Introduction

It seems that the concept of a healthy city is one that is understood intuitively by many people. It is one of those phrases that somehow says a great deal with very little explanation, has people nodding in agreement, becoming interested, enthusiastic, even excited. These are the reactions we have found among politicians, planners, public health professionals and many others as we have discussed the idea in Europe, North America and Asia. At this point, however, the concept is only beginning to take shape, and no doubt it will assume a somewhat different form in each city.

In this paper, we try to explain what we mean by a healthy city. We look at the concept historically and in relation to our changing view of the city and of health, and of what the concept may mean to different people. We then make a preliminary attempt to clarify just what are the dimensions and parameters of a healthy city, how we might assess the health, the competence, the “goodness” of a city, and how we believe a city can become more healthy.

But let us begin with ourselves, with our own beliefs and values. We have already noted that we are both North American. For both of us, and seemingly for many others, the city is an obvious starting point in discussing and working for both better health and a better society. For it is in the cities that life’s drama is acted out. In the industrialized world today, most of us are conceived, born, grow, develop, live, love, have and rear our children, work, play, grow old and die in the city. The city is the crucible of human experience, human development and human health. It is the vital centre of our industrialized world, a site of creativity and innovation. City government is the level of government closest to people, and often has most, if not all, of the resources that are necessary to enhance health without resort to higher levels of government. We are intrigued by what it is that makes the city and its people healthy, and what the potential may be to enhance or promote that healthfulness.

Furthermore, though we are both physicians - one trained in public health and working in the Department of Public Health in Canada’s biggest city, the other a psychiatrist, ex-federal government bureaucrat and an academic in both public health and city planning - we have both moved well beyond medicine into the realm of health. We believe that health - “the abi-
lity to achieve one's potential and to respond positively to the challenges of the environment... A resource for everyday life... A positive concept emphasizing social and personal resources as well as physical capacities” (Nutbeam, 1985,5) - results from the complex interactions of our total physical and social environments on the one hand and our physiological and psychological status, balance and potential on the other. We are thus interested in the health and well-being of people, individually and collectively, and in how their health can be enhanced, or in modern parlance, promoted. (By health promotion, we mean “...the process of enabling individuals and communities to increase control over the determinants of health and thereby improve their health... A mediating strategy between people and their environments, combining personal choice with social responsibility for health to create a healthier future” - Nutbeam, 1985,7).

We believe that our health and the health, perhaps even the very survival, of our species requires that our cities provide for us the opportunities and the environments necessary for us to grow and develop, to achieve our full potential in a mutually supportive and non-exploitative manner, without impairing the stability of the ecosystem upon which our health and survival ultimately rests. A healthy city is thus much more than one that has good health care services and a population with high health status. Our focus is not just upon the health of the population, conventionally defined, important though that is. For the health of a city is crucially dependent upon how well the city functions as a physical and social environment; to what extent and how well the city provides the community resources that people need not just for health in the conventional sense, but to develop to their maximum potential; and the degree to which the city makes it possible for people to mutually support each other in growing, developing and performing all the functions of life.

Of course, each city is unique, having its own history, its own values and its own concepts of health and progress. On our part, our values are clear: for individuals, the right to full growth and development, the provision of basic needs and a life of peace and freedom from fear. The principle of human rights also includes personal freedom and some control over the events that affect one's life. On the group and community level, our values favour creating ways for people to work together without exploitation, finding a glue of trust, co-operation and respect, so that communities may be formed that do minimal violence to individuals. On the global level, we are concerned with fair distribution of the earth's resources, an ecological
awareness of the limitations and fragility of our planet, and the absence of violence between peoples.

These values, we believe, are not new, startling or even controversial. After all, in one form or another, they have been repeatedly endorsed at the United Nations itself and in the statements of many other global forums such as the World Health Organization, UNICEF and UNESCO. The challenge that faces the city is how to put these values into practice and become a healthy city.

But before we examine in detail the concept of a healthy city, let us look at the historical context of the concept of a healthy city.
The Historical Context

As Freeman notes “For most of recorded history, cities have been very unhealthy...” (Freeman, 1985). While Boards of Health flourished in Renaissance Italy (Cipolla, 1976) and Johann Peter Frank had written six volumes on “medical police” (covering what today we would call public health, health policy, health services and administration) at the time of Napoleon (Frank, 1976), public health as we know it today began with Edwin Chadwick in Britain in the 1840’s. Chadwick’s answers to the appalling conditions of slum dwellers - sewers, water supply, housing improvements - had more to do with urban planning than with health services as we think of them today. In Chadwick’s time, medicine was considered to be a social science, and it was seen as medicine’s task to intervene in social and political life (Noack, 1985).

Indeed Rudolph Virchow, the great German pathologist and reformer, believed that while it was important to examine the cells of which people were composed, it was at least as important to examine the total organism in its socio-political environment. His investigation of a typhus epidemic in Upper Silesia in 1848 was anthropological, or socio-ecological in nature, based on his belief that while “the improvement of medicine would eventually prolong human life... improvement of social conditions would achieve this result now more rapidly and successfully.” Or, as he later put it, in a now famous phrase:

*Medicine is a social science, and politics are nothing else than medicine on a larger scale.* (Ackernecht, 1981)

This socio-medical paradigm was paralleled by a socio-cultural approach to urban planning (Deelstra, 1985). Indeed, urban planning has its origins in the public health movement of the mid-nineteenth century (Oberlander, 1985; Benevolo in Deelstra, 1985; Parker and Dawson, 1985), and there have always been close ties between the two professions.

The public health movement attained one of its highest points in 1875, when Sir Benjamin Ward-Richardson, a disciple of Chadwick, presented his vision of “Hygeia: A City of Health“ to the Social Science Association in Brighton (Ward Richardson, 1975; Cassedy, 1962). In his address, Ward-
Richardson celebrated the passing of the Public Health Act of 1875 by describing a utopian city. His city incorporated such concepts as clean air, public transport, small community-based hospitals, community homes for the aged and the insane, no tobacco or alcohol, occupational health and safety, 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 1890’s.

It was, then, a curious irony that Ward-Richardson’s utopian vision came just one year before the publication of the discoveries of Pasteur and Koch that would usher in the mechanistic bio-medical paradigm of health. This enormously powerful medical model is based upon the premise that disease is a linear process resulting from a single cause, and that appropriate medical interventions can prevent or cure the problem. While the idealism and the promise of the public health approach continued to have a marked impact upon cities right through the 1920s (Leavitt, 1982; Bator, 1979), the bio-medical paradigm gradually gained ascendancy. Today, for most people in the industrialized world the hospital and the doctor are health.

There was a parallel shift occurring in the emphasis of urban planning from a socio-cultural to a physical model (Deelstra, 1985). Urban planners in the industrialized world turned their attention to the slums of the old industrial cities, many of which were razed and replaced by new highrise developments. The proponents of these developments felt that by removing the inhabitants from their poor physical environment, they would improve their health.

“Once upon a time,” says a close student of New York’s slums, “we thought that if we could only get our problem families out of those dreadful slums, then Papa would stop taking dope, Mama would stop chasing around and Junior would stop carrying a knife.” (Seligman, quoted in Michelson, 1976, 151).

However, it quickly became clear that improving the physical environment was not necessarily good for the health of the relocated residents. Indeed, there is evidence that the destruction of neighbourhods and well-developed communities or systems was harmful (Gans, 1967) while the highrises themselves proved to have negative effects (Michelson, 1976; Deelstra, 1985).

In recent years, there has been a growing recognition of the importance of social structure and community organization, coupled with an awareness
of the ecosystem, both natural and human. This has given rise to an ecological or socio-ecological approach in urban planning (Berry & Kasarda, 1977; Phillips & LeGates, 1981; Lynch, 1981). At the same time, an ecological or socio-ecological model has developed in the health field. Thus, in many respects, the wheel has turned full circle in both public health and urban planning.
The Urban Context

We live in an urbanised age. In 1850, no society could be called urbanised, yet by 1925 48 percent of the European population and 54 percent of the North American population lived in urban localities. By 1975, these figures had reached 67 percent and 77 percent respectively, and by 2025 the great majority - 88 percent of Europe and 93 percent of North America - will live in urban places. Similarly the USSR, while only 18 percent urbanised in 1925, had reached 61 percent by 1975 and was projected to reach 87 percent by 2025 (Pacione, 1981, Table 1.1).

Thus anyone interested in improving human health and well-being in the industrialized world must necessarily be concerned with the state of health of the cities and their people. This has been explicitly recognised by the European Region of WHO in establishing the Healthy Cities project that seeks to enhance the health of cities and their people in the development of initiatives and processes promotive of health.

Yet 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, 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 (1984) 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.

What do we then mean when we talk of “the city”? As Phillips and Le-Gates (1981,82) 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 archeological site than 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 as so eloquently described by many writers, especially Jan Morris (1985).

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. Either way, cities frequently had enormous 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 the core of the city. That religious and spiritual significance is seldom found today, it’s place taken, perhaps by Mammon and his temples, the bank headquarters. But the role of spiritual or mythic symbol remains an important part of what a city is.

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, 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” (Phillips and LeGates, 1981,83). 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 (1985) terms the “soft infrastructure” of the city:

*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.*
To a political scientist, a city is a legally and politically defined entity with clear boundaries and jurisdictions, with a mandate, authority and powers usually defined by and limited by a higher level of government. To others, a city is a place where the maximum number of transactions take place (Meier, 1962). Clearly, what the city is depends upon who you are and how you perceive:

Researchers now believe that subjective reality is every bit as important to understanding and fostering successful urban life as the concrete and asphalt of objective measurement... How people actually perceive their environment is as important as the environments themselves. (Goleman, 1985, 11,14).

We should keep in mind the words of the late Constantine Doxiadis, one of the most provocative thinkers and writers on the topic of the city. 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 biologic ecosystem may be misleading. But,
clearly the city is a particularly important subsystem level in understanding the human ecosystem and the concept of the city as a human ecosystem is a popular one. (Duhl, 1963; Lynch, 1981; Burton, 1982; Deelstra, 1985).
The Health Context

While the WHO definition formulated in 1948 - not merely the absence of disease, but a state of complete physical, mental and social well-being - should have led us to look well beyond traditional mortality and morbidity rates, the reality is that for the first couple of decades thereafter, the medical model remained the focus. Doctors, hospitals and the health care system (in reality, of course, a sick care system) were assumed to be synonymous with health. But by the early 1970s, the limits to this medical approach were being widely recognized. McKeown (1971) pointed out that the major improvements in health in the nineteenth century owed little to medical care while Illich (1976) wrote of the limits to medicine and Carlson (1975) of the end of medicine. In Canada, the Lalonde Report (1974), drawing upon McKeown’s work, asserted that future improvements in health would result largely from improving the environment and modifying lifestyle.

The lifestyle theme was the first lesson of the Lalonde Report to be enthusiastically adopted. Personal responsibility was stressed, sometimes to the point of victim-blaming. The role of the physical and social environment in determining health was largely ignored (Buck, 1985), since to have acknowledged the crucial role of the physical and social environment, particularly the latter, would have meant questioning the very basis of our society (Lalonde and Penfold, 1981).

As long as health was considered to be a matter for doctors and hospitals on the one hand, or personal responsibility on the other, the city had only a small role to play. If, however, health results chiefly from the influence of the physical and social environments (either directly or mediated through personal behaviour) the role of the city in creating health may be very important. (For reasons we discussed earlier, we believe that cities, rather than provincial or national governments, may be an important level of community and government to focus upon).

One model that we find useful in understanding what determines health and how it may be affected is shown in Figure 1. The Mandala of Health (Hancock and Perkins, 1985; Hancock, 1985) is a model of the human ecosystem incorporating both the social sciences (upper half) and the natural sciences (lower half). A variety of factors affect the health of the individual, and thus any efforts to enhance the health of the individual must take into
account all of those factors. Health promotion, as understood by WHO Europe (1984) is directed towards action on the determinants or causes of health, combining diverse but complementary methods or approaches.

*Health promotion best enhances health through integrated action at different levels on factors influencing health - economic, environmental, social and personal. Given these basic principles, an almost unlimited list of issues for health promotion could be generated: food policy, housing, smoking, coping skills, social networks.* (p. 3).

Clearly, many of these issues are capable of being dealt with at the local level, and it is also at the local level where effective public participation can best occur. Since health promotion “enables people to take control over, and responsibility for their health as an important component of everyday life”. (p. 4) community involvement is thus crucial.

Health promotion requires the close co-operation of many sectors beyond health services, as the Mandala indicates. Our concerns have thus moved well beyond health care to a consideration of the health implications of public policy (Milo, 1981; Hancock 1982; Beyond Health Care, 1985).

Not only do these two important principles - a multi-sectoral approach
and community involvement - underlie our concept of health promotion, they are also crucial to WHO’s conception of the primary health care strategy, its chosen vehicle for attaining the goal of Health for All by the Year 2000 (Mahler, 1981). Thus the Healthy Cities Project initiated by WHO Europe in 1985 (for which this paper has been written) is, from the WHO point of view, an important means of promoting health and attaining the goal of health for all in the industrialised world.
The Concept of a Healthy City

If there is a widespread difference of opinion as to what constitutes a city, as we discussed earlier, then we must expect an even wider difference of opinion as to what it is that we mean by “a healthy city”. Some, of course, would argue that to talk of a healthy city is in itself a contradiction in terms:

As a central thesis, I would argue that American cities are unhealthy places in which to live, work, play or visit (Kennedy, 1977,9).

The city is a centre of human illness and death. It is a place of concentration, exchange and diffusion of germs and poverty. As the place of possible cures, it creates illness; as the last hope of the hopeless, it is the citadel of death. The richer the society and the more dominant the city within it, the more these truths hold (Greer, 1983,7).

Of course, not all observers of the city would agree:

(Hinckle) suggests that the conventional view that modern urban societies are unhealthy for humans is quite contrary to some of the available evidence (Hinckle, 1977, 5-6).

The various measures we use to evaluate health status indicate that since the turn of the century urban mortality and morbidity rates have been decreasing faster than their rural counterparts. Today, the big city advantage exists not only in the objective indices but also in people’s perceptions. Cities are perceived not only to have better health care but also to have healthier residents (Palen and Johnson, 1983, 47).

As should be clear by now, when we talk of a healthy city, we do not simply mean one that has a low death rate or good hospitals, important though those might be. Mortality is not the only - probably not even the best measure of health, given our current concepts of health, while we have already pointed to the fact that hospitals and sick care services are not the most important determinants of health.

Nor is a healthy city simply one that has good housing and clean, safe, hygienic environment, though that too is important.
...within wide limits, it is not the physical condition of the house, neighbour­hood or human settlement that determines a person's health so much as his (sic) own social background, his perception of his environ­ment, his relationship to other people around him and to his social group (Hinkle, 1977, 301).

We are, in any case, talking about more than the health of the people of the city, because the health of a city is much more than simply the health of its population. To an economist such as Jane Jacobs, for example, a healthy city might be one that replaces imports in a positive frenzy of creativity and innovation (Jacobs, 1984), while to an urban planner a healthy city may be one that has good physical characteristics such as housing, transportation and green space; to a sociologist, a healthy city may be one that promotes social cohesion, while to an educator it many be one that enables people to grow and develop; for an epidemiologist a healthy city may be one with high health status, for a health care planner it may be one that has high quality, accessible hospital and medical services, while for WHO it may be one that promotes health for all, enabling the attainment by all citizens of a level of health that will permit them to lead a socially and economically productive life. And for the person in the street, a healthy city may be one that enables them to make a living, keep a roof over their heads and food in their stomach, provide for their family, meet their friends, move around safely and, in general, to freely carry out all the functions of life. Each one of us understands the concept a little differently, according to our own interests and training, our culture and our values.

Nor can the health of a city be simply expressed in a set of cold, hard facts - there is a quality to the city that we must somehow capture.

We are not looking for data that can be manipulated and arranged so that all the parts add up to 100. We are looking for understanding... In urban diagnosis the observer looks for patterns, breaks in the patterns and deviations from the norm (Jacobs, 1985, 82-83).

Thus a healthy city cannot be described by tables of data and stacks of computer printouts alone. It must be experienced, and we must develop and incorporate into our assessment of the health of a city a variety of unconventional, intuitive and holistic measures to supplement the hard data. Indeed, unless data are turned into stories that can be understood by all, they are not effective in any process of change, either political or administrative. For
that very reason, we must learn to look at cities through the eyes of writers such as Jan Morris (1985), whose brief portraits of cities convey a quality and an atmosphere - an impression of the "health" of the city - that cannot be conveyed in any other manner. And we must learn to speak of cities as simply and elegantly as Michael Rowse, developer of the "new town" of Columbia, Maryland, when he asked his designers and planners to build him "a garden to grow people in".

It should be evident from the above discussion that the concept of a healthy city is a very broad one, incorporating ideas from sociology, urban geography, city planning, ecology, politics, economics, philosophy and a host of other disciplines in addition to public health. And, of course, the concept will mean different things to different people from different cultures, from different cities, even from within the same city. For that reason, our definition of a healthy city is one that focuses upon a process that creates the possibility of health for its people (however defined) rather than pointing to an end state. Our working definition is as follows:

A healthy city is one 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.

The challenge we face is twofold: can we find some broadly agreed upon dimensions that will describe a healthy city, and even more importantly, can we suggest processes, mechanisms, that will enhance a city's health, and thus the health of its people.
The Parameters of a Healthy City

While our focus is clearly upon the process of becoming a healthy city, and while we recognise that both the understanding of health and the process will vary from city to city, we nonetheless feel that it is important to propose some general parameters that would define the essential components of a healthy city. Based upon those parameters, it may be possible to develop a set of qualitative and quantitative indicators that will enable cities to answer two important questions that inevitably arise: what is a healthy city, and how do we know? Of course the parameters alone are unable to completely define the healthy city, since the qualitative aspect of life in the city cannot be so readily nailed down and measured. Nonetheless, in this section, we will briefly review some of the literature in this field, and we will propose a set of parameters that we believe are commonly referred to in the literature, in one way or another. However, as with the concept itself, each city will have to develop its own parameters to suit its own unique situation, culture and values.

Let us begin with one person’s view of the healthy city. Or, in this case, the “good” city. 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 then 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 to us. 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” (p. 125). Vitality, as used by Lynch, means that the settlement supports the vital functions and meets the biological requirements of human beings. He suggests three principal 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, even encourages, health enhancing behaviour.

Another influential, if controversial, urban designer/planner is Constantino Doxiadis. As the developer of the “science” of ekistics (and a rather annoying proliferation of neologisms), he noted that:

> 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 (Doxiadis, 1974, 4).
Doxiadis went on to expand upon that definition to develop his own goal for the city:

\[ \text{to make the citizens happy and safe and help them in their human development (p. 6).} \]

Doxiadis suggests that there are five human needs that the city must satisfy. These are:

- 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, Doxiades 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

Therefore, 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” (p. 87).

From Doxiadis, 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). His criteria are as follows:
- 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.
- Optimum balance between population and resource use.

From Fitzpatrick we may take the concepts of variety, and 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 neighborliness
- Flexibility

Eighteen criteria are listed, and among the most prominent and recurring themes are variety and choice; accessibility and mobility; safety; ecological preservation/conervation; housing quality; community; 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. A key concept is that of “community” for which, Phillips and LeGates (1981) tell us, there are at least ninety definitions in sociology. The notion of community “hinges on the notions of togetherness and sharing” (p. 112). However, they suggest that while the force that “helps bind urbanites together” is functional inter-
dependence arising from the degree of specialization that occurs within cities (p. 140), modern urbanites do not, on the whole, feel a sense of community. They also point to the important role of the neighbourhood in providing "social and cultural anchors for urbanites, "with neighbourhoods in effect acting as small villages within large cities (p. 159). From them, we may take the concepts of community, mutuality and social and cultural connectedness.

Albee (1984) proposes that primary prevention of psychopathology involves enhancing people's competence and coping skills, enhancing a sense of self-esteem and self-worth, and developing mutual support systems. The extent to which a city permits and encourages these conditions is perhaps a measure of its health.

From an anthropological viewpoint, Margaret Mead suggests that we need to live with people somewhat like ourselves and to be bound to the past, to have a sense of community. She suggests:

_You have to grow up as a child in a community that has some centre and focus and set of relationships, and that has to be held together by the members of the third or fourth generation_" (Mead, 1976).

Thus, according to Mead, a healthy city is one that has (and whose people have) a sense of history and continuity, as well as a sense of community and homogeneity. Of course, that sense of homogeneity is just the opposite of the need for variety suggested by Lynch, Fitzpatrick and others. Nonetheless, from Mead we take the concepts of a sense of history and cultural connectedness.

Duhl (1985a; 1985b; 1985c) suggests another set of socio- anthropological parameters of the health of a city. Based on his extensive experience with the National Institute of Mental Health and the Department of Housing and Urban Development, together with his more recent field trips to Canadian cities, he suggests that healthy cities:

- Have a common “gameboard” where everyone comes together to make decisions by a commonly accepted set of rules
- Are multi-dimensional, 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.

Another important component of the health of a city must include some reference to the wealth of the city. Notwithstanding legitimate critical views of the relationship between health and wealth (Draper, 1977; Robertson, 1985), it remains generally true within communities, within nations and between nations that the wealthiest are generally healthiest. The wealth of the city will thus be a reflection of the health of a city, though unless that wealth is sufficiently well distributed wealth alone, if concentrated in a few hands at the expense of the many, is unlikely to be a reflection of the health of the majority.

A second aspect of the economic health of a city is the extent to which it is an economically diverse import-replacing city (Jacobs, 1984). According to Jacobs, healthy cities have diverse economics which are in a constant turmoil of innovation and creativity in an attempt to replace imports and to export their innovations to other cities. The jobs created by this activity are what makes cities, for many people, the attractive places they are. A city that does not have and cannot create jobs is a dying city, and its population will move away. Thus economic health is an important component of the healthy city.

When we move to looking at urban design from a biological perspective, according to Rene Dubos (1976), we need to bear in mind that humanity evolved in small groups, and thus in Dubos' view the determinants of behaviour and social relationships "cannot possibly be altered in the foreseeable future, even if the world were to be completely urbanized and industrialized." In his view, therefore:

*The ways of life and design of human settlements must... be compatible with the attributes and needs which have characterized our species since Cro-Magnon times* (p. 256).
He suggests that successful human settlements must include:

- Shelters against the forces of the external world (a room of one's own);
- A community organization through which the members of a neighbourhood know what to expect of each other;
- Malls, piazzas or other public grounds where the human encounter can be enriched by contact with crowds of strangers;
- Ready access to gardens, parks and natural environments in which to experience animals, plants and the pageantry of life;
- A variety of settings to provide stages upon which different kinds of people can act out their own style of life;
- And last but not least, the opportunity to experience as often as possible the magic of infinite perspectives (p. 263).

From Dubos we may take such concepts as basic needs, safety, community, human contacts, biological connectedness and variety.

Roslyn Lindheim, an architect, and Leonard Syme, an epidemiologist, have recently reviewed the literature on environments, people and health (Lindheim and Syme, 1983). They suggest three major aspects of urbanization that are important in considering the health of urban populations:

- **Social relationships**: Family ties, social ties and social support in dealing with stressful life events.
  
  *Urbanization and industrialization have decreased the likelihood that supportive social relationships can exist... one of the tragedies of our time is that architectural and planning policy have made it difficult for people to maintain support networks* (p. 341)

- **Hierarchical status**: Socio-economic status, workplace hierarchy, etc. The three major consequences of being lower in the hierarchy is that such individuals have worse living and working conditions, are stigmatised (leading to anger and low self-esteem) and have little opportunity for participation and control.
  
  *The common element in the studies of hierarchies is that those lower in status have higher rates of disease at any relative level of poverty or affluence* (p. 344)

- **Connection to biological and cultural heritage**: While acknowledging that the evidence relating these issues to health is weak, they suggest that it is important to health that natural biological (circadian, seasonal, etc.) rhythms be respected; that our hunger for nature and variety be satisfied;
that we be re-connected to the life cycle by making birth and death a part of our daily experience; and that we be connected to places through a sense of history, territoriality and architectural and cultural roots.

Their notion of connectedness is that: “These connections help define a person’s sense of self, a person’s place in the world” (p 354), an idea that is clearly congruent with the notions of self-esteem, self-worth and mutual support that they raise in their other two categories. The relationship of this to the mechanisms for preventing psycho-pathology as proposed by Albee are particularly relevant.

Lindheim and Syme conclude by suggesting that two principal issues need to be addressed in order to prevent disease and to promote health. These are:

- To seek to establish connections with the past, our biological and cultural heritage, other people and the future - “the opportunity to shape situations, places and activities that affect their lives” (p. 354)
- Active participation, which they see as a particularly important factor in strengthening resistance to disease - “unless people can, in some way, create, manage, change or participate in activities that affect their lives, dissatisfaction, alienation and even illness are likely outcomes” (p. 354)

From Lindheim and Syme we may take the concepts of social support, biological and cultural connectedness, self-esteem and participation.

Concepts of biological and cultural connectedness are also emphasized in *The Biocultural Basis of Health* (Moore et al, 1980). This anthropological view of health stresses the vital importance for health of both our biological inheritance and our (limited) ability to adapt, on the one hand, and the enormous influence of our cultural beliefs and values on the other. Our attitudes towards health, disease and healing and our cultural practices determine our health status to a very great extent.

Finally, let us consider conventional parameters of health, together with some less conventional parameters. The standard parameters of health will include mortality measures, morbidity and disability measures, and measures of risk behaviour such as smoking, drinking, seatbelt use, etc. These are all essentially negative measures, measures of ill-health rather than health. Similarly, the provision of medical and hospital care and related sick care services are also essentially negative measures. The challenge we face is how to assess health status, as opposed to illness status.
Antonovsky (1979) has coined the term "salutogenesis" to describe the process of generating or creating health. He points out that we know very little about why it is that some people remain healthy in spite of everything, and that this is a problem at least as deserving of research as the issue of why people become ill. He suggests that the key to positive health is "coherence" and that there are three components of coherence - comprehensibility (the world makes sense); manageability (the problems one faces can be handled by oneself or a trusted person or agency); and meaningfulness (people have a sense of purpose and meaning in life) (Antonovsky, 1984). Thus one important measure of positive health status may be coherence, though Antonovsky also cautions that a high level of coherence may also come from such undesirable situations as the SS or a Hells Angels gang.

Important concepts in the health category should thus include measures of positive health status, illness status and sick care services. Clearly, there are many ways to define and describe a healthy city. Our challenge is to try to find some clearly differentiated parameters that are generally accepted and that appear to contribute to the process of making the city healthy. We suggest that the following parameters are worthy of consideration:

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

For the sake of completeness, we include a brief discussion on this topic. Since the dimensions and indicators of a healthy city are the subject of a separate paper by Harri Vertio, we will not go into the topic in detail. However, since our ideas may be somewhat different from those that he puts forward, this may be a useful contribution to the ensuing discussion. One of the most difficult challenges facing us in any attempt to assess the health of a city is how to assess those “soft” qualitative aspects of the city to which we have referred several times. This is particularly important when planning for change, since the usual mechanisms of information gathering do not work, because they depend on “yesterday’s news”. Not only can standard information systems overwhelm us with the sheer bulk of undigested data, this information tells us little or nothing about human values, purposes and dreams. Yet these can be just as important, if not more so, in assessing the city’s health and marking the progress of the process of change. We need a variety of indicators to help us map out the city and its issues. In making our “map” we do not need data so much as we need intelligence. As with people, one can with experience diagnose a situation by means of unobtrusive measures that function as “flags” to the observer, indicating that something is wrong. These “flags” include first impressions, discussions with people on the street, “gossip”, as well as going to such unorthodox sources of information as the gossip columns and political columns of local newspapers, real estate agents and policemen. The gossip columns and political columns will give you a sense of the power structure straight away, if several weeks or months worth of newspapers are quickly scanned. To learn about a city from real estate agents, go to three different agents in different parts of town looking for a house and inquiring about good and bad neighbourhoods, schools, services, ethnic mix and so on. The agents know it all, but by asking three of them you get varied views of the same city. If you can get a policeman talking about the city, of course, it is all there and the same is true for public health nurses, salespeople and anyone else who moves around the city a lot.

While such a “quick and dirty” scan can be useful, it should of course be supplemented by other measures.

As we mentioned earlier, perhaps the final arbiters of what is a healthy
city are the people who live there. At its simplest, perhaps they will “vote with their feet” by staying in or moving to a city that they consider to be “healthy” while leaving or staying away from an “unhealthy” one. While this may appear overly simplistic, it does suggest that we should look at subjective indicators as much as we look at objective indicators. After all, subjective indicators are in effect an intuitive summing up of a great deal of information about the city, and when someone says they are happy living where they are, that is a pretty holistic assessment of the situation.

For example, the Kid’s Place programme in Seattle simply asked 9,000 children (over 6,700 of whom responded) what they thought of in connection with a series of adjectives such as “smell good,” “peaceful,” “helpful,” and so on. This gave a very comprehensive overview of the city from the perspective of the city’s children. There is no reason why a similar approach would not work with adults.

In addition, there is an extensive literature on social indicators, quality of life and life satisfaction, including both subjective and objective indicators. For example, the U.S. Department of Commerce (1985) publication Social Indicators III presents an extensive set of social indicators in the areas of population and the family; health and nutrition; housing and environment; transportation; public safety; education and training; work; social security and welfare; income and productivity; social participation; culture, leisure and use of time. The report points out that “good health, family life, and peace of mind are the only three components to be regarded as very important to a happy, satisfied life by over 90% of American respondents.” But while just over one-half of the respondents report being very satisfied with their health and peace of mind, it is in precisely those two areas (together with education) that the greatest discrepancy exists between the proportion of respondents who rank that component as very important to a happy, satisfied life and the proportion who express great dissatisfaction with that component.

While this report is at the national level, much the same data is available for metropolitan areas. Thus, The Rand-McNally Guide to the Best Places to Live in America (Boyer and Savageau, 1985) ranks 329 metropolitan areas in the categories of climate and terrain; housing; health care and environment; crime; transportation; education; the arts; recreation; and economics (And the winner is... Pittsburgh!) No doubt similar publications are available for other countries.

It is not our intention to suggest that cities be ranked against one another to determine which one is “healthiest” (though the U.S. Chamber of Com-
merce and the American Public Health Association ran a Health Conservation Contest that did just that between 1930 and 1943, frequently awarding Milwaukee top honors) (Leavett, 1982). However, such existing compilations may prove to be useful sources of data for cities, as well as suggesting some categories of indicators that may be of importance.

In addition to general social indicators, at least one U.S. publication has explicitly rated American communities on the basis of health (Shakman, 1979). He included issues such as air pollution, allergies, climate, altitude, topography and natural disasters, though rather than declaring a “winner,” he provides information and leaves it to the reader to evaluate the data on each community from their own point of view.

Another potentially useful indicator is the community prevention index currently being developed at the Prevention Research Centre, Rodale Press. They have already developed and published The Prevention Index (1984, 1985) which is an assessment of personal preventive behaviours. But recognising that this is only part of the story, they are also developing an index to assess the extent to which communities take “affirmative action steps for preventing disease and promoting health (by creating) a community environment for health” (Irvine, 1985).

While the number of possible indicators is seemingly endless, the challenge is to develop a set of indicators that are comprehensive, qualitative as well as quantitative, include both subjective and objective measures, are both analytic and holistic, and measure both the physical and social environment. Furthermore, the indicators should be simple, easy to collect (and preferably, already collected by an existing local, regional or national agency), easy to repeat at annual or bi-annual frequencies so as to measure trends, and preferably capable of being used for comparative purposes both nationally and internationally.

Bearing in mind the ten parameters of a healthy city already listed, indicators that might be used to measure some components of those parameters are shown in Table 1. This represents some preliminary thoughts on this topic, and is provided purely for illustrative purposes. As can be seen, the list is far from complete. For example, it does not include the qualitative indicators used in the Seattle “Kid's Place” survey.
Table 1 Possible Indicators of a Healthy City

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Possible Indicator</th>
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</thead>
<tbody>
<tr>
<td>1. Physical environment quality</td>
<td>• overall index</td>
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<tr>
<td>- pollution</td>
<td>• air pollution index</td>
</tr>
<tr>
<td>- urban design</td>
<td>• per cent green space</td>
</tr>
<tr>
<td>- housing</td>
<td>per cent national/international standards</td>
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<tr>
<td>2. Ecosystem sustainability viability</td>
<td>• local survival of sensitive species</td>
</tr>
<tr>
<td>- sustainability</td>
<td>• ratio of non-renewable energy imports to local renewable energy production</td>
</tr>
<tr>
<td>3. Community strength mutualty</td>
<td>• coherence (Antonovsky, 1979)</td>
</tr>
<tr>
<td>4. Participation &amp; Control</td>
<td>• municipal democracy index (Morris 1982)</td>
</tr>
<tr>
<td>5. Basic human needs</td>
<td>• POLI index</td>
</tr>
<tr>
<td>- food and water</td>
<td>• per cent hungry</td>
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<tr>
<td>- shelter</td>
<td>• per cent homeless</td>
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<tr>
<td>- income</td>
<td>• per cent below poverty line</td>
</tr>
<tr>
<td>- safety</td>
<td>• relative distribution of income</td>
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<tr>
<td>6. Access to variety access</td>
<td>• per cent employed (formal and informal economies)</td>
</tr>
<tr>
<td>- variety</td>
<td>• perceived and objective</td>
</tr>
<tr>
<td>- experiences</td>
<td>• scope and variety reported</td>
</tr>
<tr>
<td>- resources</td>
<td></td>
</tr>
<tr>
<td>- contact/interaction</td>
<td></td>
</tr>
<tr>
<td>7. Diverse city economy variety</td>
<td>• social ties, networks</td>
</tr>
<tr>
<td>- types of enterprise size of enterprises</td>
<td></td>
</tr>
<tr>
<td>- innovation</td>
<td></td>
</tr>
<tr>
<td>- level of wealth</td>
<td></td>
</tr>
<tr>
<td>- distribution of wealth</td>
<td></td>
</tr>
<tr>
<td>8. Sense of connectedness history</td>
<td>• stability</td>
</tr>
<tr>
<td>- culture</td>
<td>• adaptability</td>
</tr>
<tr>
<td>- other people</td>
<td></td>
</tr>
<tr>
<td>- nature/biology</td>
<td></td>
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<tr>
<td>9. City form fit /Lynch)</td>
<td></td>
</tr>
<tr>
<td>10. Optimum public health &amp; health care services</td>
<td>• extent of primary care, home care</td>
</tr>
<tr>
<td>- appropriateness</td>
<td>• per cent not covered by insurance</td>
</tr>
<tr>
<td>- accessibility</td>
<td>• non-smoking by-laws</td>
</tr>
<tr>
<td>- health protective legislation</td>
<td>• community prevention index (Irvine)</td>
</tr>
<tr>
<td>11. High Health Status</td>
<td></td>
</tr>
<tr>
<td>a) High positive health</td>
<td>• diet or exercise</td>
</tr>
<tr>
<td>- preventive behaviour</td>
<td>• happiness, satisfaction with health</td>
</tr>
<tr>
<td>- perceived well-being</td>
<td>• support perceived</td>
</tr>
<tr>
<td>- social well-being</td>
<td>• coherence, self-esteem</td>
</tr>
<tr>
<td>- overall</td>
<td></td>
</tr>
<tr>
<td>b) low negative health (disease)</td>
<td>• per cent smoking</td>
</tr>
<tr>
<td>- risk behaviour</td>
<td>• life events</td>
</tr>
<tr>
<td>- stress</td>
<td>• days of reported disability</td>
</tr>
<tr>
<td>- morbidity</td>
<td>• life expectancy at age 40</td>
</tr>
<tr>
<td>- mortality</td>
<td></td>
</tr>
</tbody>
</table>
How Do We Get a Healthy City

There is no one single, let alone correct, approach to becoming a healthy city. The concept of a healthy city will vary from city to city, and even within the city from group to group and even from person to person. What does seem clear is that there must be a willingness on the part of some key figures within the city’s power structure (formal or informal) to start asking some important questions:

- What do we mean by a healthy city?
- What is our vision of a healthy city?
- How can our city become a healthy city?

The answers to these questions will be different in each city, but the important aspect is to get the process of discussion going. This requires not just the leadership of a few people but a widespread consultation with all segments of the community. That consultation must seek to establish the city’s values and goals, create opportunities for non-confrontational dialogue, develop a vision of the desired future and develop tactics and strategies for achieving that vision. One might think of it as a family therapy for cities! Some of those strategies may involve:

- Encouraging and building social networks
- Encouraging participation in democratic processes
- Decentralization of decision-making
- Building competence among the population, enhancing coping skills and self-esteem.

To a certain extent, some cities may find it easier to be healthy than others. A number of factors are already fixed, such as location, history (though this may be perceived in different ways by different people at different times) and demography (though this may be changed over a period of a few years by immigration or emigration). Beyond the relatively fixed determinants - place, time, persons - most of the other parameters of a healthy city are open to manipulation and change. Sometimes that manipulation and change comes from external forces, be they economic or political, and to a greater
or lesser extent these may be beyond the ability of the city to affect. However, many of them are open to change, given the right mixture of vision, community and political will, and skill. Any attempt by cities to develop a "healthy city strategy" requires commitment, involvement and participation at three levels:

1. Commitment of municipal (and where appropriate, regional or national) governments.
2. Involvement of a broad-based coalition/network of community agencies, organizations and groups.

The importance of community involvement cannot be overstated. Projects such as Kid's Place in Seattle, as discussed earlier, have involved not merely the 6,700 children, but a wide range of community business, corporations, agencies and organizations working together with parents, teachers, and, of course, the kids.

But can this really work? We believe so. John McKnight has described one project where community involvement led to a wide range of community activities that strengthened and supported that community, ultimately leading to the development of urban greenhouses to provide fresh food, new jobs, energy conservation, and recreational centres for senior citizens (McKnight, 1977).

His example also serves to illustrate other important points - projects that improve health and well-being may have, seemingly, little to do with health, at least as conventionally thought of. Yet community gardens in the Bronx, a cultural festival in Glasgow, a steam plant in Minneapolis, the threat of freeways in Toronto, a centre for independent living, for the disabled in Berkeley and waterfront development in Boston have all proved to be means to an end - providing a new focus for community action, and by strengthening the community, enhancing its health and the health of its members. In Community Dreams ("a collection of small-scale, local level ideas which can be set into motion in most communities by yourself and the people you know") Bill Berkowitz (1984) describes literally hundreds of examples of community projects that focus on "altering the mindset with which to see our communities" and which infer that "we are most likely to find power and control, and gladness and joy, closest to where we live" (p. 235). His book is a pot-pourri of ideas for a healthy city.

More recently, McKnight and Kretzmann (1984) have suggested that we
need "an organizing approach aimed at building community through the restoration of localized political economies." They suggest that we should try to enhance neighbourhood empowerment and self-reliance, using the neighbourhood as a focus for production and consumption through local community development corporations; the transfer of resources and authority to the neighbourhood, perhaps through a return of a small portion of local taxes directly to neighbourhood governments; and the re-establishment of business in the community.

Another possible strategy is an "anticipatory democracy" exercise. Such projects have been carried out successfully at the state level in a number of U.S. states (Marien, 1985, 110), as well as in a few cities (Marien, 1984, 129). In this process, a variety of plausible alternative future scenarios for the city are developed, widely disseminated and discussed in the community, then the community votes on which of the plausible scenarios is preferable. This can be a useful technique for establishing the city's values and goals as well as for securing community interest in and commitment to change. In short, there is no one way to get a healthy city. It merely takes energy, creativity, leadership and commitment! What the healthy city concept offers, importantly, is an overarching conceptual framework within which all these strategies can be located and to which that energy can be directed.
A Vision of the Healthy City

There is a need to re-articulate today, 113 years later, the vision of Hygeia: *A City of Health* (Ward-Richardson, 1875). Time and space do not permit us to do so in this paper, and even if they did, perhaps we would not and should not. After all, each city must develop its own vision.

Nonetheless, as we have stated earlier, the concept of a healthy city is not value-free. Our values are clearly reflected in our choices of parameters and indicators, though we have sought to develop parameters that reflect values which we believe (and hope) are widely held.

For us, a healthy city is one that is engaged in a process of creating, expanding and improving those physical and social environments and community resources which enable people to mutually support each other in performing all the functions of life and developing to their maximum potential. A healthy city would have a clean, safe, high quality physical environment and would operate within its ecosystem. The basic human needs of the city’s people (food, water, shelter, income, safety, work) would be met. The community would be strong, mutually supportive and non-exploitative, participating actively in community governance. Individuals would have access to a wide variety of experiences and resources with the possibility of multiple contacts and interactions with other people. The city would have a vital, diverse economy, and its people would have a strong sense of connectedness with their biological and cultural heritage, with other groups and with individuals within the city. The city’s form would be compatible with and support all of these circumstances, and there would be an optimum level of public health and appropriate sick care services accessible to all.

Such a city, were it to exist, would, we believe, have a high health status. But far more than that, it would be a healthy city in every sense of that term, a condition that must surely be the goal of all cities.
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the Concept and Principles. Copenhagen, WHO Europe.
The concepts of health and health promotion are crucial ones in the context of the healthy city project. We do not attempt here a definition of health or health promotion, but seek to lay out some of the concepts that we find useful and pertinent in understanding health.

Health

In his article *Towards an Epidemiology of Health*, Robert Anderson (1985) discusses six concepts of health. Three of these are what he terms “lay concepts”:

- The absence of illness
- A functional capacity, an ability to cope
- A positive condition of physical and mental well-being or equilibrium, including:
  - physical fitness and energy
  - social involvement and satisfaction with life
  - contentment, comfort, confidence and creativity.

His other three concepts are from the academic literature, and he suggests they are:

- Product (negative, as in the absence of disease or symptoms, or positive, as in complete physical, mental and social well-being).
- Potential - “Capacity or ability to achieve preferred goals or perform certain functions,” or health as a means to an end.
- Process - growth and development, an everchanging dynamic process.
Adopting what he calls an ecological model, Anderson then defines health as:

*Health is a state of adjustment, of adaptation or 'fit' between person and environment .... both internal and external to the individual.*

He suggests that this definition is dynamic, positive, relative and holistic, and that there are two important aspects to his definition:

1. The ability to cope with external changes and to maintain stability via:
   - Coping skills and accommodation
   - The intervention of mediating structures
   - Change in the environment
2. The ability to realize personal goals and aspirations via:
   - Stimulation
   - Supportive/facilitative social environment
   - The meeting of basic needs

He suggests that suitable measures of well-being would include social functioning, well-being, quality of life, life satisfaction or happiness. Noack (1985) builds upon Anderson’s work, also taking a systems view, and seeing humans as part of an interactive hierarchy of interdependent units from molecules to ecosystems. Based upon this concept, he suggests that health is:

*A process maintaining a state of dynamic balance within any given sub-system*

and

*A dynamic characteristic of the individual, social group or socioecological system.*

Health thus depends upon the degree of “fit” between the individual and their environment, as well as their potential to control or cope with “non-fit”. Noack then defines two key dimensions of health, quite similar to those of Anderson. They are:

1. Health Stability (Balance) - “The maintenance of physical, psychologi-
2. Health Potential - "The group's or individual's capacity to cope with environmental and psycho-social demands or stresses."

He further suggests that both health balance and health potential have individual and community components.

In the dimensions of health balance (within and between people and their environment) individual balance is defined in terms of homeostasis, the absence of illness and the presence of a sense of well-being. Community health balance is defined in terms of the experiences and activities of people, and the interactions among them. Indicators would include both subjective, epidemiological and quality of life indicators.

In the dimension of health potential (the capacity required or activities undertaken to prevent health imbalance, to maintain health balance or to restore it) the individual component is expressed in terms of physical health status, coping potential, lifestyle patterns and self-help resources. Community health potential is expressed in such broad social policy issues as employment, Social Security, housing, work, safety, nutrition, health policy and budget, health services, and social, cultural and recreational services. Table A-1 summarizes health resources and health risks that equate with the various subsystems of the human system's hierarchy.

Aaron Antonovsky (1979) has written about the puzzling phenomenon of "salutogenesis" - a term he has invented to indicate that just as there is an etiology for disease (pathogenesis) so there is for health. In fact, given the myriad forces and circumstances that would tend to push us into illness, Antonovsky maintains that the real puzzle is why we remain healthy at all. He has concluded that the key to good health is a sense of "coherence":

A global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that one's internal and external environments are predictable, and that there is a high probability that things will work out as well as can reasonably be expected.

He suggests (Antonovsky, 1984) that there are three components to coherence:

1. Comprehensibility - "The extent to which individuals perceive the stimuli that confront them as making cognitive sense."
<table>
<thead>
<tr>
<th>Sub-system</th>
<th>Health resources</th>
<th>Health risks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Person</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biological system suscepribility</td>
<td>Good nutritional status, immunological resistance</td>
<td>Malnutrition, to infectious disease</td>
</tr>
<tr>
<td>Psychological system knowledge</td>
<td>Ego identity, emotional stability, positive health attitudes, adequate knowledge</td>
<td>Negative health attitudes and inappropriate health</td>
</tr>
<tr>
<td>Whole person</td>
<td>Overall well-being, physical fitness</td>
<td>General vulnerability</td>
</tr>
<tr>
<td><strong>2. Person-environment interaction</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health practices</td>
<td>Healthful personal life style</td>
<td>Smoking, excessive drinking, overeating, lack of exercise</td>
</tr>
<tr>
<td>Work</td>
<td>Fulfilling and not stressful work</td>
<td>Overwork, stressful and</td>
</tr>
<tr>
<td>dangerous work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreation and</td>
<td>Sufficient sleep and recreation</td>
<td>Insufficient recreation sleep</td>
</tr>
<tr>
<td><strong>3. Social, cultural and economic environment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health culture norms, and behaviour patterns unhealthy life habits Social network</td>
<td>Positive health-related values, values and beliefs, Social integration, social ties</td>
<td>Unstable health-related values and beliefs, Social isolation, lack of social support</td>
</tr>
<tr>
<td>Work organization and job system Health services schools, social institutions</td>
<td>Availability of work, positive work climate, job satisfaction Adequate and accessible health care and social services, health education programmes</td>
<td>Unemployment, work stress, job dissatisfaction Lack or inaccessibility of health and social services, and of health education</td>
</tr>
<tr>
<td>Socioeconomic conditions</td>
<td>Adequate material resources, income, social security</td>
<td>Lack or inequitable distribution of resources</td>
</tr>
<tr>
<td><strong>4. Natural and technical environment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical resources - Micro-environment water safe transportation - Macro-environment</td>
<td>Adequate food supply, safe consumer goods and technical facilities Adequate housing and communication crowding dangerous traffic waste disposal Healthy climate, preservation of nature</td>
<td>Insufficient food supply, unhealthy food, easy access to cigarettes, alcohol, drugs, unsafe technical facilities Inadequate housing, safe conditions Environmental pollution exploitation of nature</td>
</tr>
</tbody>
</table>

1. Sources: See text.
2. Entries are examples and are not meant to represent an exhaustive list. Source: Noack (1985)
2. Manageability - "The extent to which people perceive they have resources at their disposal adequate to meet the demands posed by stimuli."

3. Meaningfulness - "Life makes sense emotionally, people care, at least some of the problems and demands posed by living are worth investing energy in, are worthy of commitment and engagement."

George Albee has been interested in the primary prevention of psychopathology. He suggests (1984) that there are three things that predispose to psychopathology:

- Organic factors
- Stress
- Exploitation

While there are four factors that tend to prevent psychopathology:

- Competence
- Coping Skills
- Self-system
- Mutual support

These concepts of health may perhaps be applied to the city as a whole, as well as to individuals. Thus we might ask of a city:

- Is it able to cope with external changes and maintain stability?
- Is it able to realize its goals and aspirations?
- What is the community health balance?
- What is the community health potential?
- Does the city believe that its situation is comprehensible?
- Does it believe that its problems are manageable?
- Is the city competent?
- Is the city able to cope?
- Does the city have a high self-esteem (positive self-image)?
- Is the city mutually supportive both internally and in its relationship to other cities nationally and internationally, and regional and national governments?
Obviously, there are some interesting challenges posed by these questions, and a fruitful area of research may be opened up.

**Health Promotion**

Noack suggests that health promotion "comprises all efforts directed towards the protection, maintenance and improvement of health potential, and hence of health balance." He suggests that there is both an individual approach and a community approach to health promotion.

The individual approach seeks to improve health balance through self-care and medical treatment, while strengthening the individual's health potential through immunization, good nutrition, education and counselling, exercise, and social support.

The community approach aims at improving the health potential of the community as a whole through multi-sectoral and holistic political, legislative and administrative actions. The community's health balance is sustained through the maintenance or establishment of health services, healthy working conditions, information networks and self-help facilities. These two approaches (individual and community) are shown in Table A-2 in relation to the subsystems of the human system's hierarchy.

Noack suggests that:

> In developed countries, health promotion should address the negative consequences of health of industrialization, high technology, the bureaucratic organization of many aspects of social life and the distribution of affluence.

The European region of WHO considers that:

> Health promotion is the process of enabling individuals and communities to increase control over the determinants of health and thereby improve their health. It has come to represent a unifying concept for those who recognize the basic need for change in both the ways and conditions of living in order to promote health. Health promotion represents a mediating strategy between people and their environments, combining personal choice with social responsibility for health to create a healthier future.

> Health promotion as a principle involves the whole population in the
Table A-2 Overview of Concepts of Health Promotion\(^1\)

<table>
<thead>
<tr>
<th>Sub-system</th>
<th>Individual Approach(^2)</th>
<th>Health Promotion</th>
<th>Community Approach(^3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Person</td>
<td>Adequate nutrition,</td>
<td>Good nutritional status,</td>
<td></td>
</tr>
<tr>
<td>Biological system</td>
<td>immunization,</td>
<td>immunological resistance</td>
<td></td>
</tr>
<tr>
<td>Psychological system</td>
<td>Health information, health</td>
<td>Ego identity, adequate health</td>
<td></td>
</tr>
<tr>
<td></td>
<td>education and counselling</td>
<td>attitudes and health knowledge,</td>
<td></td>
</tr>
<tr>
<td>Whole Person</td>
<td>Physical exercise,</td>
<td>Emotional stability</td>
<td></td>
</tr>
<tr>
<td></td>
<td>engagement in social activities</td>
<td>Overall well-being, physical fitness</td>
<td></td>
</tr>
<tr>
<td>2 Person-environment interaction</td>
<td></td>
<td>Healthful life style</td>
<td></td>
</tr>
<tr>
<td>Health practice</td>
<td></td>
<td>Fulfilling and not stressful work</td>
<td></td>
</tr>
<tr>
<td>Work</td>
<td></td>
<td>Sufficient sleep and recreation</td>
<td></td>
</tr>
<tr>
<td>Recreation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Social, cultural and economic environment</td>
<td>Positive health beliefs,</td>
<td>Health propaganda, mass</td>
<td></td>
</tr>
<tr>
<td>Health culture</td>
<td>health knowledge and</td>
<td>information on health risks and health resources</td>
<td></td>
</tr>
<tr>
<td>Social network</td>
<td>healthful behaviour patterns</td>
<td>Support of self-help and social networks</td>
<td></td>
</tr>
<tr>
<td>Work organisation</td>
<td>Social integration and</td>
<td>Employment policy, improvement</td>
<td></td>
</tr>
<tr>
<td>and job system</td>
<td>social support</td>
<td>of work safety, job enrichment</td>
<td></td>
</tr>
<tr>
<td>Health services</td>
<td>Appropriate use of services,</td>
<td>Health and education policy, social planning</td>
<td></td>
</tr>
<tr>
<td>Schools and social institutions</td>
<td>participation in health-related activities</td>
<td>Economic and social policy</td>
<td></td>
</tr>
<tr>
<td>Socioeconomic conditions</td>
<td>Participation in health policy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Natural and technical environment</td>
<td>Avoidance of unhealthy food and unsafe products</td>
<td>Policy and legislation related to production and distribution of food, tobacco, alcohol, drug-consumer goods</td>
<td></td>
</tr>
<tr>
<td>Physical resources</td>
<td>Awareness of need for adequate housing, safe roads, participation in environmental improvement</td>
<td>Urban planning, provision of housing, safe water, waste disposal</td>
<td></td>
</tr>
<tr>
<td>Microenvironment</td>
<td>Awareness of damage to environment, participation in environmental protection</td>
<td>Policy and legislation related to pollution control and preservation of nature</td>
<td></td>
</tr>
<tr>
<td>Macro-environment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Sources: see text.
2. Entries are examples and are not meant to represent an exhaustive list. Source: Noack (1985).
context of their everyday life. Central to this is effective public participation in the definition of problems, decision-making and action taken to change and improve the determinants of health. For this reason, health promotion involves close co-operation between all sectors of society, including government, to ensure that the 'total environment' is conducive to health.

More specifically, health promotion represents a new strategy within the health and social fields which can be seen on the one hand as a political strategy, directed towards policy - and on the other hand as an enabling approach to health, directed at lifestyles. Thus health promotion is not only concerned with enabling the development of life skills and individual competence to influence factors in determining health, but it is also concerned with environmental intervention to reinforce factors supporting healthy lifestyles and to change those factors preventing or prohibiting healthy lifestyles. This strategy has been summarized by the phrase 'to make healthy choices the easy choices.'

Health promotion has been summarized through the following general principles of approach: health promotion works with people not on them; it starts and ends with the local community; it is directed to the underlying as well as immediate causes of health; it balances concern with the individual and the environment; it emphasizes the positive dimensions of health; and concerns and should involve all sectors of society and the environment (Nutbeam, 1985).
References


