by the tenth century had melted the ice sheet of the Arctic Ocean and brought about Viking marine exploration of, and temporary settlement on the eastern shores of North America. Medieval warm climate was punctuated by two short, but extremely cold events. The first was the cold event of 535–6, possibly due to a volcanic catastrophe in the tropics that yielded extensive atmospheric dust veil, followed by a major crop failure through Europe, North Africa and the Middle East, and a subsequent terrifying pandemic of the years 541–2, the Plague of Justinian. The second cold event coincided with a prolonged series of major volcanic eruptions on the Southern Hemisphere during 1315–1322. Extensive crop failure during the years 1315–1317 had led, at the same time, to the Great Famine throughout much of Europe.

Barely recuperating from the disaster, the Black Death bubonic plague struck Europe and the surrounding regions over the period 1338–1375. Marked by agony and death of the Great Famine and the Black Death, fourteenth century saw religion and the Church offering no real relief but prayer. Rapid reforestation due to sharp population decline of fourteenth century's suffering, along with a range of other causes, had produced an extended cooling event, the Little Ice Age, affecting the north-eastern Atlantic region primarily.

With the onset of LIA people's winter survival was through their own skill and resourcefulness rather than, or not only through, prayer. Snow, ice and low temperatures helped forge a new cultural landscape north of the Alps where painting of secular winter scenes, entirely void of religious motifs, became a new form of art. Against cold winters, overcast skies through warmer seasons, and wet summers appear to have led to marked incidence of low mood during the LIA. This has been reflected

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not only in popular belief, to this day, regarding ‘gloomy’ weather, but it led to renewed artistic expression: to the melancholy art in painting, at the close of the Middle Ages, and to the revival of tragedy in drama later on during the Renaissance.

6.2 Aspects of Extreme Weather Event Impact: Prelude to the Little Ice Age

One of the major early influences on Greece was the Minoan civilization, centred on the island of Crete, less than 300 km off the southern tip of the Peloponnese. The Minoans flourished from approximately 2700 to 1550 BCE. In about 1600 BCE a catastrophic volcanic eruption on the nearby island Santorini (known in antiquity as Thera) had devastated Crete to the extent that the Minoans never regained their former stature. The eruption and its consequences in destroyed infrastructure, ash-fall and ongoing crop failure, were the major factor behind ultimate Minoan demise some 250 years later. Plato’s description of the sinking of the mythical island of Atlantis, in his dialogues *Critias* and *Timaeus*, is believed by some to be a reference to the catastrophic eruption on Santorini, and the ensuing tsunami. Volcanoes and earthquakes were later in Antiquity addressed in the short treatise, *Meteorologica*, by Aristotle where weather events and water evaporation were also discussed.

Similar to the Santorini eruption a volcanic catastrophe in the tropics, followed by extensive atmospheric dust veil, was possibly behind acute cooling episode of 535–6 CE. The episode of 535–6 was the most severe and protracted short-term cooling in the northern hemisphere since the beginning of the Common Era. The event consisted of widespread, unseasonal weather, crop failures, and famines throughout the world (Hays 2005: 23–30). The cooling event is believed to be also ultimately responsible for the Plague of Justinian, a bubonic pandemic of 541–542. The pandemic which killed about 50 million people, was named after the Byzantine Emperor of the time, as it was also blamed on him.

The drop of temperature following the cooling event of 535–6 had the harshest results closer to the northern circumpolar region. A Norse myth of severe winter that puts end to all life on Earth, the *Fimbulvinter*, may have its origins in the drop of temperatures following the 535–6 cooling event. Unrelenting year-long winters in a 3-year succession, according to the myth, will lead to countless wars as a prelude to the end of the world.

During the three centuries of approximately 950–1250 a warming period ensued, often referred to as the Medieval Climate Optimum (Hughes and Diaz 1994). Norse colonization of Greenland and North America had occurred during this period, when the Vikings took advantage of ice-free passages through the Arctic Ocean. Two Nordic tales, the *Saga of the Greenlanders*, and the *Saga of Erik the Red* describe Vikings’ exploration, discovery and settlement in Greenland and Vinland, the land west of Greenland. Through excavated evidence during the second half of the twentieth century Vinland has been positively identified with L’Anse aux

Meadows, northern Newfoundland, Canada, the unearthed remnants confirming a Viking settlement on the shores of North America.

Associated with Vinland in the two Norse Sagas is also the all-important Viking heroine, the daughter of Erik the Red. Freydís Eiríksdóttir was born c. 950, and has been pictured as a warrior woman who had taken to battle against the Natives of Vinland. Another Viking heroine, Aud the Deep-Minded, was instrumental in the earlier settlement on Iceland during the ninth century. Aud was said to have captained a ship with some twenty men under her command, first to Orkney Islands and from there to Iceland. While the historicity of both women is not disputed, the heroic accounts of Freydis are both inconsistent as well as controversial (Gjerset 1915: 91).

The Medieval Climate Optimum (MCO) was definitely sealed by about 1315, when series of catastrophic eruptions started at Mount Tarawera, New Zealand, lasting about 5 years. Ensuing, and correspondingly cataclysmic period, 1315–1322, in Europe had come to be known as the Great Famine, the first of a series of large scale crises that struck Europe throughout the fourteenth century. The Great Famine started with bad weather in the spring of 1315 accompanied by universal crop failures that lasted through 1316 until the summer harvest in 1317. In the region of Louvain, for example, in 1 month during 1315, grain prices went up by 40 % (Jordan 1996: 146). Europe did not fully recover until 1322, and the entire period was marked by extreme levels of crime, disease, and inordinately high mortality. Flanders, in another example, had suffered an estimated 10 % drop in population during 1316 alone (Jordan 1996: 135). The Great Famine had affected mainly Europe north of the Alps and the Pyrenees, and west of the eastern Baltic, and although it ended in 1317, the attendant agrarian crisis continued to cause much suffering for another 5 years (Kershaw 1973).

European populations have barely recuperated when even greater disaster struck. The Black Death, a bubonic plague and one of the most devastating pandemics in history, lasted almost half a century, 1338–1375, and often swept through an area in periods as short as a few months. In England alone, over the 2 years, 1348–1350, the, Black Death had killed 1.5 million people out of an estimated total of four million. Throughout the years 1346–1353 in Europe alone the mass contagion killed between 75 and 200 million people. Falling victim to the pandemic were additional millions of people throughout North Africa and western Asia (Cohn 2002).

Steven Elden cites Immanuel Kant who in his *Physische Geographie* (Kant 1802/1900: 298) towards the end of the eighteenth century, wrote that humans are part of physical geography, “both because they are one of the features of the *Erdboden* – the earth’s surface – but also because they [constitute] a causal mechanism for change to the earth itself, because they build dams, drain swamps and fell forests, thus changing landscape and climate” (Elden 2009).

Kant in his observation was not only ahead of his time by some 200 years, but climate change of Kant’s own time could hardly be assessed more accurately. Sharp decline in human populations during the Black Death most likely resulted in rapid *re*forestation, which in turn was one of several reasons that had triggered a protracted cooling event, the Little Ice Age (LIA), the half-millennial period, 1350–

1850. Similar to the MCO that preceded it, the LIA had no clear and unambiguous cause, and certainly no single cataclysmic event that might have caused it. But it is certain that the LIA followed on the heels of gradual introduction of large volumes of cold water from melting glaciers into the Atlantic and Arctic Oceans during the MCO, it was coincidental to heightened volcanic activity throughout much of the period, and it also may have simply reflected spontaneous variation in climate (Crowley 2000; Hughes and Diaz 1994).

Regardless of the causes of LIA, there is evidence that its impact was most acute in Europe north of Alps. On the positive side, harsh and prolonged winters of the LIA had led to a new genre of art: Painting of winter scenes (Robinson 2006). Winter as a subject of new art form, however, was but one aspect within a whole range of human responses to LIA.

6.3 The LIA: Mood Disorder and the Melancholy Art

The suffering of the fourteenth century had shown to ordinary people that no amount of prayer helped reduce famines and plagues. Such ponderings began to erode the institutional authority of the Church and helped lay the foundations for Renaissance attitudes in science and philosophy, freed from Church doctrines (Oakley 1979: 178–212). It was secular art that had opened one of the gates to gradual secular emancipation (Loos 1974: 21–24). Non-religious portrayals started with illuminations, sometimes between 1412 and 1416, in one of the books of hours, Christian devotional calendars popular in the Middle Ages. In the calendar *Très Riches Heures* the brothers Limbourg depicted several winter scenes of the time. The very first winter scene was one such illumination, for the month of February, where Paul Limbourg showed snowy landscape entirely devoid of a religious subject. But the very first large-scale painting of a winter-landscape was not until 1565 when Peter Bruegel the Elder depicted *The Hunters in the Snow* with dogs trudging off for game. The backdrop was a snowbound Flemish village with skaters on a frozen pond, villagers gathering around a fire, and snow-covered hills in the distance.

In sharp contrast to these early paintings showing outdoor winter scenes as engaging, even entertaining occasions, with no suggestion of gloom whatsoever, the famous engraving, *Melencolia I*, produced by Albrecht Dürer in 1514, is nothing *but* gloom. The engraving is an indoor scene of dejection, with people in disconsolate, contemplative mood, where rainbow in the background of the picture suggests a previously rainy weather. Reflecting on the German artist's work, the art historian Laurinda Dixon noted recently that

> Albrecht Dürer's cryptic *Melencolia I* […] is considered a major monument of art history, and rightly so. It is difficult to summon new superlatives to describe the visual impact of this engraving, which marks the pinnacle of Dürer's artistic output […] *Melencolia I* marks a turning point in history, when the conventional medieval perception of art as a predominantly manual craft was augmented by the belief that artists possessed unique intellectual and creative gifts. (Dixon 2013: 7)

Juxtaposing the sixteenth century's masterpieces of Dürer and Bruegel, one can discern association of dejection with rainy, not necessarily cold weather, against an obvious chilly, snowy scene out of the doors, with no suggestion of low mood at all.

Religious motifs, however, continued to fascinate artists. The creative triumphs of one of the greatest painters, Rembrandt (1606–1669), are exemplified in his illustrations of scenes from the Bible. His painting, *The Storm on the Sea of Galilee*, is a synthesis of Rembrandt's contemporaneous weather experience with his knowledge of New Testament stories, and their ultimate hero, Jesus.

The affliction of extremely cold weather had affected people of all walks of life during the LIA, but the most striking is the prevalence of mood or mental disorder among the most privileged class. Throughout the LIA mental illness was apparent in over 30 European monarchs the vast majority of whom were north of the Alps. Some of the most prominent mentally ill monarchs were King Charles VI of France, known as Charles the Mad (1368–1422), King Henry VI of England (1421–1471), Queen Joanna of Castile, known as Joanna the Mad (1479–1555); Emperor Rudolph II Habsburg, (1552–1612); Tsar Ivan IV of Russia, known as Ivan the Terrible (1530–1584); Tsar Fyodor I of Russia, known as Fyodor the Bellringer (1557–1598), King Charles II of Spain, known as Charles the Bewitched (1661–1709), Tsar Ivan V of Russia, known as Ivan the Ignorant (1666–1696), Queen Maria I of Portugal, known as Maria the Mad (1734–1816), King Christian VII of Denmark (1749–1808), King George III of the United Kingdom (1738–1820), or King Ludwig II of Bavaria (1845–1886), known as Mad King Ludwig.

The similarity with incidence of mental disorder among the Roman emperors is at hand. In all cases the availability of comfortable or luxurious shelter, against the excessive discomfort or fear of the outdoors had led to sunlight deprivation, and the ensuing correspondence in mood or mental disorder of the subjects. Limbourg's and Dürer's artwork seem to confirm the multiple, varying and complex human response to the LIA, the range of mental responses in particular.

6.4 The North and the Winter: From Shakespeare's Hamlet to Goethe's *Erlking*

Although all major polytheistic mythologies had a deity attached or responsible to wind, the Greeks and the Romans had the most elaborate system of directional winds, each wind accountable to its respective gods. In ancient Greek religion and myth, the *Anemoi* were Greek gods of directional winds, also associated with various seasons and weather conditions. The Romans had largely adopted the Greek wind mythology, and Vitruvius reports on no less than 24 different wind directions even though none of them has associated deities mentioned (Vitruvius I 6:10).

In Norse mythology prior to the arrival of Christianity, c. 1000 CE, *Njord* was a god to whom many lesser gods were answerable, and whose supremacy had followed also from his association with the sea, with seafaring, fishing, wealth, crop fertility – and also with wind. With the onset of LIA Christianity was firmly established throughout Europe, and Norse folklore transformed an earlier pagan belief in four gods responsible for the four main directional winds, into a saga of four dwarfs, Nordri, Sudri, Austri and Vestri who each support the respective four cardinal points in the north, south, east and west, and together uphold the celestial dome (Grimes 2010: 3–24).

It was also popular folklore that had associated mood disorder with inclement weather. Such a belief had been commonplace for many generations, but its origins are most likely in the LIA. Mood or mental disorder had been depicted by William Shakespeare (Dalby 1997), most famously in *The Tragedy of Hamlet*, *Prince of Denmark* written c. 1602, becoming one of the most powerful plays in the English language. Just as the contemplating people in Dürer depiction in *Melencolia I*, Hamlet too "would have been seen by Shakespeare's contemporaries as a victim of the melancholy humor, which was especially associated with thinkers and philosophers" (Feingold 1984: 16). On the other hand, Eleanor Prosser pointed out, the mood disorder of the melancholy Dane in the play is strongly bound with his raging desire for a violent revenge at the murder of his father: "As Shakespeare knew well, 'melancholy is the nurse of frenzy […]'" (Prosser 1971: 128).

Among the more disturbing aspects of human response to LIA was the seemingly increasing incidence of mood and mental disorder among the middle class. In 1621 Robert Burton published his masterpiece, much admired as a literary satire still today, *The Anatomy of Melancholy*, a treatise on topics close to as well as far off the subject of melancholy. The great interest in the book, published in 6 editions in the course of Burton's life is in itself a likely testimony to the acuteness of this affliction in England in the midst of the LIA.

Similar to royalty in the Middle Ages, mental disorder in urbanizing Europe between the seventeenth and the nineteenth centuries, had occurred while many people were increasingly able to seek warm shelter during days of cold or unpleasant weather. In doing so they had deprived themselves from exposure to even the modicum of available sunlight, or direct daylight, in contrast with Europe of earlier historic times when population, mostly rural, had spontaneous exposure to sunlight or daylight even during cold days (Whited et al. 2005: 51–72). Urbanizing Europe in the second half of the LIA, during the Age of the Enlightenment, would have been also different, in this regard, from North America which during this time was still mainly rural (McIlwraith and Muller 2001: 121–132).

The hardship that the LIA inflicted upon millions of Europeans north of the Alps, recently detailed in Brian Fagan's, *Little Ice Age* (Fagan 2000: 157). was possibly unique across the globe precisely due to the excessive shielding of people during cold days. Growing incidence of weather-related mood disorder, along with gradual dissipation of religious authority, have inevitably created situations of chaos leading to social upheaval, particularly in Central Europe where discontent among peasantry, still forced to work as serfs to nobles, had led to increasingly frequent uprisings. The growing pervasiveness of attitudes favoring critical thinking, with the approaching Age of the Enlightenment, had further undermined the authority of the Church, particularly in its control over common people's affairs.

The Industrial Revolution and the abolishment of serfdom in the late eighteenth century had led to swift rise in urbanization, along with rapid population increase in cities, and the attendant widespread emergence of urban poverty, urban crime and violence. The reaction of economic and intellectual elites was the romantic revival of medieval notions toward nature, rejecting the rationalism of the Enlightenment. One of the leading figures of Romanticism was Johann Wolfgang von Goethe, a brilliant scientist and outstanding humanist of eighteenth and early nineteenth century.

Goethe is known to have suffered from severe mood swings since the age of 14, and later in life he was afflicted by depression and bipolar disorder (Holm-Hadula et al. 2010). As if in confirmation to Dürer's *Melencolia I*, Goethe's most creative outbursts came during times of the most severe mental suffering. To what extent had weather or indoor stay effect on Goethe's mindset is impossible to ascertain, but his renowned tragic poem, the *Erlking* takes place in the midst of a winter storm (von Goethe 1782/1881: 72–73). The Erlking is an evil spirit creature that consumes little children, and the poem describes a scene where a father comforts his feverish young son while rushing him to a physician. The little boy's various descriptions of his vision of the Erlking, rationalized away by the father, prove true when the father arrives at the physician's house only to discover that his son is dead.

6.5 Sealing the LIA: Alone on the Lakeshore, *The Scream*

The Erlking, along with Goethe's tragic play *Faust*, show how melancholy had been one of the formative features of German Romanticism in the second half of the eighteenth century and towards the end of LIA. At about the same time, German Romanticism in science had been represented by *Kosmos*, a four-volume treatise by a founder of modern geography, the explorer Alexander von Humboldt, also a distinguished diplomat in service of Frederick William IV, King of Prussia. Addressing himself to the questions of variety in empirical world amidst universality of natural laws, and change in nature amidst uniformity of concepts about nature, von Humboldt sought to resolve them by suggesting that all empirical investigation must undertake the essential premise that universality is "an inherent necessity [,] the very essence of nature" (Humboldt 1845: 34). Ultimately, von Humboldt hoped to devise "perhaps too bold a plan – the hitherto imperfectly seized idea of a Physical Geography thus gradually coming to assume the shape of a Physical Cosmography" (Humboldt 1845: ix).

Alexander von Humboldt was a contemporary of the philosopher Georg W.F. Hegel, the two were in fact neighbors in Berlin during the years 1827–1830, and may have even commented on each other's work (Herneck 1971). Hegel in his book, *The Phenomenology of Spirit* (Marx 1988: 55–77), introduced the foundation of his Idealism, the notion of the Absolute Spirit. An "empirical" parallel to Hegel's Absolute Spirit has been seen the spirituality of the natural world, of which von Humboldt spoke in *Kosmos* (Pinkard 2000: 209–210).

Alexander von Humboldt had passion for the outdoors and for travel which took him to South America. His vigorous attempts to improve the working and living conditions of miners in Galicia, now southern Poland, and Franconia, south-western Germany, exemplify his reputation for benevolence, and show his concern for people forced to spend much of their daytime deep under the surface of the earth, deprived of sunlight, in a lifestyle sharply different from his own.

In April 1815 volcanic eruption of Mount Tambora on the island of Sumbawa, Indonesia, ranked as a supercolossal event, had ejected immense amounts of volcanic ash into the upper atmosphere. As is common after a massive volcanic eruption, less solar radiation passed through the stratosphere. The severe climate abnormalities that followed had caused global temperatures to decrease, and the year 1816 came to be known as the "Year Without a Summer." The severe temperature aberrations occupied the mind of Alexander von Humboldt, and in a paper read to the French Academy of Sciences in 1817 he set a milestone in meteorology and cartography, by introducing isotherms, contour lines on a map identifying land areas of same temperature (Robinson and Wallis 1967).

The agricultural disaster associated with the 1815 volcanic event had been most severe in New England, Atlantic Canada, and parts of Western Europe. Due to overall cooling, particularly at the latter part of LIA, northern Europe had suffered a more prolonged affliction: Increased incidence of mood disorder. Significant rise of insane asylums that occurred in northern Europe during this time points to mood disorder as an emerging acute public health issue.

This problem had gradually increased through the nineteenth century. Whereas the turn of the century saw only a few hundred individuals in asylums in England and France combined, by the turn of the twentieth century, the number of mental patients had grown to the hundreds of thousands while German speaking countries had over 400 mental asylums (Shorter 1997: 34). In his 1866 novel *Crime and Punishment* Fyodor Dostoevsky alludes repeatedly to the mental disorder prevailing throughout St. Petersburg, the site of his plot. The city's main lunatic asylum was painted all yellow, and yellow is also the predominant color throughout the novel (Catteau 1989: 523 note 48).

The end of LIA had been punctuated by the eruption at the Krakatoa island group, Indonesia, in 1883. Just as after the eruption of 1815, so too Krakatoa volcanic discharge had produced unusual atmospheric effects during sunsets. This was the setting of a 1892 painting produced in Norway by Edvard Munch (Olson et al. 2004). In the painting a human-like being in an evident mental agony stands on the backdrop of a landscape with a turbulent blood-red sky, which according to one suggestion is an accurate depiction of the sky over Scandinavia almost 10 years after the eruption. The figure's "face is pale and ghoulish, resembling a skull. The mouth is agape in a permanent scream, while eyes are wide and looking downward in fear and desperation. The hands grasp the sides of the face, perhaps in an attempt to drown out the lamentations of the world" (Alston 2014: 9).

In his diary entry headed, *Nice 22 January 1892*, Munch described the source of his inspiration, while walking on a path near Oslo (then called, Kristiania):

> The sun going down—had dipped in flames below the horizon. It was like a flaming sword of blood slicing through the concave of heaven. The sky was like blood-sliced with strips of fire—the hills turned deep blue the fiord-cut in cold blue, yellow, and red colors—The exploding bloody red-on the path and hand railing—my friends turned glaring yellow white-—I felt a great scream. (Munch 2005: 198)

Such powerful outpour of feelings could hardly have happened in the midst of the nearby city. Yet the sky was surely the same. The difference appears to have been in the milieu: The solitude of the wide-open space of lakeshore was in sharp contrast with the constrained view of a street carved among buildings. The street canyon seems to have snatched away the primordial link of a human being with the sky.

Dubbed an "icon of modern art" *The Scream* to Isabelle Alston represents the universal anxiety experienced by mankind, more specifically by 'modern' man. The redness of the sky evokes the anxiety apparently felt by the figure and is perhaps a harbinger of an incoming storm, both literally and metaphorically" (Alston 2014: 9). There could hardly be a more accurate description of the prophetic work of art Munch produced at the very end of the LIA, on the eve of the twentieth century.

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Part II
Body-Earth-Sky and City-Form

Chapter 7
Sky Myths and Gender Projection in Early City-Form

7.1 Introduction and Summary

Plato's 'Myth of Er' in the *Republic* gives an account of the World Spindle, the *Axis mundi*, operated by the goddess Necessity and her three daughters, the Fates. The afterlife vision of the soldier Er, who died previously in battle and was resurrected, suggests image of a Platonic geocentric universe of eight celestial whorls standing for planetary spheres, the sun, the moon, and the sphere of the fixed stars, each sphere in a different color. A hundred years before Plato classical Greek sources reported on the Persian city of Ecbatana, the capital of the Median King Deiokes, as having seven concentric walls, with battlements colored in accordance to their corresponding walls. It has been pointed out elsewhere that the seven walls of Ecbatana conspicuously match the orbits or spheres of the planets, the sun and the moon. There is thus an apparent parallel between the colored battlements of the seven walls of Ecbatana and the colored world whorls in the 'Myth of Er'.

There also appears to be a match between the concentric plan of Ecbatana, and the concentric plan of Atlantis, inferred in past studies. The 'Myth of Er' appears at the very end of the *Republic*, an apparent message, albeit concealed, to Plato's intended readers, the legislators of the would-be Ideal City. While the intrinsic structure of Plato's Ideal City was mirrored in the perceived constitution of the human soul, the physical design of the Ideal City, as outlined in Plato's legendary accounts of Atlantis in the dialogues *Critias* and *Theaetetus*, and further inferred, appears to correspond to his vision of the universe in the 'Myth of Er'.

The perceived correspondence between the Ideal City and the universe seems to be implied already in Mycenaean radial plan, almost a millennium before Plato. Early origins of the city-universe analogy could be perhaps sought in a late Neolithic myth that might be implicit in a chalcolithic clay tablet from Karanovo in eastern Thrace (today's Bulgaria), millennia before Plato but near his whereabouts. Carvings on the Karanovo tablet could be interpreted as a real or symbolic plan. Reinforcing

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the conjecture of a link between the Karanovo tablet and an archaic Balkan notion of an ideal city, is Aristophanes' comedy, *The Birds*, which seems to mock an ideal city plan, originating in Thrace, and described along the pattern of the carvings on the Karanovo tablet.

7.2 Void and the Gynocentrism of Minoan Ritual Places

The sky has been the source of many creation allegories, much as the earth, too, has been a primordial paradigm of various cosmogony myths. A Greek creation myth that appears to link the Earth with the sky is the account of Pandora, the first woman. Pandora was molded from *earth*, but was created on order of Zeus, the god of the *sky* and thunder. In *Works and Days* Hesiod, the Greek poet of the seventh century BCE, relates the earliest literary version of Pandora, as a female amalgam of seductive gifts of gods that were actual afflictions, meted on mankind in punishment for the theft of fire (*Works and Days* 60–105). In a rather explicit feminine symbolism Pandora exerts her power, albeit somewhat inadvertently, through a jar. Out of sheer curiosity, rather than malice, Pandora is said to have opened a jar that contained toil, sickness, disease and all other evils of mankind, releasing them all but one: hope. As a first mortal woman, she thus appears to attain supremacy through her femininity, somewhat akin to a priestess.

It was the priestess, or a cult associated with one, that appears to have inspired the Minoan civilization on the Mediterranean island of Crete during the Bronze Age, c. 2700–1550 BCE. The Minoan priestess ritual had been performed in sanctuaries at caves or at designed open spaces atop mountains, and archaeological finds on Crete point to a prominently gynocentric Minoan culture and religion. In classical Greece a millennium later shrines such as Delphi, have followed in the Minoan female priestess tradition, and the bi-sexual god Dionysus representing femininity in later classical Greece has also been traced to Minoan Crete (Kerenyi 1976).

An important feature of many Minoan sanctuaries, such as the open-air peak sanctuary on Mt. Iuktas and the adjacent palace at Knossos, is their alignment with adjacent palaces on a north-south axis (Marketou 1988:28–31; Karetsou 2010). Another sanctuary, the sacred cave of Kamares at Mt. Ida, similarly, has a north-south alignment with the palace at Phaistos. Consistent with the numerous Minoan peak sanctuaries, a north-south orientation can also be found in many Egyptian pyramids, burial monuments constructed around the same time as, or a few hundred years earlier prior to the Minoan ritual spaces.

At c. 2700 BCE a north-south orientation could be attained most expediently by alignment with the star Alpha Draconis, or Thuban to the Egyptians, as the North Star. Alpha Draconis is a faint star of brightness 3.7, and even if it was brighter c. 2700 BCE than it is today, it still would have required an observational skill to be identified as the North Star. There are no bright stars in the sky vicinity of Alpha Draconis. To the Egyptians the dark area in the nightly sky in the vicinity of Thuban was considered void round which the rest of the universe revolves. After burial

Pharao's soul was believed to ascend to the abode of gods, and the pyramids were designed specifically for the magical purpose of launching the soul from its burial place through this celestial void.

There are no extant written records by the Minoans but it is fair to presume that, due to lack of any clearly visible stars about the celestial North Pole at the time, common Minoans might have considered the celestial north, a dark area round which the rest of the celestial sphere turns, as a great void. The configuration of Minoan ritual places, as open area peak sanctuaries pointing to the north could be explained, thus, as an expedience to the priestesses linking the void in the sky with the female on earth.

In Chap. 3, "The spatiality of one's own body and motility," of his *Phenomenology of Perception*, Merleau-Ponty makes a point observing that the human body confers a meaning to our perceptions of the environment through the body's physical projection onto the environment (Merleau-Ponty in Baldwin 2004: 124). If an eidetic feature of the feminine is void itself, then the open space and the alignment of Minoan sanctuaries, appear to be deliberately fashioning such a projection. Extending Merleau-Ponty's insight the further observation could be made to the effect that the built environment throughout its history is largely a projection of gender facets. If so, the question arises as to whether and how femininity and masculinity are, or have been, represented in the built environment. Associated question is whether gender projection affects our perception of the natural environment, and first and foremost, of the earth itself.

7.3 Sky Patterns and Early Settlement Groundplans

Following the Santorini eruption c. 1600 BCE, and subsequent demise of the Minoan civilization on Crete, the major centre of the early Greeks shifted to Mycenae, a city-state in the north-east Peloponnese. Through its military prowess Mycenae dominated much of southern Greece, and evidence shows that Mycenaeans absorbed many elements in its religion from the Minoans (Dietrich 1973: 65–66).

A frequent pattern in Minoan and Mycenaean pottery had been rosettes or linear lines radiating from a centre, suggestive of a solar pattern. Such design evokes spoked wheels on chariots as well as solar deities (Marinatos 2010: 24–28). Noteworthy, therefore, is the "well-planned radial pattern of built roads covering the immediate hinterland," converging on Mycenae as the center (Castleden 2005: 31).

Presaging the Minoan radial pottery design are intersected or radial carvings on several of the numerous Neolithic or Early Bronze-Age sherds, disks, spindle-whorls and other clay roundels excavated in the Balkans. Many of the clay roundels have been unearthed within, or adjacent to south-eastern Balkans bordering Anatolia and Macedonia. Radiating lines carved on these archaeological finds could be expressions of sunwheel lore, or some other cosmogonic myth, which had prevailed also as an urban design motif.

During western antiquity perimeters of numerous planned cities had been often circumscribed by the circle and their internal layout by square grid. Defense considerations, but also observations of the sun or of paths of celestial objects, as well as continuing manufacture and use of round articles, may have been instrumental in the inclusion, or outright preference of concentric or oval groundplans of several Bronze Age cities in the Mediterranean (Kelly 1977: 12). The Early Bronze Age settlement of Al-Rawda (2400–2000 BCE), in the eastern Mediterranean, had circular concentric design with radiating streets carving the town into zones (Castel and Peltenberg 2007). In the Greek city circuit walls round the acropolis became quite common by the fifth century BCE, according to Wycherley (1949: 10). The city of Rhodes, founded c. 408 BCE, was said to be "built in the form of a theatre," and Lewis and Boardman, giving account of excavations and aerial surveillance at the site, confirm that "from [the temple of Aphrodite] the ground rises gradually to west and south west, giving a theatre-like effect […]" (Lewis and Boardman 1992: 205). Many planned colonies in Classical Greece, such as Miletus or Thurii (both 440s BCE), however, were often laid out on a rectangular grid, perhaps following on some settlement plans from Egypt (Morris 1994: 29), but possibly also in deference to the belief in Four Elements, as well as for ease of property assessment. In the *Republic*, a philosophical dialogue series, Plato had presented the social structure of his Ideal City as analogous to the makeup of the human soul (*Republic* II: 368d–369a; IV: 434d). His Ideal City, as the Platonic *Form* of a city, had been launched as a cerebral imprint common to all humans (*Republic* IV: 435). But except for brief descriptions of his two apocryphal cities, Atlantis – an ideal city on a mythical island by the same name, and Magnesia – a fabled city addressed in his very last book, the *Laws*, Plato did not elaborate a great deal on the Ideal City's physical design.

In the *Critias* Plato purports to give a factual description of the island of Atlantis, with its elite seated at the very center of its capital. In Plato's myth, the city of Atlantis was built by the god of sea, Poseidon, who

> enclosed the hill in which [the maiden Cleito] dwelt all round, making alternate zones of sea and land larger and smaller, encircling one another; there were two of land and three of water, which he turned as with a lathe, each having its circumference equidistant every way from the centre […]. (Critias 117d)

The number of enclosed land areas between and outside the five zones in Atlantis has been shown to be seven (Golding 1975), and radiating avenues in four cardinal directions have been inferred for Atlantis repeatedly (Saunders 1976).

It has been pointed out that in Atlantis Plato had followed the concentric circular plan of Ecbatana, Persia (Naddaf 1994), as reported by Herodotus of Halicarnassus in *Histories*. The seven enclosed land areas of Atlantis seem to correspond to seven walls encircling Ecbatana, the capital of Media, while Poseidon and Cleito's dwelling place on a hill at the centre of Atlantis is located, similarly to the palace of the Median king Deiokes, on a hill at the centre of Ecbatana(Gill 1977).

> [Deiokes] built large and strong walls, those which are now called Ecbatana, standing in circles one within the other [...] on a hill [...] all seven in number. And within the last circle are the royal palace and the treasure-houses [...] and of the first circle the battlements are white, of the second black, of the third crimson, of the fourth blue, of the fifth red: thus are the battlements of all the circles colored with various tints, and the two last have their battlements one of them overlaid with silver and the other with gold. These walls then Deiokes built for himself and round his own palace, and the people he commanded to dwell round about the wall. (Herodotus I: 98)

Five spheres of the known planets and the two spheres of the moon and the sun, accepted as a fact in early astronomy, confer cosmic harmony on the plans of both Atlantis and Ecbatana (James and van der Sluijs 2008). In the *Republic* Plato writes that "we must use the embroidered heaven as a model to illustrate our study of those realities [of the pure, ideal Forms]" (*Republic* VII: 529c). This has been interpreted as an intention to assimilate celestial patterns into a pure intellectual contemplation (Hetherington 2006: 11–28). Awareness of the sun disk, of circumferential apparition of the nightly skies, or the surmise of planetary spheres, as guides to ancient city plans, and to the Platonic ideal city in particular, therefore, come to mind immediately as a likely rationale.

7.4 The Comic in the Cosmic: The Ideal City in *The Birds* of Aristophanes

Save Herodotus, the only other known *literary* source to circular – concentric or radial – city plans, prior to Plato, is the Athenian dramatist Aristophanes (*c*. 448–385 BCE) who in one of his most renowned plays lampoons ideal city-plans, precisely, by linking them to sky patterns. It may have been a supposed mythical association with circular plans that Aristophanes had in mind in his comedy, *The Birds*, written sometime before 414 BCE, i.e. at least 6 years *prior* to the founding of Rhodes. Since Rhodes could not have been the butt of his lampoon, Aristophanes was possibly satirizing some prevailing parable attempting to mimic an ideal city according to the rules of geometry and the universe. In the play, the fifth century Athenian astronomer Meton appears as a town planner trying unsuccessfully to peddle his skills to Pisthetaerus, one of two elderly runaways who fled the disorderly and corrupt Athens, and who wish to found Nephelokokkygia, an ideal city (Cloud Cookooland, or City of Birds):

> PISTHETAERUS: What are these things?
> METON: Tools for measuring the air. In truth, the spaces in the air have precisely the form of a furnace. With this bent ruler I draw a line from top to bottom; from one of its points I describe a circle with the compass. Do you understand?
> PISTHETAERUS: Not in the least.
> METON: With the straight ruler I set to work to inscribe a square within this circle; in its centre will be the market-place, into which all the straight streets will lead, converging to this centre like a star, which, although only orbicular, sends forth its rays in a straight line from all sides.
> PISTHETAERUS: A regular Thales! Meton [...] (*The Birds* 995–996)

The play's Meton provides the audience with a bird's eye view depiction of a city laid out on a circular plan divided into equal radial portions, with the *agora* at the centre, a representation close to the ideographic image of 'city' (Castagnoli 1971: 68).

One of the protagonists in the play is a hoopoe, as the metamorphosed mythical king of Thrace. Located in the south-eastern region of the Balkans, Thrace was referred by Plato in a context reminiscent to that of Meton in *The Birds* (Tomin 1987). In the *Theaetetus* the Platonic Socrates engages in a dialogue with the mathematician, Theodorus of Cyrene, regarding a philosopher said to have

> the outer form of him only in the city: his mind, disdaining the littlenesses and nothingnesses of human things, is 'flying all abroad' as Pindar says, measuring earth and heaven and the things which are under and on the earth and above the heaven, interrogating the whole nature of each and all in their entirety, but not condescending to anything which is within reach.
> THEODORUS: What do you mean, Socrates?
> SOCRATES: I will illustrate my meaning, Theodorus, by the jest which the clever witty Thracian handmaid is said to have made about Thales, when he fell into a well as he was looking up at the stars. She said, that he was so eager to know what was going on in heaven, that he could not see what was before his feet. This is a jest which is equally applicable to all philosophers. (*Theaetetus* 173d–174b)

It is this very same region mentioned here, Thrace, between today's Greece and Bulgaria, that appears to be the origin of both accounts by Plato and Aristophanes. It is also Thrace where a pedigree could be sought to Plato's cosmogony *and* to layout of his Ideal City on the island of Atlantis, said to have vanished into the ocean some "9000 years" before Solon, a legislator who preceded Plato by two centuries (*Timaeus* 23d–e).

Several chalcolithic clay seals and whorls excavated in the Balkans throughout the twentieth century carry carvings variably presumed to be an early script, or ornamentation. One such clay disk is a roundel in cross-like division into four equal and inscribed parts, conjuring Meton's groudplan in *The Bird*s. About 6 cm in diameter and 2 cm in thickness, the roundel, perhaps a whorl-like seal, was unearthed in eastern Thrace, at Karanovo, Bulgaria, in 1968, and has been dated to about 4800 BCE (Makkay 1971: 1–9). The inscriptions have never been definitely deciphered, and the suggestion that they could, in fact, represent an asterism or some other pattern in the sky has been put forward as one of possible interpretations (Pellar 2009).

The roundel from Karanovo, and another Early Bronze Age roundel from c. 5300 BCE at Tartaria, Romania, are both intersected, alluding to association of a solar myth, on the one hand, with early settlement groundplans, on the other hand. This could lend support to the suggestion that the roundels represent an Early Bronze-Age source to Mycenaean radial planning and to radial images of an ideal city later in Classical Greece (Akkerman 2014).

7.5 Atlantis and the ‘Myth of Er’: Plato’s Final Message?

The rendering of carvings on the Karanovo and Tartaria disks as an allusion to asterism or some other related celestial pattern suggests a possible background to Plato’s cosmogony as well as to his design of Atlantis. In his mythical account of creation by the demiurge Plato traces the origin of the universe to a primordial compound. In what appears to be reference to the intersections of great circles of the ecliptic and the celestial equator, Plato says, inscrutably in the *Timaeus*:

> The entire compound was divided by him [the demiurge] lengthways into two parts, which he united at the centre like the letter χ and bent into an inner and outer circle or sphere, cutting one another again at a point over against the point at which they cross [...] and the one revolved horizontally to the right, the other diagonally to the left. (*Timaeus* 36b6)

The unearthing of bisected disks in the geographic proximity of Plato’s own whereabouts could indicate an early, primeval source to Plato’s assertion regarding the crossed cosmic circles in the image of the letter χ. Rather illuminating, now, is the description of prehistoric Balkan settlements based on their configuration, as reported by Jane McIntosh:

> By 4500 B.C. tell settlements were often substantial and carefully planned, with houses laid out in rows, concentric circles, or blocks. Defensive ditches and palisades, with entrances placed at cardinal points, surrounded the settlements [...] (McIntosh 2009: 40)

Corresponding to such a description could be many inscribed whorls excavated in the Balkans. If the Karanovo and Tartaria roundels points to some early source to Plato’s cosmogony, in a similar vein it might constitute a further clue as to the origins for the physical layout of Plato’s ideal city. Whether seals, or imitations as amulets, the Karanovo and Tartaria clay disks could be construed as symbolic maps, or even real settlement plans, epitomizing the linkage between a sunwheel myth, the manufacture of disks and the concept of an ideal city. It is Plato’s esoteric conclusion of the *Republic* that buttresses such a supposed linkage.

At the very end of the *Republic* Plato launches an enigmatic, cosmogonic parable, the ‘Myth of Er’ (*Republic* X: 614–621). In the fable, the soldier Er who is believed to have died, journeys to the afterlife and comes to life again to tell his story. In Er’s account the universe is shown to be a celestial spindle, the Spindle of the goddess Necessity, Ananke, assisted by the Fates, her three daughters, Clotho, Lachesis and Atropos. Placed on the Spindle of Necessity, on the *Axis mundi*, are eight whorls, constituting perfect disks:

> The first and outermost whorl has the rim broadest, and the seven inner whorls are narrower, in the following proportions – the sixth is next to the first in size, the fourth next to the sixth; then comes the eighth; the seventh is fifth, the fifth is sixth, the third is seventh, last and eighth comes the second. The largest (or fixed stars) is spangled, and the seventh (or sun) is brightest; the eighth (or moon) coloured by the reflected light of the seventh; the second and fifth (Saturn and Mercury) are in colour like one another, and yellower than the preceding; the third (Venus) has the whitest light; the fourth (Mars) is reddish; the sixth (Jupiter) is in whiteness second. (*Republic* X: 615b)

The colored seven inner whorls appear distinctly manifest against the colored battlements of Ecbatana's seven circular walls, as described by Herodotus only a century before Plato, as well as the seven enclosed land areas of Atlantis, as accounted for by Naomi Golding (Sect. 7.3). The 'Myth of Er' appears at the very end of the *Republic*, and ought to be seen as the closing message to its intended readers, the legislators of the city-state. Plato's extension of the intrinsic city-soul analogy onto the *physical* city-universe analogy, emerging from the juxtaposition between the 'Myth of Er' and the description of Atlantis, appears to be such a concluding precept.

The clockwork universe of Plato's cosmic whorls is regimented, somewhat masculine, much as a sunwheel, softened by its female deities. It was Friedrich Nietzsche who in *The Birth of Tragedy* suggested that Greek classicism had evolved from primordial gender facets that came to be expressed in the arts as Apollonian and Dionysian dispositions (Nietzsche 1871/1956). Plato's "Myth of Er',' as if presaging Nietzsche's insight, presents femininity and masculinity as inherent features of the universe.

Nietzsche's discernment advances, furthermore, an evolutionary premise that follows from a standpoint presupposing two elemental environ/*mental* imprints: the myths of the Earthmother and the Sky Father. The two primordial paradigms were shown by Carl Jung as archetypes of the collective unconscious, originating in prehistory (Jung 1959: 81–84). The emergence at the dawn of history of city-form – the configuration of urban voids, edifices and infrastructure – ought to be viewed, accordingly, as expression of ongoing allegories, rather than merely the strict product of reason (cf. Boyer 1983: 214–215 286–287).

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Chapter 8
The North and Paradigms of Balance: Harmony and Equilibrium as an Urban Ideal

8.1 Introduction and Summary

The impact of ancient variants of the myth of *Axis mundi* upon city-form traces to late prehistory and early antiquity. Evidence from Mohenjo-daro of the Harrappan civilization in the Indus Valley, and from Greek colony of Thurii are two examples that show alignment of streets to cardinal directions with deference to North. Compass street alignment has been recorded in many other early archaeological sites, and has been prevailing in Roman colonies.

Axis mundi inspired early town planners not necessarily due to the constancy itself of the North Star, but in the harmony and balance it exuded in the rotating nightly firmament. During Greek antiquity Pythagoras' cosmic mysticism as well as his advances in geometry likely influenced classical Greek planning, orthogonal and radial street layouts in particular. Perception of harmony and accord in geometry and in ideal city-form brought about projection of mechanistic notion of balance also in the deportment of the Platonic ideal-city inhabitants, "as though fashioning a city and its inhabitants out of waxwork."

Plato's mechanistic city-universe analogy had carried onto the Stoic notion of Cosmopolis, viewing the universe as a city of gods, and attained a Christian rendition in St. Augustin's balancing juxtaposition between the earthly city of sin and the heavenly City of God. Geometric balance in streetscape design emerges from the proposal of a plan for Rome by Leone Battista Alberti for pope Nicholas V, c. 1450, and the further redesign of Rome by Domenico Fontana, a century later, for pope Sixtus V. Renaissance scientific advances in research into equilibrium in physics and mechanics further projected the notion of balance upon plans for London of Sir Christopher Wren and Robert Hooke, for example.

Such approach was seen expedient in the context of rising urbanization, growing urban populations and intensifying urban transportation. Predictability and transparency in mechanical science were to be thus a guide to an urban ideal: wide, linear streets and avenues, planned in a symmetrical fashion, allowing for predictability

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and a clear field of vision. The envisaged urban equilibrium was to decrease high density residential crowding, or separate it from burghers' areas of the city, and to reduce fire hazard through introduction of building code preventing chaotic construction. The increasingly muddled streetscapes in larger cities of the late seventeenth and eighteenth centuries called for streamlining of animal and wagon traffic, elimination of congestion, traffic accidents and crime.

The prowess of the scientific and industrial revolutions culminates in the nineteenth century's visions of the surprise-free city. A mechanistic ideal, that had proven itself in the progress of science and industry, had to be applied to the increasingly volatile urban milieu of Northern Europe. The beauty of the medieval city-form, haphazardly accreted over centuries, was lost in the fear of the middle-class and the rising bourgeoisie in the wake of ever increasing discontent of the urban poor. Geared towards the machine rather than the person, seeking a mythical equilibrium rather than charm of the accidental, conformity rather than occasion for adventure in the unforeseen, by the turn of the twentieth century the mechanistic attempt at a safe, surprise-free city was, incredibly, pursued through the obliteration of historic urban centres across much of Europe.

8.2 Compass Directions and Street Alignment in Geomancy and Early Settlements

It is commonplace that since prehistory the earth has been universally associated with myths of female deities, while the pole star in the northern hemisphere had often provided an opportunity for the formation of a masculine paradigm of a god, a builder of the universe, a cosmoplast. The pole star of the northern hemisphere, and myth of *Axis mundi* associated with it, thus provided also an early inspiration to the notion of a perfect construction, a citadel and an ideal city, commencing a feedback progression between minds and their built environment.

The contrast between the existential threat in the ever changing fortunes of nature, perceived as akin to feminine capriciousness, against the seemingly unchanging axle of the North Star as the cornerstone of the nightly sky, ultimately laid ground at the dawn of history for the mythic drive to found an ideal community, as a shelter in a masculine image of the universe. The ensuing myths of the Citadel, and the descendant Ideal City, have been put forward as significant mental constituents in the history of city-form (Vico 1744/1968: IV- 982). Geomantic as well as practical significance in the construction of human settlements was assigned to the respectively advantageous, or adverse wind directions, sun angle and shadow patterns. Compass direction of settlements or edifices, from China through the Indus Valley, Mesopotamia and the Near East, to Europe, as well as in northern and Central America, would be guided by geomantic beliefs.

Since the Bronze Age, but possibly already earlier in the Late Neolithic, wind directions in configuration of dwellings attained practical, but sometimes also mythical significance, and led to considerations of compass direction of dwellings, and later on, of streets in the construction of early human settlements. Exemplifying the significance of wind directions is the Sumerian city, Nippur, in southern Mesopotamia, the southern part of modern-day Iraq, founded possibly as early as 2500 BCE, as the seat of worship for the god Ellil, the "Lord Wind," ruler of the cosmos (Beaulieu 2004).

The contrast between the existential threat in the ever changing fortunes of nature and human fate, against the seemingly unchanging axle of the North Star as the cornerstone of the nightly sky, ultimately laid ground at the dawn of history for the mythic drive to found an ideal community as a shelter in the image of the universe. Street orientation to the points of the compass has been enshrined in urban environments throughout history. The first sign of systematic city planning is an orthogonal grid plan of straight streets appearing in Indus Valley cities during the third millennium BCE. At Mohenjo-Daro, built sometime before 2600 BCE, 12 orthogonal city blocks measuring 35×25 m were formed by three 9-m-wide avenues and two streets crossing them at right angles. These very large blocks were subdivided by alleys up to 3 m wide onto which many of the houses opened. The three avenues were identified to run north and south, with corresponding positioning in the subdivision of street blocks. The orienting of Mohenjo-daro to the points of the compass and the street layout into 12 blocks, apparently corresponding to the 12 lunar months, suggests adherence to perceived cosmic order in early cities of the Indus Valley (Hawkes 1973: 271).

Adherence to cardinal directions in the layout of Mohenjo-daro repeats itself in other early cities as well, and the division into 12 blocks also appears in classical Greece, likely to match the 12 Olympian deities. Recalling the layout of Mohanjo-daro, literary account of the first century BCE reports at Thurii, a Greek city founded in 443 BCE in southern Italy, four avenues running in one direction and three other streets at right angles to them:

> The Sybarites who were driven a second time from their native city […] received an oracular response from Apollo that they should found a city in the place where there would be water to drink in due measure, but bread to eat without measure. […] Having found not far from Sybaris a spring called Thuria […] and believing this to be the place which the god had pointed out, they threw a wall about it, and founding a city there they named it Thurium after the spring. They divided the city lengthwise by four streets the first of which they named Heracleia, the second Aphrodisia, the third Olympias, and the fourth Dionysias, and breadthwise they divided it by three streets, of which the first was named Heroa, the second Thuria, and the last Thurina. And since the quarters formed by these streets were filled with dwellings, the construction of the city appeared good. (Diodorus IV, 12: 10)

Excavations at the ancient site of Thurii, southern Italian peninsula, have also shown north-south orientation of streets (Cerchiai 2002: 120). Numerous other ancient urban sites in Magna Graecia are well-known to be laid out on an orthogonal grid pattern, some of them in north-south orientation. Such was Elea, home of the Eleatic school of philosophy headed by Parmenides and Zeno of Elea (490–430 BCE).Tradition associates the planner Hippodamus of Miletus (c. 500–440 BCE) with the planning of Thurii as well as Olynthus and Priene, among other sites.

Founded in 432 BCE, the hilltop city of Olynthus had a short history of less than a hundred years. Its earmark was the layout of *several* major avenues in the north-south direction, intersected at regular intervals by streets running perpendicularly east to west. Sited upon the steep lower slopes of Mt. Micale, the city of Priene, too, displays a relatively rigid orthogonal pattern of streets. It is certain that many of Priene's streets and lanes consisted of steep stairs, gracing the city with dramatic views of both the surrounding country and its own townscape (Ward-Perkins 1974: 14).

8.3 Cosmic Harmony and Urban Planning in Classical Greece

Early ideas of orthogonal city-form from the Indus Valley had been projected upon the deliberate design of cities in ancient Greece, by way of Mesopotamia and Egypt, possibly as early as the 7th century BCE (Roth 1993: 183). Land in both town and country throughout much of Classical Greece was being subdivided into uniform rectangles, to ensure expedient land measurement (Jameson 1991: 176). In so far as landscape permitted, orthogonal layout of new settlements or rebuilt old settlements was therefore the norm in much of Classical Greece (Roth 1993: 191–3).

But in Greece too the adherence to orthogonal street pattern is significant due to its intriguing consistency with the Greek idea of the universe. Stemming from the practical need for the measurement of right angles to parcel out land, consistent development of orthogonal geometry is attributed to the philosophical school that commenced with Pythagoras in southern Italy in 525 BCE, and lasted for almost a thousand years carrying his name. It was the fortuitous unanimity of this pragmatic origin with Pythagorean geometry, and its fixation with musical form that had led to the School's canon of cosmic harmony.

This consistency can be observed also in the preoccupation of the Pythagorean School with the number 4 (the very first integer which is the second power of any other integer), with the geometry of the square and with the hypotenuse (cf. Burnet 1964: 105–16). Influenced by the Pythagoreans, the 5th century BCE poet and philosopher Empedocles, observing the grid plan of his hometown Akragas, introduced the concept of Kosmos, as composed of four primeval elements (earth, fire, water, air). The doctrine of the Four Elements was adopted by Aristotle (384–322 BCE) a century later, it was fully embraced by scholasticism throughout the Middle Ages, and it was further sustained during the Renaissance.

The Pythagorean legacy of orderly universe reveals itself in the reconstruction plan of Miletus (c. 479 BCE), where rigid geometrical layout is imposed upon topography, rather than following it. The rebuilding of Miletus is described by Aristotle with reference to a tripartite division of the city into distinct zones:

> Hippodamus, the son of Euryphon, of Miletus, who invented the division of cities and laid out Piraeus […] wanted to institute a city of ten thousand men, divided into three parts, and

> to make one part artisans, one farmers, and the third the military part and that possessing arms. He also divided the territory into three parts, one sacred, one public and one private […] (*Politics* II: 8)

Based on Aristotle's figures Miletus may have had perhaps 30,000 inhabitants, whereas the typical Greek city had population much less than that: Aristotle's teacher, Plato describes the ideal *polis*, Magnesia, as having 5040 citizens. In fact, only Athens, Syracuse and Akragas had recorded populations over 20,000.

Plato's *Republic*, completed c. 380 BCE, refers to the ideal *polis* as composed also of three classes of citizens, a fact that had led to speculations as to the impact the plan of Miletus may have had upon Plato (Von Gerkan 1924: 62; Lang 1952). The social structure of Plato's Ideal City is austere and to the extent that Plato elaborates on the city's physical layout, it corresponds in rigidity to his view of the city's social structure:

> The conditions suppose a population with no disrelish for […] social regulations, who will tolerate life-long limitations of property, restrictions such as those we have proposed on procreation, and deprivation of gold and other things which it is certain, from what has been said already, that the legislator will prohibit; they presuppose further the central position of the capital, and the distribution of the dwelling-houses over the territory, as [the legislator] has prescribed, almost as though he were telling his dreams or fashioning a city and its inhabitants out of waxwork. (*Laws* V: 746)

To Plato, orderliness in the tripartite division of the city-state arises from the depths of the human soul (*Republic* II: 369 435e and 544d; IV: 435–440). In Plato's mind, there is a fastidious mutuality, mirrored by the human soul onto the Ideal City, and thus the Ideal City is a universal archetype, common to all humanity.

In contrast to Plato's city-soul analogy, his city-universe analogy is more subtle, but has its own deep roots in early antiquity and prehistory (Chap. 7). A generation after Plato, Eratosthenes of Cyrene (275–194 BCE) introduced the initial idea of a north-aligned grid for geographic reference in his, now-lost book, *Geography*, further improved by Marinos of Tyre (70–130 CE) introducing measurements of latitude and longitude (Greenhood 1964: 42). In all their geographic alignments Eratosthenes and Marinos used the North Star as a reference. In his own *Geography* treatise, Claudius Ptolemy (90–168 CE) had provided the ultimate and comprehensive geographic coordinate system that had been the one and only in use until the end of the Middle Ages. Ptolemy introduced an analogous *celestial* coordinate system to identify precise location of stars. Such approach sparked compass-aligned and universe-inspired orthogonal plans later in the Middle-Ages and the Renaissance.

8.4 The Ideal City of Stoicism and Early Christianity

The notion of harmonious city as a universalist imprint had been further advanced by the Stoics, about 300 BCE, most evidently in their concept of Cosmopolis, the universe "as it were, the common home of gods and man, or a city that belongs to both". The universe, in this view by the first century CE, is the only true city, "for no one knows of a good city, made up entirely of good elements – neither a mortal one that came to be in the past, nor one that is to be one day in the future worth conceiving of – unless it be a city of the blessed gods in heaven" (Dio Chrysostom in Schofield 1991: 62).

Harmony, and the allied concepts of order and symmetry, as guiding principles in the arts and the sciences since ancient Greece, also became pivotal in the history of later urban thought. The most important link between the morphology of the classical Greek city, and urban perceptions of the Middle Ages and the Renaissance, has been the notion of the planned town, expounded in *De architectura* of Vitruvius. Based upon concepts Vitruvius put forward in his own ideal city-plans, the suggestion was made that his main concern, too, was to satisfy the premises of harmony, only using circular (rather than square) forms for compliance with regularity, enclosure and wind protection (Rosenau 1983: 14–24).

In the fifth century the Stoic ideal of *Cosmopolis* had received a magnificent amplification in St. Augustine's 18 books of *The City of God*. It is perhaps no coincidence that Aurelius Augustinus (354–430), as the bishop of Hippo, found it significant enough to address the base nature of the real city of his time, when deliberating on a heavenly community in *The City of God*. Borrowing from the Stoics to contrast the terrestrial city of sin, the underlying tenet of St. Augustine's treatise are the concepts of justice and accord as theological principles in an ideal community. Significant in St. Augustine's social ideal, it has been pointed out, had been the notion of harmony *and* balance, or *Ordo*, allied to a cosmic system of flawless relations, *Ordo creaturum* (Barker 1945: xii). St. Augustine's juxtaposition of the two cities, too, points to a universal parity:

> Two cities were formed by two loves: the earthly by the love of self, even to the contempt of God; the heavenly by the love of God, even to the contempt of self. The former, in a word, glories in itself, the latter in the Lord. (City of God XIV: 28 in Tasker 1945)

The notion of the Ideal City in St. Augustine emerges thus as an ontological component of cosmic balance, not a mere religious and social attempt at rectifying conditions in the existing society. The 'love of self' by which the terrestrial city in St. Augustine is characterized, has a factual expression in the prevailing irregular plans of most medieval cities. The orientation of houses in relation to streets as well as to adjacent dwellings often mirrors desire of property owners for access to market places or main thoroughfares rather than pointing to a prearranged, centralized scheme (Dickinson 1963: 315).

On the other hand, the coveting of geometrical symmetry in a plan continues to characterize medieval New Towns, outposts of dominant city-states such as Florence or Siena in the late middle ages. Florence's own original street plan, dating back perhaps to 90–80 BCE, was possibly laid out in a chess-board fashion (Haverfield 1913: 92), a fact that may have reinforced the fancy for orthogonal, symmetric plans in the New Towns as well.

Analytic considerations in layout and the reintroduction of orthogonal planning commenced in New Towns of central, and then northern Europe during the eleventh century. This was largely on the heels of Ptolemy's *Geography* and the translation into Latin of Euclid's geometry treatise, *Elements*, until then extant in Arabic only (Cosgrove 2003; Boerfijn 2000). Particularly striking examples are the two Florentine New Towns, San Giovanni Valdarno and Terranuova. In both towns the deepest lots face onto the main street in the centre of town, perceived as the first or the central city block. Retreating towards the city wall, there are several rows of blocks that succeed the first block. As they near the town wall, the blocks within each row, and their respective lots, become progressively shallower. While lots in different rows retain the same width, they differ from one another in their depths determined by distance of their respective row from the central block. In San Giovanni (founded 1299) the lot depth is determined by the shorter and the longer side of right angled triangles opposite the angles of 30 and 60°, respectively. In Terranuova (founded 1377) the depths are determined by the sides of right angled triangles, opposite the corresponding angles of 15°, 30°, 45°, 60° and 75° (Friedman 1988: 120–129). Other medieval examples of orderly plans, often intimating aspects of property development and speculation but also of trade and commerce, can be found as far away from Italy as the British Isles (Slater 1999).

8.5 Equilibria in Ideal Cities of the Renaissance and Mannerism

The Pythagorean concept of harmony appears to have culminated in the aesthetic and scientific advances of the Renaissance and Mannerism. As a methodological tool emerging prior to and during the Renaissance, geometrical symmetry had continued to be an essential tenet in both art and the natural sciences of early modernity. Given their great emphasis on defensive fortifications, Renaissance plans for ideal cities can rightfully be viewed as a creative union of art and technology within a single project. Perhaps more than any other such union, Renaissance town and fortification planning had cast the concept of harmony into an articulated notion of the straight line and the circle, thus setting the ground to use of perspective in urban design, and the consideration of equilibrium in early modern science (Akkerman 2000).

The Renaissance recognition of balance as an aesthetic feature in a physical object had been brought forward first by Leone Battista Alberti (1404–72) who, in his ten-book treatise, *Libri de re aedificatoria decem*, defined beauty "as that reasoned harmony of all the parts within a body, so that nothing can be added, taken away, or altered, but for the worse" (Book VI, Chap. 2). Almost a hundred years prior to Alberti, rendition of the perspective was introduced in painting by Duccio di Buoninsegna in Siena and Giotto di Bondone in Florence.

The weather cooling pattern of the LIA had possibly some impact on urban design in early Renaissance Italy. Porticoes, recommended already by Vitruvius (Book V, Ch. 9), were introduced into Renaissance streetscapes for protection from winds and rain thus allowing people to leave enclosed quarters (White 2014: 258–266). Alberti's adherence to aesthetic balance through introduction of the perspective into urban design became evident shortly after 1447, when he became the architectural advisor to pope Nicholas V. Commissioned by the pope to prepare a plan for Rome, Alberti never saw the full implementation of his proposal (due to the pope's death in 1455), but the plan itself discloses Alberti's proclivity:

> From [a large] square three straight and broad avenues were to start, and terminate in another open space at the foot of the Vatican Hill; the central avenue was to lead to the Basilica, the one to the right to the Vatican Palace, that on the left to the building facing it. (Pastor 1899: 171–176)

Alberti articulated the notion of the perspective and the vanishing point in *De re aedificatoria*, and through it wielded influence on many of his contemporaries. Among the theoreticians, Antonio Averlino Filarete (c. 1400–69) had marked Renaissance urban design with lasting profundity. His treatise, *Trattato d' architettura* (c. 1464), is an impassioned persuasion of the Milan count Francesco Sforza to commission Filarete with the construction of a new town, Sforzinda. Filarete describes the plan of his ideal city as a perfect octagon, created by two superimposed squares, with details on fortifications and gates. There are 16 evenly distributed main avenues, each 24 m wide, leading from the gates to the centre of the city (Filarete 1457/1965: VI, 43v). Filarete's ideal city echoed some existing practices in the layout of streets, but primarily it portended urban design principles that came to be adopted in the construction of Renaissance new towns in Italy, France and Germany: The introduction of secondary *piazze*, configuration of streets, and the placement of monumental buildings (Rosenau 1983: 46–55).

Akin to existing monasteries and to ideal physical layouts of New Towns, ideal harmonious communities were envisaged by social and religious thinkers of the Renaissance. Perhaps intended primarily as a satire on contemporaneous English society, Sir Thomas More's *Utopia*, first published in 1516, became epithet to all notions of ideal communities. Although the extent to which More was aware of the works on ideal cities of his European contemporaries remains unclear, their overall cultural context was not lost on him. On his imaginary island there were 54 cities almost identically designed after Amaurot, the capital. Amaurot itself

> lies up against a gently sloping hill; the town is almost square in shape […] The streets are conveniently laid out for use by vehicles and for protection from the wind. Their buildings are by no means paltry; the unbroken rows of houses facing one another across the streets through each ward make a fine sight. The streets are twenty feet wide. (More 1516/1989: 45–46)

Harmony also guided the civic program of *Utopia*, where More touched upon such modern concepts as optimal city size and transportation within the context of agricultural production and labour (ibid. 50–51).

Results of continuing explorations into the perspective in painting had become a guiding principle entrenched in Renaissance town planning. This is perhaps best exemplified by some of the notes of Andrea Palladio (1508–1581) in Book III (Ch. 4) of his *Four Books on Architecture*:

> The principal streets […] ought to be so comparted, that they may be straight, and lead from the gates of the city in a direct line to the greatest and principal piazza; and sometimes also, the site permitting it, lead in the same manner directly to the opposite gate […] by the same line". (Palladio 1570/1965: 59)

Palladio's contemporaries and compatriots used Filarete's work as a reference to further develop ideal city plans as projects on circular defensive systems and fortifications as, e.g., Pietro Cataneo in his *L'Architettura* (1554), Girolamo Maggi in *Della Fortificatione delle Città* (1564) or in the actual design of new towns such as Palmanuova (founded 1593), near Venice, attributed to Vicenzo Scamozzi.

The appeal to confer a geometrically symmetrical perimeter upon a city was directly related to the delineation of a city's boundaries by its fortification walls. As people were driven from surrounding rural areas, the walled perimeter of cities also provided safety and relative tranquility. Cities thus filled up quickly, and whereas within city walls one could still find relative placidity, the suburbs outside walls became hubs of crime and destitution (Blake 1939: 38).

The political ideal of More's *Utopia* combined with a cosmic vision of harmonious relations led Tomasso Campanella in the late 16th century to write *Civitas Solis* (first published 1602). Campanella wrote his book upon a brief respite from a Rome prison in 1595, just at a time when Domenico Fontana, under pope Sixtus V (during the years 1585–1590), significantly redesigned the city. Whereas Fontana placed four avenues radiating from the Santa Maria Maggiore Church, Campanella's vision of the City of the Sun was of

> a hill upon which the greater part of the city is situated […] The city is divided into seven large circuits, named after the seven planets. Passage from one to the other is provided by four avenues and four gates facing the four points of the compass […] the entire city is two miles and more in diameter and has a circumference of seven miles. (Donno 1981: 7–27)

8.6 Equilibria as Seeds of Modernity in Baroque City Planning

In many respects, Sixtus' design was ingrained in the plan launched in the 1450s under Nicholas V. The papal design principle was characterized by two features: The one, to have a wedge of three streets meeting at a single point, and axially aligned with, a fourth street; and the other, to have the street complex itself aligned with hoisted obelisks as place makers and orientation guides. But the overriding concern of Rome's early Baroque urban renewal was, possibly for the first time in the history of urban design, a conscious focus on harmonizing transportation and the movement of people, pilgrims in particular, with the configuration of monuments, streets and open spaces (Burroughs 1994: 189–202).

Changes in the layout of Roman streets, following Nicholas' initiative, occurred already under the popes Julius II (pontificate 1503–1513) and Leo X (pont. 1513–1521), and Sixtus' redesign was the pinnacle of efforts over the century preceding him. Major among these early changes in the redesign of Rome was a new configuration of open spaces proposed or made by Donato Bramante (1444–1514), under Julius II, and later by Michelangelo (1475–1564). In 1505 construction began on Bramante's plan for the immense church of St. Peter (replacing an ancient basilica built by Constantine in 333) with the intention to build a large open space around the stupendous temple. Michelangelo's revised design of St. Peter's (c. 1536) focused on centralizing the church within its context of open space and access. Similar attempt at visual balance was exerted by Michelangelo in the redesign of the Campidoglio, the Capitoline Hill in Rome, where a measure of order was introduced into the initially irregular landscape geometry (Roth 1993: 375–6).

Sixtus' massive spatial reorganization of Rome linked the major religious sites through a vast network of new roads supported by fountains to which water was piped, for the first time since Roman times, through a rebuilt ancient aqueduct. The lofty attempt of Sixtus V was to physically link the great basilicas of San Lorenzo, Santa Croce, San Giovanni and the church of St. Peter. Thus the great basilicas became nodes of a new, monumental street network in which ancient obelisks were raised and consecrated as beacons of pilgrims' final destination points. Here the notion of equilibrium evolved into a new dynamic form heralding a modern concern for balance of utilitarian needs, movement in particular, within the context of urban development opportunities.

But classical symmetry in urban design retained its appeal well into the eighteenth century. Following an ideal town plan by Albrecht Dürer in his treatise, *Etliche Underricht zu Befestigung der Stett*, *Schloss und Flecken* (1527), Heinrich Schickhardt (1558–1635) built in the late 16th century the Bavarian town Freudenstadt (Fleming et al. 1991: 391). Along with Campanella's *Civitas Solis*, the unfolding of Dürer's plan at Freudenstadt inspired the German theologian Johann Valentin Andreae in his vision of the utopian community, Christianopolis:

> Its shape is a square, whose side is seven hundred feet, well fortified with four towers and a wall. It looks, therefore, toward the four quarters of the earth. Eight other very strong towers [are] distributed throughout the city. (Andreae 1619/1914: 140)

The conformity to geometric balance that appears in the imaginary blueprints of Christianopolis, runs in parallel to actual physical layouts such as those of Freudenstadt and of other Mannerist or Baroque planned cities.

Geometric balance is the signature of Parisian urban places built by Henri IV, and of the new towns of Henrichemont, Charleville, Richelieu, and others, all examples of Mannerist and early Baroque town planning in the early seventh century. The social awareness of More's *Utopia* or Francis Bacon's *New Atlantis* (1627), however, is often absent in Mannerist plans as they seldom pay attention to detailed physical configurations within their cities. Furthermore, the linear layout suggests clear visibility, possibly to facilitate control and monitoring by the ruling authority.

The ideal city plans of the Frenchmen Iaques Perret, and later, the plan of Versailles by André le Nôtre and Louis Le Vau, as well as the layout of Mannerist planned cities such as Naarden in Holland (late 17th century), all show affinity with axial, symmetrical design. But the idealized geometric form of rigid symmetry which had flourished in Renaissance city planning, gradually became more realistic keeping nominal balance instead of unequivocal symmetry (Rosenau 1983: 58).

Much as the planned city of the Renaissance and Mannerism appears to have addressed the notion of equilibrium through the works of Alberti and Filarete, so the early modern notions of equilibrium in the city are largely indebted to Sir Christopher Wren (1632–1723). With the rising significance of urban transportation, Wren's proposed plan for London following the Great Fire of 1666 was unique, precisely, in its attempt to balance through street design pedestrian access with emerging modes of vehicular traffic.

But Wren's was only one of several other plans for the rebuilding of London after the Great Fire. Wren's design followed a plan for London by the physicist Robert Hooke, the discoverer of a 1678 elasticity law in which the notion of equilibrium is fundamental. Equilibrium in physics was a concepts much talked about already four years prior to Wren's 1666 proposal, when another distinguished physicist, Robert Boyle, had demonstrated an equilibrium in the elasticity of solid bodies. Wren himself presented in 1661 a theory of elastic impact in which the force of collision was equated to balance in a mechanical system (Bennett 1972: 72).

8.7 Harmony and Discord in Early Modern Urban Design

Although Wren's Plan for London was never executed, it foreshadowed the dawn of the ideal industrial city that became the motif of much of urban design during and after the 18th century Enlightenment, with urban transportation becoming gradually a central consideration. It is also fair to say that urban design of the Enlightenment was mainly affected by another two, antithetical, developments: On the one hand it was the archaeological discovery of Pompeii and Herculaneum in the mid-18th century; and on the other hand, the emergence of Romanticism as the longing for naturalness in reaction to the mathematically ideal paradigms of early modern science.

The streets of the two Roman cities, destroyed in the sudden eruption of the Vesuvius in 79 CE, showed impressive adherence to geometry thus reinforcing the universalist notion of mathematics and rationality as perpetual standards in urban design. The rationalist standard was embraced by Claude-Nicolas Ledoux in 1755, in his plan for Chaux, an ideal industrial town that were to be located in western France. The town was to be set on an oval plan in the centre of which the house of the town's administrator would be located, adjoined by industrial buildings in which the processing of brine, dug in the nearby salt mines, were to take place. In the oval ring around the industrial centre worker's apartments would be placed, the whole town complex surrounded by a green belt in which public facilities, gardens and parks were to be located.

Geometric precision found many adherents among Continental architects of the Enlightenment, but it was also countered, on the British Isles, by rustic garden designs, such as Kew Gardens, Hampton Court or Blenheim, devised by Lancelot ("Capability") Brown (Brown 2011: 148–179). Rapid disillusion with the emerging industrial city was articulated by Jean-Jacques Rousseau (1712–1778). The Swiss Romantic thinker made a persuasive argument for the rejection of conventions exposed as hiding corrupt practices in the urban society, and for the celebration of the natural man. Challenging the rationalism of the Enlightenment, along the precepts of Rousseau's philosophy, a picturesque, unkempt suburban park, was established just outside Paris by one of Rousseau's patrons.

The 19th century visionary plans, such as Karlsruhe (1804–1824) by Friedrich Weinbrenner or Paris (1853–1870) by Baron Georges-Eugène Haussmann, have attempted to introduce urban equilibrium in a blend of art and technology. To what extent these modern attempts were successful as city-planning notions has been a source of continuing apprehension (Roth 1993: 442). Haussmann's project, the more pragmatic among those mentioned, is a case in point. The narrow, dark and vermin-infested streets and alleys of central Paris, much as in other European cities, were often the outcome of unwitting contraptions from the middle ages. Void of sunlight or adequate air circulation, as well as frequent focal points of simmering discontent, such urban settings served as hubs of rebellious disturbances against the government. From here arson attacks on government outposts and monuments were led, with the hiding places within this tortuous urban environment used as defensive formation against advancing police force (Evenson 1979: 9).

Ostensibly addressing public health problems arising from overcrowding and urban blight, but primarily concerned with popular insurgency and urban warfare threatening the government of Napoleon III, Haussmann, the Prefect of the Seine *département* had responded by razing much of the medieval centre of Paris. The narrow, crooked streets throughout much of central Paris were demolished to make place to wide boulevards emulating the redesign of Rome under Sixtus V. Haussmann's airy, exposed arterial thoroughfares had created a new standard of an emerging metropolitan environment where access to air and sun came in response to current discoveries that traced the spread of disease to local causes such as dirt, overcrowding, lack of sunlight and deficient air circulation. Calling for the spatial accord between plazas, avenues and monuments, Haussmann undoubtedly reinforced an urban design standard that came to be admired by many a planner and architect (Sutcliffe 1971: 29 326). At the turn of the century Haussmann's model came to be followed elsewhere, from Chicago (Wrigley 1987) to Canberra (Fischer 1989: 155–194) to New Delhi (Irving 1981: 82–87).

Haussmann's urban renewal was as much a solution to public health hazard and urban decay as it was a ruthless answer to riots and insurrection in nineteenth century Paris. Widening of linearly laid-out streets to accommodate cannon fire against the barricades made a point to Haussmann's critics that the baron viewed the metropolis as battleground, a place of conflict, rather than accord (Cacciari 1993: 22). To Haussmann's critics it was the old, undulating, narrow street or alley, deprived of sun and hygiene, menacing as it was, that formed a hub of propitious surprise where daily life took place. The signature of Haussmann's new design, the destruction of the historic streetscape of central Paris by the introduction of wide boulevards, now epitomized the ideal of the surprise-free city, geared towards the machine rather than the person, seeking equilibrium rather than charm of the accidental, conformity rather than occasion for adventure in the unforeseen.

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Chapter 9
Axial Age Civilizations as a Project of North-Hemispheric Masculinity: The Antipodean Myth

9.1 Introduction and Summary

The myth of *Axis mundi* has been shown earlier (Chaps. 2 and 3) to be a case of gender projection upon nightly sky patterns. Possibly ensuing from such attitude, Plato's universe appears to possess gender attributes as well, the celestial "upper" hemispheres in Plato's 'Myth of Er' consisting of mechanic whorls controlled by feminine deities, while the rest of the universe, its "lower" half is a capricious, unpredictable realm, ruled over by the masculine demiurge. Projection of human-features, gender in this case, upon the physical environment could be said to be cognitive embodiment, essentially a mythical assignment of anthropomorphic attributes to some parts of the physical environment.

All the same, the historical perspective on the rise of early cities, virtually exclusive to the northern hemisphere, against images of pastoralist and egalitarian human communities south of the equator, has reinforced the antipodean myth, implicitly assigning masculinity to North, and femininity to South, with corresponding gender features for each of the earth's hemispheres. A related case of anthropomorphic projection yielding environmental myth is the underlying tenet of Karl Jaspers' notion of Axial Age civilizations, the view that over the period 800–200 BCE there was a concurrent awakening to Western religious and moral precepts across Eurasia due to divine guidance.

But contrary to Jaspers' contention the religious urging during Axial Age emerges simply from the widespread use of the wheel, paired against observations of the rotating nightly sky during Iron Age Cold Epochof the same period. The cognitive embodiment during this time had occurred in China with the masculine projection onto the Jade Emperor, the Heavenly *Grandfather*, master of the universe; in the Indus Valley, Vishvakarman rose as the grand *architect* of the universe; Ahura mazda was the sky god of Zoroastrianism and of the Achaemenid empire; and demiurge was the Platonic *artisan* fashioning and maintaining the physical universe, all during the Iron Age Cold Epoch roughly coinciding with the Axial Age.

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The Platonic city-universe analogy emanates from an analogous masculine projection equating the ideal city with the mechanical universe, or perhaps also likening the legislator of the ideal *polis* with the demiurge. The celestial spheres in Plato's 'Myth of Er' are coloured, reminiscent of coloured battlements on the concentric circular walls of Ecbatana and concentric zones of land and water in Atlantis, Plato's ideal city. Magnesia, Plato's other ideal city, is disposed on a radial plan of 12 zones branching out from the centre. The exact number of 5,040 households in Magnesia alludes to Pythagorean influence in numerology as well as in cosmogony. Also Pythagoras' belief in the sphericity of the Earth is evidenced in Plato's writings.

Axial Age civilizations ought to be seen in a single context along with the emergence of the notion of ideal city in the image of the universe – as a project of north-hemispheric masculinity. The myths of Axial Age are still ingrained in its distant heirs, a civilization and its city-form two-and-a-half millennia onward: our own.

9.2 Magnesia and the Myth of Atlantis in Plato's Cosmology

The cult of a Minoan female priestess is echoed in the maiden Cleito of Plato's enigmatic Atlantis, the mythical island and its metropolis. In his dialog *Critias* Plato places the home of Cleito, the future wife of the sea-god Poseidon, on a mountain:

> And Poseidon, receiving for his lot the island of Atlantis, begat children by a mortal woman, and settled them in a part of the island which I will describe. Looking towards the sea, but in the centre of the whole island, there was a plain which is said to have been the fairest of all plains and very fertile. Near the plain again, and also in the centre of the island at a distance of about fifty stadia, there was a mountain not very high on any side. In this mountain there dwelt one of the earth born primeval men of that country, whose name was Evenor, and he had a wife named Leucippe, and they had an only daughter who was called Cleito. The maiden had already reached womanhood, when her father and mother died; Poseidon fell in love with her and had intercourse with her. (*Critias* 113 b-d)

In his reference to the mythical city on Atlantis in the *Critias* Plato elaborates on the fortification of the city by Poseidon who encircled Atlantis by two zones of land and three zones of water "so that no man could get to the island, for ships and voyages were not as yet" (Critias 113 d-e).

A cosmic parallel of the ideal city of Atlantis is at hand. The two zones of land could be seen corresponding to the celestial spheres of the inner planets, Mercury and Venus, the only two planets that transit across the Sun, as against the three zones of water, corresponding to orbits of the remaining three planets known at the time, Mars, Jupiter and Saturn. In the account of Naomi Golding (1975), the number of enclosed land areas between and outside the five zones is seven – but on this account too Plato could have been counting in also the celestial spheres of the Moon and the Sun (see Chap. 7, Sect. 7.3).

Plato's other ideal city, Magnesia, is described as self-sufficient in resources so as to dampen love of money by discouraging seafaring and outside commerce (*Laws*

V 811ce). Plato described Magnesia, his ideal *polis* on Crete, as having 5,040 households, the entire city set on a radial plan. A cosmic link is implicit in Magnesia through the number 5,040, and the apportionment of Magnesian land:

> Then we divide the city into twelve portions, first founding temples to Hestia, to Zeus and to Athene, in a spot which we will call the Acropolis, and surround with a circular wall, making the division of the entire city and country radiate from this point. The twelve portions shall be equalized by the provision that those that are of good land shall be smaller, while those of inferior quality shall be larger. The number of the lots shall be 5040 [...] (*Laws* V 745c)

The number 12 corresponds to the number of Olympian gods, possibly drawing also on practices such as those from Thurii, where monthly rotation of cultic duties was apparently administered throughout the year. Earlier, Plato explains the territorial division in conjunction with the optimal number of households in the ideal city:

> The number of our citizens shall be 5040 – this will be a convenient number; and these shall be owners of the land and protectors of the allotment [...] Let the whole number be first divided into two parts, and then into three; and the number is further capable of being divided into four or five parts, or any number of parts up to ten. Every legislator ought to know so much arithmetic as to be able to tell what number is most likely to be useful to all cities; and we are going to take that number which contains the greatest and most regular and unbroken series of divisions. The whole of number has every possible division, and the number 5040 can be divided by exactly fifty-nine divisors, and ten of these proceed without interval from one to ten [...] (*Laws* V 737e – 738b)

Plato's choice of the number 12, for subdivision of the city's land, and of the number 5,040 as the amount of household lots, in such close association with gods and oracles, alludes to Pythagorean influence upon Plato and to cosmic link sought by him for Magnesia (Livio 2002: 65–66).

9.3 Gender as an Inherent Feature of Plato's Ontology

Plato's myth of Atlantis, as well as his directives for Magnesia, seem to be a prelude to his own notion of a link between mind and the city. Such a link is offered in his city-soul analogy, mainly throughout Book IV of the *Republic*, where the ideal city, as the Form of a city, is shown to be a universal paradigm shared by all mankind:

> And so of the individual; we may assume that he has the same three principles in his own soul which are found in the state; and he may be rightly described in the same terms, because he is affected in the same manner. (*Republic* IV 435)

The obscure, cosmogonic 'Myth of Er' (see Chap. 7), at the very conclusion of the *Republic* (X 614-621) is a parable through which Plato links cosmos to his ideal city of Atlantis. Plato's ideal city of Magnesia does not correspond to the cosmic parable of the 'Myth of Er', but it appears to follow Pythagorean cosmic myth, "the idea that order, or harmony of relation, is the regulating principle of the whole universe" (Smith 1859: 635).

Plato leaves no doubt that the celestial whorls in the 'Myth of Er' are real cosmic devices, and not a mere metaphor on the earthly spindle. The clockwork universe of the cosmic whorls appears regimented, somewhat masculine. This rigid masculine mechanism is softened by the feminine touch of the Fates, the daughters of the goddess Necessity, who assist at will in the revolution of the cosmic spindle-whorls:

> […] the Fates, daughters of Necessity, are clothed in white robes and have chaplets upon their heads, Lachesis and Clotho and Atropos, who accompany with their voices the harmony of the sirens—Lachesis singing of the past, Clotho of the present, Atropos of the future; Clotho from time to time assisting with a touch of her right hand the revolution of the outer circle of the whorl or spindle, and Atropos with her left hand touching and guiding the inner ones, and Lachesis laying hold of either in turn, first with one hand and then with the other. (*Republic* X 618a-b)

Plato's model of the universe, the spindle-whorl, is in the form of "upper" hemispheres only. In addition, as a spindle-whorl, this "upper" hemispheric model appears to be mechanical, "masculine," save the action of the Fates, the daughters of Necessity, who assist at will in the revolution of the hemispheres. The outstanding, implicit, question is, What then is the nature of the universe's "lower" hemispheres, and who is assisting in *their* operation?

The description of the cosmic χ in the *Timaeus* (Chap. 7, Sect. 7.5) precedes a discussion with an obscure exposition on three founding elements of the world, each such element in two varieties: divisible and indivisible. The three founding elements are Sameness, Difference and Being (or Existence). The two cosmic circles, crossed in the image of the letter χ are seen by Plato as created from action upon the three founding elements, whereby the demiurge imparts on the circles a rotary movement about their axes (*Timaeus* 34c-36c). Parallelism with the three Fates in the 'Myth of Er' is most likely and deliberate (Taylor 1928). If Plato's parallelism had been indeed intended, inevitably also the underlying view of Plato in his message is that femininity and masculinity are ingrained in the structure of the universe itself, an ontological feature of existence itself.

In the *Timaeus* (29b-34b) Plato describes the world as a living creature with a soul (rather than a mechanism) and the demiurge, a world craftsman, a supernatural masculine figure using three inanimate elements, Balance, Difference and Being, to create order out of the primordial, disordered substance of the world, shapeless, mixed and in an unpredictable persisting motion. With a modicum of effort one could find a masculine-feminine parallel between the model of the universe in the 'Myth of Er' and the one in the *Timaeus*. Flair of Dionysian capriciousness, unpredictability or femininity, seems to emerge from such a parallel for the "lower" hemispheres of Plato's universe that must be ruled in by the demiurge. And analogous to the goddess Necessity and her three daughters in control of the "upper," mechanical, Apollonian hemispheres of Plato's universe, the male demiurge, that could be none other than the Sky Father, extends his control over the universe's "lower" hemispheres through his three inanimate elements. Such Platonic outlook inevitably leads to questions about the nature of the "lower" terrestrial hemisphere, and leads to the later myth of antipodes (Akkerman 2013).

9.4 *Antarktikos* and the *Antichthones*: Forging of the Antipodean Myth

The parallelism between the clockwork "upper" hemisphere and the whimsical "lower" hemisphere of the universe throws light on the attitude forming also towards the southern *terrestrial* hemisphere in Plato's time. While sphericity of the Earth has been put forward already by Pythagoras, evidence of Plato's reception of the spherical shape of the Earth is his assertion in the dialogue *Phaedo* (110b) that, seen "from above," the Earth appears like a twelve-paneled globe, a dodecahedron (Couprie 2011: 208).

According to Cicero's account (*Tusculan Disputations* XIV) creator of the first celestial globe was the astronomer Eudoxus of Cnidus (*c*. 410–347 BCE). A scholar at Plato's Academy, Eudoxus would have been inevitably cognizant of the southern celestial hemisphere. Platonic perception of the southern celestial hemisphere seems also to correspond to early beliefs regarding the universe and the Earth. Dating to early Greek myth the Earth was perceived as encircled by the vast river Oceanus (e.g., Homer's *Odyssey* XII: 1; *Illiad* XVIII: 399; XXI: 194) while, according to the early historian Diogenes Laërtius, Pythagoras was "the first who called the earth round, though Theophrastus attributes this to Parmenides" (*Life of Pythagoras* XXV). In Greek mythology and religion flowing water conferred feminine qualities (Harrison 1922 257–321), and such attribution seems to confirm yet again the feminine flair in the Platonic discernment of the southern celestial hemisphere.

Explicit parallelism between northern and southern terrestrial hemispheres had been articulated only by Aristotle (384–322 BCE). In his *Meteorologica* Aristotle gives account of the Earth's "known," northern hemisphere, and its "unknown," southern hemisphere along with the hypothetical southern continent of Antarktikos. The parallelism stated by Aristotle assumes five geographic zones to the Earth, the torrid zone enveloping the Equator from both its northern and southern sides, the frigid zones enveloping the northern and southern poles of the globe, and the temperate zones lying at the opposite hemispheres of the globe, between the frigid and the torrid zones (*Meteorologica* 362 a 31–35). The frigid and torrid zones are entirely uninhabitable, while the inhabited part of the temperate zone in the northern hemisphere is referred to as the *Oikoumene*.

Parallelism between the hemispheres of the universe and those of the Earth could be sought in the reference to the "inhabitants" of the southern hemisphere, i.e. those who occupy places that are antipodes of the northern hemisphere. As reported by Strabo, inhabited land in the southern hemisphere's temperate zone had been assumed by Crates of Mallus, in his construction of the first terrestrial globe, in the second century BCE (Strabo's *Geography* I: 2.24) The first explicit mention of hypothetical inhabitants of the southern hemisphere was not until the year 43 CE, in Book I of *De chorographia* of the Roman geographer Pomponius Mela:

> The earth also is divided from east to west into two halves, which they term hemispheres, and it is differentiated by five horizontal zones. Heat makes the middle zone unlivable, and

> cold does so to the outermost ones. The remaining two habitable zones have the same annual seasons, but not at the same time. The Antichthones inhabit one, we the other. (Mela 43/1998)

Since late Antiquity, the antipodean myth about Antichtones, or people on the southern hemisphere, had not become a subject of query for over a millennium. With European voyages during the Age of Discovery such proposition had emerged with the new notion of the ideal city in Thomas More's *Utopia*. The historical perspective on the rise of early cities, virtually exclusively in the northern hemisphere, against images of pastoralist and egalitarian human communities south of the equator, has reinforced the antipodean myth, implicitly assigning masculinity to North, and femininity to South, with corresponding gender features for each of the hemispheres.

9.5 Axial Age Civilizations and North-Hemispheric Masculinity

In his book, *Origins and Goals of History*, Karl Jaspers referred to the half-millennium just prior to the onset of the Common Era as Axial Age, as humanity's founding period that had presaged later religious and philosophical thought. In the relatively short period, 800–200 BCE, at the doorstep of the Roman Empire and Christianity, basic tenets of world thought had emerged in China, India, and the West. Common quest for human meaning had emerged in the East and the Occident, almost simultaneously, throughout these regions, Jaspers claims.

Alluding to trade and warfare as the carrier of ideas, hence a partial explanation to the simultaneous emergence of the foundational philosophical concerns (Jaspers 1953: 2–6; Christian 2004: 319), Jaspers also characterizes the emerging urban environments of Chinese, Indian and Western antiquity as the undergrowth from which these ideas emerged:

> Corresponding to this new spiritual world, we find a *sociological* situation showing analogies in all three regions. There were a multitude of small States and cities, a struggle of all against all, which to begin with nevertheless permitted an astonishing prosperity, an unfolding of vigour and wealth. In China the small States and cities had achieved sovereign life under the powerless imperial rulers of the Chou dynasty; the political process consisted of the enlargement of small units through the subjection of other small units. In Hellas and the Near East small territorial units […] enjoyed an independent existence. (Jaspers 1953: 4)

Against the underlying tenet of Jaspers that there was occurrence of some simultaneous awakening to moral precepts across Eurasia due to divine guidance, it has been pointed out that the simultaneity in the appearance of great religions, as lauded by Jaspers, is nothing but a reflection of relative prosperity and available free time leading to reflective thought (Baumard et al. 2015). In his book, *Convenient Myths*, Iain Provan, a biblical scholar, juxtaposes criticisms of Axial Age against supportive commentaries by Jaspers' advocates. Provan sums up showing that, although

Axial Age alludes to simultaneous emergence of common ideas during the said period, it also points to a mixture of coincidence and intercommunication, rather than to divine guidance. “There never was an entity as an axial age,” Provan concludes. “It is a construct that has little to say for itself from the point of view of actual historical data” (Provan 2013: 39). The period of human history from the eighth to the second centuries BCE, was “certainly remarkable,” writes Provan, but “in the end, it is just impossible to generalize, as Karl Jaspers and others have done, about an age in which there existed […] different visions of reality” (Provan 2013: 105).

It seems, however, that the problem of the Axial Age supposition, largely bypassed by proponents as well as critics, is disregard for the impact of the environment and technology of the time upon myth. Much of the Axial Age period overlaps the Iron Age Cold Epoch, a cooling period of about 900–300 BCE (Behringer 2010: 57–59). Urbanization and advances in agriculture may have been linked to this cooling pattern. In China iron ploughshares were invented in the course of the sixth century BCE (Greenberger 2006: 11–12), and Chinese irrigation systems were built along with associated hydraulic engineering networks during this period (Needham and Bray 1984: 138–161). In Indus Valley the Axis Age coincides with new urban settlements arising at the Indo-Gangetic plain (Samuel 2008: 42–48). And in Ancient Greece Hippocrates of Kos (460–370 BCE) wrote the treatise, *On Airs*, *Waters and Places*, during the coldest part of this cooling epoch.

Jaspers’ Axial Age civilizations span a Eurasian band between approximately the Tropic of Cancer and the 45th parallel northern latitude. Extending Jasper’s axial band through the Americas, the main urbanizing civilizations prior to the first millennium BCE, would include also the Maya and the Olmec (later the Aztec). As a religious philosopher, Jaspers suggests that his notion of an historical axis to rising civilizations is the commonality of emerging ethical concerns. But a different axis entirely constituted the preponderant commonality of people inhabiting this geographical band: It was the myth of *Axis mundi*.

During the two-millennial period, 1500 BCE–500 CE Kochab (Beta Ursae Minoris) had served as the North Pole star. The geographical band between the Tropic of Cancer and the 45th parallel, approximately, is the earth’s region from which, topography allowing, a sufficiently bright North Star, and adjoining circumpolar stars, are visible to casual onlooker. Kochab is observable today by the naked eye, and there is no reason to believe that this was not the case 3,000 or 4,000 years ago (Howse 1986; Haynie 2014). The revolving nightly firmament, and other sky patterns common to observers through the Diluvial belt (Chap. 1, Sect. 1.2), along roughly the 45th parallel through Eurasia, had occurred when wheels, axles, carts and whorls were common and familiar tools.

During the Iron Age Cold Period of 900–300 BCE, the use of agriculture and shelter construction would have intensified, carts and wagons becoming major technological advances. Within such a context assigning the nightly sky revolution round the North Star to a Grand Designer of the universe, was a plausible explanation. It was this climatic, geographical and technological configuration that gave rise in China to the myth of the Jade Emperor, the Heavenly Grandfather, master of the universe. In the Indus Valley, Vishvakarman was the grand architect of the universe. Ahura mazda was the sky god of Zoroastrianism and the Achaemenid empire. And demiurge was the Platonic artisan fashioning and maintaining the physical universe. The Diluvial belt that hosted Venus figurines during the Upper Paleolithic, and the cup-and-ring marks during the Neolithic, largely coincides also with the Eurasian corridor where similar cosmogonic myths had emerged during the Iron Age Cold Epoch. Identical nightly sky patterns, accessibility in viewing them, and existing technological tools had led to similar results of mythmaking in the common human drive for explanation.

If city-building and agricultural techniques are considered features of civilization, then the religious tenets of Axial Age civilizations are largely the result of a project of north-hemispheric masculinity. The outlook of Axial Age civilizations, even if grounded in fact, reinforces thus the antipodean myth, set into parochial language by Jaspers himself:

> Any people that attained no part in the Axial Period remained 'primitive', continued to live that unhistorical life which had been going on for tens or even hundreds of thousands of years. Men living outside the regions of the Axial Period either remained apart or came into contact with one of the three centres of spiritual radiation […] For many primitive peoples this contact resulted in their extinction. All human being beings living after the Axial Period either remained in a primitive state, or took part in the new course of events, now the only of the fundamental significance. Once history had come into being, the primitive peoples represented the residue of prehistory, which occupied a continually shrinking space and has only now reached its final end. (Jaspers 1953: 7)

Linked with habitat design Antipodean myth has emerged in the recent work of Deborah White precisely through gender disposition. Going as far as identifying Australia as a "woman" White maintains that Australian Aboriginal tradition in material culture and feminine expressions in the built environment have a common denomination. Absence of feminine and Aboriginal aspects in mainstream architecture, in her view, is missing precisely due to bias toward masculinity (White 2001: 179–200). White's own antipodean allegory, calling Australia a "woman" is evidence of an ongoing, ingrained myth.

In 1980 Gilles Deleuze and Félix Guattari published two volumes of *Capitalism and Schizophrenia*. Chap. 3 in Volume II, *A Thousand Plateaus*, seems written as a pseudo-scientific rant of one, Professor Challenger (Deleuze and Guattari 1987: 44–82). The chapter was entitled, "10,000 B.C.: Geology of Morals (Who Does the Earth Think it Is?)." Debora White might have snapped at Professor Challenger with a Dionysian retort: "The Earth Thinks her Southern Hemisphere is a Woman, and his Northern Hemisphere is a Man."

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Chapter 10
Philosophical Urbanism from Thomas More to Walter Benjamin

10.1 Introduction and Summary

The standard in cartography, set by Claudius Ptolemy in the second century CE, placing the North on a map in a superior, “up” position, extends during the Renaissance into placing Europe or the Holy Land at the centre of maps. Flattening a 3-dimensional globe onto two dimensions of a map, Renaissance cartographic modeling had also conferred disproportionately larger allocation in a map to land mass close to circumpolar regions of the northern hemisphere, while the unknown Australia and Antarctica were nowhere to enjoy the same kind of acquiescing distortion.

Eurocentric masculinity during the Renaissance had embodied the northern hemisphere as masculine and the southern hemisphere as feminine. In contrast to prehistoric attitudes towards the indiscriminate entirety of the Mother Earth, reasoning, exploration and discernment had, gradually, since at least the Platonic rendition of the universe, yielded the antipodean myth as yet another anthropomorphic projection. This is also apparent in *Utopia*, the sixteenth century literary fiction of Sir Thomas More.

Perhaps to signpost the injustices inherent in medieval English society, the fabled egalitarian cities on the island of Utopia in the masterpiece of St. Thomas More bestow a feminist flair upon the entire island, whose location is given as “under the equator.” Anthropomorphic embodiment of the Earth has continued into modernity and beyond not only with Deleuze’s question, “Who the Earth Thinks It Is?” but also with environmentalist lore of Neopaganism.

Ptolemy’s comprehensive advance of a universal geographic coordinate system reinforced the tendency toward orthogonal city planning in the late Middle Ages with some additional radial features in the early Renaissance. Incorporating the circle, the square and the human body in an urban vision of perfection, Francesco di Giorgio Martini had extended Renaissance anthropomorphic embodiment onto the notion of the ideal city. Francesco’s elaboration on his ideal city was through

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drawings of the human male body, possibly his own, Plato's city-soul analogy being thus complemented by Francesco's Neoplatonic city-body analogy.

Prominent among other Neoplatonic ideal city plans of the Renaissance, are Sforzinda by Antonio Averlino Filarette, and the City of the Sun of Tomasso Campanella. Circular perimeter and orthogonal features of compass directions continue to be the landmark, and Campanella's tale of solarians' alliance with the Chinese suggests some influence of *feng shui* geomancy on Campanella's ideal city plan. To Walter Benjamin such integration of sky-myth within the cultural evolution of humanity is fundamental, albeit entirely missing through modernity. Given Benjamin's view on myth and the built environment, city-form as well as the sky come to delineate the dynamics of the mind-city feedback progression.

10.2 Atlantis Revisited: Gender and Geography in Thomas More's Utopia

More's *Utopia* had become a celebrated fiction in seventeenth century's continental Europe, and soon also an epithet to all notions of ideal communities. More's fabled island of Utopia, an early Renaissance inspiration from Plato's Atlantis, has the ideal city Amaurot permeated with gardens shared along with other property among all citizens. Amaurot is described as a city of open spaces rather than mere buildings, communalism and altruism of the society, rather than its ruling hierarchy, and in the view of at least some, More's ideal society lends a feminist flair to his *Utopia* (Jones and Sellers Seibel 1978).

Agriculture is prevailing on Utopia, where also everyone is taught farming and is expected to live and work in the countryside for at least 2 years, women engaged in the same work as men. Within households, wives have about the same status as their husbands even though women are responsible for most household errands. Along with these features, feminist relative to sixteenth century's standards, More identifies the geographic location of Utopia:

> [U]nder the equator, and as far on both sides of the line as the sun moves, there lie vast empty deserts, scorched with the perpetual heat. The whole region is desolate and squalid, grim and uncultivated, inhabited by wild beast and serpents, and by men no less wild and dangerous than the beasts themselves. But, as you go on, everything gradually grows milder. The sun is less fierce, the earth greener, the creatures less savage. At last you reach people, cities and towns which not only trade among themselves and with their neighbours, but even carry on commerce by sea and land with remote countries. (More 1519/2002: 11)

A voyage "under the equator," much as to the New World, would have been among the most galvanizing ideas through the Age of Discovery, with navigation, and thereby also astronomy and astrology, becoming much sought disciplines of study. Alchemy and astrology had utilized names and symbols of planets, adopting the medieval explanation of the shield and spear as a symbol of the Roman god of war, Mars, and the goddess' looking glass as a symbol for Venus, the Roman goddess of love and beauty. The medieval symbols of planets are, in fact, traceable to classical Greece with the letter Theta for Thouros, or Greek for Mars, and the letter Phi for Phosphoros, a minor deity associated with the morning star, i.e. Venus (Stearn 1962).

Prevailing belief associating Mars with the North had emerged from early European myth, as for example, in the case of Thor (Mars), the mighty god of thunder, and the husband of the goddess Sif (Venus) in Norse mythology. In an allegory of courage and beauty the Renaissance painting *Mars and Venus* (1483) of Sandro Botticelli shows Mars resting next to Venus who had emerged from the sea, shown in the distant background. The early mythical bond of Mars with the North, and of Venus-Aphrodite with the sea, depicted in Botticelli's other painting, *The Birth of Venus* (1486), suggests also a symbolic analogy between Venus and the South. Such symbolic relation would have been receptive by More who in his poetic epigrams "emphasizes the mutuality of the interest between Venus and Mars" (Perry 1985).

The convention that North is represented at top of a map, or in the upward direction, and South at the map's bottom, or in the downward direction, was established in the second century CE by Claudius Ptolemy, and had been adopted, with some exceptions, by later European cartographers, also placing Europe or the Holy Land at the map's centre (Bagrow and Skelton 2010: 73–105). Flattening a 3-dimensional globe onto two dimensions of a map, Renaissance cartographic modeling had conferred disproportionately larger allocation in a map to land mass close to circumpolar regions of the northern hemisphere, while the unknown Australia and Antarctica were nowhere to enjoy the same kind of acquiescing distortion.

More's cultural milieu would have therefore likely identified the upward-pointing Mars symbol, as indicating north direction, and almost as if toward the North Star (at the latitude of England), and the downward-pointing symbol of Venus, as showing southward direction. Two centuries later similar expediency led the Swedish naturalist Carl Linnaeus (1707–1778) to apply the very same two symbols in his *Systema Naturae* (1735) as designating the male and female gender, respectively.

The implication of femininity as associated with the southern hemisphere, Utopia's location, lends also certain consistency to the view that, in the southern hemisphere, humans have been associated, more often than not, with pastoralist, frequently egalitarian, communities. Progression from nomadic settlements, into prehistoric forts and towns, and a patriarchal society in the northern hemisphere, on the other hand, has been propounded already by the early Arab historiographer Ibn Khaldun (1332–1406) in his *Prolegomena*.

10.3 The Geomancy of *Feng Shui*: An Eastern Source of European Urban Thought?

One of the most significant early influences of More's *Utopia* was the *Civitas Solis* by Tomasso Campanella (Chap. 8, Sect. 8.5). In his ideal City of the Sun Campanella had his solarians make alliance with the Chinese. But Chinese leverage in

Campanella's ideal city seems to go much deeper than a superficial pact. Since the late Middle Ages Chinese sway upon Europe had become apparent, most famously in the advent of gun powder and paper. China's clout in European urban thought, however, may have been primarily through Campanella's *Civitas Solis*.

Chinese influence on Camapanella appears to be through principles in city layout guided by what appears to be the geomancy of *feng shui*. In early China the encircled, or squared, cross denoted the emperor's location at the centre of the world, shown as the meeting point of the four cardinal directions. Implicit here too is an analogy with the North Star and the skies spinning round it. The masculine view of the Chinese myth is embedded also in the notion of world's pillars: The Song Shan Mountain is said to be at the centre of the world, along with the four other mountains, Tai Shan (East), Heng Shan Bei (North), Hua Shan (West) and Heng Shan Nan (South). The Five Pillars of the world come in parallel to the Five Elements of which the world is made, according to Taoist belief, and the five planets known at the time, with the entire belief system linked to the divination of *feng shui* (Moore 1967). As an environmental myth the *feng shui* alleges aesthetic as well as utilitarian principles in optimal site selection and object configuration. Access to the Emperor's palace at the Forbidden City in Beijing is from the south, thus placing the Emperor as an earthly likeness of the North Star round whom the heavenly sphere revolves. In the twentieth century the *feng shui* geomancy has received increasing attention in environmental design, enjoying still today an impressive commercial success in architecture and landscaping.

The related yin/yang principle found its way to the psychoanalysis of Carl Jung who had employed it in introducing the notion of Anima and Animus (Papadopoulos 1992: 19; McGowan 1994). The yin/yang is a belief in two mutually complementary forces as the underlying substance of the universe, yin being the feminine, passive, dark and downward seeking force, yang being the masculine, active, bright and upward seeking force. Yin and yang are jointly reciprocal, interdependent, gradually mutating or flowing into each other, rather than constituting absolute contrasting elements. The conceptual origin, and the cosmic connotation, of the yin/yang pair of concepts can most likely be sought in the universality of change between day and night, but their significance to the *feng shui* geomancy ought to be seen in their literal meaning, yin standing for "shady place", and yang standing for "sunny place." Even as geomantic lore behind ancient Chinese city planning, *feng shui* appears to be also an applied, practical attempt to address climatic concerns, not the least wind directions and solar exposure (Hong et al. 2007).

While it is More's *Utopia* that had most directly influenced Campanella's social and political structure envisaged for the City of the Sun, the layout of his ideal city as a cosmic analogy is not only the mark of Plato's Atlantis, but possibly also of classical Chinese urban planning. Campanella followed the Chinese ideal plan in having his four main avenue point to the four cardinal directions. Through the orthogonal layout superimposed upon a radial plan, Campanella appears to have put forward a universalist parallel between his ideal city and the cosmos. In his essay, "Ptolemy and Vitruvius" Denis Cosgrove points to a historical link between representations in urban geography and descriptive cosmography, that has lasted from antiquity to the middle ages (Cosgrove 2003). The affinity in the layout of Campanella's City of the Sun with classical Chinese urban planning give further affirmation to Cosgrove's outlook, much as they appear to lend some support to non-Eurocentric claims in the history of ideas and civilization (e.g. Hobson 2004: 116–133).

Even though Campanella's major source to his *Civitas Solis* was Plato, the possible influence of Chinese planning on Campanella's ideal city has also a broader context. Ancient Chinese symbolism represents heaven as a circle, and the earth as a square (Lowe 1982: 52). In Hindu tradition, Carl Jung pointed out, both the circle and the square, unified in a *mandala*, are a universal manifestation of personhood (Jung 1972: 20).

10.4 The Neoplatonic Urbanists: Francesco di Giorgio Martini and Tomasso Campanella

It was the perceived association of the human body with the circle and the square that led Vitruvius, in *De Architectura*, to point to anthropometric scale as the source of ideal proportions in architecture. A millennium and a half later, sometime between 1487 and c. 1490, Leonardo da Vinci produced the famous drawing of the Vitruvian Man. Inscribed within a circle and a square, Leonardo's Vitruvian Man is a universal projection of perfection. Leonardo's drawing is based on three sentences from Book III of *De Architectura*:

> […] if in a man lying with his face upward, and his hands and feet extended, from his navel as the centre, a circle be described, it will touch his fingers and toes. It is not alone by a circle, that the human body is thus circumscribed, as may be seen by placing it within a square. For measuring from the feet to the crown of the head, and then across the arms fully extended, we find the latter measure equal to the former; so that lines at right angles to each other, enclosing the figure, will form a square.

Leonardo's Vitruvian Man had been preceded by an analysis of human proportions in the short tract *De statua* by Leone Battista Alberti, first published sometime before 1450 (Aiken 1980). It is, therefore, of some interest to note that Alberti's publication seems to have also influenced the Tuscan architect, painter and engineer Francesco di Giorgio Martini (1439–1502). Following on Vitruvius, Francesco in his *Trattati di architettura*, *ingegneria e arte militare* (1481), several years before Leonardo's Vitruvian Man, showed the circle and the square matching the outline of a human male body as a standard for the optimal layout of an ideal city:

> I will describe the various parts of city areas and how they have the same structure and form as the human body. First, thinking of a human body stretched out on the ground, I will place a thread on the navel, and pull it in a circular motion around that body. Similarly, squared and angled the design shall be. Moreover, just as the body has all its parts and limbs with perfect measure and size, the same should be noted of those cities [*sic*]. (Francesco in Friedman 1988: 252 note 4)

It is this universal perceptual imprint of the circle and the square that appears in urban planning throughout history. During western antiquity perimeters of numerous planned cities had been often circumscribed by the circle and their internal layout by square grid (see Chap. 7, Sect. 7.3).

Planned colonies in Classical Greece, however, were often laid out on an orthogonal grid, which had been also adopted in many European New Towns throughout the Middle Ages and the Renaissance. Two new towns, San Giovanni Valdarno and Terranuova (Chap. 8, Sect. 8.4), both founded by the Florentine Republic in the late thirteenth century were in the vicinity of Siena, Francesco's birthplace. Their orthogonal plans likely had some perceptual impact on Francesco's own urban thought.

During the 1470s Francesco worked as a military architect and engineer in the service of Lorenzo de' Medici, a dedicated sponsor of the Platonic academy in Florence. Through the Medicis Francesco would have become familiar with, and very likely influenced by Platonism of the Florentine academy, at the time led by Marsillio Ficino (1433–1499). It would have been likely due to the teachings of the Florentine academy that Francesco's hominine urban conception drew on the *Republic* where the social structure of the Ideal City is presented by Plato as analogous to the makeup of the human soul (*Republic* II 368d-369a; IV 434d-435c.) As the Platonic *Form* of a city, the Ideal City had set Plato's city-soul analogy to an archetype presumed to be common to all humanity (*Republic* IV 435).

But except for brief descriptions of his two apocryphal cities, Atlantis, and Magnesia, Plato did not elaborate at any great length on the Ideal City's physical design. Francesco seems to have filled this gap by extending Plato's city-soul analogy onto a city-body analogy. More than a century after Francesco's Neoplatonic design expressing a city-body analogy, Campanella had provided an inadvertent match in his own urban ideal, a Neoplatonic city-universe analogy in the *Civitas Solis*.

10.5 Walter Benjamin and Carl Jung: The Ideal City vs. the Authentic Street

The impact of Campanella's *Civitas Solis* had echoed into the twentieth century leaving its mark on early Soviet architecture and urban planning (Lodder 1993). This could be seen as a landmark in modern urban planning, with its roots in the Renaissance New Town, itself often a Neoplatonic replica of an Ideal City.

Sympathetic attitude towards the Soviet Union was commonplace among Europe's intellectuals prior and during WWII, and the art and architecture of Soviet 'socialist realism' had aroused also the interest of Walter Benjamin (Ferris 2008: 19). Benjamin's series of observation essays, commenced in the *Arcades Project*, was, unsurprisingly, tainted with a Marxist outlook. Benjamin's later dissociation from Marxism, documented in his 1940 pamphlet, O*n the Philosophy of History*

(Ferris 2008: 130–135), however, had never been explicitly absorbed into his urban concepts. But Benjamin had developed an independent, entirely non-Marxian position already in his *Arcades Project*, leading him to suggest that civilization re-creates its own environments through ideal images of earlier ages. It is also due to this process, according to Benjamin, that city-form evolves (see Chap. 1, Sect. 1.4).

Benjamin draws on Carl Jung's notion of the collective unconscious, observing "elements of ur-history" wedded in an epochal feedback pattern (Tiedemann 1999). Visions of a utopia are produced through this impact between contemporaneous urban environment and a newly shared ideal. The shared elements of a community's image of a utopia stamp thus their mark also upon urban objects or their configurations, "from permanent buildings to ephemeral fashions" of the contemporary city (Buck-Morrs 1990: 114).

In Benjamin's eyes a manifestation of the "unconscious of the collective" since antiquity has been the street. Cultic rituals on the Italian peninsula were the custom in the founding of cities already in the Etruscan period (*c*. 700 BCE) and continued to be the practice for almost a millennium, throughout much of the Roman Empire. Fabled founders of cities in Greek mythology are often deified heroes, and within newly founded Greek colonies streets had often received their names through divination. To Benjamin the street since antiquity, and to our own times, has been a medium through which minds generate images and thoughts:

> *Streets* are the dwelling place of the collective. The collective is an eternally restless, eternally moving essence that, among the facades of buildings endures, experiences, learns, and senses as much as individuals in the protection of their four walls. For this collective the shiny enameled store signs are as good and even better a wall decoration as a salon painting is for the bourgeoisie. Walls with the "*defense d'afficher*" are its writing desk, newspapers are its libraries, letterboxes its bronzes, benches its bedroom furniture – and café terraces the balcony from which it looks down on its domestic concerns after work is done. (Benjamin 1933/1999: 423)

Benjamin identifies two elements that set in motion the interaction of minds and their built environment: The one is the myth of an ideal urban world; the other is the authentic, unadulterated space of the city street. Benjamin's hybrid of city-form and the minds within it is an unusual blend of psychoanalysis with *urban* analysis.

In envisaging a single composite of city-form and minds within it, Benjamin, furthermore, makes a conjecture of a philosophical nature by putting forward the notion of a continuous mutual impact between streetscapes, the perceptual emblem of built environments, on the one hand, and human minds within it, on the other hand. It is this interaction that constitutes a forceful dynamics behind the evolution of urban civilizations. Lewis Mumford, in chapter 'The Myth of Megalopolis' in his book, *The City in History* presented a similar idea as a gap between actual social or physical space of the city and the universal, albeit imaginary, notions of an ideal city (Mumford 1961: 525–46).

In observing the condition of individuals within twentieth century's urban environments Benjamin had focused on human interaction with the city's edifices, and voids between or within them. The mind-city feedback that Benjamin envisages consists of mutual and continuing metamorphoses of ideal-city myth and authentic city-form. City-form mutates when the myth of an ideal city is brought to bear upon it, while the myth of the ideal city transforms itself in the same feedback process when a new city-form emerges. The contemporary city, on Benjamin's view, is the result of just such feedback loop, ongoing throughout history.

10.6 Antipodean Myth and the Contemporary City

In a critique of contemporaneous social conditions Benjamin addresses femininity in the city through "the mannequin and the prostitute […] as emissaries of a whole system of exploitation, reification, alienation" (Leslie 2006: 99). But if myth is seen as permeating outlooks of humans, then no less legitimate feminine representation is Dionysian symbolism. One abiding Dionysian enactment throughout the ages has been intoxication and ecstasy. In the final section, "To the Planetarium," of his *One Way Street* written in 1928 Benjamin noted:

> Nothing distinguishes the ancient from the modern man so much as the former's absorption in a cosmic experience scarcely known to later periods. […] All the same, the exclusive emphasis on an optical connection to the universe, to which astronomy very quickly led, contained a portent of what was to come. The ancients' intercourse with the cosmos had been different: the ecstatic trance. (Ferris 2008: 75–77)

Not only is this a critique of the technological civilization that had contributed to WWI, but it is also a clear expression of admiration of Dionysian rites, long rejected by modes of thought that had led to this civilization exactly. Anthropomorphic embodiment of the Earth that has continued into modernity and beyond with environmentalist lore of Neopaganism, and the attendant deep-ecology view of the need for the protection of Mother Earth, seem as an attempt to counter the military-industrial deportment of modernity and postmodernity.

Benjamin's views on intoxication and drugs, portending one of the most contentious issues in the postindustrial city, have been recently juxtaposed with his imagined, yet plausible at the time, arrival in South America (Herlinghaus 2010). Contemporary bond between narcotics and South America is obvious, but the more subtle implication linking insobriety, a Dionysian attribute, with the Southern Hemisphere is noteworthy precisely due to its representation in myth.

Juxtaposing the hemispheric south with Benjamin's attitude on intoxication ought to be thus seen also in the context of two thousand years of antipodean myths that have played a significant role in the religion, travel literature, exploration and colonization emanating from Europe (Arthur 2007). There has been a venerable claim that Eurocentrism, along with colonial and masculine biases associated with it, have been historically the essence in representations of north-hemispheric supremacy epitomized by much of traditional cartography (e.g. Maddrell 1998). Northern positioning of maps, the centering of Europe in cartographic projections of the world, or cartographic diminution of geographic regions in correspondence to their proximity to the equator are the most frequent objections cast against masculine and Eurocentric biases in the history of map-making (e.g. Harley 1988).

Foreshadowing feminist and anti-colonialist critiques that were yet to follow in geography, was the air-ocean world projection of Buckminster Fuller, introduced in the March 1, 1943, issue of *Life* magazine. Perhaps a brilliant extension of Plato's vision of the Earth as dodecahedron, Fuller's dymaxion world map was icosahedron, a sphere whose surface of 20 identical, equilateral triangular faces, was laid flat on a horizontal surface. Distortion due to spherical projection was minimized in Fuller's icosahedral net that displayed oceans as a contiguous body of water surrounding Antarctica at the centre, with other continents dispersed accordingly. In his book *Critical Path* Fuller claimed advantage to his dymaxion projection in that it did away with what he saw being prejudicial views of verticality, "up" and "down", as representations for Heaven above and Hell below, advanced by religion (Fuller 1982: 43, 183–194). Cartography met habitat design in Fuller's 1951 patent of his geodesic dome where the dymaxion frame was shown to be the optimum structure maximizing volume at minimum shell, containing "more for less" (Gorman 2005: 41–48).

A likeness of mythical masculinity has been said to be expressed not only in skyscrapers but in most other urban structures (White 2001 100–134). Feminist critique of contemporary city-form could hardly find a better target of its censure than what has often been paraded as the symbol of architectural femininity – the Sydney Opera House. Within contemporary built environment the femininity of the shell-shaped Sydney Opera House, a mid-twentieth century masterpiece designed by the Danish architect Jørn Utzon, has been usually juxtaposed specifically against the monumental steel Harbour Bridge nearby. But this fairly unique example of architectural symbolism of femininity versus masculinity is the result of the mutual proximity and union of two contrasting structures, both quite exceptional. In itself, however, the Opera House is a masculine production of a feminine symbol, and far from commonplace (Akkerman 2013).

But the Sydney Opera House and the Harbour Bridge make a point: Masculinity and femininity can be discerned only in association with one another. But so, too, city and minds within it ought to be perceived jointly, in context of their mutual interaction. Gender archetypes and city-form are an intertwined amalgam, and only one aspect of the mind-city composite. The supposition that since archaic times myth has been a continuing driving force in the mind-city dynamics affirms contemporary views on the inherently masculine construction of geographic space throughout history. A corollary of this premise is not only the indictment by geographers led by Gillian Rose to the effect that human production of space as well as geographic knowledge, have historically suffered from a masculine bias (Rose 1993). As a complement to the nascent work of Walter Benjamin such stance leads also to the corresponding call for recognition of feminine metaphors as a requisition of city-form.

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Part III
Phenomenology of the Winter-City

Chapter 11
The LIA: Prelude and Aftermath, from the Garden to *City Without Streets*

11.1 Introduction and Summary

Environmental parables of the Bible are the Garden of Eden and the Tower of Babel. The myth of the Garden is primordial, possibly emerging at the onset of the Agricultural Revolution, its origins perhaps tracing to the Paleolithic Venus figurines, the Earthmother symbols. The Garden's consort had been the Tower, or the Citadel, a variant myth of *Axis mundi*, which along with the Sky Father, was the complement myth of the Earthmother represented by the Venus figurines. Throughout the history of north-hemispheric built environments, the masculine Citadel has gradually attained primacy and superiority, whereas the myth of the Garden has progressively, from antiquity and the Middle Ages through the Renaissance and modernity, become subdued in city-form.

The regimentation of French gardens of the Renaissance is one aspect of the gradual subjugation of the Garden myth to the Citadel. After all, geometric regimentation epitomized by the straight line or the circle can be only seldom observed in nature, yet both are the ubiquitous feature of the French garden. It was very likely this kind of geometrization of the French garden space that had a momentous cognitive impact on the 11-year old René Descartes upon his entry in 1607 into the Jesuit school at the town of La Flèche. Cartesian philosophy and coordinate geometry, at the founding of modernity, trace their cognitive source to the perceptual contrast of the regimented and masculine, geometrized milieu of gardens and the planned built environment in Renaissance France, against the free-flowing and feminine, natural environment and accreted built form of the Romanesque.

In turn, it was Cartesian science that had carried through industrial revolutions European built environments onto nineteenth century's city-form. In urbanized northern Europe of the nineteenth century the ability to seek shelter in the city meant inadvertently a voluntary abdication of open-air urban spaces to the homeless and the impoverished, with dire consequences on the physical and mental wellbeing

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to mainstream population staying mainly indoors during the frequently cold or inclement weather of the late LIA.

The urban planning aftermath of the LIA had resulted in schemes attempting to artificially introduce nature into city-form while ensuring command and control over urban space through wide streets and avenues. Such was the new standard introduced into urban planning by Haussmann's grand redesign of central Paris, modelled after sixteenth century's remaking of Rome's streetscapes by Sixtus V. In England Ebenezer Howard introduced, through his Spiritualist caricature of Plato's Atlantis and his unacknowledged reception of Thomas More's *Utopia*, a suburban scheme with gardens attached to each single family home. Both schemes, of course, caught up in North America, with the resulting late twentieth century's trend of people shielded from harsh or inclement weather continually.

In the North American winter-city urban planning of the twentieth century has lent hand to what can be qualified, past Deleuze's *Body without Organs*, as *City without Streets*. A disturbing parallel emerges between the psychocultural impact of city-form and weather in late nineteenth century northern Europe and contemporary winter-cities of North America. Furthermore, there is a parallel between the LIA and the scientific-industrial revolutions, on the one hand, and Iron Age Cold Epoch and Axial Age civilizations. Whereas the aftermath of Axial Age in Europe were largely the Dark Ages, the epoch past the LIA is a time we all are still living through.

11.2 The Myths of the Garden and the Citadel

In all major Near-Eastern mythologies cities were created by gods, and in classical Greece they were dedicated to gods (see, e.g., Chap. 8, Sect. 8.2). In the Bible cities are man-made (Lampl 1968: 7–12). Primal sacredness in the Bible is conferred upon the Garden. The Garden in *Genesis* epitomizes innocence, a primordial interaction with the environment, and guileless human relations. First and foremost among these is sharing in the environment as the only mode of human existence. And yet, the dread of human existence emerges precisely as an outcome of selflessness. For the outcome of the Garden's innocent altruism is the sharing in the Garden's Forbidden Fruit. The need for shelter in the Bible arises only following the expulsion from the Garden, and it emerges at once with the discovery of reason.

Extending Vico's interpretation of the ancient sources, and Jung's archetypal theory of the collective unconscious, the primordial emergence of two myths, both stemming from the Earthmother archetype, can be conjectured. The feminine archetype of the Earthmother culminates in the ultimate myth of the Garden, possibly at the turn of the Neolithic, c. 9000 BCE in the Near East, c. 7000 BCE in southeast Europe, c. 6000 BCE in East Asia, and later in other regions of the world. Symbolizing human fertility, the female gatherers of fruits and vegetables become the Garden's emissaries. The emergence of the other myth occurs more recently, evolving from the Earthmother and becoming a primal, masculine, paradigm on its own: It is the paradigm of the Citadel. Hunters, fathers of families, forming pacts to face off external attack as well as to suppress internal mutiny, become the first overlords, the builders of citadels and forts. The masculine paradigm of the Citadel unfolds in early North-Hemispheric civilizations into the myth of the Ideal City. Following the first prehistoric settlements, during the Neolithic revolution sometime after 9000 BCE, the Citadel becomes the masculine consort of the seraphic Garden. The myth of the Garden is primeval while that of the Citadel is at the founding of early north-hemispheric civilization. Both myths continue to define our material culture, both entailing a collective unconscious as an outgrowth of the Earthmother archetype. Figuratively, the Citadel represents solitude, exclusion, solidity and power, whereas the Garden represents multitude, compassion, fluidity and spontaneity (Akkerman 2006).

Imprint of the two paradigms, so fathomed, is implicit in early Greek thought. In Pre-Socratic philosophy the paradigm of the Citadel can be seen as represented by Parmenides of Elea, while that of the Garden is represented by Heraclitus of Ephesus. The fundamental statements of the two philosophers show this ostensibly: Whereas Parmenides' pronouncement is that which *is*, One, an unchanging singularity, Heraclitus' most famous assertion is: "You cannot step into the same river twice, for other and yet other waters are ever flowing on" (Gallop 1984: 7–28; Wheelwright 1959: 29).

The myth of the Citadel emerges along with the invention of counting, separation, measurement and individuation. Since at least ancient Egypt, measurement for the purpose of allocation of land has been a driving force in the advent of geometry. And since time immemorial measurement has also implied or confirmed hierarchy: First a hierarchy of objects, later hierarchy of individual persons or deities. But through measurement of their relative wealth or other hierarchical graduation humans, too, had become objects in the eyes of one another. Egoism, as a tenet of human relations, emerges as an attendant attribute of the ability to separate and count, to exercise power and to acquire wealth. The edifice of the citadel of antiquity and the Middle Ages rises mainly as the means to project power and to protect wealth. It may not come as a surprise, therefore, that Greek, and particularly Roman colonies and outposts were planned as forts according to rigid linear patterns.

11.3 Placemaking in Medieval Townscapes

Less rigidly planned but more expedient militarily were large fortified Celtic settlements which the Romans called oppida. Emerging during the second and first centuries BCE in Central Europe they spread across Europe throughout the second century CE, stretching from Britain and Iberia in the west to the edge of the Ukraine in the east. Later, throughout the Middle Ages European towns routinely grew in irregular patterns. Excepted planned New Towns, most medieval towns evolved to fit the topographic features of their areas rather than imposing a formal pattern of their own on the territory, and an irregular pattern of streets was not only tolerated but often consciously devised as a means to defend against an intruder.

Urban space unfolded gradually around the church or the castle of the sovereign or the overlord, assuming a lopsided pattern not only due to haphazard domestic animal traffic circulation but also as a result of the sporadic erection of new buildings. Since all wished to live in the vicinity of the castle for security, buildings rose up to several stories, and ordinances were often issued by town councils limiting building height. With the upper floors projecting upon usually uneven terrain, charming vistas were inadvertently carved into the urban space, delineated by often randomly distributed structures.

In northern France and Germany the irregular street plan of most cities was grounded in the orientation of the houses onto curving streets or away from adjacent houses previously built (Dickinson 1963: 315). But in spite of the prevailing irregular pattern of streets, main roads sometimes radiated from the plaza and the market square towards the gates, as was the case in Völkermarkt (founded *c.* 1240). In some other medieval communities main streets run in parallel to each other, the main square being formed by pairs of such streets as in Radstadt (f. *c.* 1280). Secondary lateral streets and alleys connected the main thoroughfares facilitating dense pedestrian circulation (Eisner et al. 1993: 77–78).

Wheeled traffic was generally absent from all but the main roadways between the market place and the gates. There were no lights in the streets except candles in windows, and sporadically, a lamp in front of a sanctuary. North of the Alps most houses were built of wood and only the nobles and merchants built in brick or stone. Accordingly, fires were frequent resulting often in complete destruction such as in the case of Rouen, Beauvais, Arras, Troyes, Provins, Poitiers and Moissac in the twelfth century. Yet with all the difficulties and danger, life was interesting in the medieval city: “Markets were crowded, talk was plentiful, dress and goods were colourful, pedlars cried their wares, craftsmen plied their trades” (Durant 1950: 643).

Principles of deliberate design of urban space considered by Vitruvius, had focused mainly on proportions. Images of the Forum Romanum, a vast open space complex in Rome prior to the sack of the city in 410, had also likely influenced later medieval architectural or planning design.

The shape and physical scope of the demarcated space of the town square had sometimes brought about the concern with arithmetic proportions. A guide were the deliberations on proportions that led St. Augustine to revive the formal Vitruvian ratios that mirror the dimensions of the human body (Vitruvius I: 2), by evaluating Noah’s ark as an architectonic object:

> For the length of the human body, from the crown of the head to the sole of the foot, is six times its breadth from side to side, and ten times its depth or thickness, measuring from back to front: that is to say, if you measure a man as he lies on his back or on his face, he is six times as long from head to foot as he is broad from side to side, and ten times as long as he is high from the ground. And therefore the ark was made 300 cubits in length, 50 in breadth, and 30 in height. (St. Augustine XV: 26)

Examples of Roman planning recurrently led to the premeditated design of urban places guided by the grid pattern. Yet both towns and urban open spaces in the Middle Ages became often function of random residuals of small voids shared by building frontages, as pointed out by Camilo Sitte in his book *City Planning According to Artistic Principles*. The medieval city square was geographically delineated by edifices housing the civic offices, the church, the law courts, and by buildings of prominent citizens. But it was only in the late nineteenth century when Sitte showed how medieval towns engaged curiosity as well as a feeling of receptiveness due to the interaction between people and their urban space. Place was given a meaning by people inhabiting it, more often than not, at locations of their daytime business (Sitte 1965: 25–26).

The marketplace was adjacent to, or congruent with the main plaza, where also the church, the townhall and the guild hall were located. Such configuration enabled the physical designation of finite space, while at the same time giving content to the place in the way of function and ornament. The main square in a town would be the only place, if at all, where trees or greenery were present. Urban space was precious, and there was no room for trees or shrubbery in the narrow streets. Nature was plentiful outside the town, and importing it in any artificial form into the townscape would be considered, rightly, an exercise in futility. The myth of the Garden was embedded in the unexpectedness of streetscapes that often grew in an opportunistic, haphazard fashion according to a moment's circumstances.

11.4 The Garden and the Citadel in Design History of the North: Descartes' Gardens

It might not be a farfetched attempt to follow Aristotle's classification of imitative arts in his *Poetics*, in suggesting that the Garden appears to be represented by arts emphasizing temporal flows – music, dance, poetry – whereas the fine arts emulate the Citadel, highlighting discrete visual images – architecture, sculpture, painting. Place in Aristotelian philosophy is considered and analyzed mostly in terms of physical properties, rather than aesthetic attributes. But Aristotle too dedicates considerable portions of his *Politics* to the design of the *agora* as well as other open spaces within explicit concern for the public good (Lord 1984: 267). The theatre of classical Greece and Rome encompasses both Aristotle's temporal and static attributes, also in correspondence to the Garden and the Citadel, much as it embraces the Dionysian and Apollonian impulses of Greek art (see Chap. 4, Sect. 4.5).

How well does designed, open urban space fit within the two paradigms of the Garden and the Citadel? A generation after Aristotle, about 311 BCE, the philosopher Epicurus (342–270 BCE) came to Mytilene on the island of Lesbos where Aristotle during the period 345–342 BCE had conducted his life-sciences investigations. Emerging from Mytilene, Epicurus in his teachings contended that immediate experience is incontestable, since its source is sensation. Citing sensory experience as the ultimate evidence, the philosopher established *c*. 306 BCE at Athens an Epicurean community called the Garden (Strodach 1963: 79).

Whereas the Garden in early built environment evolved into the open spaces of the agora and the marketplace, the myth of the Citadel, the early escort of the Garden, had evolved into the allegory of the Ideal City. It was the practical and the mythical that had conjoined in city-form from antiquity through to the pre-industrial age. Compass directions and grid layout of streets have frequently addressed also the need for navigation, for protection from sun or wind, or for other thermal comfort, or for measurement of land in ownership; all these yielded a need for regimentation of urban space. Increasingly during the Little Ice Age, the Citadel, rather than the Garden, came to express the urban fabric. By the onset of the Renaissance an overriding pattern of the masculine Ideal City, becoming a centerpiece of city-form had emerged, while the feminine myth of the Garden had become subdued.

This was the city-form encountered by René Descartes in Paris, c. 1616, when he moved there from the medieval city of Poitiers. Geometric rigour could be said to be the principal feature of Descartes' philosophy, which made him into one of the founders of modernity. And it was in Paris where Descartes would have encountered Renaissance ideal-city planning first-hand. Paris, under deplorable conditions until the end of the sixteenth century, became the focus of the new urban planning after the entry of Henri IV in 1594. New urban squares in Paris adhered to strict geometric patterns as Descartes would have witnessed in the two major urban plazas built in the capital: Place Dauphine, a monumental open space of a triangular plan, under construction *c.* 1610, and Place Royale, in the image of a perfect geometrical square, inaugurated in 1612 (Akkerman 2001).

While in Paris, Descartes could also not have overlooked the Palace of the Tuileries, built in 1564, with its adjacent gardens. Jean Bullant did much of the construction of the Palace while the Garden of the Tuileries was the work of several landscape architects, among them, Jean le Nôtre and Jacques Boyceau (Kostof 1991: 251). The highly regimented plan is governed by a central axis formed by the Palace towards which a long avenue lined with trees converges. It is mainly due to Bullant's design that symmetry and geometry emerge as an overriding design principle in the Tuileries (Hazlehurst 1966: 79–80).

French gardens of the Renaissance were entirely curtailed by geometric regimentation. And Descartes, even prior to being introduced to formal concepts in geometry, could have experienced this geometric regimentation already at the age of 10, upon his entry in 1607, into the Jesuit Collège Royal Henry-Le-Grand at the town of La Flèche, in central France. Consistent with the Jesuit comportment, a formal garden was added to the college complex at La Flèche, probably towards the end or after the major alterations in the late sixteenth century (Gaukroger 1995: 40). In all likelihood, the garden at La Flèche had a momentous impact on Descartes early thought.

Descartes is also known to have spent some time at similar royal gardens, those near Saint-Germain, just outside Paris, where he is believed to have lived sometime during the period 1614–1615 (Gaukroger 1995: 62). The landscape and building design of this type would have appealed to Descartes for its expression of geometrical clarity and efficacy, contrasting with the random fabric permeating its commonplace natural and urban environs.

11.5 The Garden City of Ebenezer Howard as a Neoplatonic Myth

Cartesian science, as it evolved from Descartes' philosophy and the coordinate geometry he fathered, carried an obvious impact on evolving city-form of late LIA and modernity. The urban planning of Baron George-Eugene Haussmann, exaggerating sixteenth century's remaking of Rome's streetscapes by Sixtus V, had reintroduced the standard of geometrization of urban space in the grand redesign of central Paris (Chap. 8, Sect. 8.7). The myth of the Garden as a feminine allegory of spontaneity has disappeared from city-form almost entirely, and since Haussmann has been of little concern to urban planning. The idea of greenery in the city, more often than not, has epitomized possession and control rather than expressing the primary feature of the Garden allegory.

This continues to be still the case today. Originating in southern United States, New Urbanism has largely perpetuated such attitude, not to mention its irrelevance to winter-cities further north of the continent. New Urbanism is a late spinoff of Ebenezer Howard's Garden City movement, a pioneering work of the turn of the twentieth century that had attempted to bring the notions of town and country into a single, integrated whole, perhaps attempting to complement Haussmann's redesign of Paris. Howard's project is considered a milestone in the history of modern urban planning, and quite understandably, finds still today many admirers (Beevers 1987; Rutheiser 1997), as well as detractors (Ramroth 2007).

But just as its latter-day version of New Urbanism, so already Howard's own project, as a forerunner of the North-American suburb, had largely contributed to the curtailing of the allegoric Garden in city-form. It was Jane Jacobs who in the early 1960s, qualified modern urban planning movements, starting with Howard's Garden City, as "architectural design cults" (Jacobs 1961: 375). The architectural historian and critic Kenneth Frampton, more recently, bluntly judged Howard's postmodernist sequel of New Urbanism as "megalomaniac" (Frampton 2006).

Howard's proclaimed purpose of his Garden City project was to provide acceptable living conditions to the working class in England through a rationalist egalitarian scheme of urban co-operatives. It was the appealing idea in his short handbook, *Garden Cities of To-morrow* (Howard 1902), to inject nature into the design of a small-size city, that almost immediately became a commercial real-estate triumph. Not surprisingly, far from catering to the working class, the two garden city communities in England, Welwyn Garden City and Letchworth, as well as their later sequels elsewhere, had since their founding been rather elitist, and anything but working class (Jacobs 1961: 17–25). Ultimately becoming an exclusionary manor development for the upper-middle class, on its own, the original Garden City concept can be seen as a nineteenth century's culmination in the progression of the masculine myth of the Ideal City.

Howard's idea of gardens within the city, quite evidently, has its unacknowledged origin in the description of Utopia and its cities by St. Thomas More (Chap. 10, Sect. 10.2). Lewis Mumford in *The City in History*, had pointed out, additionally, that Howard's Garden City carries semblance to Plato's Atlantis (Mumford 1961: 175–184; 516–520). Indeed, Howard charted his Garden City on seven concentric ring-roads round the central square, the interior six rings being "avenues" and the seventh, exterior ring being a railroad. Radiating from the central square were six major linear boulevards, dividing the Garden City into six equal sections.

Howard begins his book with a picturesque symbolism of the Town, the Country, and the Town-Country as the 'Three Magnets'. Howard's metaphor of the Three Magnets would seem an innocent literary device, had it not appeared in conjunction with his concentric plan, and his own association with a Neo-Platonic religious movement. In his treatise, the *Laws*, Plato describes Magnesia as the ideal "city of Magnetes" (*Laws*, IV 714a–722b). Built on the island of Crete by migrants from Magnesia, a region in north-eastern Greece, the ideal city of Magnesia has its land apportioned, according to Plato's advice to Magnesia's ruler, into 12 radial portions of land within which 5,040 households are distributed (*Laws*, V 745c–811ce) (see Chap. 9, Sect. 9.2).

It is, therefore, of some interest to note that, in the first edition of his book, Howard included a diagram entitled, *No. 7, Group of Slumless and Smokeless Cities*. In his diagram *No. 7* Howard shows a regional plan of several garden cities, each garden city on a concentric plan carved by 12 radiating avenues into 12 equal radial sections. The diagram *No. 7* was included only in the first edition of Howard's book, in 1898. In the 2nd edition, of 1902, diagram *No. 7* "was sadly omitted […]" (Hall and Ward 1998: 23).

The semblance of Howard's Garden City plan with Plato's Atlantis and Magnesia is consistent with Platonic myths espoused by an esoteric religion with which Howard had been associated. In 1871 Ebenezer Howard arrived in America, and it was here where, as a church preacher, he came under the influence of the Spiritualist movement, one of whose most celebrated séance mediums was Cora Richmond (also known as Hatch or Scott). On one occasion Cora is reported to have said to Howard:

> I see you in the centre of a series of circles working on something that will be of a great service to humanity." That suggestion coming from a woman he regarded as a seer gave him confidence when he came to draw his plan of a Garden City in concentric circles. (MacFadyen 1933: 11).

There could be little doubt that Cora was promoting a cult that saw her as a continuance to the Oracle of Delphi. Her trance messages were within an enclosed circle, which would have included Howard, and just as the Pythia so too Cora gave out directions about the founding of new cities. In 1881, during her visit to London, she told Howard:

> "[Y]ou have a message to give the world." Howard thereafter thought his purpose in life was "to put forward […] practical proposals to uplift society." Howard's desire for reform rested on a solid belief in a God-given purpose of harmony and unity in the universe. In the world vision offered by 'Modern Spiritualism,' humanity needed to align itself with this divine order. […] This, he now believed, required the garden city. (Buder 1990:63).

Between the late nineteenth and early twentieth centuries Plato's myths had been in the heart of the Spiritualist movement of the north-eastern U.S., and the story of Atlantis was among those that "trumped the finer points of rhetoric in the imaginations of Americans" (Gutierrez 2009: 8). It is noteworthy, in this regard, that after Howard's book was repeatedly refused by publishers, its ultimate publication was secured through Spiritualist financial support: "Mr. George Dickman, an admirer of Cora's, and the General Manager of Kodak, came forward with 50 pounds toward publishing costs of the book" (MacFadyen op. cit., p. 22).

The association of Howard with Cora's psychic religion is beyond a doubt and could be of further concern in light of observations such as one made by the novelist Henry James. Intrigued by Cora's charismatic personality, James characterized the contents of her trance messages as "a string of […] arrant platitudes" (Buder op. cit., p. 9, footnote 11).

Howard's penchant for mysticism notwithstanding, the early success of introducing nature into urban residential space in the Garden City concept is unquestionable. Yet placing Howard's source in Plato's Atlantis and Magnesia gives support to a notion quite contrary to proclamations associated with the Garden City movement. Presenting his Garden City as a progressive co-operative addressing the plight of the working poor, and an egalitarian urban settlement whose design is founded on reason, Howard never mentioned Plato's elitist myth of Atlantis as his source. Yet projected into Howard's plan of the Garden City was, precisely, Plato's ancient predilection for a rigidly stratified society, along with Howard's own Spiritualist beliefs, rather than his avowed rationalist egalitarianism. The masculine myth of the Ideal City has shaped the history of city-form through the gradual, corresponding subjugation of the Myth of the Garden culminating, precisely, in Howard's Garden City concept, at the founding of modern urban planning.

11.6 Past Deleuze's BwO: Simone de Bevoir on Brasília Without Streets

Howard's Garden City is a mythical, masculine offshoot of Plato's Atlantis, "as though fashioning a city and its inhabitants out of waxwork." Consistent with such image of perfection, there is no police-station, jail or a courthouse in Howard's Garden City; and insane asylums are at a faraway distance from the Garden City. Yet, almost 2000 years before Howard, entirely different urban sceneries were brought forward by Vitruvius. And a millennium *after* their introduction into the Roman theatre, the three theatrical settings of Vitruvius had become the inspirational leitmotif to the architectural classification of Renaissance streetscapes by Sebastiano Serlio (1537/1982: II 68r–70v). None of that has been retained in the modern streetscape design. Howard's Garden City is a manifestation of the modern Neoplatonic transmutation of the Citadel in the progressive strife at regimentation of city-form, including its gardens and parks, of course.

During the twentieth century two of the most monumental Neoplatonic urban ideals have been carried out as artificial cities, planted on virgin grounds – where else but in the southern hemisphere. Howard's source in masculine myth was repeated by Walter Burley Griffin in his award-winning radio-centric design proposal for Canberra in 1912 (Proudfoot 1993). And in Brasília, the federal capital city of Brazil, a UNESCO World Heritage Site, the same masculine myth had been perpetuated during the 1960s (Palazzo and Saboia 2012).

The Harvard economist, Edward Glaeser, has recently dubbed Brasília a "warning to urban dreamers." Undoubtedly, Brasília's public buildings, the work of the architect Oscar Niemeyer, are breathtaking in their magnificence: Catedral Metropolitana, Congresso Nacional, Praça dos Trés Poderes, Palácio da Justiça or Palácio do Planalto. But Brasília's problem is not so much in its monumental buildings, as it is in *that* which it does not have. Simone de Beauvoir has most succinctly described Brasília's problem through her own experience:

> […] what possible interest could there be in wandering about among the six- or eight-story quadra and super-quadra, raised on stilts and all, despite superficial variation, exuding the same air of elegant monotony? […] But the street, that meeting ground of riverside dwellers and passers-by, of stores and houses, of vehicles and pedestrians – thanks to capricious, always unexpectedly changing mixture – the street, as fascinating in Chicago as in Rome, in London as in Peking, in Bahia as in Rio, sometimes deserted and dreaming, but alive even in its silence, *the street does not exist in Brasilia* […]. (De Beauvoir 1992: 273)

The predicament of Brasília as *City without Streets* increasingly accords with planned urban environments most everywhere. There could hardly be a better metaphor describing the urban ills of North-America, not the least, blight and transportation. *City without Streets* to de Beauvoir is what *Body without Organs* is to Gilles Deleuze. Introduced by Deleuze in *A Thousand Plateaus* as a deliberate and provocative absurd, BwO is the body's residual of sounds, smell and fluidity. Thinking away the organs, the body's sounds, smell and fluidity become the essence of the body. Can *City without Streets* (CwS) be similarly perceived?

CwS *has* formal streets, but just like BwO, their only substance is their noise, smell and objects speeding through them. The streets are nothing more than conduits to process people and traffic, holding no longer the medieval air of human interaction – that, which makes a street into a place. Milan Kundera, the Czech-French author, describes accurately how noise, smell and speed emanating from such streets define nothing but the ugly of the city, much as BwO in Deleuze. Alienation then becomes the hallmark of CwS:

> She said to herself: when the onslaught of ugliness became completely unbearable, she would go to the florist and buy a forget-me-not, a single forget-me-not, a slender stalk with miniature blue flowers. She would go out into the streets holding the flower before her eyes, staring at it tenaciously so as to see only that single beautiful blue point, to see it as the last thing she wanted to preserve for herself from a world she had ceased to love […] Suddenly, the sharp sound of a motorcycle pierced her being. She could not help but immediately look towards something that had caused such physical pain: a young girl in jeans, her black hair waving behind her, erect on a small motorcycle as if she were sitting at a typewriter; it had no muffler and made a horrific noise. […] It wasn't the machine that was making the noise;

> it was the "I" of the black haired girl, trying to make herself heard, to penetrate the consciousness of the rest by linking her being to the deafening escape of the engine. Agnes looked at the hair streaming behind that noisy aggressor and realized she intensely wished the death of that girl. […] Her hate immediately frightened her and she said to herself: the world has arrived to the frontier of something disastrous; if it crosses it, everything will turn to madness: the people will wander through the streets with forget-me-nots in their hands or will kill each other on sight. It will take very little, the drop of water that overflows the glass: just one car, person or decibel more. (Kundera 1991: 21-22)

The city, the largest artifact ever made by man, seems to have turned on its creator. And CwS is the harshest expression thereof. Modern city-form is largely the product of planning through late stages of the LIA and into the twentieth century. Advances of the Industrial Revolution, had reinforced the masculine drive for regimentation in twentieth century city-form, staging it against patterns of disorder that had emerged from the LIA.

In *Little Ice Age*, Brian Fagan documents the chaos and hardship of people north of the Alps during early modernity. In only 2 years, 1693–1694, some 10 % of the French population "perished from famine and attendant epidemics," and during "the sudden cold of 1739–1742 many died of hypothermia and hunger-related disease" (Fagan 2000: 155–157). Fagan notes that "rural crime rose as bands of brigands intimidated farmers and robbed them" (Fagan 2000: 161), further intensifying late eighteenth century's urbanization. Hunger and cold weather, quite evidently, led to disruptive social patterns. Modern city-form, largely sparked by Haussmann's redesign of central Paris, the Garden City movement of Ebenezer Howard and the advent of the automobile, in North America in particular, were to counter and prevent social disorder of past centuries (Carver 1948). In North America of the twentieth century, along with advances of the Second Industrial Revolution, economic and personal freedom were to be heightened and upheld by sprawling, automotive and automated city-form, with only few voices dissenting (Stein 1957: 218).

11.7 Iron Age Cold Epoch and the LIA: Cognitive Impact and Psychocultural Consequences

One major similarity between twentieth century North America, and nineteenth century northern Europe, was the rapid urbanization and the attendant universal availability of shelter to most everyone. With the advent of the industrial revolutions in northern Europe during the high LIA, when people north of the Alps were not only compelled, but were also increasingly able to seek continual urban shelter from weather as well as crime, mutual impact between urbanization and cerebral disposition had led to increasing incidence of mood disorder. In urbanized nineteenth century northern Europe the ability to seek shelter in the city meant inadvertently a voluntary abdication of open-air spaces to the homeless and the impoverished, and unremitting sunlight deprivation, with dire consequences on physical and mental wellbeing to those staying continually indoors. North American winter-cities of the late twentieth century till the present time seem to be largely following a similar route.

The LIA had coincided with half-a-millennium span in which the Scientific Revolution had led to the advent of the two industrial revolutions. As a contiguous time period the LIA was arguably one of the most prolific in the history of civilization. Without a doubt, one of the most important founders of this progress was René Descartes. But Descartes, the founder of modern philosophy and coordinate geometry, may have been a victim of the very same environment that was the backdrop to his intellectual breakthroughs. Biographic evidence as well Descartes' personal account of his thought processes suggest that he suffered from bouts of mental disorder, and that his affliction may have been caused, triggered or exacerbated by extended indoor habitat during cold weather (Withers 2008: 691–709; Gaukroger 1995: 106–111). Moreover, Descartes' mental condition and his whereabouts in Europe north of the Alps show similarity with other leading intellectuals who had emerged in the same geographic region in the course of the late LIA, and till the second half of the nineteenth century (Fellin and Blè 1997; Holm-Hadulla et al. 2010; Catteau 1989: 523; Krell and Bates 1997: 203).

The urban feature associated with excessive shelter and with sheltered, automated urban existence in particular, is CwS. Whereas malnutrition, the result of cold weather and poor crops, and mood disorder on a mass scale, had led to upheavals of the high LIA, CwS must be viewed within an analogous context of modernity and post-modernity. The contemporary depravity of many people in the cold regions of North America is in voluntary abstinence from sunlight during cold winter days. Mood disorder, increasingly, is the earmark of the contemporary northern metropolis of America, and CwS is its mournful symbol.

An important climate-related analogy holds also between antiquity and modernity. This second analogy does not draw on sunlight but, rather, on the nightly sky. At the end of the Iron Age Cold Epoch (900–300 BCE), the widespread use of wheeled tools led people within the Deluvial belt in Eurasia (along roughly the 45th parallel North) to the myth of the heavenly operator of the *Axis mundi*: the Jade Emperor of China, the Vishvakarman Architect of the Indus Valley, Ahura-Mazda of Zoroaster, or the demiurge of Plato (see Chap. 9, Sect. 9.5). The advances made between 800 BCE and 200 BCE, claimed by Karl Jaspers to be due to directive force guiding the unfolding of history, were in actuality the coincidental result of commonalities in climate, technology and the ability to pair wheel techniques with observations of the rotating nightly sky. Imagination and a sky myth were the driving force of this period in China, the Indus Valley, the Near East and the Classical Antiquity of Europe.

The LIA and the industrial revolutions, along with the associated urbanization, ought to be seen as analogous to the configuration of Iron Age Cold Epoch and the widespread use of the wheel in antiquity. Unquestionably, both classical antiquity and the industrial revolutions constituted remarkable advances. The psychocultural consequences of both periods, however, were entirely different.

The rotating circumpolar stars of the nightly sky, and the widespread acquaintance with the wheel, had reinforced the myth of *Axis mundi*, and frequently as a result, brought about the belief in a singular transcendent authority responsible for the heavenly mechanics. But what impact, if any, has the *disappearing* nightly sky on the psyche of contemporary humans? To most of us today the nightly sky is no longer amenable to casual observation, and in cities where air and light pollution prevail, the nightly sky can no longer inspire a child's imagination. The impact of this missing link in a human cognition chain could be a matter of argument, but undoubtedly it epitomizes our detachment from an important feature of our natural environment. A Talmudic sage, Samuel bar Abba (165–257 CE) of Nehardea (near the present-day city of Fallujah, Iraq) was said to be "as familiar with the pathways of the stars as with the streets of Nehardea" (Talmud *Berachot* 58b). Almost two millennia onward, *City without Streets*, DeBeauvoir's comment on the absurdities of last century's city-form, is not only the urban equivalent of Deleuze's BwO: it is also a reflection of the nightly sky *without* stars.

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Chapter 12
From Cartesian Doubt to Heroic Design: The Late LIA and the Myth of the Grand Designer

12.1 Introduction and Summary

Descartes account of urban images in his visions of a stove-heated room in southern Germany, at the turn of the Thirty Years War, had been a milestone on the road to modernity. So were the laws of planetary motion discovered a decade earlier by Johannes Kepler, triggered as well by urban imagery. Descartes' whereabouts at the time were in the same jurisdiction, duchy Württemberg, as the place where a witchcraft trial were to proceed, at the same time, against Kepler's herbalist mother. In the story of the concurrent location of Katharina Kepler, a silent victim of medievalist persecution, and René Descartes, a flamboyant founder of modernity, we have two protagonists who, both in their own way, helped shut down the Middle Ages and usher modernity.

The two are genuine heroes, one in pursuit of naturalism, and the other in the pursuit of reason. But the modernity they helped usher produced yet another kind of a hero. Two or three centuries after Descartes, several leading architects of modernity emerge, each on their own, as the Grand Designer of the industrial metropolis, a would-be hero reminiscent of the Platonic demiurge, the designer of the universe. The myth of the Grand Designer, initially, had been associated with *Axis mundi* and was the essence of the Argument from Design, an ostensible proof for the existence of God from the perfection of the universe. In the third century BCE Alexander the Great, suffering from several mood or mental disorders, had the city of Alexandria designed and built, precisely, to correspond to his self-appointment as the 'Master of the universe'.

Over the Middle Ages and the Renaissance, the myth of the Grand Designer seems to have emerged as a companion myth to the Ideal City. All the while the myth of the Garden, still present in the typical medieval city-form, had become gradually subdued. Unlike the planned New Town of the Middle Ages and the Renaissance, the paradigmatic medieval city was seldom built according to a plan: it grew in an accreted and unexpected manner, slowly over centuries, a function of

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a myriad factors from ownership through topography and economics to defense. There were neither trees nor greenery to speak of in the accreted medieval city-form, simply, because space within city-walls was at premium. Yet the labyrinth of crooked narrow streets, lanes and squares was in itself the allegory of the Garden in the built environment.

Noticeably, the Garden and the Grand Designer are two paradigms exerting conflicting features upon city-form. Starting with Baron Georges-Eugène Haussmann in Paris, the Grand Designers of modern city planning did away with much of the Garden allegory, demolishing medieval centres of European cities to make place for wide boulevards, and regimenting urban greenery according to their master plans.

12.2 Kepler in Prague

In recent years Gilbert LaFrenière (2008: 41–72, 261–300) has provided a comprehensive overview of the history of environmental change as it had influenced the emergence as well as the decline of civilizations, not to mention the reverse impact of modernity on the environment. In an inadvertent affirmation of the more specific outlook of mind-city interaction, Erwin Panofsky (1957) showed that a factual impact of the built environment upon mind is evident in the case of Gothic architecture and scholastic thought. Panofsky's observation relates not only to the architecture of gothic edifices as the source of impact upon mind, but mainly also to the structure of monastic spaces, i.e., to the logic and expediency in the configuration of buildings, and voids within and between buildings. Panofsky's example, however, is important for yet another reason: High scholasticism marks the eve of the LIA in northern Europe.

A less-known, but well-documented example of city-form impact upon mind, during the LIA in northern Europe, is the case of early application of geometry to scientific reasoning, by Johannes Kepler (1571–1630) at Prague. Based on astronomical observations of the orbit of Mars made by his mentor, the astronomer Tycho Brahe, Kepler had modified the Copernican conjecture of planetary motion round the sun, confirming its fundamentals. But prior to his discovery, for years Kepler was unsuccessful in fitting circular circumference, as assumed by Copernicus, or any other curve to the planetary orbit of Mars round the Sun. It was only in 1608 that it dawned on him that the orbit is elliptical, and Tycho's observational record had confirmed this. Ultimately, Kepler in his treatise, *Astronomia Nova* (1609/1992) introduced the first two of his three laws of planetary motion, the first law stating that the Sun is located in one of the two foci of an orbital ellipse circumscribed by a planet. In *Astronomia Nova* Kepler rescued the Copernican heliocentric system from oblivion, thus setting the direction of the ensuing Scientific Revolution (Cohen 1994: 92–93).

An argument has been put forward that the perceptual stimulus which led Kepler to his first law, after so many years of unsuccessful attempts to fit a curve to the orbital record of Mars, was the shape of the Italian Chapel in the Old Town of

Prague, near Kepler's residence. The Italian Chapel, still extant today, is disposed upon an obtrusively elliptic plan, and it is this chapel's ovaloid structure that is thought to have been an architectural model that ultimately triggered Kepler's astronomical discovery (Horský 1990: 189–190). The strikingly harmonious elliptic structure of the Italian Chapel, only a few yards from Kepler's residence on the same street, provided a sharp contrast to the maze-like Romanesque environment of the Old Town. The elliptical plan of the Italian Chapel was the very first one, at the time, to be introduced anywhere north of the Alps (Kaufman 1999).

As against the clearly efficacious link between the Renaissance environment and Kepler's first law of planetary motion, the impact of LIA on Kepler was devastating. In 1620 at Leonberg, Duchy of Württemberg, southern Germany, Kepler's herbalist mother was imprisoned, interrogated, and expected to be put on a witchcraft trial following accusations by a woman neighbor who claimed that Katharina Kepler had made her sick with an evil brew. Witchcraft trials against women herbalists, like Kepler's mother, ran rampant in central Europe, in the wake of frequent storms and hail that had left crops and agricultural land laid to waste. The women were sometimes put to death for having "caused" weather anomalies, such as hail or storms, or for allegedly bringing about upheaval (Behringer 1999).

It was only due to the vast effort of Kepler that his mother was released in 1621 (Connor 2004: 259–274). But the emotional and financial strain on Kepler took its toll. Kepler set aside his other astronomical investigations, and focused on producing his "harmonic theory" of the universe, *Harmonices Mundi* (1619/1997), where his third law of planetary motion had been introduced, along with a mixture of false assumptions regarding cosmological properties of Platonic solids. Kepler died at Regensburg, Bavaria, in 1630, aged 58, following an arduous journey to collect a debt of 12,000 gulden (Caspar 1993: 355–360).

Always of firm mind Kepler had endured many personal tragedies, among the worst being the death of his first wife, Barbora, who died in 1611 of complications from typhus and from what was said to have been "melancholic" illness. The emperor Rudolph II, Kepler's patron, died the following year, also from "melancholy" after having been stripped, due to his mental incapacity, of all imperial powers (Rattle 2011: 52–54).

12.3 Descartes' Stove-Heated Room Visions: November 10, 1619

The severe period of cold extremes of the second half of the LIA was also a period of intensifying urbanization, as people sought shelter in cities. The Romanesque city-form juxtaposed against the emerging Renaissance planned urban environment had provided an intensifying perceptual stimulus. It was the contrariety of the old Romanesque townscape of tortuous narrow streets, against the orthogonal and radial plans of the New Towns that had contributed to the rise of modern thought, personified by Johannes Kepler and René Descartes.

Descartes' *Discourse on the Method of Rightly Conducting One's Reason and of Seeking Truth in the Sciences,* was published in the French original, *Le Discours de la méthode sous-titré Pour bien conduire sa raison, et chercher la vérité dans les sciences*, in 1637. It is singularly distinguished from other philosophical works of Descartes by its self-reflective biographical account and by its conspicuous reference to townscapes or house-building. Initially, the title proposed by Descartes in 1636 was, *Le projet d'une Science universelle qui puisse éleur nostre nature à son plus haut degré de perfection*, translated by Cottingham et al., appropriately associating it with town planning and architecture, as "The Plan of a universal Science which is capable of raising our nature to its highest degree of perfection" (Cottingham et al. 1985: 109). The *Discours* was printed in a single volume with his other three treatises, *Les Météores*, *La dioptrique* and *La Géométrie*. There seems to be a substantial link, grounded in perception, between these four works of Descartes, and that link ought to be sought, among other things, in the changing urban streetscapes of the Renaissance (Akkerman 2015). In a few key passages over the six parts of the *Discours*, while explicating on the origins of his philosophical approach, Descartes had made some distinctive references to his own urban environment. It has been pointed out in recent years that this constructional allusion demonstrates the extent to which Descartes was using the manner of architectural production for conceptual constructs of his own (Brodsky Lacour 1996: 32–37). Such association between Descartes' thought and his environment ought to involve, as well, the climate of the time.

The several references to townscapes and house-building, as metaphors throughout the *Discours*, beg the question of Descartes' motivation, in the first place, to resort repeatedly to urban planning and architectural cues. In addressing this quandary, the contrast of Renaissance planned New Towns and urban *places* against the prevailing medieval city-form, should be considered as a factor pivotal in moulding Descartes' cognition and way of thinking. It is this contrast that seems to have been instrumental in launching Descartes onto the path of his philosophical and mathematical inquiry.

Among his autobiographic disclosures in the *Discours* the one more striking is an account Descartes gave, recalling a three-stage reverie known to have occurred to him on a cold day of November 10, 1619:

> At that time I was in Germany […] While I was returning to the army from the coronation of the Emperor, the onset of winter detained me in quarters where, finding no conversation to divert me and fortunately having no cares or passions to trouble me, I stayed all day shut up alone in a stove-heated room, where I was completely free to converse with myself about my own thoughts. Among the first that occurred to me was the thought that […] ancient cities which have gradually grown from mere villages into large towns are usually ill-proportioned, compared with those orderly towns which planners lay out as they fancy on level ground. Looking at the buildings of the former individually, you will often find as much art in them, if not more, than in those of the latter; but in view of their arrangement – a tall one here, a small one there – and the way they make streets crooked and irregular, you

> would say it is chance, rather than the will of men using reason, that placed them so. (Descartes 1637/1985: 116)

The new urban environment of the Renaissance aspired to be new symbol of clarity and simplicity. Descartes's admiring observation of "those orderly towns which planners lay out," comes also to emphasize his salient criticism of "ancient cities" due to their "crooked and irregular" streets. In the rising urbanization of north-western Europe during the second half of the LIA, this is also a remarkable testimony of the dramatic change that had been occurring in the built environment.

The new urban imagery was represented by the straight line: a linear street laid mainly in an orthogonal or radial pattern. To many urban dwellers of the Renaissance the emerging urban surroundings enabled also a more expedient continuance of their own daily lives. Cities which for hundreds of years were spontaneously accreted throughout late antiquity and the Middle Ages would have now their inhabitants observe and reflect on a new urban environment, permeating emblems of perfection and clarity. Descartes confrontation with the Renaissance city-form, its avenues, squares and proportioned buildings would have shown the significance of street pattern for spatial clarity and simplicity. It was the contrast between this novel, simplified urban paradigm and the streetscape labyrinth of the medieval town that had led Descartes to probing the notions of the methodical doubt against clear and distinct ideas, as well as his discovery of coordinate geometry.

12.4 Romanesque Streetscapes and Descartes' Methodical Doubt

Descartes was 23 when his trance in the stove-heated room occurred. Only 3 years earlier, he completed his course of study at the University of Poitiers, where he spent two of his formative years, between ages 18 and 20, reading law. Poitiers, founded in late antiquity, had extensive fortification, built during the ninth and tenth centuries for defense against Viking raids. Buildings confined to the small space within the walls yielded streets that were narrow and did not follow a plan, but rather constituted minimal open space to allow traffic of pedestrians, carts and animals. Poitiers saw little construction activity during the Renaissance and Descartes at Poitiers encountered a Romanesque streetscape in sharp contrast to the geometrically designed gardens at La Flèche (Chap. 11, Sect. 11.3).

During Descartes' life, most cities in north-western Europe would be characterized by an erratic street layout, grounded in –

> the irregularity of block and in the orientation of the houses in relation both to the street and to adjacent houses. There is often a curved belt of lots and an irregular arrangement of building lots […] Rib patterns have narrow side streets and elongated blocks running back from the main street and a few side streets on which the houses have their frontages. In the parallel and elliptical plan the narrow cross streets are few, and the blocks are elongated […] Main thoroughfares [are] about 6–8 meters wide, the living streets about 2–3 m wide, [with] narrow alleys that cut through the blocks. (Dickinson 1963: 315)

As opposed to the tortuous curve of a Romanesque street, representing randomness and irregularity, geometric street plan "which planners lay out" to Descartes epitomized certainty and predictability. Foggy mornings of central Europe in the late autumn could have easily compounded Descartes' perceptual analogy with the notion of doubt. Limited visibility due to weather conditions would have sharpened the contrast between a view on crooked street shrouded in fog, against a straight street whose one end is visible from the street's other end.

It was geometry that was the beacon that led Descartes to the vision of a single, unified science in which philosophy and all knowledge would be interconnected. Descartes' philosophical endeavour is manifest by the aspiration to found all science upon a single, axiomatic proposition that is beyond all doubt. His idea of *methodical* doubt allowed him, first, to suspend belief in anything that could conceivably be doubted. At the second stage of his philosophical enterprise he identified the desired axiomatic proposition that was self-justifying and beyond *all* doubt: It was the argument that, while doubting, one cannot doubt that one doubts, and therefore, that one thinks and exists. He expressed this single self-evident notion in his famous Latin phrase, *Cogito ergo sum*. Based upon this evidence Descartes then proceeded, in a deductive fashion resembling the axiomatic format of Euclidian geometry, in his attempt to build a methodological edifice as a framework for scientific knowledge.

In Meditation II of his *Meditations on First Philosophy* Descartes asserts his renowned *cogito* statement:

> It further occurred to me that I was nourished, that I walked, perceived, and thought, […] but, if it be true that I have no body, it is true likewise that I am capable neither of walking nor of being nourished. Perception is another attribute of the soul; but perception too is impossible without the body; besides, I have frequently, during sleep, believed that I perceived objects which I afterward observed I did not in reality perceive. Thinking is another attribute of the soul; and here I discover what properly belongs to myself. This alone is inseparable from me. I am—I exist: this is certain. (Descartes 1641/1879: II 106)

Denying that there is any absolute authority to truth, and focusing instead on the uniqueness of the individual, is the essence of the methodical doubt introduced by Descartes, and largely also the disposition of modern Existentialism. It is noteworthy that Cartesian methodical doubt is presented in the earlier passage through the example of walking. In a letter to his contemporary, Jean-Louis Guez de Balzac, Descartes uses the simile of a city walk to express his joy of anonymity as much as presaging the Existentialist alienation from, and contempt for urban crowds:

> I can walk out each day in the bustle of the crowds with as much freedom and ease as you have in your paths, and I pay no more attention to the people I meet than I would to the trees in your woods or the animals that graze there. (Gaukroger 1995: 188)

12.5 Renaissance Streetscapes and Descartes' Clear and Distinct Ideas

The mentioning of city walk by Descartes in his letter to Balzac is possibly emblematic to Descartes' notion of clear and distinct ideas. The experience of walking through a Renaissance planned new town, against a walk through the Romanesque streetscape such as Poitiers, must have been momentous not only to Descartes, but to all his contemporaries. It is in these contrasting streetscapes that the cognitive source of Descartes' rationalism ought to be sought.

Descartes' rationalism involves the attempt to derive a comprehensive system of knowledge from a few rudimentary precepts, thus instituting a method, which would lead to definitive certainty. By posing a question of sensory evidence Descartes asks: In any particular case of one's own perception, how can one ascertain that one has a genuine piece of knowledge? Descartes found his answer in 'the clear and distinct ideas' of the intellect. Proving, as he supposed, the existence of God through a traditional scholastic argument, he then argued that the notion of God's perfection rules out the possibility of a *genius malignus*, a transcendent evil and deceiving spirit that might falsify one's perception or reasoning. Once a supreme authority was established to guarantee the authenticity of clear and distinct ideas, the reliability of beliefs that are beyond clear and distinct ideas could be established as well.

Descartes' notion of clear and distinct ideas, through its articulation of both philosophy and mathematics, had marked the dawn of modern scientific reasoning (Redondi 1989: 15). It is also this notion through which the genealogy of Descartes' approach might allude to his own predilection with perceptual validation in an urban context:

> I call a perception 'clear' when it is present and accessible to the attentive mind – just as we say that we see something clearly when it is present to the eye's gaze and stimulates it with a sufficient degree of strength and accessibility. I call a 'perception' distinct if, as well as being clear, it is so sharply separated from all other perceptions that it contains within itself only what is clear […] Hence, perception can be clear without being distinct, but not distinct without being clear. (Descartes 1644/1985: 208)

Descartes' notion of a 'distinct perception' is defined as sharply separated from other perceptions. Descartes here does not resort to a visual example or analogy. But an optical analogy would suggest a spatial outline. The vistas introduced through clearly delineated avenues, and the symmetrically designed urban squares of French Renaissance planning, such as the Place Dauphine or Place Royale in Paris (Chap. 8, Sects. 8.5 and 8.6), would have served as such analogy to the Cartesian notion of clear and distinct ideas.

But the cerebral impact upon Descartes of planned new towns in the west of Europe, north of the Alps, goes further. In his *Meditations on First Philosophy*, first published in 1641, Descartes elaborates on Part IV of his *Discourse*, where his main philosophical argumentation is first introduced. It is in the *Meditations* where, in Meditation III, Descartes claims "clear and distinct" notions for the existence of self and for the existence of God, and in Meditation VI, where he discerns perception of external objects that is clear and distinct, against one that is confused and obscure (Descartes 1641/1879: 126 and 162). Conspicuously, the concept of "clear and distinct" is introduced for the first time nowhere else but in the *Discours*, and only a few paragraphs following Descartes reference to "those orderly towns which planners lay out." It is following his celebrated account from the stove-heated room that Descartes comes to pledge "to comprise nothing more in my judgment than what was presented to my mind so *clearly and distinctly* as to exclude all ground of doubt" (Descartes 1637/1988: 30).

12.6 Duchy Württemberg: Modernity Meets Middle Ages

The simplest urban metaphor to Descartes' notion of "clear and distinct" would be the street of a planned New Town of the Renaissance. And the simplest urban metaphor to his "confused and obscure" would be a Romanesque street.

Descartes' location at the time of his acclaimed stove-heated room reflection of autumn, 1619, is known to have been in the south of Germany. There are two places where Descartes' meditation may have taken place, both within the historic region of Swabia: at Neuburg an der Donau (Sasaki 2003: 149–150) or in a village near Ulm (Gaukroger 1995: 105). It is this biographical detail of Descartes' whereabouts on that cold autumn day that places his discovery of coordinate geometry and systematic philosophy within a defined urban context. Both Ulm and Neuburg are near Freudenstadt, a new town planned and laid out by Heinrich Schickhardt for Frederick I, Duke of Württemberg in 1599 (Chap. 8). In all likelihood, it was Freudenstadt that Descartes had in mind when he recalled "those orderly towns which planners lay out as they fancy on level ground."

Freudenstadt was built on a plan that resembles the grid of the ancient board game, Nine Men's Morris, which has been known since the Middle-Ages through the German-speaking countries as Mühle (Mill). The streets of Freudenstadt are all perfectly straight: each and every street in the town is thus openly observable from both its ends (Schickhardt 1599/1966: 135–138; Akkerman 2001). Decartes' deliberate choice of an urban metaphor leaves little doubt as to the momentous impact urbanization and Renaissance planning had on the minds, not only of Descartes, but also of his contemporaries.

The new town of Freudenstadt, in the duchy of Württemberg, is only some 80 km south of Leonberg where, about the time of Descartes' stove-heated room dreams, witchcraft investigation against Katharina Kepler had been completed in preparation for her trial. The oft violent struggle of the Church against secular thought is thus curiously exemplified at Württemberg where one of the cruelest of medieval superstitious practices took place while the duchy was inadvertently also becoming the ground from which the Scientific Revolution had been launched. The silent heroine, the last victim of the Middle Ages who unwittingly helped put the lid on medievalism, and the flamboyant hero of the Renaissance who opened the gates of modernity: they were side by side, in the same locale at the same time, yet in two entirely different worlds.

Descartes' admiration for the calculable certitude inspired by planned towns, expressed in the *Discours*, could have occurred only on the backdrop of his disdain for the indeterminate ambience of Romanesque townscapes. Unlike their archaic counterparts, buildings in the Renaissance new planned towns and squares, were of equal, or equally proportional height, set on a plain with very small elevation differences. Often occasioned by exorbitant capital and political ambition, the New Towns of the Renaissance countered the common medieval urban form with streets that were unswervingly linear in a grid or radial pattern (Kostof 1991: 30).

In 1637, the same year the *Discours* was published, Descartes published also his markedly less important work, *Les Météores*, largely tracing Aristotle's *Meteorologica*. Weather anomalies of the LIA were behind the interest in climate and weather, and the *Météores* preceded later important work on meteorology by Robert Boyle, John Hooke and Edmund Halley in England (Crewe 2003: 135–139). Descartes' work thus helped set the course of early modern inquiry into climate and weather. Otherwise diffident in substance, Descartes' inquiry on weather was portentous. In 1649, after some hesitation, he accepted invitation by Queen Christina of Sweden to become her philosophy tutor and moved to Stockholm. Unaccustomed to the harsh winter weather of Scandinavia Descartes contracted what was likely pneumonia, and died in February 1650 (Gaukroger 1995: 416).

In spite of his evident interest in the built environment and in weather, during his relatively short life Descartes never managed to bring the two subjects together in an integrated inquiry. It is revealing that two centuries after the emergence of Cartesian philosophy, modern Existentialism, as a new philosophical trend that traces its early origins to Descartes himself, rose from the midst of European city-form and Nordic weather.

Descartes' musings insinuate likely the sinister psychosocial hallmark of LIA: mood or mental disorder. In his criticism of Foucault's *Madness and Civilization* Jacques Derrida in an essay entitled, "Cogito and the history of madness," attributes mental disorder to Descartes himself (Derrida 1978: 36–76). Descartes' ensuing mind-body dualism that came to typify all Cartesian philosophy and science has been said, in fact, to betray mind-body dissociation, known as depersonalization disorder (Withers 2008: 691–709). Such a condition would be also consistent with what one of Descartes' biographers describes as his "nervous breakdown" in 1614 as well as his mental state during the stove-heated room episode (Gaukroger 1995: 106–111). Descartes' frequent reference to walking appears to be an innuendo to his own action he took in order to fight his affliction.

His likely mood or mental disorder notwithstanding, Descartes' genius unfolded in the midst of an unprecedented urbanization, and a newly emerging city-form of the Renaissance. There could be little doubt that it was the simplicity and clarity of the new Renaissance streetscape that had jolted Descartes' mind. But all the same: Cartesian science and coordinate geometry, among its vastly constructive impacts, had undoubtedly led also to the emergence of modern city-form in the latter part of the LIA.

In *Meditations* II Descartes asks his notorious question, while staring from his window onto the street, presumably on a rainy day: "what do I see from the window beyond *hats* and cloaks that might cover artificial machines, whose motions might be determined by springs"? (Chap. 1, Sect. 1.2). Weather and the excessive shelter of early modern city-form with the resultant shielding from sunlight were likely behind the increasing incidence of mood and mental disorder during the LIA. But then, one must also ask, what impact did environmental conditions of the LIA, compounded with Cartesian geometry and philosophy, had on subsequent city-form of the twentieth century, and its further bearing upon cognition and mindset of people?

12.7 The Argument from Design and Twentieth Century's Myth of the Grand Designer

The myths of the Vishvakarman, the Jade Emperor, or the Platonic myth of the demiurge as a cosmic artisan responsible for the molding and maintenance of the universe, have reverberated throughout Eurasia across millennia. In the demiurge, as well as in his eastern counterparts, the myth of the Sky Father and the archetype of the wise old man had transmuted into the allegory of the Grand Designer, an anthropomorphic driving force on a cosmic scale.

These were the anthropomorphic myths of the *Axis mundi* that spread across Eurasia during the Iron Age Cold Epoch, primarily due to the varied and frequent use of the wheel (Chap. 9, Sect. 9.5). But *Axis mundi* is also an environmental myth that happened to be quite instrumental in the forging of north-hemispheric civilizations. Cartesian philosophy and science, with nineteenth and twentieth centuries' city-form it helped bring about, had yielded a different, and disturbing, myth of the Grand Designer. The myth of the Grand Designer *of the Ideal City* is not an anthropomorphic projection attempting to explain phenomena of the natural environment. Rather, it has been largely a projection of narcissistic disorder of individuals attempting to design large-scale urban environments. A missing environmental allegory that could have countered this psychocultural configuration of the twentieth century, was the myth of the Garden.

While the myth of the Garden has long become subdued in the history of city-form, the myth of the Grand Designer has come to forge an inseparable cohort with the Ideal City. Recurring construction of an "ideal city," and the ensuing feedback progression between minds and their built environments, have led to continuous transformations based upon the endeavor of an envisaged perfection. With new observations and embellishments, evolving city-form fed back not only to the myth of the Ideal City, but also onto the myth of the Grand Designer, culminating in its twentieth century genre.

The parable of the Grand Designer has been the pervasive myth associated with the Ideal City since antiquity. This was also the gist of Francesco's urban design

(Chap. 10): The heroic projection of the designer's perceived grandeur of self, or of a revered other human being, upon an ideal plan. It seems that the Vitruvian notion of male body proportions, projected by Francesco to inform the spatial features of an ideal city had expressed a masculine metaphor of correspondence between the faultless body, presumably Francesco's own, and the city. Francesco's contemporary, Leonardo da Vinci, drew his Vitruvian Man, very likely, in the image of himself too (Mack 2005: 66; Lester 2012: 216).

The Ideal City and the Grand Designer appear as two companion masculine allegories that have shaped city-form in the west throughout history, culminating in twentieth century's urban distortions. Initially, the concept of the Grand Designer was the essence of a professed proof for the existence of God from the perfection of the universe. Known in modern age as the argument for evidence of 'intelligent design', historically the Argument from Design is traced to Cicero's *De natura deorum* (II: 34). As an ostensible inference for the existence of God, the Argument from Design claims evidence of a supreme perfect being from the apparent perfection of the universe.

The first occasion where the *city* becomes a central notion in the Argument from Design, is the account of Philo Judaeus in his treatise *De Opificio Mundi* (*On the Creation of the World*) in the first century CE:

> (VI) … It is manifest also, that the archetypal seal, which we call that world which is perceptible only to the intellect, must itself be the archetypal model, the idea of ideas, the Logos of God, already occupied in the creation of the world; for neither is a city, while only perceptible to the intellect, anything else but the reason of the architect, who is already designing to build one perceptible to the external senses, on the model of that which is so only to the intellect. (Yonge 1933)

Philo compares the universe to a perfect urban design and the architect of the city, to God: Both are, in effect, seen as the Grand Designer – the Platonic demiurge, only at a different scale. In his *Dialogues Concerning Natural Religion*, David Hume refutes the Argument from Design through a character by the name of "Philo," showing the Argument's fault in ignoring the existence of imperfection, pain or ugliness (Hume 1782: XXII). Extending this criticism Immanuel Kant had shown that the Argument implies absolute determinism, leaving no possibility of contingency in nature (Kant 1787/1929: A625–629; B653–657). But the idea itself of the Designer of the universe, compared by the human being to the image of self or of another human being, is not only an erroneous association. Arguably, it is also a delusional and frenzied expression of imagined grandeur, projected upon self or upon another human being. As a psychoanalytic aspect of architecture and planning, the myth of the Grand Designer appears as a manic inversion of the Argument from Design.

There could be little doubt that the "city" in Philo's parable was his hometown of Alexandria. Laid out on a regimented orthogonal grid plan some 400 years earlier by Dinocrates of Rhodes, the city was planned to become a showpiece for the eminence of Alexander the Great who had himself declared the Master of the Universe (Runia 2001: 104). A case has been made in recent years to the effect that at the time of Alexandria's founding in 331 BCE, the main longitudinal axis of Dinocrates' plan was orientated to the rising sun on the day of Alexander's birth while at sunset of the same day the axis was aligned in the approximate direction of the rising star Regulus, associated in Babylonian tradition with royalty (Ferro and Magli 2012).

The pragmatic impetus for the founding of Alexandria is no less telling than its axial direction. According to Vitruvius in the Introduction to his Book II of *De Architectura*, Alexandria was built as an alternative to the proposal for a colossal statue of the Macedonian king that was to be sculpted in the flank of Mount Athos in northern Greece. In the account of Vitruvius, Dinocrates boasted that he had proposed a gigantic sculpture of Alexander in whose left hand a most "spacious city" were to be constructed. It was the outrageous folly of the gargantuan design scheme that had stopped Alexander from following on the bizarre proposal. But both Philo and Dinocrates in Alexandria exemplify how the myths of the Ideal City and the Grand Designer have been formative in the communal-cerebral progression of humans, and in the evolution of city-form.

Dinocrates stamp of Alexander's sumptuousness in the plan of Alexandria was a singular occasion of gargantuan city construction between antiquity and the Middle Ages. But the hero self-image of a designer, architect or planner in antiquity or the Middle Ages could seldom affect the entirety of the urban environment, for the simple lack of technical means. This has changed following the industrial revolutions. Two millennia after Dinocrates, during the latter part of the LIA, architects or planners such as Claude-Nicholas Ledoux, Georges-Eugène Haussmann, Robert Moses, Frank Lloyd Wright, or Lucio Costa, each saw himself as the Grand Designer of *his* own ideal city. Narcissistic personality disorder has been detected in Robert Moses by Robert Caro (1974: 641–647), in Haussmann and Le Corbusier by Norma Evenson (1979: 199–219, 232–238) and in Frank Lloyd Wright by Friedland and Zellman (2006: 251–340, 543–561). The all-too-telling photographs of three-dimensional urban models dwarfed by their designer-planners bending over them are the latter-day versions of the fantasy that had engaged Dinocrates at Mt. Athos.

Most salient, in this regard, is the project of the Radiant City (*Ville radieuse*) of Le Corbusier, a 1924 plan joint with Le Corbusier's cousin, Pierre Jeanneret (Le Corbusier 1933/1967). Even though never executed the Radiant City plan has carried a significant impact on modern urban planning. The plan shows zoning in parallel bands, from offices at the top end of his blueprint, through housing in the centre, to industry at the bottom, within a perimeter clearly delineating image of a human body. Kenneth Frampton has qualified the Radiant City plan as "anthropomorphic metaphor […] inserted into this model" (Frampton 1992: 180). The resemblance to the allegoric setting of Francesco's ideal city five centuries earlier is unmistakable: In both cases the anthropomorphic metaphor recalls the Platonic myth even as the outline of a masculine super-creature, a Neoplatonic demiurge, permeates through the plan of Le Corbusier's Radiant City.

A corresponding mechanistic myth appears to be behind the *Modulor*, Le Corbusier's version of the Vitruvian Man, showing a male figure in bodily proportions consistent with the Golden Section ratio in two different series of anthropometric scales. Both anthropometric series of the *Modulor* amount to the formal basis for "ideal" design of Le Corbusier's urban dwellings (Le Corbusier 1954/2004:

131). The impression that Le Corbusier, too, designed the *Modulor* in the image of himself is inescapable (Akkerman 2014).

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Chapter 13
The Late LIA and Its Urban Sequel: Reason, Mental Illness and the Emergence of Crowd

13.1 Introduction and Summary

There is sufficient evidence to show that a mitigating factor against mood disorder during the late LIA, has been the city walk. Quite apart from its therapeutic effect, in the case of both René Descartes and Immanuel Kant, the walking experience through seventeenth and eighteenth centuries' European streetscapes had thrust Descartes into his discovery of coordinate geometry, and Kant into his discernment of synthetic – a-priori concepts. In the nineteenth century the subjective experience of urban space has been also at the founding of European Existentialism. To Descartes orthogonally planned streets were the epitome of clear and distinct ideas as well as incipient discernment of axes x and y in a coordinate system. To Kant, according to some interpreters, direction in space was not absolute, but was the product of the body's encounter with space, leading him – through walking – to consider geometry not as a mere neutral a-priori standard of spatiality, but one into which *synthetic* subjectivity is injected.

Søren Kierkegaard had specifically referred to the healing power of walking. But Kierkegaard, along with other millions of Europeans of the late LIA, was able to seek shelter much easier than the impoverished folk in cities. Comfortable daytime shelter of middle-class or prosperous Europeans deprived them, in turn, of sunlight, particularly at higher latitudes during the cold and short days of autumn and winter. The likely outcome, depression, had been a prominent trait amongst North-European people of the nineteenth century, and in the case of Kierkegaard, a defining moment of the European Existentialism he founded.

The multitudes seeking comfortable and safe shelter from harsh weather and urban crime had voluntarily abdicated vital sunlight, choosing to acquire a permanent shield against exposure. The inordinate increase, toward the end of the nineteenth century, in mental asylums throughout urbanized northern Europe, in contrast to the much less urbanized United States and Canada at that time, suggests a menacing bond between harsh weather, shielded city-form and mood disorder.

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The configuration of city-form and weather in northern Europe of the nineteenth century had inadvertent impact on the multitudes of people in cities, as well as on the discerning individual observing them. With rapidly growing urban populations, the increasingly automated city-form had also progressively become geared less to the needs of the individual city dweller and more towards crowd control. Streamlined to such city-form, and adhering to the mediocrity of the expected, the crowd becomes the subject of contempt in the eyes of the ardent spectator. Both Kierkegaard and Nietzsche condemn the crowd for both its obedience to the standard of complacency and for its moral fraud of inauthenticity.

Past Kierkegaard and Nietzsche, twentieth century begins with the promise of a well-functioning city, projected against the reality of the *mal*functioning city at the century's end. The sum-total of individuals attempting to extricate themselves from dysfunctional urban infrastructure, yield a spiral of frenzy in traffic congestion, lineups and crime. This is the urban superconscious that most everyone in the metropolis wishes to escape. But in doing so *en masse* the urban superconscious only feeds upon itself in an escalating fury.

The one authentic feature in such urban milieu is the residual of its malfunction, the ugliness of the urban superconscious: the smell, noise and speed associated with the City without Streets, the mayhem of the modern Tower of Babel, a collapsing myth of the Citadel. Among the scope of physical outcomes of the urban superconscious is urban decay: a place of contempt in the city, its 'reverse side,' in the words of Jean-Paul Sartre. Urban decay is as much an outcome of the urban superconscious as it is the complement of the City without Streets. An unplanned place in the city, in its authenticity urban decay becomes the city's Garden allegory.

13.2 Immanuel Kant and Leonhard Euler in Streetscapes of the Baltic Shore

Descartes' move to Stockholm marks the diffusion of modern philosophical and geometrical inquiries into Scandinavia and the Baltic shore. It was at Königsberg (now, Kaliningrad), a city on the south-western coast of the Baltic Sea, where Cartesian mind-body dualism had been fundamentally contested by Immanuel Kant in the notion of synthetic a-priori concepts. Königsberg, in what had been since 1701 the Kingdom of Prussia, was built on two sides of the river Pregel whose two islands were connected with each other and with the rest of the city by seven bridges.

When Kant was a young boy at Königsberg, the city's people approached the Lord Mayor of nearby Danzig, another Prussian city (now Gdansk, Poland), with a geometric brainteaser: How to find a contiguous walk that would cross once, and only once, each of Königsberg's seven bridges that connected to the city's two river islands? The mayor wrote to Leonhard Euler, arguably the greatest mathematician of all times, presenting to him the riddle. Euler, who at the time resided at Saint Petersburg in the employ of the Imperial court of Russia, showed that the Seven

Bridges' Problem had no solution. In the course of reporting this undoubtedly disappointing result back to Prussia, Euler inadvertently founded a new branch of mathematics, known today as graph theory (Gribkovskaia et al. 2007: 199–203).

Kant, at the time when the Seven Bridges Riddle was posed to Euler, in 1735, was 11 years old, and growing up in Königsberg he would have been likely aware of it. Kant's notion of synthetic a-priori concepts was a revolutionary argument addressing the rules of geometry and arithmetic. Kant had argued that conventional mathematical concepts are beyond any specific experiential observation, and their origin is in imprints of mind – space and time – which he called *forms of intuition*. Kant's argument about the rules of geometry (or arithmetic) is that, rather than being analytic truths or a-posteriori observations, they are synthetic a-priori, i.e., emerging from the mind's reflective thought in conjunction with the mind's forms of perceiving: Space and time. The notion that mind is the origin of all synthetic – a priori statements is perhaps Kant's most significant insight.

In his last published essay, "Eye and Mind," Maurice Merleau-Ponty extended Kant's argument of mind as an epistemic center, onto the body as the manifestation of consciousness and the center of all perception (Merleau-Ponty 1961/2004: 290–324). A clear analogy to such a notion is none other but a pedestrian moving through a streetscape, watching objects from consecutively changing angles: As Merleau-Ponty relates, the moving pedestrian is always the center of all her street observations. Kant's own fundamental approach could be essentially viewed as the source of this outlook, positing foundation of all knowledge as originating in the uniqueness of an individual's experience and condition. Emphasis on an individual's experience is also a fundamental stance of modern Existentialism (Solomon 1972: 19–23). At the latter part of the LIA, and towards its closure, Kant's discovery of synthetic-a priori concepts had brought about not only the *universal* forms of perceiving, space and time, to be viewed as imprints of mind, but had also led to the emphasis upon the significance of *subjective* mental dispositions of the perceiving individuals.

In the case of both Descartes and Kant, the link with geometry could be largely due to the experience of the *lived* space of their respective built environments. Descartes' intense account of his thoughts in the stove-heated room is a vivid testimony on the link between observation of linear street grids in Renaissance new towns, and the coordinate geometry which he pioneered (Lacour 1996; Akkerman 2001: 143–169). To Descartes orthogonally planned towns were the epitome of clear and distinct ideas as well as embryonic reference to axes *x* and *y* in a coordinate system.

To Kant, according to some interpreters, direction in space was not absolute, but was the product of the body's encounter with space, leading him to view geometry by injecting *synthetic* subjectivity into the neutral a-priori standard of spatiality (Elden 2009). Similarly, the abstraction of a street walk onto a mathematical problem of the Seven Bridges Riddle, is fundamentally a process of phenomenological reduction, bracketing all incidental meaning and addressing only invariate aspects of experience. Kant's street walking and his awareness of the Seven Bridges Riddle may have been, indeed, an important source of his discovery of the synthetic-a priori.

Streetscape perception could also explain why Euler took up the Seven Bridges Problem as a legitimate challenge. Saint Petersburg was planned on an orthogonal grid by Domenico Trezzini in 1716, and similar to Königsberg, it was connected with bridges over a series of small islands on the Baltic shore. Trezzini's plan had never been fully executed but perhaps was sufficiently interesting to Euler who engaged also in cartography at the Imperial Russian Academy of Sciences. In his own account Euler is said to have related that his eyesight problems began in 1738 with overstrain due to his cartographic work and that by 1740 he had lost sight in his right eye (Heine 2009).

The reflective thinking about one's own walks might appear unusual, but it seems to have been an aspect of lifestyle that has emerged from some built environments, the two Baltic cities included. What had made the passion for walking of Königsberg's people of such significance to the history of mathematics, evidently, was their subsequent reflecting on their walking experience as a geometric quandary. The towering philosopher and Königsberg's most famous son had been renowned throughout the city for his walks, his neighbors winding their watches in accordance to Kant's precise timing of his 3 o'clock strides (de Quincey 1862: 99–166; Soccio 2007: 313). Kant's daily walking exercise had likely also delayed till his relatively advanced age the onset of his own mental illness, dementia (Fellin and Blè 1997: 1771–1773).

13.3 Anguish and Anger in the City of the Late LIA

Winter-city streetscapes appear to have been critical to the rise of European Existentialism, but with nuance entirely different from Cartesian rationalism. Søren Kierkegaard writes approvingly about his walks in the Romanesque streets of Old Copenhagen, and Friedrich Nietzsche's walks in the Alps, or in the streets of his favorite city, Turin are well documented (e.g., Kierkegaard 1847/1978: 214; Krell and Bates 1997: 203). Their attitude to the modern city, however, is far from Descartes' admiring approbation. Bitter, sometimes raging, reflections of Kierkegaard observing the urban crowd against the anguished self, in *The Crowd is Untruth*, for example, or Nietzsche's apocalyptic cursing cast against the city, in *Thus Spoke Zarathustra*, allude to condemnation of the city, in an undercurrent of anguish and anger (Kierkegaard 1848/1962; Nietzsche 1885/1961: 195–198).

Both avid walkers, Kierkegaard and Nietzsche chose walking not only as a catalyst for thought but, similar to Descartes, also as a means to fight their own affliction: depression. If the complexity of city-form and climate during the late LIA needs to be looked at as an agent of mental disorder, then it is also this urban and climatic context within which the rise of European Existentialism ought to be seen. The further acuteness of this observation rests also in industrial-era urbanization during the late LIA which had a prolonged social effect lasting to late modernity and to this very day (Mokyr 2007).

Streetscapes of the late LIA have increasingly captured the attention of writers during the nineteenth century. Phenomenological interest in lived space and in the experience of everyday life, later in the twentieth century, however, did not seem to have elicited a widespread interest in cities' streetscapes as a rigorous philosophical issue. Even within broader environmental and psychological concerns city-form has been frequently overlooked in its impact on mind. Whereas weather has been often believed to influence mood, the peculiar combination of streetscapes *and* weather, such as that during the historically lengthy period of LIA, remains even more impervious.

The unprecedented urbanization throughout northern Europe during the eighteenth and nineteenth centuries had resulted in severe social and economic imbalances apparent in unmet basic needs of the urban poor. Poverty and the urban masses described in novels such as *David Copperfield* (1850) by Charles Dickens, *Poor Folk* (1846) by Fyodor Dostoyevsky or *Germinal* (1885) by Émile Zola, were another piece in the puzzle of background to the thought of Kierkegaard and Nietzsche as the foremost among the ardent observers of this urban environment.

Europeans at higher geographical latitudes during the short days of cold seasons of the LIA had easier access to accommodation than their Continental ancestors or their North-American contemporaries. Middle-class Europeans throughout the late LIA, Kierkegaard or Nietzsche among them, thus enjoyed comfortable shelter while the impoverished folk in cities became vagrant or homeless, roaming the streets during the day, and huddling in makeshift shelters during the night. But walking the streets, the homeless received some sunlight, while the relatively comfortable daytime shelter kept middle-class or prosperous Europeans indoors, depriving them of even modicum of sunlight during the cold and short days of autumn and winter. Incidence of depression or other mental disorders, as the likely outcome, had become increasingly prevalent in North-European people of the late LIA, and Kierkegaard and Nietzsche were no exception (Akkerman 2014; Hemelsoet et al. 2008; Ziolkowski 2011: 229–230).

It was upon the questioning of one's own place and condition as a subject in the lived world that during the late LIA in Europe north of the Alps Existentialist philosophy had emerged. Declaring the longing for universal or objective truths as largely irrelevant modern Existentialism had arisen mainly in focusing on individual despair, hardship and helplessness, and the individual's concrete surroundings and circumstances (Kierkegaard 1846/1974: 107–182). A foundational concept addressing such conditions is *angst*, the primordial anguish, an existential anxiety.

In *The Concept of Anxiety*, an essay published in 1844, Kierkegaard had associated *angst* with the original sin in the Bible. Such observation was possibly a self-reflection on the part of Kierkegaard, given the intense awareness he had of his own depression along with some of the virulent verbal violence he had used against his Danish adversaries (Lippitt 2003: 136). Kierkegaard presents *angst* as an inborn arcane condition of insecurity and fear, as a genuinely authentic aspect of the human constitution of each individual. The attempt of most people to rid themselves of *angst* is through their absorption within the crowd. Contrasted against human authenticity, the crowd, the epitome of folly and fakery, does not and cannot allow individual expression. It is in *this* sense that the crowd perpetuates fraud. In his other essay, *The Crowd is Untruth*, Kierkegaard writes: "[…] every single individual who escapes into the crowd, and thus flees in cowardice from being a single individual, […] contributes his share of cowardice to […] the crowd." His view on mass media as forging the crowd through phantom public opinion, is anything but disparagement and scorn: "There is a far greater need for total-abstaining societies which would not read newspapers than for ones which do not drink alcohol" (Bretall 1959: 431).

13.4 Kierkegaard, Nietzsche and Kafka on the Crowd

The crowd is also a central theme in Friedrich Nietzsche's Existentialism. Even though Kierkegaard's essays had not reached Nietzsche, the two philosophers address the notion of the crowd from a virtually identical standpoint: as a human muddle defrauding the participating individuals, depriving them of their own authenticity. The fact that the concept of crowd had emerged in the minds of Kierkegaard and Nietzsche almost simultaneously, yet entirely independently, finds a likely explanation, precisely, in the fierce urbanization at the end of LIA, in which both were equally immersed along with millions of fellow North Europeans. Much as Kierkegaard so Nietzsche too, referring to the crowd as the *herd*, condemns the crowd and the mass media which manipulate it (see, e.g., Nietzsche 1882/1974: 174–175). Without ever having read Kierkegaard, Nietzsche joins the Dane in a bitter attack against the urban populace and the newspapers, the only mass urban media of the time. In *Thus Spoke Zarathustra*, upon approaching a *great city*'s gate, damning, virulent pronouncements ensue between the city's fool and the Persian prophet:

> O Zarathustra, here is the great city: here hast thou nothing to seek and everything to lose. Why wouldst thou wade through this mire? Have pity upon thy foot! Spit rather on the gate of the city, and – turn back! Here is the hell for anchorites' thoughts: here are great thoughts seethed alive and boiled small. Here do all great sentiments decay: here may only rattle-boned sensations rattle! Smellest thou not already the shambles and cookshops of the spirit? Steameth not this city with the fumes of slaughtered spirit? Seest thou not the souls hanging like limp dirty rags? – And they make newspapers also out of these rags! Hearest thou not how spirit hath here become a verbal game? Loathsome verbal swill doth it vomit forth! – And they make newspapers also out of this verbal swill. (Nietzsche 1885/1961: 195–196)

Similar to Kierkegaard's evoking of Biblical accounts, Nietzsche likens the *great city* to Sodom and Gomorrah, the two Biblical cities of sin consumed by fire and sulfur. Zarathustra, as Nietzsche's prophet of doom, in response to the fool's depiction of the great city envisages vengeance as the only human relation left in the city, condemning the city as well as its fool:

> What, then, was it that started you grunting? That nobody had *flattered* you enough: therefore you sat down beside this filth, so that you might have cause for much grunting –

> so that you might have cause for much *revenge*! For all your frothing, you vain fool, is revenge; I have divined you well!
>
> But your foolish teaching is harmful to *me*, even when you are right! And even if Zarathustra's teaching *were* a hundred times justified, *you* would still – *use* my teaching falsely!
>
> Thus spoke Zarathustra; and then he looked at the great city, sighed and was long silent. At length he spoke thus:
>
> This great city, and not only this fool, disgust me. In both there is nothing to make better, nothing to make worse.
>
> Woe to this great city! And I wish I could see already the pillar of fire in which it will be consumed!
>
> (Nietzsche 1885/1961: 197–198)

Undoubtedly, both Nietzsche and Kierkegaard saw the press media as the manipulating agent forging the defrauded mass of people, molding it according to construed "public opinion." Thus, when talking of the city, Nietzsche refers mainly to the social makeup of the city, rather than the city's physical structure. Yet to both Kierkegaard and Nietzsche, according to their private letters, the physical space of streets had provided major relief of what evidently must have been their acute awareness of their own mental suffering. This relief came to them through walking, even though in the case of Nietzsche his most favored pathways were mountain trails in the Alps.

In the early twentieth century Franz Kafka had provided at least part of the answer as to why a street walk through a European city is so therapeutic. In his short story, "The sudden walk," Kafka says:

> [Y]ou find yourself on the street again, with limbs that respond with special mobility to the unexpected freedom you have obtained for them; when through this one decision you feel all ability to decide gathered in you; when you recognize with greater than accustomed significance that you have more power than you need to bring about the most rapid change easily and to bear it. (Kafka 1912/1983)

To Kafka, the European city street brings about freedom expressed in the facility of walking in the open air, and for its own sake.

Right at the opening of his brief story, however, Kafka identifies the timing and the milieu: "In the evening […] when there is unfriendly weather outside." It is more than likely that Kafka would be experiencing an almost empty street, quite the opposite to walking through a crowded city. Beyond the therapeutic void of the street, the impression of a consistent attitude of contempt to the urban crowd seems to be emerging from Descartes (Chap. 12, Sect. 4) through Kierkegaard and Nietzsche to Sartre (see Chap. 1, Sect. 5).

Through European urbanization of the seventeenth century and onward, the increasing multitudes in cities have had an inevitable impact upon the individual. Each individual within the crowd is allowed to assert his or her being, within the limits of law. Kierkegaard shows this as a choice to either attempt to extricate oneself from the rest, or become part of the crowd. But features of the urban crowd have been changing, and by the end of the twentieth century even those who extricate themselves from the mainstream, become just another crowd. Individuals extricating themselves *en masse*, create urban muddle, an urban superconscious whereby city-form and minds within it are on the verge of implosion: "It will take very little, the drop of water that overflows the glass: just one car, person or decibel more" (Chap. 11, Sect. 6).

13.5 The Urban Superconscious

It was René Descartes' admiring adage of straight, aligned streets that served him as a paradigm for his principle of clear and distinct ideas, thus in turn, mainly through his coordinate geometry, laying also the ground to modern urban planning. Striving towards the well-functioning ideal of modern science and technology, and in the image of a rational city-form, ideal plans throughout the Enlightenment and the industrial revolutions have adhered to the principle of predictability in science and surprise-free city-form in urban planning. Much as algorithms and machines, so also the modern city was to be launched as an apparatus. The ultimate effect upon the city, and the people in it, has been accurately appraised by Jean-Paul Sartre in *Nausea* (Sartre 1964: 158): "cities have only one day at their disposal, and every morning it comes back exactly the same" (Chap. 1, Sect. 5).

Against the blueprint for a well-functioning city, a malfunctioning city-form has emerged, and in the gap between the *myth* of the Rational City and the *reality* of urban incoherence the candid observer has detected deception:

> Modernism's alchemistic promise – to transform quantity into quality through abstraction and repetition – has been a failure, a hoax: magic that didn't work. Its ideas, aesthetics, strategies are finished. Together, all attempts to make a new beginning have only discredited the idea of a new beginning. A collective shame in the wake of this fiasco has left a massive crater in our understanding of modernity and modernization (Koolhaas 1998).

Post-modern notions of the city have arisen within this milieu through competing attempts at optimization, projected upon urban infrastructure, building construction, or individual behavior. Human authenticity has been lost within this new urban context as city-form emerging from the spiraling need for crowd control has come to subordinate its makers. In a Nitzschean allusion, Rem Koolhaas writes sarcastically:

> Since we are not responsible, we have to become irresponsible. In a landscape of increasing expediency and impermanence, urbanism no longer is or has to be the most solemn of our decisions; urbanism can lighten up, become a 'Gay Science' – 'Lite Urbanism'. What if we simply declare that there is no crisis – redefine our relationship with the city not as its makers but as its mere subjects, as its supporters? (ibid.)

Individuals attempting to optimize their returns from participating in the urban community, ultimately try to extrude themselves from imposed crowd control and the corresponding rigidity of city-form. The urban public comprising such individuals creates, in turn, run-away discordance: Traffic congestion, line-ups, systemic failures, inadvertent breakdowns, road rage or wanton vandalism are the overt symptoms of the urban superconscious. From mere nuisance in the city of the mid-twentieth century, these manifestations have increasingly turned into defining traits of contemporary city-form.

In the escalating cycle of cacophony, individuals focus on ever-new means at extrusion from the rest of the crowd and at insolence against city-form. In this *super*conscious state individuals' extrusion from the crowd continually amplifies the conflict between the crowd and a city-form intended to streamline it – only to make incoherence and malfunction increasingly acute. The bewildering trait of the urban superconscious is that all attempts to escape it through extrusion only guarantee its very perpetuation and intensification. Focused on urban megastructures, automation, mechanization and speed, misplaced technological prowess pays its own tribute to the Myth of the Rational City and to the ghost of the superconscious.

13.6 Urban Decay as the Urban Subconscious

A spatial manifestation of dysfunction in city-form has been always urban decay. As a lesion left behind by hasty urban growth and development, or in an oversight or disregard surfacing from a plan, sometimes a monumental manifestation of failure by a grand designer, urban decay never emerges *suddenly* within city-form. As the disparaging term suggests accurately, urban decay is a process. It evolves within city-form as the complement of the urban superconscious: The *reality* of urban decay is the counterpart of the *Myth* of the Ideal City.

As a contrasting complement of the Ideal City, does urban decay, represent the mythical Garden? The paradigmatic Garden could be seen emerging in the built environment since antiquity. The Garden of Epicurus was a school set in an Athens arboretum that had its gates open to women and slaves alike. During Roman Empire the Garden allegory was expressed in the satyric theatrical scene of Marcus Vitruvius Polio as a pastoral setting of people and decrepit dwellings in nature's wilderness, picturing those who lived outside cities – the rustic people. Later in the fifteenth century, Sebastiano Serlio referred to the Vitruvian satyric scene as involving "dissolute and devil-may-care lives [where] the corrupt and criminals were identified" (Serlio 1537/1982). In the North-American winter-city the allegory of the Garden is all but nonexistent: Private gardens are expression of middle-class possession and private control, while many public parks in contemporary North-American cities are shunned by the middle class, and increasingly resemble Serlio's description of the satyric scene.

Within the contemporary metropolis, closely corresponding to the satyric scene are also places of urban decay. As disintegrating and hostile, disheveled and desolate, the place of urban decay in the contemporary metropolis has been habitually ignored or – alternatively – marked for elimination. Yet, more than any other facet of contemporary city-form, urban decay – a manifestation of the gap between an urban blueprint of the past and its aftermath lingering into a present – expresses urban time as a flowing continuum, both in its social and its physical attributes.

The social qualities associated usually with places of urban decay are, much as in Serlio's satyric scene, poverty and crime. In the North-American winter metropolis this relates often to inner-city areas where gentrification has not yet reached – sometimes in places where people had lived for generations for lack of means to move to the suburbs. Yet on reflection, there could hardly be urban places more expressive of the passage of time: Places of urban decay often carry actual marks, sometimes the physical scars, of the past; not as museum pieces but as places carved, for better or worse, by communities on the urban fringe.

Auspiciously, urban *subconscious* has been said to be the "sum of physical circumstances […] and historical events, experienced collectively by a group of people living for several generations in the same environment" (de Bievre 1995). Reflecting upon the physical aspects of urban dysfunction and obliteration, urban subconscious is also the label photographer Ryuji Miyamoto, in his *Architectural Apocalypse* (1986), had given to the decay of architecture disintegrating into ruins – either by way of deliberate destruction, through *planned* urban growth and modernization, or as a consequence of a natural disaster.

To Sartre, urban decay, the only authentic face of the city, is indeed reminiscent of the Garden:

> I am on the curb of the Rue *Paradis*, beside the last lamp-post. The asphalt ribbon breaks off sharply. Darkness and mud are on the other side of the street. I cross the Rue *Paradis*. I put my right foot in a puddle of water, my sock is soaked through; my walk begins. […] I am cold, my ears hurt; they must be all red. But I no longer feel myself; I am won by the purity surrounding me; nothing is alive, the wind whistles, the straight lines flee in the night. The Boulevard Noir does not have the indecent look of bourgeois streets, offering their regrets to the passers-by. No-one has bothered to adorn it: it is simply the reverse side. […] The town has forgotten it. Sometimes a great mud-coloured truck thunders across it at top speed. No one even commits any murders there; want of assassins and victims. […] The Nausea has stayed down here, in the yellow light. I am happy […]. (Sartre 1964: 24–26)

In contrast to fossilized emblems of past time in a museum piece or a heritage site, or to the spatialized, solemn Form of the Ideal City, urban decay is the spontaneous, inadvertent expression of urban authenticity, here and now. Within contemporary city-form urban decay is an ever-present, ongoing veracity: The unplanned place, or the unintended aftermath of a plan. It is a spontaneous mark of defiance against the enforcement of rationality and predictability in the city. Stripped of pretension, the place of urban decay is a niche where city-form as a dynamic, prerational entity has won over a plan.

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Part IV
Solvitur Ambulando

Chapter 14
Reflections on the LIA: Loss of Place and the North American Winter-City

14.1 Introduction and Summary

Recognizing that allegories have been ingrained in city-form throughout its long history means also that attempts to ignore or to eliminate allegories from urban planning and design are misplaced. Particularly vital to city-form are environmental gender allegories. The two spirited urban parables that are at the founding of an affirmative city-form are the Garden and the Citadel, the feminine and the masculine environmental counterparts to Nietzsche's Dionysian and Apollonian dispositions in the arts. In city-form these allegories have been represented by urban voids and urban edifices, respectively, for the feminine and the masculine facets of the city. Past chapters have shown that north-hemispheric civilizations have gradually but consistently reduced the feminine allegory of the Garden in city-form, by absorbing the competing myth of the Grand Designer.

Whereas the Garden and the Citadel have their cerebral origins in the observation of the environment, and its interpretation through anthropomorphic projection of gender types, the Grand Designer is a narcissistic allegory that is incompatible with the spontaneity and freedom implicit in the Garden: The Garden and the Grand Designer are mutually exclusive and entirely irreconcilable. Yet *master* plans of twentieth century's urban schemes exude nothing but grand design with human scale, surprise and enigma absent entirely.

The emergence of twentieth century's *master* plan, as a grand design in urban planning, ought to be seen as one of the psychocultural aspects in the aftermath of the LIA. It was the sheltered built environment in the wake of the LIA that likely exacerbated mood or mental disorder incidence among European winter-city inhabitants of the late nineteenth and early twentieth centuries. Among the victims of this environment were the brilliant minds not only of Existentialist writers but also of several leading architects. Documented evidence of narcissistic or similar mood disorders among some of twentieth century's most prodigious architects is entirely consistent with *master* plan design schemes, not only of their own, but also of those

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who went in their footsteps. The built environment resulting from twentieth century's urban *master* schemes worsens the very same psychocultural incapacity that had been at the inception of these schemes: Mood disorder.

More severe than narcissistic mood disorder, yet positively suspect as related to fluctuating weather patterns, is seasonal affective disorder and depression. How *socially* destructive is depression? Association between depression and violence has been broached for some time now. Alterations in brain levels of serotonin, a hormone secreted with sun exposure, have been linked to depression as well as to violence. Mental disorder in northern Europe at the end of the LIA, and in its aftermath, ought to be seen within this context: Anguish as being behind the rise of European Existentialism, and violence at the arrival of Marxism. The psychocultural trait of late nineteenth century's Europe, was prevalence of mood or mental disorder, accompanied by rising strife in cities. At the close of LIA, second half of nineteenth century gave birth to European Existentialism, the philosophy of anguish, as well as to Marxism, an ideology of violence. The emergence of Existentialism and Marxism, at the same place and at the same time, has a very clear environmental context.

Such an observation is ominous for contemporary North American winter-cities. While people in Europe's winter-cities of the late LIA inadvertently attained modicum of sunlight by wandering or purposefully walking through city streets, no such opportunity is easily available in the automotive cities of North America. Descartes or Kierkegaard had fought their mental affliction with city walks, a measure that was likely fecund also in their remarkable accomplishments. The contemporary winter-city of North America does not lend itself to such an opportunity at all.

Built for automobile access many of North America's winter-cities have no inviting streetscapes to offer to pedestrians, let alone a perceptually stimulating environment. The shield against solar radiation that has been gradually built through sheltered skywalks, underground passageways and automotive transportation has steadily reduced, sometimes to a virtual nil, sunlight exposure during the winter to people in North American cities along and north of the 45th parallel. But the same built environment that shields people from sunlight exposure is also one that constitutes a contributing cause to mood disorder. Although more research might be required to substantiate an association between mood disorder and urban violence, there could be little doubt that reversing or adapting automotive and sheltered city-form onto pedestrian, open-air streetscapes, might be one of the more important objectives of urban planning for North America's winter-cities in this century.

As the myths of the Citadel and the Grand Designer have come to dominate city-form over the course of history, the myth of the Garden in the built environment has become subdued and suppressed. Reintroducing allegories of the Garden into city-form is to recognize the significance of human scale in the built environment, the serendipity of an unplanned place, and the vigour in open-air street walking. As opposed to *master* plans of twentieth century's grand designs, the opportunity to confer upon aspects of city-form the ability to accrete from within, rather than to obey an outsider's rules, is also a prospect to reintroduce humanism into urban planning.

14.2 The Garden and the Citadel as Gender Allegories of City-Form

In *Fear and Trembling*, Kierkegaard's 1843 biblical commentary, the individual is confronted with the inescapable dilemma, and also with the First Question of geography: "*Where* am I?" The response to the Question sets the primordial spatial context of any human being: identifying each individual's *place* in the world. To the first humans in the Bible, that place was the Garden. Yet the answer to the question, *Where are you*? – as Kierkegaard points out – had been given only generations later by the patriarch Abraham, exclaiming, *hineni*, "here I am!" (Kierkegaard 1843/2006: 18). The answer is not only about a location in space, but also about a meaning that transcends a contingent passage. In the cited biblical story, it is on account of a revelation that a location attains an exalted attribute to become a holy place: In this case, Mt. Moriah, at what were to become the city of Jerusalem generations later. Edward Relph, in his critique of urban planning, points out that a location in space turns into a *place* through "individual and communal identity […] to which people have deep emotional and psychological ties" (Relph 1979: 141). When a location loses its spirited context, even a trivial one, it ceases to be a place: "There is no there there," said Gertrude Stein at the altered site of her home as she recalled it from her childhood memories (Stein 1937: 289). Yet whereas Relph's notion of place as a community-bound locale exudes meaning in context of a small group – a family or a neighborhood – Kirkegaard sees the crowd confronted only by the fervent individual.

As Kierkegaard would have known, an intervening episode in *Genesis* between the primordial Question and the *hineni* response, is that of a city and a tower, the Tower of Babel (*Genesis* 11: 1–9). Whereas the individual in the Garden is appropriately juxtaposed by Abraham, as the one responding to the primordial Question, the Garden itself ought to be juxtaposed with the city and the Tower of Babel. Two diametrically contrasting *places*, the Garden is the place of innocence where divinity reaches out to *two* human *individuals*, whereas the Tower of Babel is a large artificial construct through which the human *crowd* attempts to reach divinity. The Garden is a place where the individual is a contingent caller, whereas the Tower, or the Citadel, is a place of conquest and domination of space by the crowd. The Citadel, or the city, have no meaning without the crowd within them. The biblical Garden, however, is meaningful also without the humans in it, such as after their very expulsion from the Garden (*Genesis* 3: 21–24).

In his essay "On Truth and Lies" Nietzsche makes similar point alluding to man within the context of his own constructs as against man's insignificance against nature:

> As a genius of construction man raises himself far above the bee in the following way: whereas the bee builds with wax that he gathers from nature, man builds with the far more delicate conceptual material which he first has to manufacture from himself. In this he is greatly to be admired, but not on account of his drive for truth or for pure knowledge of things […] There have been eternities when human intellect did not exist, and when it is done for again, nothing will have happened. (Nietzsche 1873/2004)

Kierkegaard points out that most individuals abdicate the Question escaping the struggle to find their own place in the world by seeking refuge within the crowd. Whereas the crowd seems to be associated with the city, the fervent individual, on the other hand, retains a bond with the Garden.

The myths of the Garden and the Citadel, the environmental counterparts of Nietzsche's Dionysian and Apollonian, have been the two defining elements of civilization at the dawn of history. In the context of urban environments both myths were instrumental, the Citadel standing for solidity and power, the Garden representing softness, and fluidity (Akkerman 2006). Even if not entirely the "domain of Hell" (Gilloch 1966: 172–6) the contemporary metropolis has lost its Garden facet, in a slow process that had begun with the geometrization of urban space in the late Middle Ages (Chap. 11).

Gardens have been obviously associated with warm climates. The figurative Garden in a winter-city, such as that of Kierkegaard's or Nietzsche's, would be a secular urban void where reflection, contemplation, or just plain sense of freedom, could be attained. Nietzsche in his essay concludes that "there should be some *place* where illusion and reality can be divined." To Kafka, such a place is the street of "the evening […] when the weather outside is unpleasant" (Chap. 13, Sect. 13.4). The paradigmatic North-American city street would hardly be what Kafka had in mind. More fitting, for many a North-American winter-city, would be the hyperbole, CwS (Chap. 11, Sect. 11.6).

14.3 Henri Bergson on the City Walk

Streets and squares are often defining features in the literary work of Fyodor Dostoevsky from the second half of the nineteenth century. In his *Notes from Undergound* Dostoevsky shows Saint Petersburg as a stage for alienation, and in his *Crime and Punishment* Domenico Trezzini's planned streets and squares are described as mere conduits of crowds. Throughout *Crime and Punishment* scruffy tenement buildings and the city's noise-filled filthy taverns are shown as analogous to mood disorder, likely Dostoevsky's own depression (Fanger 2006; Rice 1985), and Petersburg's bridges are repeatedly addressed as if to allude to continual passing through vantage points uncoupled or dissociated from the rest of the city (Gill 1982).

As opposed to such depersonalizing urban space, Dostoevsky had two favorite areas in the city, both shabby neighborhoods. He chose them out of financial necessity, but was also fascinated by their rough street life, their danger as well as authenticity. In her *Literary St. Petersburg* Elaine Blair stresses the significance of Dostoevsky's walks through Saint Petersburg, pointing out that in the 28 years that he lived in the city, Dostoevsky moved 20 times and never spent more than 3 years at a single address, preferring corner buildings with multiple views at intersections (Blair 2007).

In his essay, "Walking in the City," a chapter in his *Practice of Everyday Life*, Michel De Certeau evokes that which seems to be missing in Dostoevsky: communal memory in the city imparted through street walking (de Certeau 1984). Rather than conduits of the crowd De Certeau views streets as wordless stories, non-verbal allegories which recall community memory. The streets are not mere traffic routes but, rather, walking paths through urban places forged by such community memories. Only through walking, the one mode of travel almost entirely overlooked by twentieth century planning, can we, de Certeau argues, preserve the communal memory of urban places, thus conferring meaning to them and the streetscape enveloping them.

Unfortunately, de Certeau in his essay points also, rather arduously, to "the long poem of walking [that] manipulates spatial organizations, no matter how panoptic they may be" (ibid.). De Certeau in his essay repeats the account given at the opening of Henri Bergson's *Introduction to Metaphysics*, some 70 years earlier (Cornfeld 2013). The poem example used by Bergson actually stresses, quite contrary to spatial manipulation, the wholesome experience of a city walk:

> Were all the photographs of a town, taken from all possible points of view, to go on indefinitely completing one another, they would never be equivalent to the solid town in which we walk about. Were all the translations of a poem into all possible languages to add together their various shades of meaning and, correcting each other by a kind of mutual retouching, to give a more faithful image of the poem they translate, they would yet never succeeded in rendering the inner meaning of the original. (Bergson 1903/1912: 5)

Bergson brings the urban place and the city-walk into a single context. A city walk is the quintessence of *human* disposition in urban voids, as it encompasses change, variety and diversity in an allegory of the Garden.

Inevitably, it is urban void that facilitates and delineates movement within the city. But whereas mechanized transportation, subject to control and structured rules, constitutes a conduit to buildings and other fixed structures, human gait through a streetscape induces spontaneity, human encounter and surprise. It is in this sense too that streetscape can be viewed as a mythical text, involving both enigma and revelation. The urban space, Bergson alludes, is not to be measured, but it is to be experienced. Such interpretation, of course, corresponds very well to Bergson's notion of *dureé*, the immeasurable flow of human experience. Benign encounter evoked through casual urban happenstance, calls upon human scale in streetscapes where walk, not speed, and reflection, not luster, transform space and time into expectation, revelation and surprise.

14.4 Gait as a Means of Thought, and Crowd as a Form of Space

In 346 BCE Aristotle went to Mytilene on the island of Lesbos with Theophrastus, his friend and follower. It was at Mytilene where Aristotle and Theophrastus conducted their botanical research, and where also the Athenian philosopher Epicurus would reside at a later time. It was apparently also at Mytilene where c. 340 BCE Aristotle wrote his *Meteorologica*, a treatise that addressed the weather, lightnings and tornadoes in particular, and physical nature in general.

After tutoring the young Alexander of Macedonia, at Pella during 342–336 BCE, Aristotle went back to Athens where, at the age of 50, he established in 335 BCE his own school. The school was founded at a public park and near a gymnasium named Lyceion after the statue of Apollo Lyceios ("wolf god"). Aristotle's lyceum was dubbed Peripatos, on account of the colonnades where Aristotle was said to be striding while discoursing with students.

A generation after Aristotle, on the north side of the agora in ancient Athens Zeno of Citium (333–261 BCE)

> used to discourse pacing up and down the painted colonnade […] Hither, then, people came henceforth to hear Zeno, and this is why they were known as the men of the Stoa, or Stoics. (Laërtius Vol. II, Book VII, Sect. 5)

With the ascent of the Roman Empire Stoicism became a respected worldview, later seeping into early Christianity, while adherents of Aristotle's school who came to be known as peripatetics – wanderers, striders, helped channel the Aristotelian outlook into Islam (Ferguson 2003: 368; Klein-Frank 2001: 165). It is this historic and geographic context to which the phrase, *solvitur ambulando* ("solved by walking") traces its origins (Walshe 1933: 42).

Recent observations have shown an affirmative relation between walking and thinking in poetry and in prose (Hirsch 2011; Otterberg 2011), and for modern thinkers from Descartes to Dostoevsky, walking through their built environments was possibly as much a pastime or therapy, as it appears to have been also a catalyst of their contemplations. Kierkegaard may have best expressed both aspects of walking, in writing to his niece:

> Above all, do not lose your desire to walk: every day I walk myself into a state of well-being and walk away from every illness; I have walked myself into my best thoughts, and I know of no thought so burdensome that one cannot walk away from it. (Kierkegaard 1847/1978: 214)

Similarly, in the *Twilight of the Idols* Nietzsche writes: "All truly great thoughts are conceived by walking […] A sedentary life is the real sin against the Holy Spirit. Only those thoughts that come by walking have any value" (Nietzsche 1889/1977: 26). David Farrell Krell goes as far as saying that Nietzsche "was convinced that the effects of environment, climate, and terrain on one's life and thought were both tangible and profound" (Krell and Bates 1997: 257).

Saint Petersburg, a planned city gone awry, could be a particular case in point to the wide scope of streetscape experience in a winter-city. A source of fascination to such avid and unalike observers as Leonhard Euler and Fyodor Dostoevsky, it is the novel *Saint Petersburg* by Andrei Bely that provides a certain culmination to perceptions of this Baltic city's streetscapes on the heels of the LIA. Against the ardent individual walking through the city, Bely posits the urban multitude in the revolutionary days of 1905. And against the Kantian conception of space as a form of perception, Bely presents the crowd as a form of urban space. "On Nevsky Prospect circulated a human myriapod," writes Bely as if there were no individuals but shaggy fur hats comprising such human myriapod (Bely 1913/2005: 82). The boulevard, a means of designed crowd control, transforms the crowd into a 'myriapod' which in turn redefines the boulevard as well as the rest of urban space. Descartes' observation of "hats and cloaks that might cover artificial machines, whose motions might be determined by springs" (Chap. 1, Sect. 1.2), in fact, resonates as an ominous foresight presaging Bely's own.

Past the end of LIA, dejection, anguish and alienation pictured by both Dostoevsky and Bely had become features of Existentialism, unquestionably also reflecting the mental torment of many of its adherents. Concreteness of the lived urban space, transmuted into an Existentialist gaze at intrinsic individuality, and at the human condition, had emerged on a background of rejection of the idealist notion of the Absolute Spirit introduced by G.W.F. Hegel half-a-century earlier. Karl Marx and his followers, too, rejected Hegel's notion of the Absolute Spirit, but alongside they also presented an outlook in sharp contrast with the emerging Existentialist thought. Rejecting Hegel's Absolute Spirit Marx introduced, instead, an absolute doctrine endorsing social change through violent revolution. Marx and Kierkegaard, in fact, are sometime presented as "contrasting critics of Hegel's dialectical Idealism, the main difference being that Marx's focus on class made him a kind of idealist all the same, while Kierkegaard fastened more radically upon the particular" (Hannay 2010: 34). It is noteworthy that the advocacy of violent overthrow of ruling elites by the suffering working poor came to be seen in Marxism as an inevitable law of human progress. Bely, in a masterful strike of his pen, presents the Existentialist stance, as well as its Marxist complement current at the time.

14.5 Placelessness as Spatial Absurd

Contemporary evidence broaches association between depression and violence (Diamond 1996: 55–86). Mental disorder in northern Europe at the end of, and immediately following, the LIA, depression among authors associated with Existentialist outlook in particular, is also one aspect of historic evidence on the late LIA, the other aspect being the abundant attestation of increasing political onslaught in Europe, leading to violence surrounding WWI. It is noteworthy that Vladimir Lenin, the Soviet communist leader, saw it appropriate to criticize Marxists who did not adhere to his own views in a pamphlet entitled, "*Left-Wing*" *Communism*, *an Infantile Disorder* (Lenin 1920/1999). The curious title of Lenin's pamphlet came to portend the ensuing violence against adversaries that had soon after his death escalated into deadly purges within the ranks of the communist state. Such observations can hardly help escape the impression that concurrence of the increase in mental disorder in intensely urbanizing parts of northern Europe at the end of LIA, with nineteenth century rise of Existentialism and Marxism, in their respective embrace of anguish and rage, was not a random coincidence.

Meaningless violence is the subject of Kafka's short novel, *In the Penal Colony* (1918), foretelling with eerie accuracy the brutality of twentieth century's coming decades in Europe. Dejection and absurdity are the defining features of *The Castle*, Kafka's unfinished but most renowned novel. Written in 1922 in a winter resort town amidst the mountains of northern Bohemia, *The Castle* pictures a village streetscape as flawless in its entirety through imposed regimentation. The absence of people in streets on a winter day, and monotony of the built form are the backdrop to a hopeless attempt to reach the Castle through a perpetual walk:

> At every turn K. expected the road to double back to the Castle, and only because of the expectation did he go on; he was flatly unwilling, tired as he was, to leave the street, and he was also amazed at the length of the village, which seemed to have no end; again and again the same little houses, and frost-bound window-panes and snow and the entire absence of human beings […]. (Kafka 1926/1992: 17)

K., the novel's antihero, is Land-Surveyor attempting to reach the Castle, where a bureaucrat named Klamm had apparently promised him a job ('klam' stands for *fraud*, *mirage* in the Czech language). K. never attains his goal of reaching Klamm at the Catle, just as Kafka himself never completes his novel. The village, with its streets leading nowhere, and the Castle, somewhat reminiscent of the Tower of Babel, occupied by males only, emerge in their entirety as a surreal existence. Salient in this setting is the frame of mind associated with void in the streetscape: placelessness reflected in utter alienation. Void and the perpetual incompleteness in the streetscape are entrenched in meaningless perfection of a faultless built form, within which the only pure realization is placelessness itself. To K. the lack of any meaningful quality in the streetscape becomes a conduit of self-awareness to his own estrangement, and it is perhaps for this reason that he remains on the street and keeps walking.

Placelessness in Kafka's novel is inherent in the process itself, from within the layout of streets and of the entire village. Since all has been measured in the village and the town's plan has been sealed, the Land Surveyor, the prime expert who since antiquity has measured property lots and laid out new towns, has no reason to stay in the village. Just like in his perpetual street walk, he incessantly leaves the towns of his residence behind, having to move from one territory to another to practice his profession of perfection. This repetitive process is expressed in a witless query by K., asking about the promise for a job, eliciting even a duller, but ominous response from a superintendant:

> You've been taken as Land Surveyor, as you say, but, unfortunately, we have no need for a Land Surveyor. There wouldn't be the least use for one here. The frontiers of our little state are marked out and all officially recorded. So what should we do with a Land Surveyor? (Kafka 1926/1992: 61)

Placelessness, identified by Relph as typifying the North-American city is largely defined by the absence of people in a space, particularly one designed *for* people, Such urban space conveys a disposition of meaninglessness, certainly amplified in a cold winter climate. Contemporary suburban design, often criticised for introducing desolate perfection in city-form, appears as another affirmation of Kafka's foretelling at the turn of the twentieth century (e.g., Jacobs 1961: 17–22).

14.6 Anguish, Rage and Their Symbolism

The very idea of a suburb presumes automobile access, which in its intensely applied fashion such as in the contemporary winter-city, is inconsistent with human encounter and with direct exposure to sunlight or daylight. In the North-American suburbia some mental health issues, among other ills, in fact have been attributed to automotive transportation (Frumkin 2002). A more lasting popular belief, possibly since the early LIA, has associated privation of sunlight during winter and inclement weather with melancholy. Such a supposition finds support in observations that have shown mood-disorder, such as S.A.D., as accompanying the seasonal obscurity of sunless days (Hidaka 2012). Climate change has been identified recently as a source of impending threat to community mental health, with expected outcomes ranging from higher incidence of depression and anxiety, to increased levels of addictions and suicide rates (Bourque and Willox 2014). The North American suburb, by and large, is not a place; often it is the epitome of placelessness. The loss of place in the North American suburb is also at the root of its ills. But the loss of public space as a *place* corresponds exactly to the attempt, encouraged by twentieth century's urban planning and design, to seek comfort in a continuous shelter against inclement weather.

A measure of notoriety regarding association of mentalities with climate, but also with geographic latitude, gained in early modernity Charles de Montesquieu. In *The Spirit of the Laws*, Montesquieu put forward statements unacceptable by any standards today, but quite tolerable in the mid-eighteenth century, associating climate with general character traits of people. Explaining some legislation of the West Indies as "arising from the laziness of the climate" (Montesquieu 1749/1949), he set the ground to further such and similar pernicious arguments, universally viewed today as deplorable. Fifteen years after the publication of *The Spirit of the Law*, the archaeologist and art historian Johann Joachim Winckelmann, in a fashion less detestable by a degree, in his otherwise highly-esteemed work, *The History of Ancient Art*, posited climate as conferring uniform attributes upon body and mind:

> […] the present-day Greek race is still noted for its beauty; and the closer that nature draws to the Greek climate, the more beautiful, lofty, and powerful in appearance are the human creations […] Just as visible and understandable as the influence of the climate on appearance is, secondly, its influence on ways of thinking, to which external circumstances also contribute, especially a people's education, constitution, and government. (Winckelmann 1764)

Later versions of such or similar attitudes, usually referred to as environmental determinism, have been found ethically objectionable as well as methodically simplistic, in claiming causal impact of climate and geography upon the makeup of people's character. Environmental determinism has been largely rejected, in the discipline of geography, in particular.

The initial coarse claim that geographic and atmospheric conditions give some people advantages leading to superiority was advanced by the first century Roman senator Cornelius Tacitus. Pointing to climate that has "taught them to bear cold and hunger" Tacitus claimed that "in the peoples of Germany there has been given to the world a race unmixed by intermarriage with other races, a peculiar people and pure, like no one but themselves" (Tacitus 98/1980: 136–137). Tacitus planted seeds of hatred that bore their poisonous fruit two millennia onward. His pamphlet became a major influence in the formation of the Nazi ideology of supremacy and hate (Krebs 2012: 22.), where gloomy weather or harsh climate symbolism have played a significant role.

It is not without interest that *Storm* Detachment (better known as the S.A. or the Brownshirts) had been the paramilitary wing of the Nazi Party that brought Adolf Hitler to power in the 1930s. All the same, a major symbol in Nazi and neo-Nazi occult, has been the 'Black Sun,' still a central concept in white supremacist mythology (Goodrick-Clarke 2003: 130–150).

Anger cohabits with anguish in the human soul. It is the imagery of the 'Black Sun' which exemplifies that hatred and anger can share the same symbolism with grief and anguish. Less than a century prior to the rise of National-Socialism in Germany, Gerard de Nerval in his poem "The Disinherited," presented 'black sun' as a symbol of sorrow:

> I am of darkness—widower, —unconsoled
> Prince of Acquitaine & the stricken tower:
> My one star is dead,—& my lute of the firmament
> Bears despair's black sun. (de Nerval 2009)

In her late twentieth century book, *Black Sun*: *Depression and Melancholia*, Julia Kristeva drew on Nerval's symbolism noting that "beyond its alchemical scope, the 'Black Sun' metaphor [of Nerval's poem] fully sums up the blinding force of the despondent mood" (Kristeva 1989: 151). Surprisingly Kristeva had omitted the violent side of the 'Black Sun' symbolism, and in spite of the suggestive title of her book, she passed over the findings in psychiatry of her own time to the effect that lack of sunlight is a cause of mood disorder, such as depression (Howarth and Hoffman 1984).

But Kristeva's work is remarkable for her emphasis on eroticism and western religion, although the book misses the link between the two in Nerval's poem. Indeed, the poem includes another metaphor of depression, the "stricken tower," suggesting, precisely, such a frame of mind: The *Citadel* (the biblical Tower of Babel) as a biblical parable of masculinity, its complement being the *Garden* (of Eden), a symbol of femininity.

The two biblical allegories, as primordial myths, at least in the west, offer a view on city-form as primarily a masculine project that extends the allegory of the Citadel as a foray into the natural environment, symbolized by the Garden. And whereas a tower, a citadel, is inevitably associated with solitude and confinement, the garden, much as urban voids, is associated with gathering and emanation. Emphasizing edifices instead of urban voids, city-form through history, and in the winter-city in particular, has kept affirming its own masculinity, quite contrary to its own archaic sources (Chap. 3, Sect. 3.5).

The shielding of people from sunlight in the North American winter-city occurs not only within edifices, but also within sheltered skywalks or underground walkways, and through automotive transportation. Such purposeful and designed shielding of people has made the street superfluous and has turned the winter-city onto a CwS.

Yet the gender disposition of urban space offers, in fact, two distinct outlooks at urban voids such as streets or city squares. Considering the standpoint of Merleau-Ponty, as the first stance, the passing pedestrian is always the centre of all his or her street observations (Chap. 13, Sect. 13.2). This inevitably suggests an observation of specific *objects* on the street, and might be viewed as a masculine outlook.

Another, very distinct approach to the pedestrian in the streetscape is that of Tetsurō Watsuji in reflecting upon "cold" in his work, *Climate and Culture*. A pedestrian stepping onto the street, in cold weather, in her feeling cold she makes no perceptual contact with any specific object: the pedestrian simply steps into a milieu. The feeling of cold characterizes the urban void as a whole: the cold is shared among people who stepped out into *this* urban void. The feeling of cold, Watsuji points out, is neither subjective one, nor is it an objective observation (Watsuji 1961: 3–5). A feminine outlook, as one based upon void, rather than on objects in it, with a shared sensation ("cold") as an attribute, is also one that complements Merleau-Ponty's subject/object representation.

As tacitly feminine elements of city-form, the agora and the forum of ancient Greece and Rome, were designed with the overt purpose to facilitate commercial or civic interaction of people. Early modernity marked the transition of the forum and the medieval marketplace into an urban square increasingly planned to display masculinity, the might of the sovereign. Place Dauphine and Place Royale (later known as Place des Vosges) in Paris, built by Henri IV at the turn of the seventeenth century, are examples of urban voids upon which manifestations of masculinity were imposed by way of military parades and musket drills, or through fashioning them as carting interchanges. Half-a-millennium later, in contemporary winter-cities in particular, urban squares have turned into not much more than transportation junctions and intersections where pedestrians have no business other than crossing them.

In a poignant twist, Henri IV met a violent death in 1610 at the hands of an assassin when his coach was stopped by traffic congestion at Rue de la Ferronnerie at the south entrance to the Paris marketplace. The assassination, by a frenzied madman illustrates a case of association between mental disorder and violence in the masculinization of urban voids during the LIA.

14.7 Existentialism and Marxism in the Late LIA: A Message for the North American Winter-City

Watsuji's notion of shared milieu is an important insight that ought to be seen on a universal scale. It applies to a morning street environment just as it does to half-a-millennium LIA across continents. In the latter case identical patterns in climate, and the built environment, shared among peoples had constituted a critical epistemological backdrop to the formation of views and concepts that shaped philosophy and political ideology. Anguish and anger, both emerging hand in hand during the late LIA, along with excessive shielding from sunlight and attendant prevalence of mood and mental disorder, have largely contributed to the near-simultaneous rise of modern Existentialism and Marxism.

Analogous to such near-simultaneity had been other cases of emergence of ideas. The coincidental emergence of the various myths of the Grand Designer during the Iron Age Cold Epoch throughout the Eurasian region, called here the Diluvial belt, is a prime example (Chap. 11, Sect. 11.7). The Iron Age Cold Epoch, on the one hand, forced widespread use of the wheel for purposes ranging from transportation to pottery-making to spindle-whorls in fabric weaving. On the other hand, near-identical perceptual features among people able to view the circumpolar stars, unhampered by topography or vegetation, pointed to a nightly sky dome revolving round a northern pole star.

A 1922 study by William Ogburn and Dorothy Thomas pointed to almost 150 major inventions and discoveries that were made independently by two or more individuals at the same time, concluding that commonality in “mental ability and cultural preparation” was behind all simultaneous multiple discoveries (Ogburn and Thomas 1922). In 1961 Robert Merton had suggested further that “the pattern of independent multiple discoveries in science is in principle the dominant pattern, rather than a subsidiary one” (Merton 1961). Karl Jaspers’ own myth of the Axial Age is nothing but an omission in noticing the outcome in the observation of rotating circumpolar stars, along with widespread use of the wheel during the Iron Age Cold Epoch among Eurasian peoples. Millennia prior to the Axial Age, the same coincidence between multifold inventions of the wheel, along with observations of rotating circumpolar stars, observable from the Great Plains of North America, from north Atlantic coastlines in Europe, and from various high places, led to prehistoric medicine wheels, and to cup-and-ring carvings near, or within, these locations, precisely (Chap. 3, Sect. 3.4).

The near-simultaneous emergence of modern Existentialism and Marxism ought to be seen in a similar light. The two philosophical and ideological approaches are jointly a single modern example of psychosocial traits associated with identical urbanization patterns, enveloped in North-European weather at the end of the LIA. Emerging from a continuing shielding from open air, along with increasingly automated and surprise-free city-form, has been the philosophy of despair and meaninglessness, and the ideology of rage and belligerence.

But the LIA sequel of Existentialism and Marxism, as a historical caveat to climatic link between depression and violence, serves also a grim notice to the North American winter-city. Phenomenological retrospection of city-form at the close of LIA, as a backdrop to the coming violence of the twentieth century, could be a foreboding reminder, indeed, to the contemporary automotive and sheltered winter-city of North America. At the end of LIA, dejection and anguish had become features of Existentialism, while the advocacy of violent overthrow of ruling elites by the suffering working poor became the defining moment of Marxism. The association between depression and violence, repeatedly brought up over the past half-century in psychiatric literature, could hardly be ignored within the North American urban context (Perlis et al. 2004).

14.8 *Solvitur Ambulando*

The late LIA had likely contributed to the documented personality disorder observed in baron Haussmann, Robert Moses, Frank Lloyd Wright and Le Corbusier (Chap. 12, Sect. 12.7), all of whom projected a measure of narcissism onto urban schemes that often had a major sway upon cities in which millions of people were to live to posterity. The myth of the Grand Designer had become a driving force in the late LIA, and into the twentieth century. Absurdities of twentieth century's urban planning aside, the authoritarian aspect of the myth of the Grand Designer has been also evident. Sara Westin contends that contemporary urban planning continues to be expression of "a strict superego, which in its pursuit of certainty, order, cleanliness and beauty, seeks to defeat what is perceived as chaos" (Westin 2014: 103).

Supervening upon these observations is the exasperating wariness that alienation itself has become the overriding sentiment in the contemporary city. Alienation has become Watsuji's shared milieu within which everyone is immersed, not the least the most talented architects and designers. The LIA and its built environment had been a party, to the very least, in the rise of this incongruous milieu. The incongruity is continually sustained by pretty much the same environment that helped bring about it, and that is still perpetuated.

If there is one important message from the nineteenth and twentieth centuries to contemporary urban planning, it is, indeed, the acute detrimental impact that the LIA and its sequels in the built environment had on mood, one that had affected everyone, to lesser or greater degree, including those who were later to mould city-form for their fellow human beings. In contrast, the accreted city-form of the Romanesque had no grand designer: but it had mystery and human encounter on streets and market squares.

The city-form that had attempted to resolve climatic discomfort for people, gradually, has yielded a shield around human beings – with further alienation as an inevitable outcome. The related attempt for a surprise-free and automated city-form is very likely having further impact upon the cerebral capacities of people in metropolitan areas. Some 3 million years ago, bipedalism uncoupled breathing and striding in the hominid, thus facilitating later in early humans the development of orderly observation, and the progress towards speech and thought. Throughout millennia, walking and thinking have become intertwined and integrated. But twentieth century automotive and automated city-form has minimized, sometimes effectively eliminated, walking in the city, thus perturbing an important kinetic-cognitive link in humans. Automatism in human behavior, upheld by mechanized, automotive and automated city-form of the superscale, is further promoting a course of severance of the cognitive process from the kinetic propensity in humans. In the longer run such development could lead to weakening in the cerebral cortex in humans through metropolitan areas of the industrialized world, and in winter-cities in particular.

Global warming trends notwithstanding, twentieth century urban infrastructure, suburban sprawl and the seeming comfort of shielded, automated city-form have become a precept of North America's lifestyle, excessively so in its winter-cities. It is within this context that the simultaneous emergence at the end of the LIA of Existentialism and Marxism, the philosophy of despair and the ideology of rage, ought to be also a message to North America's winter-cities.

Automatism in humans had been hailed early on in Plato's ideal city, where in the *Laws* Plato envisions people in the ideal polis as if made out of waxwork (*Laws* V: 746). As Karl Popper had pointed out Plato's designed society had become an inspiration to absolutist regimes later in history (Popper 1969). But already at the dawn of civilization the faith in a being (or beings) behind the design of the universe found, a matching, self-reflective notion by the high priest or the sovereign on his own role as the Grand Designer – or the umpire on behalf of one. The high priest would reinforce cult among the folk, accompanied by rituals (along with the attendant tributes) that became automatic, uniform and universal. Twentieth century's myth of the Rational City has been an attempt at a surprise-free city – automated, uniform and universal, at times also celebrating the "grand designer" behind it.

The breaking away from automation and uniformity in city-form cannot be found in yet another set of objects; it must be sought in a process. Some contemporary urban design is beginning again to address human scale, and walking in particular. Downtown pedestrian precincts in winter-cities, and the curbing of suburban sprawl, ought to be viewed only as the starting points toward a comprehensive stance recognizing climate as well as mutual impact between mind and city-form as integrated, ongoing and vital dynamics. Recognizing the significance of unstructured, open-air space in city-form for human development is to confer an ambience of affirmative, hybrid interaction between minds and their built environment. Authentic human experience within the city cannot be addressed through ordered city-form insolent to such recognition.

The emerging challenge, then, is to incorporate the unplanned within a plan. An age-old grievance of urban critics has been their observation of planners as confounding urban reality with myth (Boyce 1963). An alternative view, however, had been presented more recently to the effect that exposition of underlying myths is precisely what is needed in contemporary urban design (Aravot 1995). It is this latter view that ought to be embraced, recognizing that myth has been integral to city-form throughout its long history. But whereas the myths of the Citadel and the Grand Designer have come to dominate city-form, the myth of the Garden has been subdued and suppressed. Reintroducing allegories of the Garden into city-form would emphasize the significance of variety and change, over solitude and stringency.

Walking, a biosocial expression of change, is as profoundly inherent a human component of any garden, as it is a cogent, cumulative process against urban uniformity. Designing for gait in a winter-city is not an unsurmountable challenge. Gait is the quintessence of *human* disposition in urban time and space as it encompasses change, variety and diversity. Not solely as a mode of occasional urban recreation, but as a preferred means of access in winter-cities, walking can bring back human spontaneity, creativity and serendipity. Recognition that city-form is a symbolic, gender-based landscape deriving from primordial allegories could be an important *step*, indeed, towards a city-form affirmative to human communities.

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Chapter 15
Epilogue

15.1 Platonic Form of the City, and City-Form

The Platonic Form of the city comprises Plato's projection of fundamental attributes of the human soul upon the social makeup of his Ideal City (Chaps. 7 and 9). Plato's city-soul analogy might be said, therefore, to be the earliest attempt to subject the concept of the city to an eidetic reduction. Plato's Forms, of course, are static, solemn constructs, and the Form of the city, reflecting Plato's Ideal City, is no different. In this, Plato's insight is at variance with the dynamics of the city, primordially expressed in human movement through urban voids – in walking through streets, squares and other open spaces in the city.

The street walk is the unspoken condition behind Walter Benjamin's conjecture of environ/*mental* feedback within the mind-city composite, a spatio-temporal interaction that occurs over geographic space and historic time. The psychocultural features of the dynamic process of mind-city interaction involve, as Benjamin points out, a whole range of items in the environment from "permanent buildings to ephemeral fashions" (Chap. 1). And they involve the city-form itself. City-form has been transmuting over historic time in a dynamic feedback with the correspondingly changing paradigm of the Ideal City. Against the day-to-day, ad-hoc changes in streetscapes effected by passers-by, property owners or even agents of the authority, actual streetscapes consistently and incessantly grow into discordance with the Ideal City, habitually expressed in a "Master" Plan behind which a "grand designer" looms. The gap between a plan and its targeted planned urban space increases as time passes, decades later the previously "planned" urban space often derogated as "urban decay."

The gap between a "Master" Plan and its targeted cityscape, lingering and increasing as time passes, seems to be in a strange correspondence to the "grand designer" behind the Master Plan, and the mundane day-to-day street pedestrian. In a winter-city certainly, a Master Plan seldom takes into genuine consideration the walking human being in the midst of the cold season. Yet it is due to human beings

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that Master Plans always and without exception, fail to address commonplace reality. Of interest to phenomenology, as well as to urban planning, ought to be, precisely, the ever-increasing rift between plans and their targeted planned urban spaces. This ever-present gap, increasing over time, between a plan and the planned shows that also the eidetic structure of city-form has been changing ever since the founding of first Neolithic settlements.

There were two source features to the early city, both of which could be claimed as eidetic, constituting the primordial structure of city-form. One feature had evolved from the open space of the Neolithic ritual assembly, later the civic place of the community, the agora, the forum or the theatre of classical Antiquity, and the market place of the Middle Ages and the early Renaissance (Chaps. 5 and 6). This feature was the public space in the open-air, representing the Dionysian, feminine aspect of city-form, whose environmental paradigm has been the myth of the Garden (Chap. 11).

The other eidetic feature of city-form had evolved from defense considerations, manifest in the emergence of hillforts, representing the Apollonian, masculine facet of a community and of city-form, the environmental archetype of which had been the myth of the Citadel, later the Ideal City (Chap. 8).

Over the last two millennia city-form, but also its eidetic structure, have been transmuting whereby the Garden has been gradually displaced by the masculine myth of the Grand Designer (Chap. 12, Sect. 12.7). The two masculine myths of the Grand Designer and the Ideal, later the Rational, City, have been a powerful force that primarily in North America yielded a city-form during the twentieth century, quite discordant with human welfare. The paradigm of the Garden has all but disappeared from contemporary city-form, its subdued remnants most prominently dispersed through the suburbs in a range of versions of Howard's Garden City (Chap. 11, Sect. 11.5).

One might say that if not the Garden, then at least the Citadel has remained a primordial structural feature in the contemporary metropolis, its high-rises apparently the strongest evidence of such. The Citadel, represented by urban tall towers, however, could hardly qualify as a structural feature of the *concept* of the city in our own times. Much of the contemporary Western city is sprawling far beyond the commercial centres and no high-rises, or the Citadel, could conceivably have a representational value for the concept of a sprawling city. Vast numbers of single-family dwellings strewn over ever expanding suburbia are no longer symbolized by the Citadel.

Yet the one feature that typifies a universal structural facet of the transformed city of industrial and postindustrial age is the peculiar, albeit obvious, link with the sky. The binary switch between day and night has a fairly accurate urban counterpart in the periodic pulse of the contemporary metropolis: the daytime location of people, usually their workplace, as against their home or nighttime location. The switch between day and night during the working week is a consistent and ubiquitous structural feature that is reflected in commuter patterns across the metropolis. This binary, diurnal feature of metropolitan space throughout the working week is also a shared quality in the consciousness of all dwellers of the metropolis. It is this structured feature, which becomes the underlying, unspoken convention of the metropolis, a necessary condition for a functioning city. This particular link with the diurnal attribute of the sky had been inherent in the diurnal functioning of the city from antiquity, through the Middle Ages and the Renaissance to modern times, and as a generic feature it possibly reaches into settlements in deep prehistory (Chap. 2).

15.2 Human Need vs. Economic Demand: Access vs. Transportation

Throughout history the city has almost always provided an opportunity for livelihood, for a modicum of security, for intellectual encounter and for pastime and entertainment. To such opportunities the contemporary metropolis could add also healthcare, culture and education. But strangely, when attempting to identify the primordial, skeletal features of the city, education, entertainment or healthcare could hardly qualify as an outcome of eidetic reduction. Rather, it would seem, the diurnal projection of the sky upon the city, confers upon it its binary pulse through the working week, with one single and pervasive pattern: the repetitive diurnal movement of people between their places of residence and their places of daytime location. This repetitive movement, of course, is facilitated by urban transportation and its infrastructure. One could even argue that it is urban transportation, the prevailing diurnal movement of vehicles carrying humans, which gives the contemporary metropolis its eidetic structure: The rush-hour traffic in opposite directions at the start and end of the working day.

Yet notably, urban transportation is here only as a secondary service, one that ensures physical access to places of primary concern in the metropolis: employment, education, health-care or entertainment. Furthermore automotive transportation in a winter-city extends the shelter of the dwelling also onto the journey to work or to place of other daytime activity, and back home. Automotive commuters are deprived not only of sunlight, or even daylight, but also of human encounter. And yet it is, indeed, largely urban transportation infrastructure that features as the skeleton of the city, or perhaps as its *arteries*, to use the conventional urban transportation jargon. Transportation infrastructure is often the largest municipal budget item. To an unbiased observer it must seem utter absurd that a secondary service consumes the most resources. Yet many of us don't even notice.

A paradox inherent in the concept of urban transportation itself has been discerned by Wing-Tat Hung in his guest editorial in the *International Journal of Sustainable Transportation* (Hung 2009: 139–140). Hung's paradox consists of the factual observation that metropolitan automobile transportation has become an obstruction to traffic itself. But even earlier, declarations that urban transportation will improve not only access, but also quality of life, had been confronted with the fact that urban transportation has become the main culprit of urban carbon dioxide emissions and safety liability in urban centers (May and Nash 2009: 239–260).

Hung's paradox shows that urban access and urban transportation are not only nonconforming concepts, but they have come increasingly to contradict each other, urban transportation imperceptibly becoming a major source of urban dysfunction. Hung's paradox arises from an unstated but erroneous presumption that the notions of access needs and transportation demand are somehow equivalent. Access and transportation are, clearly, not the same, and so also human needs are not identical with economic demand of people. Transportation, increasingly, is contradictory to access, and so is economic demand for transportation in conflict with human needs for access. Access needs of everyone in the city, manifestly, can be hampered by the demand for speedy and convenient transportation of a group within the city. The occasion of placelessness in the metropolis, it might be added, is often linked to the disregard for access needs in a community. In a compact city of the pre-industrial age access needs were satisfied through walking, and this is how urban places had emerged.

The preordained, premeditated, and planned urban spaces, since the Renaissance, came to be ultimately perceived as conduits of crowds, sometimes also intended for military parades (Dennis 1988: 43–51; Chap. 14). In nineteenth century's Paris Georges-Eugène Haussmann, the prefect of the *departement* of Seine, had ordered the carving of wide boulevards for which Paris is known today, through its historic medieval center, ostensibly for sunlight and hygiene, but mainly also for the purpose of crowd control (Cacciari 1993: 22). Yet urban places, in historic European cities much as in traditional neighborhoods of America, had emerged always through human encounter and interaction within small communities, rather than through a deliberate plan (Jacobs 1961: 61–74).

Advances in motorized and automated transportation, particularly in the first half of the twentieth century, were thought to lead, along with robust infrastructure, to ever-increasing efficiency in urban access. The opposite has proven to be true. The advent of the automobile heavily contributed to planned suburban sprawl nourishing escalation of motorized commuting serving further suburban sprawl. Automotive commuting and suburban sprawl are two urban trends feeding upon each other, while effectively eliminating the urban place from the contemporary metropolis. Taken for granted in the medieval city, affirmative human encounter in the contemporary metropolis is diminishing almost by the day, largely due to continuing emphasis on automotive transportation, along with absence of thoughtful, open-air infrastructure for pedestrian access and for places of casual happenstance between people.

Throughout the late LIA and following it humans in buildings as well as on streets, in northern latitudes in particular, have become increasingly shielded from sunlight and daylight during cold or inclement weather. This is still the case in contemporary winter cities where people are discouraged by design to be in the open air, in the interest of their climatic comfort, but entirely contrary to their wellbeing (Verderber 2012: 1–5, 69–72). Yet weather and urban microclimates are, in effect, the last remnant of authentic nature in the city.

15.3 Access Needs and LeFebvre's "*Right to the City*"

It was during the 1960s student uprising in France that the philosopher Henri Lefebvre published his book *Le Droit à la ville*, in which the concept 'Right to the city' was introduced as a city's political and social objective of equality in access to urban resources. Lefebvre addresses the entirety of resources in urban space as being subject to individual and communal right of access (Lefebvre 1968/1996: 61–181). Yet his much referenced concept of the *right to the city*, as the need for "a renewed access to urban life," has been interpreted vaguely as the ability to attain equal footing to all, across features and facilities within urban space (Brenner 2000: 361–378). Discussions surrounding the *right to the city*, however, have not attempted to question access itself, particularly the physical modes of access in the city and within the context of *place*.

Instructive in this regard has been the view that facilitation of access, such as between home and workplace, has yielded urban traits which came to characterize the contemporary metropolis, if not its very essence (Burke 1975: 13–21). Whereas urban access, through transportation, has largely delineated the modern metropolis, it was the urban *place*, the city squares, streets and corners – open spaces as mainly representations of the feminine Garden paradigm in city-form – that had constituted the urban essence of communities throughout pre-modern history (Zucker 1959: 35–44). Shops, markets and street performances had all occurred here, remnants of the archaic open ritual place, the agora and the open-air Greek and Roman theatre (Chaps. 3 and 4, Sect. 4.5). It is the peculiarity of contemporary urban access, its motorized automotive fashion, specifically, that has led to the loss of place in the modern metropolis (Chap. 11).

In his phenomenological critique of urban planning Edward Relph identifies urban place, as the defining element of a community, one that also provides a constructively meaningful lived space to its comprising members (Relph 1979: 141–143). Placelessness, thus, ought to be seen as an aspect of urban dysfunction. The loss of place, as the absence of human encounter in urban space, in winter-cities in particular, could be seen as concretely attributable to the lack of opportunity to walk in open-air (Chap. 14).

Lefebvre's *Le Droit à la ville* was published in 1968, the same year as the sociologist Amitai Etzioni put forward an argument that alienation emerges, among other things, due to unfulfilled human needs (Etzioni 1968). Reasonable physical access in the city, surely, ought to be considered a human need as well as a right. One may think of a corollary notion of equal *physical* access to urban sites and spaces, as addressing the very essence of Lefebvre's 'Right to the city' (Baudry 2014). But while walking is the most rudimentary means fulfilling a *need* for access, automotive transportation is a representation of economic *demand*, affordability, for comfort in access. Automobile transportation is a right, but hardly could it be argued that, for most people, it is a need when, for example, the less comfortable public transit is available. Yet the demand for automobile transportation to achieve access impairs the need of pedestrians to walk in accident-free environment, clear of air and noise pollution. Fulfilling the rights of one group of people, while causing another group of people to be deprived of *their* rights, is an obvious conflict that alienates the second group, or possibly both groups.

There is a range of conflicts between the access *need* of a pedestrian, and the economic demand for comfort of a driver in a passing car. But on the streets downtown winter-city, infrastructure that discourages street walking has a fundamental, cumulative effect on people, both those walking as well as those driving. Emerging from streetscape design that dispenses with pedestrian access as secondary, giving priority to demand for automobile transportation is disregard for human scale in physical movement. The speed of cars is beyond such scale. Since the speed of walking does not match car velocity, the encounter between the pedestrian and the driver is not to human scale. This is how urban alienation arises, one car at a time.

The estrangement that occurs in the winter-city streetscape, of course, is not only between pedestrians and drivers. It is *total* estrangement, one that brought Descartes to ask his notorious question: "What do I see from the window beyond hats and cloaks that might cover artificial machines, whose motions might be determined by springs?" Twentieth century's answer came from Andrei Bely: "bowler hats, feathers, service caps; service caps, service caps, feathers; tricorne, top hat, service cap; shawl, umbrella, feather" (Chap. 1, Sect. 1.1). A hundred years after Bely our own answer to Descartes' notorious question is that artificial machines whose motions are determined by springs, is *all* we see. Barring road-rage or accidents, the human being inside the car is entirely immaterial to pedestrians or other car drivers.

15.4 The Winter-City Back-Alley: From Urban Contempt to a *Place* in the City

Posed as seemingly protective measure, automotive and other sheltered access, insular in nature, is in full correspondence with pedestrian truancy on the streets, in the winter-city in particular. In the North American winter-city downtown the concern of most people that *could* walk, rather than drive, is for personal safety in the streetscape. Climatic discomfort and urban microclimate during the cold season are not unsurmountable obstacles to walking. But personal security on the street, of course, is an overriding concern. Facilitating frequent sheltered stops for pedestrians to create short distances in open-air winter streetscape, for example, would encourage higher pedestrian density, and thereby safety for all. Yet North American winter-city downtown has met with little meaningful urban design measures aimed at the pedestrian in the open air (Shaftoe 2008: 64–85).

Circumstantial evidence points to winter sunlight deprivation as a contributor to several health disorders (Muehleisen and Gallo 2013). Increasing evidence points, in particular, to sunlight deprivation as a cause of mood disorders (Hidaka 2012; Gagne et al. 2010). In Canada's popular press the exceedingly high numbers of college students with mood disorders have been recently called the "broken generation"

(Lunau 2012). Sleep disorder and depression have been qualified in one breath as "epidemic" and as related to sunlight deprivation (Gominak and Stumpf 2012). Excessive shielding of people from sunlight exposure in winter-cities likely carries an impact on ailments that have been suspect as latitude-related. In northern latitudes, during the fall and winter season, widespread automotive and other sheltered access would appear to only worsen a bad situation. On the other hand, at least one recent study suggests that, in northern latitudes, out of door stay appears to alleviate mood disorders during winter (Hahn et al. 2011).

In a dubious quest for protection from weather and crime, the construction of skywalks and underground walkways has perpetuated sunlight deprivation, street-level pedestrian truancy and lack of safety, altogether reinforcing alienation in the North American winter-city. Along with associated blight and safety concerns at the street level, such projects have been helpful to developers, but for the rest of the urban community they had only conserved, or intensified, existing urban problems. The spiral of urban neglect, poor health and street crime has not been alleviated through sheltered skywalks and underground passageways, but quite to the contrary – projects for sheltered access have conserved many of the existing urban ills. Street-level pedestrian truancy as a feature of the winter-city streetscape, deliberately or inadvertently induced, feeds upon these ills only to reinforce them in a vicious circle of urban decline.

Urban design attitudes that admit the automobile, even tacitly, as a dominant means of access in the city's centre, create and increase urban blight at and near parking lots, as well as in small spaces inaccessible to cars, thus lending a hand to the flight of the middle class into the suburbs (Kim and Morrow-Jones 2011). With intensifying automobile access downtown throughout the last century, the epitome of the North American vicious circle of urban decline has become the winter-city's back-alley. An emblem of decay in the city's centre, the abandon of the back-alley is also in a relationship of mutual impact with that which is *not*: the absence of pedestrians. Resentful or fearful of the downtown and the inner city families usually do not live downtown. In an ongoing spiral of fear people stay away from the back-alley, which in turn keeps reaffirming itself as a place of contempt. In its own small way, thus, the winter-city back-alley detracts from quality of the environment in the entire downtown area, entombing itself in escalating neglect (Andersen 2003: 98–124).

A symbol of alienation, and at its best, the deposit ground of garbage or municipal hardware, the back-alley, on its own, is neither ugly nor evil. It has become a place of contempt, not on its own, but as a result of neglect and abuse. Yet quite contrary to its stature as a place of contempt, the confines of the North American winter-city back-alley carry a wonderfully mitigating microclimatic feature: During the cold season, temperature in the alley is usually warmer than in the open streetscape.

In the historic cities of Europe dense pedestrian traffic has been facilitated by Romanesque streets of about the same width as the North-American back-alley. Constriction of the Romanesque city street, although mainly due to scarcity of land in the medieval walled city, has protected the pedestrian from scorching summer heat, as well as from the winter windchill (Akkerman 2013). It is this environmental characteristic that has contributed to the success of the historic European streets as conduits for walking even during winter. Yet while the narrow street canyon has generated dense pedestrian movement in the historic urban centers of Europe, in North American winter-cities it has turned the back-alley into a hub of crime. Such contrasting use of the same street feature cannot be explained other than by an affirmative feedback between an inviting environment and pedestrian movement in the Romanesque street, against a self-destructive feedback loop between pedestrian truancy and deteriorating environment of the North American back-alley. Clearly, the vicious circle of pedestrian truancy and urban decline in the North American winter-city is far from inevitable. Romanesque city streets show that a narrow street canyon, similar to that of the back-alley, acts as a *virtuous* circle: attractive street environment draws pedestrian movement, which in turn encourages maintenance of, and further improvements in the streetscape in response to pedestrians' needs.

Present-day symbols of urban neglect in the winter-city, back-alleys could become segments in a continuous pedestrian pathway linking them with streets, colonnaded arcades and short, sheltered passageways through buildings, along with corresponding reduction of automobile traffic. The tendency of insular access in the winter-city could be thus countered utilizing, precisely, *that* which is presently its symbol of decline. As a narrow street canyon and a small space, the back-alley has a significant design potential in addressing pedestrian truancy by accommodating and encouraging open-air pedestrian traffic also during the cold season. A careful back-alley, lane and street design could confer the same effect on the winter-city downtown, as it had on the historic centers of European cities: Human scale, generating lively, open-air pedestrian movement.

The *loss of place* in the city has been manifest in the lack of affirmative human street encounter (Norberg-Schulz 2007: 150–162). Within the goal of sustaining urban community health in the winter-city, *designed* walkways sheltered from wind but exposed to unmitigated daylight, ought to become part and parcel of existing transportation networks. Walking, as an egalitarian mode of access, ought to become thus an *active transportation* alternative of choice downtown winter-city, thus forging *places* in the city. The back-alley, beyond its significance for community health, can transform itself into a meaningful place, and an affirmative streetscape.

The significance of the streetscape as a backdrop to human movement and cerebral development cannot be overemphasized. In the words of Maurice Merleau-Ponty, "we perform our movements in a space which is not 'empty' or unrelated to them, but which on the contrary, bears a highly determinate relation to them: movement and background are, in fact, only artificially separated stages of a unique totality" (Merleau-Ponty 1962/2005:159). Descartes' own momentous account of the cold November day in 1619 is a lasting testimony to the significance of the streetscape as a backdrop to human movement, perception and cognition.

For Walter Benjamin streetscape features are symbols of the collective unconscious (Chap. 10). Merleau-Ponty reflects on the cumulative effects of the moving human body as a dynamic milieu of psychocultural significance: "The senses and one's own body generally present the mystery of a collective entity which, without abandoning its thisness and its individuality, puts forth beyond itself meanings capable of providing a framework for a whole series of thoughts and experiences" (Merleau-Ponty 1962/2005:146). Answer to the mystery of city-form interacting with the bodies and minds inhabiting it, in the ambience of weather and urban microclimates, may not be at hand. But the responsibility to humbly recognize the very existence of such interaction is a lasting challenge to urban planning and design.

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