Chapter 1
Cities and Health from the Neolithic to the Anthropocene

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Introduction: Urban and Human Development

Human settlements are pivotal for the human, social and ecological development of our planet. Initially, people started to band together for reasons such as a secure food supply, but safety and security also extended to protection against man-made and environmental threats, including tribal violence and joint efforts to deal with (and exploit) seasonal events like floods.

Early human settlements in Mesopotamia and Egypt were driven by agricultural development around rivers, but with the accumulation of human and natural capital these settlements could also engage in trade with other settlements and with people who led nomadic or semi-nomadic lifestyles. This led to specialization of human capacity and development, and the need for particular trades unique to the geographical uniqueness of the settlement (Diamond 1998). Trade led to the emergence of reliable travel routes that in turn had to be protected and supplied by further settlements, and cities started to develop around the confluence of natural features that allowed for the movement of people and goods (rivers, valleys, and harbours and roads).

With urbanization came institutionalization: implicit and explicit rules about the shape of cities and how to behave in them, as individuals and as communities. An early urban planning directive for the ruler's complex in the Assyrian city of Larsa suggested appropriate locations of storage facilities for food. Governance arrangements in the city-states of ancient Greece led to the precursors of democratic systems. This is not to say that urban development necessarily leads to democratic rights for all—full participation of people in the affairs of their city has still not been accomplished in many parts of the world (e.g. Hardoy and Satterthwaite 2014).

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Slaves were not eligible to engage with early iterations of democratic decision-making in ancient Greece, nor were women. In most parts of the world female suffrage took another 2000 years to be achieved. In Australia, electoral equality between Aboriginal Australians and newcomers (colonization by the British started in 1786) was not established until the *Commonwealth Electoral Amendment Act* of 1983, which made voting compulsory for the Indigenous population as it was for other Australians. But for cities around the world with large slum or 'informal' areas—favelas, barrios or shanty towns—participation of individuals and communities in the processes that shape their environment remains a challenge precisely because of the informal nature of their conurbations.

Cities shape our lives, and our lives shape cities. To what extent is the same true for our health?

The Neolithic Demographic Transition: Health Shifts

Archaeological records show that during the Neolithic era (from ~10,000 to ~4500–2000 BC, depending on the geographical area), a hitherto relatively stable human population started to grow rapidly, displaying much higher birth and death rates than previously. Paleoepidemiology suggests that before this Neolithic demographic transition, human populations thrived in relatively good health but did not expand in size. After the transition populations experienced a far higher burden of disease, offset by an even greater increase in birth rates and possibly female fertility. McKeown (2014; based on an original statement published in 1979) attributes these changes to greater food security, but current interpretation of the archaeological record (Bocquet-Appel and Bar-Yosef 2008) suggests a more complex interplay between a number of factors claiming a more direct relationship between demographic growth during the Neolithic transition and the settlement of hunter-gatherer populations. They suggest that the fertility explosion can be attributed only in part to the emerging farming economy during the Neolithic age, and may be better explained by factors more directly associated with sedentism: that is, the process of people settling permanently in one place. The suggestion is that the limitation of the need to be constantly mobile increased resources, allowing Neolithic women to bear and successfully deliver more children. New resources included secure access to good food and nutrition, but more generally could be attributed to improved energy balance at population level, for with security and sedentism came opportunities to invest energy beyond mere survival.

The Neolithic demographic transition meant that more people began living sedentary lifestyles in a more permanent way—and in so doing they changed the etiological and pathological ecosystem: that is, the complex set of relationships among living resources, habitats and residents of an area, and the ways and means by which they cause and transmit health, disease, disability or infirmity. The determinants of health in early human civilizations were generally associated with seasonal and environmental conditions and the greater mobility of human groups following favourable climate conditions. Once these groups started to inhabit more stable and

permanent dwellings, the types and impacts of pathogens became different; they were, in a way, more 'man-made' (or part of the Anthropocene, as we will elucidate below). In permanent settlements, as we have described above, social determinants of health in addition to shifts in environmental determinants (associated with building materials, proximity and species density) cause different aetiologies and stimulate different pathogens.

When We Settle: Determinants of Health, Disease and Death

Armelagos (2009) argues that Omran's (1971) theory of epidemiological transitions should extend further into the past. Epidemiological transition theory has been described as a useful heuristic that models the impact of various disease types on demographic change and population viability and longevity, but without the predictive and operational precision that a 'real' theory should display (Mackenbach 1994).

Armelagos adds another dimension to his criticism. He quotes Thomas Hobbes who described our paleolithic ancestors as living in 'continual fear' with 'a danger of violent death and a life that was … solitary, poor, nasty, brutish, and short' (*Leviathan*, I xiii 9), but the archaeological record strongly suggests that they were relatively healthy and well nourished. The first epidemiological transition would have been associated with the Neolithic demographic transition in which more sedentary populations began to be exposed to an increase in infectious diseases (Table 1.1).

Indications of the relatively good health of pre-Neolithic populations were provided, among others, by Bengmark (2000) who found that 'the diet of our forefathers contained at least a billion times more non-pathogenic health-promoting bacteria' and that in contemporary developing countries humans' commensal (health supporting) gut flora weighs 2 kg, while in developed countries it is less than 1.3 kg. Empirical evidence is added by Hershkovitz and Gopher (2008) who compared archaeological dietary inferences from two populations in the Levant. This finding, for better or for worse, has inspired the current fad for the 'paleo diet' (Frassetto et al. 2009).

Among archaeologists, paleo-epidemiologists and anthropologists studying social transitions between forager and sedentary societies, a debate still rages as to what precisely caused the Neolithic demographic transition (cf. Caldwell and Caldwell 2003), but there is no doubt that the shift towards lasting and denser settlements that occurred around the world from 6000 to 10,000 years ago had a great impact on patterns of morbidity, mortality and aetiology. The presence of a greater diversity of species, spatially and temporally more continuous, meant that humans were exposed on a more constant basis to many pathogens, with fewer changes to their occurrence and impact. Changes (in the forager way of life also stemming from shifting habitats and ecological variation, e.g. McMichael 2001) became merely seasonal: for example, autumn and winter influenza, and the rainy season bringing floods and water-borne diseases (Cohen 1989).

Table 1.1 Causes of death and disease in Palaeolithic and Neolithic eras

Palaeolithic		Neolithic	
Vectors/pathways	Diseases/causes of death	Vectors/pathways	Diseases/causes of death
Patriarchy	Anthropoktony (war, homicide, infanticide, etc.)	Faecal contamination	Hookworm
			Ascarids
Wild animals and their parasites	Rabies	Rats, mice, ticks, fleas, mosquitoes, lice	Rubella
Other zoonoses	Tuberculosis	Domesticated animals	Cholera
	Brucellosis	Irrigation	Smallpox
	Plague		Mumps
	Tularaemia		Measles
	Leptospirosis		Chickenpox (wrongly)
	Chagas disease		Salmonellosis
	Yellow fever		Yellow fever
	Encephalitis		Typhoid
	Rickettsiosis		Poliomyelitis
	Chickenpox		Malaria
	Herpes		Influenza
	Leprosy		Common cold
	Staphylococcal and streptococcal infection		
	Haemorrhagic fever		
	Anthrax		
	Gangrene		
	Botulism		
	Tetanus		
	Encephalitis		
	Trypanosomiasis		

Compiled from Caldwell and Caldwell (2003)

This differential exposure to pathogens did not go unnoticed by the rulers of the cities that emerged in the Levant, in Mesopotamia and in the Indus valley. In the latter around 4000 years ago, Possehl (2002:105) reports, elaborate domestic water management systems clearly suggest a plan to store water safely and dispose of it after use. In the Indus urban settlements of Mohenjo-daro, Harappa, Nausharo and Lothal, this happened not just in individual dwellings but at a collective level through sewer systems, and the evidence suggests that human waste and faeces were collected and disposed of separately and deliberately for sanitary reasons.

Other health dimensions have been identified in ancient Babylonia, particularly in the royal palaces of Ur and Larsa, where food storage facilities were determined

to be about 5000 years old (Crawford 2007:91). Goetze (1950) reports cuneiform tablets in which sesame inventories from food stores are listed—which qualifies as one of the earliest attempts to establish food security.

The great cities in the cradle of humankind continued to grow and thrive, leading to the next great shift: increased sophistication in the governance and management of city states—either loosely connected to each other as in the Ancient Greek civilization, or elaborate continent-spanning bureaucracies as in the Persian Achaemenid empire (e.g. Farazmand 1998).

This is, therefore, the situation in which we can place writings in the Hippocratic tradition. The worldview espoused by the Hippocratic physicians valued an assessment of the social and physical environment as much as individual dream reading and analyses of bodily fluids. Driven by a strong sense of empiricism, they identified connections between the location and architecture of dwellings and the classes of disease that were likely to afflict their occupants. The location and quality of dwellings, and their physical and social environments, has been integral to architectural paradigms from the days of Marcus Vitruvius Pollio (also known as Vitruvius) (c. 75 BC–15 BC). He is part of the popular lexicon in the phrase 'Vitruvian man'—more correctly, *Le proporzioni del corpo umano secondo Vitruvio* (the proportions of the human body according to Vitruvius) drawn by Leonardo da Vinci around 1490. This iconic perspective suggests ideal proportions of the human body, as well as a measure of its relation to the broader environment.

Proportions and balance are key to Vitruvian thinking. Vitruvius is famous for asserting in *De Architectura* that a structure must exhibit the three qualities of *firmitas*, *utilitas*, *venustas*—that is, it must be solid, useful, beautiful. These are sometimes termed the Vitruvian virtues or the Vitruvian Triad, and still drive good design and architecture; for instance, in the Design Quality Indicator tool (www.dqi.org.uk), which argues that good design leads to better health and well-being, and brings economic, ecological and sustainability benefits as well as better governance. Vitruvius is also hands-on in stressing the need to test environmental quality before establishing new communities. To test the soil, for instance, animals were left to graze and then slaughtered, and their livers were inspected to gauge healthfulness (Porter 1999:19).

In practical terms, the Vitruvian legacy lives in contemporary architecture through the heritage of Andrea Palladio (Venice, 1508–1580). His renaissance concept of *commoditas* resembles *utilitas* (utility) but is generally framed as the idea that the vision of utility is embraced in a balanced and aesthetically pleasing manner (Alexander 2013, in Basta and Moroni 2013). Boschi and Pagliughi (2002) review the Vitruvian and Palladian perspectives on these matters in relation to perspectives of health and well-being (Table 1.2).

Hippocrates, Vitrivius and Palladio may be seen as proponents of a rational approach to place-based health, but religion and health practice go hand in hand. Cities, as focal points of religious adoration and practice, made for a connection between settlement, cleanliness and godliness. Paul Unschuld (1985a, 1985b:264) traces such a gaze back to ancient China, where 'Chinese doctors under the Chou Dynasty (1122–250 BC) linked physical health to moral well-being and spiritual serenity, which led to cosmic harmony'. Porter (1999:13) finds the same aspiration

Table 1.2 Vitruvius' and Palladio's concepts of utility, durability and beauty (based on Boschi and Pagliughi 2002)

Dimension	Vitruvius	Palladio
Utilitas/commoditas and location	First comes the choice of a very healthy site if our design of private houses are to be correct we must at the onset take note of the countries and climates in which they are built	Great care … not to build near those waters … with regard the wholesomeness of the air
Utilitas/commoditas and ventilation, thermal comfort, health	Different rooms require different exposures … in libraries with southern exposures books are ruined by worm and dampness… summer dining rooms to the north … it makes the use of the rooms both healthy and agreeable	An edifice may be esteemed commodious, when every part or member stands in its due place and fit situation, neither above or below its dignity and use; or when the loggia's, halls, chambers cellars and granaries are conveniently disposed, and in their proper places
Utilitas/commoditas and social-well being	After settling the position of the rooms … we must consider the principles on which should be constructed those apartments … to suit different classes of persons	The habitation for the master ought to be made with regard to his family and condition
Utilitas/commoditas and economy	Proper management of materials and of site … thrifty balancing of cost and common sense in the construction work … plan for different kinds of dwellings suitable for ordinary people, great wealth	That one may learn, by little and little, to lay aside the strange abuses, the barbarous inventions, the superfluous expenses
Durability	When foundations are carried down to solid ground ….	Foundations strong and solid…
Beauty	Members are in due proportion. Proportion is a correspondence among the measures of the members if the entire work and the whole to a certain part selected as standard…	Will result from the form and correspondence of the whole, with respect to the several parts, of the parts with regard to each other, and of these again to the whole; that the structure may appear an entire and complete body, wherein each member agrees with the other, and all the necessary to compose what you intend to form

to achieve balance in ancient Egypt, where full health is seen to exist in a space between temporal and spiritual existence. In Babylonian, Assyrian and Hebrew codes, the injunction was to achieve 'purity before God'. Jewish (and later, Muslim) doctors continued to influence public health thought through these perspectives well into the Middle Ages.

In fact, Porter finds that organized *urban* health care provision was first witnessed under Muslim rule, when Caliph Harun al-Rashid and Caliph al-Muktadir in the ninth and tenth centuries established hospitals in Baghdad. In the Christian world the provision of health care on a charity basis became the source of political power later in the Middle Ages, where 'providing welfare for the sick-poor may have been one route to power; controlling their ability to spread disease was another' (1999:23). The connection between health and urban planning has therefore always existed, implicitly or explicitly. Common practices in the European Middle Ages included expelling people who were suspected of carrying fatal infectious diseases (e.g. bubonic plague or the Black Death in the mid-fourteenth century) outside the city limits, as well as excluding certain population groups such as Jews (often on the basis of 'moral' arguments) from urban living. These practices consolidated a strong sense of the need for governance arrangements in urban health. In central Europe this led, for instance, to the establishment of sanitation squads during epidemic events. This tradition inspired early scholars of public health like Johann Peter Frank (1788) to develop encyclopaedic instructions for the creation of a *Medizinische Polizey* (medical police).

A strong belief emerged in the Enlightenment that certain types of urban planning would be more beneficial to health (and the prevention of disease) than others. Maneglier (1990) describes how Voltaire, in the same era as Johann Peter Frank, complained about the markets of Paris, 'established in narrow streets, showing off their filthiness, spreading infection and causing continuing disorders'. It took another century before Louis-Napoleon Bonaparte (elected president of the French Republic in 1848 before becoming emperor Napoleon III through an odd, almost reverse, coup d'état) committed to improving the lot of the Parisian working classes through better urban planning. The original work of French hygienist and early sociologist Louis-René Villermé, looking at occupational health hazards, had been instrumental in the French 'mouvement hygiéniste' to legislate for the 'Première Loi sur l'urbanisme interdisant la location des logements insalubres' (1850; the 'First Urban Planning Act Prohibiting the Rent of Substandard Housing'). This—almost literally—paved the way for Louis-Napoleon to commission George Eugene Haussmann (1809–1891) to *aérer, unifier, et embellir* (provide air, unify, and beautify) the great city. The grands boulevards radiating through the city have become emblematic of Parisian charm, but Haussmann clearly had health in mind in designing the infrastructure; in his memoirs he wrote:

> The underground galleries are an organ of the great city, functioning like an organ of the human body, without seeing the light of day; clean and fresh water, light and heat circulate like the various fluids whose movement and maintenance serves the life of the body; the secretions are taken away mysteriously and don't disturb the good functioning of the city and without spoiling its beautiful exterior. (De Moncan and Heurteux 2002).

In Britain, similar reflexions led to a surge in urban and public health development. Edwin Chadwick founded, and gained support from, the Health of Towns Association in 1844 (Ashton and Ubido 1991). In 1875, Sir Benjamin Ward-Richardson presented his vision of *Hygeia: A City of Health* to the Social Science Association in Brighton, UK (Cassedy 1962). In his address he marked the passing of the recent Public Health Act by describing a utopian city incorporating concepts like clean air, public transport, small community-based hospitals, community homes for the aged and the insane, occupational health and safety, the absence of tobacco and alcohol, and many other advances. His ideas were taken up by others, notably Ebenezer Howard, who proposed and developed the first 'garden cities' in Britain in the 1890s—a movement still alive today through New Towns, sustainable communities or transition town projects (Alexander 2009). One would think that the longevity of such initiatives would have moved them to the mainstream of public health and urban planning ideas in the twentieth century, but the reality is that throughout that century they remained marginal in the face of Cartesian, reductionist and structural-biomedical approaches to urban health.

One year after the presentation of *Hygeia*, Pasteur and Koch marked the birth of the public health era that has been variously labelled 'germ theory' or the 'biomedical' wave (Davies et al. 2014; Kickbusch 2007). This perspective has great potency—rather than having to look at a multitude of abstract and interrelated 'big picture' concepts, ill health can be dealt with by eliminating a single organism (or such is the belief—Birn (2011) has shown in her analysis of smallpox eradication that even vaccination campaigns are complex social constructions). A similar competitive slant has been identified in the area of urban planning (Deelstra 1985): from visionary sociocultural perspectives in the nineteenth century, the urban planning perspective shifted to a structural-physical model in which architectural hardware is all that matters in planning.

All the World Was Conquered by Reductionism, or Was It?

As an echo of nineteenth century sociocultural ideals (or more likely—with great twenty-first century foresight) US psychiatrist Leonard Duhl initiated a long-range programme development in the National Institute of Mental Health in 1955. His vision was to explore, across disciplines, the impact of the physical environment on human behaviour. From 1956, with zoologist John B. Calhoun, he organized conferences on social and physical environmental variables as determinants of mental health. The first 17 cross-disciplinary participants preferred to call themselves the Space Cadets—where their space was not *outer* space (these were the days of the space race between the Soviet Union and the USA) but *urban* space. The Space Cadets grew to several hundred participants (Martin 2014). The conversations they had across the country, and most notably at the 39th Annual Meeting of the American Orthopsychiatric Association in 1962, led Duhl to compile and edit a book of pivotal importance to Healthy Cities.

In this, *The Urban Condition—People and Policy in the Metropolis* (Duhl 1963), an eclectic, innovative and remarkably funny group of thirty men and two women discuss health, housing, ethology, violence, mental health, pathology, planning and matters that have only re-emerged since the turn of the century: climate change, systems thinking and complexity in the urban environment. The Space Cadets contributing to this volume agree that the city must be viewed as a system in which physical infrastructure (which Deevey in 1963 dubbed 'urbs') and its people and their capabilities (which he called 'civitas') constantly interact, dynamically and often unpredictably. Duhl himself, in his introduction to the book, states in no uncertain terms that looking at the parts of the city is possible and often understandable, but in order to make sense of the connection between health and urban dynamics one must see its complexity as an ecological whole.

The psychiatrist Duhl moved into academia at the University of California (Berkeley) to take up a chair in public health and planning, from where he continued to refine his humanistic and ecological perspective on urban development through teaching and research into community health, entrepreneurship for change and city dynamics. His work appeared on centre stage during the 1984 conference in Toronto that celebrated the Lalonde Report and declared the Canadian city's ambition to become a Healthy City (see Trevor Hancock's account of this event in Chap. 4 of this book). Duhl presented a keynote speech, and Ilona Kickbusch of the European office of WHO saw the potential of Healthy Cities to advance innovation for the new public health.

In one of the foundation documents of the WHO European Healthy Cities project, Hancock and Duhl justified the ecological, inclusive and dynamically complex view of urban health:

> Some question the city's ability to initiate and implement health initiatives in the face of a variety of problems that include deterioration of the physical environment, poverty, unemployment, economic stagnation, homelessness, hunger, family violence, and crime and youth alienation. In some respects, cities may be seen as the potential or actual 'victims' of national and international policies—most spectacularly in connection with the threat of nuclear annihilation, more mundanely as a result of social, economic, immigration and other policies. On the other hand, others point to the many real strengths of the city. For instance, it is in the city that the greatest variety of skills, resources and talents are available; it is the city, Jane Jacobs argues, that is the economic powerhouse of nations; it is in the cities that invention, the arts and other forms of creativity have traditionally flourished. Furthermore, city governments are often the closest level of government to people that have the mandate, the authority and the administrative resources needed to bring together the wide variety of skills and resources needed for a multi-sectoral approach to health. (1986)

Many global city networks have flourished since the early 1980s, and Davies (2015) lists others besides Healthy Cities:

- Just Cities
- Green Towns and Cities
- Sustainable Cities
- Transition Towns and Ecodistricts
- Winter Cities
- Resilient Cities

- Creative Cities
- Knowledge Cities
- Safe Cities and Communities
- Festive Cities
- Slow Cities

In addition, we know of international networks of local governments coming together as Happy Cities (Montgomery 2013), Smart Cities (Caragliu et al. 2011), Child-friendly Cities (Riggio 2002), and Age-friendly Cities (WHO 2007), Conscious Cities (Palti 2016) and Inclusive Cities (UN-HABITAT 2010). All of these show the importance of human settlements for (social) change, and the search for local as well as global opportunities to make cities better places for all their inhabitants and all their other users.

Hancock and Duhl ask a quintessential question which once again leads to an inclusive, ecological and dynamic answer:

> What do we then mean when we talk of 'the city'? As Phillips and LeGates (1981, 1982) point out, the concept of the city does not inspire consensus: there is no precise definition of the word 'city' that social scientists or anyone else can agree upon. At one level, the city is a collection of buildings and roads and their associated transportation, communication, water and sewage systems—the hard infrastructure. However, this is more a description of an archaeological site than of a city. Clearly, a city is more than simply bricks and mortar. A city has a life of its own, it has a soul, a spirit, a personality … Historically, the city may have begun as a centre of trade, because of its strategic siting on a main transportation route, or because of the religious and symbolic nature of the site. Cities frequently had considerable religious symbolism, what Lynch (1981) refers to as the "cosmic city", one that negates time, decay, death and fearful chaos. Such a city was based upon order, stability and dominance, with religion and faith as its core. This religious and spiritual significance is seldom found today, its place being taken, perhaps, by Mammon and his banking headquarters. But the role of spiritual or mythic symbol remains an important part of what a city is. (1986)

On a perhaps quintessential aside, it seems important to note that in many cities around the world the largest economic sector is not banking, but the health or medical–industrial complex. Some authors, like Clerc and Stern (2004) or Foucault (1983) go so far as to claim that modern medicine has taken over the role that faith and religion played in bygone times. This creates an interesting perspective for a Healthy City: whereas it is relatively easy to attribute all sorts of 'bad' (e.g. poverty, new public management and inequity) to 'Mammon and his temples', the health care sector—in spite of many critical perspectives—is held in high moral regard across societies and communities. But as Hancock and Duhl (1986) argue, it becomes clear that it is not (only) the health care sector and medical–industrial complex that create urban health, but rather the complex interplay between all the infrastructure and all the people in the cityscape:

> Phillips and LeGates (1981) suggest that the common elements that describe a city are permanent residents, a large population living at high density and a heterogeneous population. However, there are no criteria delimiting how large, how dense or how varied. To an economist, a city is a place 'where the local inhabitants satisfy an economically substantial part of their daily wants in the local market' (Weber 1999, originally published 1921). To an anthropologist, it may be that a city exists 'only where there are cultural ingredients considered essential to urban life—the fine arts, exact science and, in particular, writing'. (Philips and LeGates 1981:83).

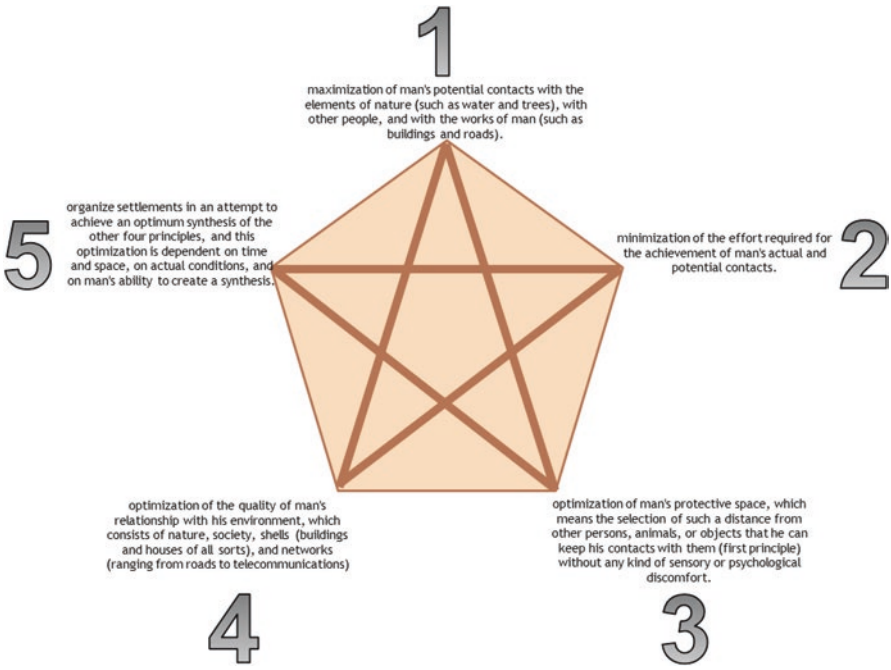

Fig. 1.1 Five principles that guide human settlements (Doxiadis 1970)

A sociologist, of course, would focus upon the interactions between the inhabitants of the city, and for her or him that would be the city. It is these interactions that Duhl terms the 'soft infrastructure':

> It is the geography and history of the city, with its varied populations, their immigration patterns and cultures and their art, music and poetry that governs the city. These characteristics and events, interacting with the still broader context of region, state, nation and world in all their manifestations, determine how people are born, live and die. The laws, taxes, regulations, business practices and the availability of infrastructure emerge out of the political struggles of all these groups and people.

Hancock and Duhl turn to Konstantinos Doxiadis' *ekistics* (a term coined by himself—'the science of human settlement'). Doxiadis devised a scholarly approach to framing the drivers of settlement and urbanization. The establishment of settlements and cities is driven by five principles (Fig. 1.1) that constantly interact.

Hancock and Duhl (1986) consider that 'according to Doxiadis, our image of the city has gone through a number of phases in the past four decades, from buildings to transportation, then to society and now to nature and energy':

> '…we know that in fact people all over the world suffer from much more complex situations than these fashionable attitudes would have us believe, we must not allow passing fashions and incomplete diagnoses to divert us from understanding the real problems or basic diseases of human settlements and their causes' (Doxiadis 1977:50).

We believe that if we are to come to grips with the complex reality of the city, it is perhaps best understood holistically, as an organic, living system, partly organism, partly ecosystem. As an organism it is composed of a number of subsystems—arteries to transport materials and nutrition, nerves to carry messages, an excretory system, a respiratory system—and like an organism it must learn from its mistakes, adapt to and cope with change, repair itself, and communicate and exchange with its fellows. As an ecosystem—'a functioning interaction system of living organisms and their effective environment, physical, biological and cultural' (Berry and Kasarda 1977:16)—it is composed of a variety of competing and cooperating groups in a state of dynamic balance. Its strength lies in its diversity, its interdependence, in the efficient use of energy and the continuing recycling of material (Lynch 1981). Of course, the city is really a social ecosystem, and a direct analogy to a biological ecosystem may be misleading. But clearly the city is an important subsystem level in understanding the human ecosystem, and the vision of the city as a human ecosystem is a popular one (Burton 1982; Deelstra 1985; Duhl 1963; Lynch 1981).

According to Kevin Lynch, a noted urban designer and theorist,

> The fundamental good is the continuous development of the individual or the small group and their culture … a settlement is good which enhances the continuity of a culture and the survival of its people, increases the sense of connection in time and space, and permits or spurs individual growth: development, within continuity, via openness and connection. (1981:116)

He goes on to discuss five dimensions of good city form. Four of these (sense, fit, access and control) refer to the need for the settlement to be clearly perceived and put in a context of time and space; the extent to which a settlement's spatial pattern matches the customary behaviour of its inhabitants; the extent to which people are enabled to reach other people, resources, activities, services, information or places that they might want access to; and the extent to which those who use, work or reside in a space control the use of and access to the space.

However, important as several of these are to health (perhaps particularly access and control), it is Lynch's first dimension—vitality—that is of particular interest. It is also the dimension of city form which, in Lynch's view, 'comes as close to being a pure public good as any on our list, since health and survival are values very widely held' (1981:125). Vitality, as understood by Lynch, means that the settlement supports the vital functions and meets the biological requirements of human beings. He suggests three main features relating to human health and well-being, and two features relating more generally to environmental/ecological well-being:

- Sustenance: 'An adequate supply of food, energy, water and air and a proper disposal of wastes'
- Safety: 'A good settlement is one in which hazards, poisons and diseases are absent or controlled and the fear of encountering them is low. It is a physically secure environment'
- Consonance: 'The spatial environment should be consonant with the basic biological structure of the human being'. By this Lynch means that it supports natural

rhythms of sleeping and waking, provides optimum sensory input (not overloading and not boring), promotes exercise, and controls the harmful effects of light, noise and indoor air pollution.

Lynch's other two aspects of vitality are concerned with

- How well the environment provides for the health and genetic diversity of species economically useful to man.
- The present and future stability of the total ecological community.

From Lynch we may take the concepts of provision of basic human needs, a physically safe and clean environment, biological connectedness, ecological sustainability, access, mobility, control, and the extent to which the settlement's form permits—or even encourages—health-enhancing behaviour. Doxiadis adds:

> Out of all definitions of the goal of the city which we have inherited, I think that there is only one that is valid for all human societies and this is the Aristotelian one: to make the citizen happy and safe.

Hancock and Duhl observe that 'Doxiadis went on to expand upon that definition to develop his own goal for the city: to make the citizens happy and safe and help them in their human development' (1986:6). Doxiadis suggests that there are five human needs that the city must satisfy (cf. Fig. 1.1):

- The maximization of potential contacts with other people, resources, etc.
- The minimization of effort in making those contacts (measured as energy, time and cost). In their attempts to maximize potential contacts, humans try to bring things closer to them.
- Optimization of protective space, the attempt to create a balance between bringing people and objects close and feeling crowded or threatened.
- Optimization of relationships with other elements of the system (nature, society, buildings and communication networks).
- Striking a balance among the four principles listed here. On the basis of these principles, Doxiadis suggests five things that humans demand in their cities:
  - Freedom to move (so as to maximize potential contacts)
  - Safety
  - A quality of life which satisfies their aspirations
  - Human contacts
  - Creativity and human development

As Doxiadis sees it, the city has to assist individuals in responding to challenges and developing to the fullest extent possible by bringing people 'closer together to benefit from their contacts, but at the same time to form a proper structure that can keep them sufficiently far apart, so that the exposure to and the danger from each other is minimized' (1977:87). From him we may take the concepts of human development, maximum contacts, freedom to move, safety, efficiency, human contacts and quality of life.

Another interesting urban planning theorist is Malcolm Fitzpatrick, who has attempted to combine the science of ecology, the values of public health and the methodology of urban planning in deriving his four criteria for evaluating community design (Fitzpatrick 1978), which are:

- Minimize intrusion into the natural state. Since health is dependent upon maintaining an ecological equilibrium and the dynamic natural state can adjust more easily to small changes than to large ones, it is important that cities minimize the alteration of their ecosystem.
- Maximize variety. The availability of choice, together with the ability to choose (which requires participation and opportunity), will promote adaptability and prevent monotony and boredom.
- Close the system as much as possible. In ecological terms, we want a closed loop system, so that its outputs become its inputs, thus making the city as self-perpetuating and sustainable as possible.
- Maintain an optimum balance between population and resource use.

From Fitzpatrick we may take the concepts of variety, ecological sustainability and participation.

Another important planner who has developed a framework for thinking about the 'health of the city is Hans Blumenfeld (cited in University of Waterloo 1984). He suggests six parameters for the functions of a city:

- A place to make a living, and for living
- Accessibility and transportation
- The environment
- Relationship of the physical with the social environment
- Privacy and neighbourliness
- Flexibility

Eighteen criteria are listed. Among the most prominent and recurring themes are variety and choice, accessibility and mobility, safety, ecological preservation/conservation, housing quality, community, and continuity and identity (connectedness). Although planners such as Lynch talk of space, design, ecosystem and other physical or biological attributes, they are of course fully aware that the city is more than bricks and mortar. A great deal of work has been done in the field of urban sociology that may help us to understand what it is that makes a good city from a sociological point of view, recognizing that 'good' depends on who you are, and how you are affected'.

Based on their profound understanding of urban and human systems, and on field trips they undertook in the early 1980s, Hancock and Duhl (1986) add their final layer of understanding to what a Healthy City is all about. Good cities

- Have a common 'gameboard' where everyone comes together to make decisions by a commonly accepted set of rules.
- Are multidimensional, yet succeed in relating the various parts to each other.

- Are homogeneous and heterogeneous at the same time (the dominant culture accepts new cultures without engulfing them, and is enriched by them).
- Have an extensive and redundant network of formal and informal communication linkages, both among its own people and with the outside world.
- Can adapt to change, cope with breakdown, repair themselves, and learn from their own experience and that of other cities.
- Have a commonly accepted mythology about themselves, in terms of a sense of history, and image of the city as it is today and a vision of what the city should be in the future.

Combining these insights, and connecting them to historical and developmental parameters and definitions (e.g. of health and salutogenesis), the fathers of Healthy Cities propose that a Healthy City is a city

> that is continually creating and improving those physical and social environments and expanding those community resources which enable people to mutually support each other in performing all the functions of life and in developing to their maximum potential

and strives to provide the following qualities to its people and infrastructure:

- A clean, safe, high quality physical environment (including housing quality)
- An ecosystem which is stable now and sustainable in the long term
- A strong, mutually supportive and non-exploitative community
- A high degree of public participation in and control over the decisions affecting one's life, health and well-being
- The meeting of basic needs (food, water, shelter, income, safety, work) for all the city's people
- Access to a wide variety of experiences and resources with the possibility of multiple contacts, interaction and communication
- A diverse, vital and innovative city economy
- Encouragement of connectedness with the past, with the cultural and biological heritage and with other groups and individuals
- A city form that is compatible with and enhances the above parameters and behaviour
- An optimum level of appropriate public health and sick care services accessible to all
- High health status (both high positive health status and low disease status)

The Anthropocene and Healthy Cities

We started this chapter—and book—arguing that Healthy Cities in a way emerged in the late Neolithic. This archaeological and physical anthropological characterization of the era coincides with the Holocene—the geological and climatic epoch that is classified as the current interglacial period in Earth's evolution that started ~11,000 years ago (Walker et al. 2009). And where the Neolithic (or Stone Age)

evolved into a Bronze and Iron Age (and currently arguably the Plastic or Quantum Age) the Holocene, some argue, is being transcended by the Anthropocene.

A proposal to formalize this term is being developed by the Anthropocene Working Group of the International Commission on Stratigraphy. These geologists characterize the—tentative—period as the current one, started in the early 1800s, in which

> many geologically significant conditions and processes are profoundly altered by human activities. These include changes in:
>
> - erosion and sediment transport associated with a variety of anthropogenic processes, including colonization, agriculture, urbanization and global warming.
> - the chemical composition of the atmosphere, oceans and soils, with significant anthropogenic perturbations of the cycles of elements such as carbon, nitrogen, phosphorus and various metals.
> - environmental conditions generated by these perturbations; these include global warming, ocean acidification and spreading oceanic 'dead zones'.
> - the biosphere both on land and in the sea, as a result of habitat loss, predation, species invasions and the physical and chemical changes noted above. (International Commission on Stratigraphy 2016)

The idea of the Anthropocene, even without formally being adopted as a geological epoch, is gaining traction outside the earth sciences. Hancock (2015), in continuing an eco-social paradigm of (public) health, argues that detrimental human impact on the planet in the Anthropocene must be countered with sane, participatory and sustainability-driven actions, research and policy. There seems to be a fair bit of doom and gloom about the ways in which humanity since the dawn of the Anthropocene has systemically compromised the future of the planet and the health and well-being of coming generations (Steffen et al. 2007; Whitmee et al. 2015). But integral to human development in the epoch have not just been exploitation, deterioration, pollution and degradation: the human spirit has also led to creativity, boundless thought, recognition of complexity, and fun (de Leeuw 2011). The 'hardware' deficits of the Anthropocene may well be offset by the 'software' of human ingenuity and flexibility.

We are not—just—talking about technological innovation and inventions to compensate for general planetary destruction (e.g. through elaborate industrial processes for carbon capture to mitigate the consequences of climate change). Derickson and MacKinnon (2015), for instance, argue for a feminist praxis of anthropocenic justice and resourcefulness which is being tried and tested with communities in, for instance, West Atlanta. Buck (2015) takes the argument even further: she sees opportunities for a charming—and healthful, imaginative, positive and expansive—Anthropocene. She does so because the emerging evidence on 'fear framing' (i.e. risk-focused appeals to motivate public support to act for, notably, better climate change policies) show these perspectives do not work, or work less well than positive frames and scenarios aiming at betterment and gain (Moser and Dilling 2011). This is an honoured mantra in health promotion, where healthy choices are to be made the easier (or more fun) choices (Kickbusch et al. 2005).

Buck paints four scenarios:

- The *Futuristically Ancient*, in which cunning 'rewilding' (balanced reintroduction of beasts and monsters—predators—in relatively monocultural ecosystems) will yield greater biodiversity and ecosystem resilience
- *Art and Craft*, where human creativity shapes biophilic cities that are constantly evolving, highly varied urban-diversity-ecodesign-politics environments that generate new and more opportunities for an expanded ethic, activities, attitudes, knowledge, institutions, and governance for all
- *Connection and Care*, aiming at holistic and integrative systems of planetary farming honouring the human scale and Indigenous knowledge systems in which human, community and creation are one
- *Convergences and Distributed Systems*, where peer-to-peer, distributed, open-source and rhizomatic connections shape natural and information landscapes that are directly connected to the human experience. Bruno Latour (2015) has typified this as the ultimate dimension of people connected to the Anthropocene: the ability to feel, anticipate and control consequences.

Healthy Cities, we feel, are quintessential vehicles to create a charming Anthropocene, an epoch in which community and creativity work together to shape institutions and governance arrangements that benefit equitable health and well-being for all in the new natural habitat of humanity: *urbs* and *civitas*, the city and its people.

This Book

Healthy Cities, particularly in Europe, has been described often as a visionary movement. It drew on the evidence and foresight of seers like Duhl, Hancock, Kickbusch and Tsouros. We believe that the vision was so strong (and enabled the movement) because it resonated with deeply held human values that urbanites and their institutions can easily identify with. In most cities, (health) inequity is at your doorstep, or around the corner in your gutter. Solidarity is what happens at train stations and in farmers' markets. Sustainability is seen in gardens and parks. Admittedly urban planning toward *Truman Show*-like gated communities does effectively block out misery and filth (Cunningham 2005) and community action is easily compromised by a 'smile and you're happy' subterfuge (Ehrenreich 2010), but that is precisely why urbanites identify with, or at least have emotional connections with, efforts to strengthen communities, effective and healthy transport, etc.

Discussions about this book started about a decade ago, in meetings between European and Canadian Healthy Cities aficionados, organized by the Centre Québécois Collaborateur de l'OMS pour le Développement des Villes et Villages en Santé (The Quebec WHO Collaborating Centre for Healthy Cities and Villages Development) where Michel O'Neill and Evelyne de Leeuw saw human values—not planning checklists or scholarly definitions—as the key to the existence and success of this international initiative. Values are an essential expression of the

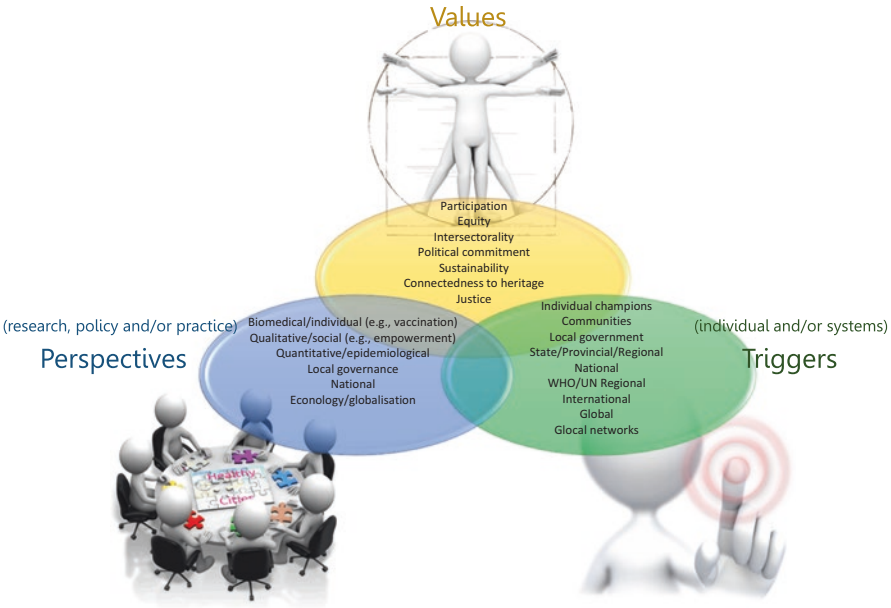

Fig. 1.2 The conceptual design of this book

Anthropocene: the redwood tree or the quoll do not hold values or aspire to them. Values are what matter in Healthy Cities, and the successful advocates of the effort are all firmly grounded in a deeply profound ethical value-base—one that pans out in their personal lives and actions. We believed, however, that values are the key ingredient but not the reason for getting cooking. For the generation of a proper argument in a collection of essays we needed to identify the triggers, the catalysts, that urge communities and (political) institutions to act on those values. Those triggers, we recognized, are always contextual. They are created, shaped and morphed by opportunity, serendipity and sheer coincidence. If Healthy Cities were 'easy' they would be ubiquitous, and they aren't (yet): why? How do values, triggers and opportunities interact to create, in the words of Buck (2015), that charming Anthropocene?

We invited 'friends and family of the movement' (as Agis Tsouros used to call them) to reflect on this conceptual development (Fig. 1.2) and structured the book accordingly.

We asked our colleagues to reflect on their passion in Healthy Cities and to identify the values that pervaded their experiences in being scholarly and activist in the area. As value prompts, we mentioned participation, equity, intersectorality, political commitment, sustainability, connectedness to heritage, and justice—but many proposed other values and value systems. We also asked them to identify the 'triggers' that led to the birth of the Healthy City (or Healthy City network or experience) that they reflect on. We suggested that a Healthy City could have been triggered by individual champions (we have already mentioned the likes of Ilona

Kickbusch, Trevor Hancock and John Ashton), but also by a fortuitous confluence of actors and factors that might or might not include communities, local government, governments at a higher level, or a range of glocal networks. Finally we told our authors to not restrict themselves to a standard 'scienc-ey' view of the world in which the standard repertoire of the biomedical model is dominant. We wanted to harvest the richness of narrative, epidemiology, governance, evaluation and assessment, storytelling, etc. The result is a highly diverse, possibly slightly rambling, but absolutely exciting collection of chapters.

There are three parts to this work. In Part I ('Healthy Cities in History') we look at what happened to create such a fertile soil for the emergence of a range of Healthy Cities initiatives in the 1980s. Jason Corburn makes an argument that twenty-first-century urbanization necessarily must lead to new forms of urban governance and the relations of all those people and their institutions in the urban context. Following this, Ann Pederson and Irv Rootman take up the 'values' argument and show that Canada in the 1970s and 1980s was deeply rooted in a commitment to do things differently, precisely because of a strong value base. Trevor Hancock describes the events that created the serendipity of getting the right people at the right places—for a series of daring meetings in the second half of the 1980s that were the catalysts for new ways of thinking about urban health.

In Part II ('Regional World Perspectives') we present a global inventory of Healthy City and Community efforts. We asked regional leads/editors to apply our conceptual gaze (Fig. 1.2) and invited city case studies from their region. The process and general perspective are outlined in the first chapter of this section by Evelyne de Leeuw. Jean Simos then kicks off with Anglophone and Francophone African Healthy Cities. They display an enormous variety in triggers (e.g. overwhelming pollution or population pressures) and values (e.g. a very strong sense of community). Nastaran Keshavarz Mohammadi has joined forces with colleagues from the 'Eastern Mediterranean' (and Islamic world) to describe a similar diversity in Oman, Iran and Egypt. Marilyn Rice, with many co-authors from across the continent, contributes an exceptional piece from Latin America where hundreds, if not thousands, of Healthy Cities and Communities thrive. Trevor Hancock, Tyler Norris, Réal Lacombe and Fran Perkins present an inventory of North American towns and cities—which sometimes seem to have been struggling with the values but always resiliently re-emerge. Jean Simos takes the lead on the European account of six veteran cities of the network. Keiko Nakamura assembles three strongly value-inspired case studies from Asia and puts them in the context of the thriving Alliance for Healthy Cities, and Evelyne de Leeuw compiles material from Oceania (Australia, New Zealand and the Pacific)—not just towns and cities, but also reflecting on the firm commitment to values of sustainability and community that are found in the network of Healthy Islands in the Pacific.

Part III looks forward to 'Grand Healthy City Challenges and Perspectives'. Healthy City evaluations have happened throughout the life of the movement, importantly in Europe, but under different guises in other parts of the world as well. Carole Clavier and Michel O'Neill use this evidence to compile evidence on the role of community participation in influencing local policy. Mardie Townsend and Claire

Henderson-Wilson accumulate evidence on urban ecosystems and the important role of accessibility of green space for health, wealth and resilience in urban environments. De Leeuw and Lin review what is known about urban health governance and how connected networks of community values and institutional values and commitments make Healthy City initiatives stronger and more resilient to change. Jean Simos reviews the role of Health (Equity) Impact Assessment as a critical tool, not just for describing risk and impact, but for maintaining and building the very fabric of Healthy City communities, policies and practices. Trevor Hancock and Clem Bezold describe how communities and their political representatives can be enabled to think proactively about the future of their (urban) environment. Evelyne de Leeuw and Geoff Green, who have both been instrumental in shaping the European Healthy City evaluation context and deliverables for about 30 years, describe how the theoretical and methodological context for developing and implementing such challenging multi-national research programmes has evolved.

As outlined above, the arguments in this book centre around values. In the conceptualizations around the development of this work, both with Michel O'Neill and Jean Simos, it was almost implicit that there is an 'old style' 'Urban Health' that is important and that should continue to be embraced, but that 'Healthy Cities' do something extraordinary that the old style has not accomplished—it added a strong grounding in human and development values. Values are, of course, closely connected and often aligned to politics. In the last chapter Agis Tsouros reflects on the political nature of Healthy Cities—and he frames very well what this book is all about: if we want to advance the health of people that live in cities we *must* be political about it. Describing what the occurrence and distribution of health in cities is, and documenting the range of interventions that might resolve or exacerbate health challenges is important but 'old style' (as illustrated in World Health Organization and UN Habitat 2016). Shaping urban (health) politics is an entirely different, and far more pressing issue.

Reflecting on the arguments in this book we cover many of these values. There is one domain, however, where we have not ventured with any significance. This relates to the quality of urban planning and design, and the role of aesthetics in health experiences and outcomes. Beauty, although in the eye of the beholder, clearly is a factor in the determinants of individual and population health opportunity and development. There is a growing body of work that explores the aesthetics of urban planning and its relation to health (e.g. Loder 2014 and Ghertner 2015), and above we illustrated that this is one of the foundations of Healthy City thinking, from the early dawn of humanity through the Classics. But this book does not systematically review the qualities of urban design for health, as compiled by and validated by Ewing and Clemente (2013)—Table 1.3. This is one area where the value base of Healthy Cities needs to connect more significantly with that of Healthy Urban Planning (e.g. Barton and Tsourou 2013; Grant 2015)

Table 1.3 Fifty-one perceptual qualities of the built environment

Adaptability	Expectancy	Ornateness
Distinctiveness	Mystery	Upkeep
Intricacy	Territoriality	Continuity
Richness	Comfort	**Imageability**
Ambiguity	Focality	Prospect
Diversity	Naturalness	Variety
Legibility	Texture	Contrast
Sensuousness	Compatibility	Intelligibility
Centrality	Formality	Refuge
Dominance	Novelty	Visibility
Linkage	**Transparency**	Deflection
Singularity	Complementarity	Interest
Clarity	**Human scale**	Regularity
Enclosure	Openness	Vividness
Meaning	Unity	Depth
Spaciousness	**Complexity**	Intimacy
Coherence	Identifiability	Rhythm

Qualities in Courier font have been tested, with those in bold validated, and those in italics not passing the test (adapted from Box 1.2 in Ewing and Clemente 2013)

A Positioning Note

What *is* a Healthy City? And who *needs* a Healthy City?

Sometimes the real story and the true answers are not being related in the official literature and it seems important to position ourselves in our experience. In this chapter, and in Part I of this book, we have outlined the contours of Healthy Cities. We have, with the help of Len Duhl and Trevor Hancock, tentatively defined and characterized the Healthy Cities idea. But it is important to realize that we may be blindsided. The fact that cities around the world identify as Just, Happy, Sustainable, Winter, Resilient, Creative, Knowledge, Child-friendly, Festive, Slow, Smart, Conscious, Inclusive, Age-friendly Green Transition Towns and Ecodistricts, and Safe Cities and Communities, shows one thing: health may not be the all-important consideration for local government. And it isn't, really, for Healthy Cities either.

This may come as a surprise. It did so, very much, when we engaged in the very first review of European Healthy Cities (Draper et al. 1993). One of the questions we asked (and we thought this was a mere validation check …) was 'Why did you join the network?' The responses—which we thought better not to include in the official WHO document in full at the time—were interesting:

- 'As we are the home of the National School of Public Health we thought it impossible *not* to join'.
- 'We needed to create political momentum to invest in sustainable public transport and we thought that Healthy Cities would give us significant clout'.

- ‘Being a Healthy City would enable us to bring back the old grandeur of our city as a spa town and would bring more tourists’.
- ‘We wanted to show off our efforts at urban renewal internationally—Healthy Cities seemed a good forum’.
- ‘We were very happy to be able to join a pan-European city network’.

I remember a conversation I subsequently had with Ron Draper. I was very disappointed that the majority of cities had not claimed they wanted to improve the health of their populations; that none of these reasons argued for the development of health policy; that the official rhetoric of determinants of health was absent from coal-face European Healthy Cities considerations. Thoughtful as ever, Draper said, ‘I think they all have committed to investing in the determinants of health and well-being. They may not label it that way. But they do commit. And that is a major achievement’.

There is more than one lesson in this anecdote. Healthy Cities embrace diversity—they do not exclude a biomedical model of health in favour of a social model. They are not hung up on ownership of their programme by the health care sector (e.g. de Leeuw 2015). Goumans (1998), in fact, showed that for Dutch and British Healthy Cities ownership can be shared between the education sector, police, parks and recreation, and many more—very much beyond health *care*. Healthy Cities are archetypical for Health in All Policies development (see Chap. 17). For many professionals in the health (care) silo this generates ambivalence: how can you make health if it is not under the control of the health sector? In fact, health *is* created outside the health sector, and many Healthy Cities are prime examples of how that

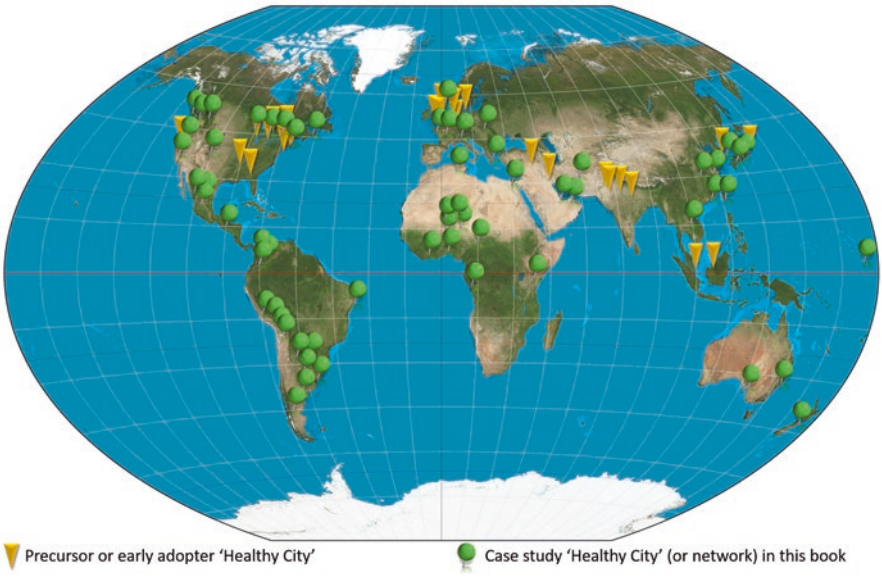

Fig. 1.3 Cities mentioned in this book

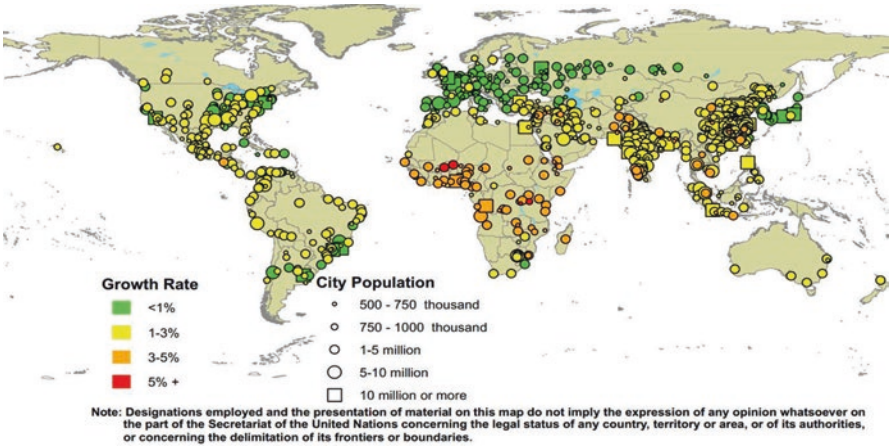

Fig. 1.4 Urbanization rates. Overview map of global urban growth. Source: UN World Urbanization Prospects Report, 2014 Update

works and can be managed: not through ever-increasing (social) epidemiological data collections and analyses, but through a much broader understanding of what creates pleasant, liveable urban environments (Crammond and Carey 2016). This is what this book is about.

For that very reason it is also interesting to develop a quick geography of Healthy Cities. In Fig. 1.3 we show the location of Healthy Cities in history mentioned in this book, and Healthy Cities mentioned as case studies. We see that Healthy City precursors in the early and mid-Holocene are found in the cradles of urbanization—the Middle East and the Valley of the Indus. The Healthy Cities ancestors during the industrialization era were European and US East Coast, whereas the small group of early adopters before the movement even was a project can be found in Canada, Britain and the Far East.

A superficial assessment of Fig. 1.3 would suggest that the current global spread of Healthy Cities (and our documentation of them) is fairly evenly distributed, and aligns with general patterns of urbanization.

Figure 1.4, however, shows that this is only partly true. There are very few cities in the sparsely populated tundras of Russia, Kazakhstan and Mongolia. The saying that most Canadians live within 50 km of the United States seems to be holding, and there are—fortunately perhaps—not too many cities in the deserts of Africa and Australia, or the jungles of Amazonia and Melanesia. But Fig. 1.4 shows that cities around the African equator are growing faster than their American and Asian counterparts. The Middle East, the Indian subcontinent and the Eastern half of China continue to see a slow but steady urbanization growth. Indonesia alone is

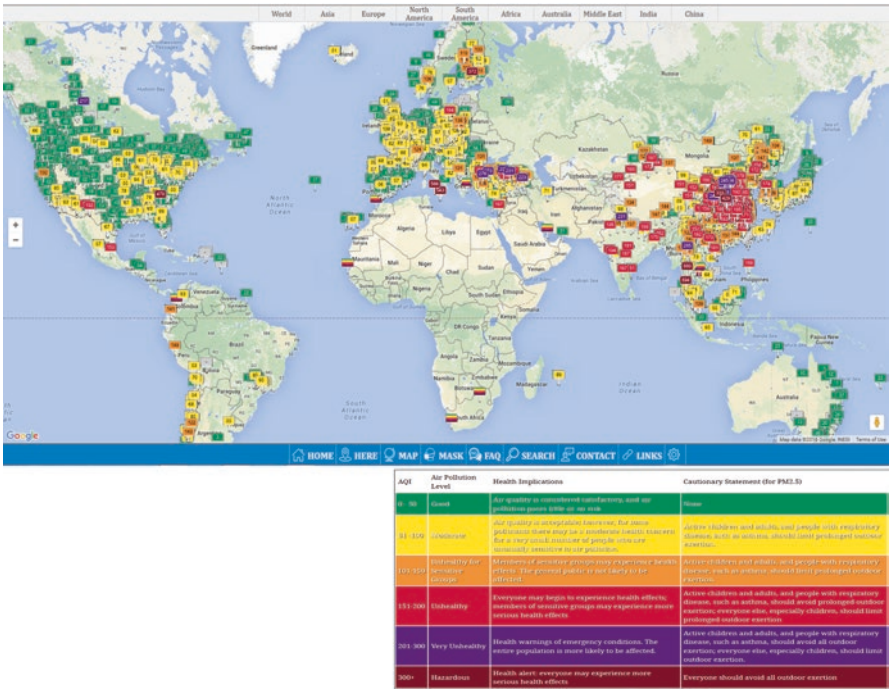

Fig. 1.5 The real-time World Air Quality Index, developed and maintained by a China-based social enterprise at www.aqicn.org. World data per city on 24 March 2016

showing greater urbanization than all its neighbours combined. Some of these patterns have not been reflected in this book. After initial successful efforts at establishing Healthy Cities on the subcontinent (for instance, in Cox's Bazaar in BanglaDesh—see Burton 1999 and Harpham et al. 2001), we have been unable to identify any urban environment in India, Pakistan, BanglaDesh, Myanmar or Indonesia that even remotely embraces the remit of this book—and we are quite certain that this is the fault of the editors, as we have heard rumours of Healthy City projects in Surabaya and Mandalay. Our investigative powers to track these down, however, failed.

The proverbial alien arriving from a galaxy far far away, looking down on our urbanizing world, may perhaps think that these lands (the Indian subcontinent, Eastern China, Indonesia) do not require Healthy Cities. Perhaps in their modern evolution they have not made the mistakes of the crowded American and European cities of the nineteenth century industrialization era. Alas—Fig. 1.5 shows that they, more than any other local government area, need some 'Healthy, Just, Happy, Sustainable, Winter, Resilient, Creative, Knowledge, Child-friendly, Festive, Slow, Smart, Conscious, Inclusive, Age-friendly Green Transition

Towns and EcoDistricts, and Safe Cities and Communities'-thinking. They are in the red-to-maroon zones of urban air pollution (with the two top tiers being hazardous).

This book is not for the cities in Fig. 1.3. It is for the cities on the wrong side of the track in Fig. 1.5. And we hope that in a second edition of this book they will have been inspired to take centre stage.

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