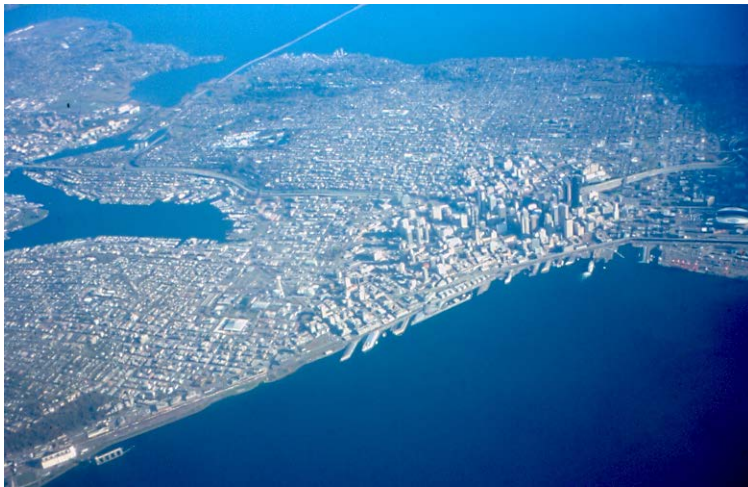


Sustainable Cities:

An Oxymoron?



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Overview

There is a lot of talk these days about ‘sustainability.’ Discussion focuses mainly on “sustainable development” and “sustainable cities” – and occasionally on the

sustainable values and practices leading to other options – but what exactly does it mean to be sustainable? For the purposes of the discussion in this paper, a sustainable situation is one that can be continued *into the indefinite* future, for as far along the time horizon as one can imagine. The most obvious example of such a sustainable situation is the profusion of biological life, proceeding now in ever-greater complexity and diversity for some 3,900 million years (Margulis & Sagan, 1995, p. 56). James Lovelock estimates that the Sun’s life expectancy gives it another 3,000 million years before it expires, but that within the next 100 million years it will grow so large and hot that planet Earth will no longer be able to maintain the comfortable, homeostatic conditions necessary for biological, carbon-based life (1982, pp. 561-63). Can we set our sustainability sights *that* far into the indefinite future? Can we begin envisioning and making preparations, in the interest of sustainability, for creating viable socioeconomic structures and settlement patterns that can sustain human beings on Earth for another 100 million years?

It is my intention in this paper to propose and guide the reader into considering that the settlement pattern called ‘the city’ is not the best arrangement to meet these criteria, that the city cannot be continued into the indefinite future. This is so because the typical pattern of the city deviates from and is an antithesis to the underlying patterns that support it – its biological and ecological substructures. I want to attempt to show that a settlement that reaches the scale of ‘city’ is already in an eco-socio-economic crisis situation; there is a debilitating over-population problem associated with the city that is covered up and made bearable by technical fixes and philosophical reasoning, but which influences its inhabitants nonetheless.

Before going any further, let me define what I mean by the term ‘city:’

Human settlements come in a variety of sizes: camp, hamlet, village, town, city, metropolis, and megalopolis. There is no clear-cut demarcation between these classifications as each settlement is unique. Each of these categories, however, has similar common attributes of geographic, demographic, and socioeconomic character useful for making descriptive generalizations, and each can be classified largely according to *function*.

For example, some ‘village’ settlements “may have populations of up to 5000 without possessing the attributes of a town” (Hudson, 1970, p. 8); yet all villages share a similar socio-economic function centered upon an agrarian base. The village could be considered an anthropomorphological outgrowth of a particular ecosystem characterized by its essential integration within a specific local ecology. Its layout will flow with the lay of the land and its built environment will be continually evolving through time. The village also has the unwavering social dynamic that everyone is known, maybe not intimately, but all faces can be recognized. There are no strangers and there is no alienation. The people feel a sense of belonging and consider themselves

to be an integral part of the natural world. “Most villagers have a love of their native land...an intense attachment to their ancestral soil, a personal bond to the land, a reverence for nature and toward habitat and ancestral ways.”¹

A town is more than just an overgrown village; there is a distinctly different socioeconomic function and climate as a town is a structural response to increased population density, and will usually begin as a market and commerce center for a group of villages. “In a town the man-made scene predominates over the natural much more than in a village” (Hudson, p. 9), giving rise to a more diversified economy but also beginning a sense of abstraction from its local ecology. This sense of abstraction, a direct consequence of increased concentration of population, may be questioned as the pivotal “tipping point” (Gladwell, 2000, p. 260) for judging whether a settlement or society is organized sustainably; for this abstraction ultimately separates the human condition from its biological and ecological substructures, and if carried to its extreme will lead to the illusory and self-negating attitude of feeling alienated and separated from Nature.

A town may contain up to 50,000 persons, more or less, without assuming the function of a city. At this scale the settlement becomes so large that not everybody can be known and factions will inevitably develop into an ‘us and anonymous them’ mentality concerning how to allocate resources and for which economic purpose; more and more people are laying claim to an ever-dwindling “commons.”² Since the actors in this drama are no longer engaged personally, directly, but interact through an ever-growing body of recondite codified laws, personal responsibility for the health of the commons is abdicated and individuals are freed to pursue their own personal gains, even at expense to the health of the whole.

“Broadly speaking, a city may be regarded purely as a leading town, i.e. one which has outstripped its local or regional rivals...It exemplifies to a greater extent than a town the dominant elements of the cultural realm in which it lies” (Hudson, p. 10). This is a bit simplified but it gets to the essence of the nature of the city: at its core it is a human settlement that has expanded into a centralized regional power structure through success in economic competition. As it continues to expand, its economic function ultimately extends into managing and expropriating the resources of an entire region. As a dominant centralized power structure that won its position through economic – and historically, military – competition, the city must be organized hierarchically and must continue to adopt a rigid posture of competitive readiness,

¹ Robert Redfield from his 1956 book *Peasant Society and Culture*, as quoted in Critchfield, 1983, p.342

² This is a reference to Garret Hardin’s 1968 work *A Tragedy of the Commons*, where he explicates the phenomenon that what might be considered logically beneficial for the individual becomes extremely detrimental for the group. The writing is a call for personal responsibility when dealing with collective resources.

which is reflected in the character of its built environment and social climate. Morphologically differing from a “leading town,” the city has the distinction of purposely concentrating a densely packed urban core that assumes a vertical dimension, symbolically removing the top of the hierarchy from terrestrial contact and constraints. The city unavoidably will become the repository of unchecked population growth in the region, expanding into crowded metropolis form while retaining its highly centralized pattern, both physically and socially. The “ecological footprint” of a city extends far beyond its borders. For example, the city of Vancouver, B.C. “requires an area 19 times larger than its home territory” (Wakernagel & Rees, 1996, p. 86) to support its consumption. What are the social and ecological implications of such a huge concentration of humans hierarchically organized to outperform their rivals?

At city-scale, any sense of integration between the settlement and its local ecology is completely lost. The city is a brute imposition upon a once living landscape, generally burying all traces of life beneath an abstract grid pattern of streets, buildings, and blocks, resembling more the squared, ordered layout of an electronic printed circuit board or schematic than any natural pattern. In the city, Nature is completely, intentionally controlled, harnessed, and replaced by a rigid, artificial built environment; the people living and working in its core could conceivably live out their entire lives without ever touching grass. The sense of abstraction begun at ‘town’ scale is now complete; the city dweller can speak convincingly about being ‘separated from Nature.’ The fundamental structural form of the city resembles more a manufactured, energy-dissipating machine than a vibrant, evolving living system. Since all mechanical systems are prone to entropy, the thermodynamics of the city require huge inputs of high-grade energy with enormous resulting heat loss. How could this structural pattern be sustainable, that is, continued into the indefinite future? What becomes of human nature when people must live in such mechanistic contraptions?

It is the thesis of this paper that in order to be truly sustainable, to have the vision set for another 100 million years (or we may as well say into perpetuity), human settlement patterns must be modeled upon natural, self-regenerating, self-organizing, autopoietic, *living systems*, with the ecologically embedded ‘village’ as the appropriate scale from which to begin design work. Settling into this pattern, human beings will have the possibility to be around long enough to witness the climax of biological evolution on planet Earth.

The City-Civilization-Global System Isomorphic Continuity

There is a growing conviction among informed observers³ that the predominant, so-called “global system” is untenable, unable to continue on its present course much longer. This is so primarily because this system rapidly depletes and undermines the resource base upon which it depends. This resource base is not just the raw material of natural resources – minerals, soils, forests, fisheries, genetic diversity, ecosystem services, etc. – but also cultural resources – the strength, stability, and long-term viability of intact, healthy communities, peoples living in place for a long time, developing cultures unique to that place. The so-called global system ultimately depends on both these kinds of resources to sustain itself.

Yet, this system has no inherent negative feedback to correct or control its self-destructive over-consumption of these resources. Indeed, one of the structural characteristics that has defined its present morphology is a built-in mechanism for

³ These observers not only include studied intellectuals, scientists, and NGO’s, but also increasing numbers of national governments and international organizations, not the least of which is the United Nations. This growing awareness has led to “international discussions leading to adoption of Agenda 21 at Rio de Janeiro in 1992, The International Conference on population and Development in Cairo in 1994, The Beijing Declaration in 1995, The Habitat Declaration in 1996, and the Kyoto Protocol in 1997.” (from the Ecovillage Network of the Americas web page at www.gaia.org/secretariats/ena/)

voraciously *exploiting* its resource base. Not only that, there are actually ingrained, overlapping *positive* feedback loops to ensure that the system exploits its resource base at an *exponentially increasing rate*. Continued, uninterrupted, accelerating growth is an inherent structural characteristic and institutionalized policy of the global system. Without continued growth – in population, production, extraction, consumption, investment, technological innovation, etc. -- the system will collapse in upon itself, internally; it will no longer have a reason for being. And in a materially closed system like the Earth, exponential growth soon runs into harsh, unforgiving limits – meaning that unless this global system can reverse its direction, its ultimate destiny is to collapse from exhaustion, externally. Either way, the current so-called global system is destined for collapse and replacement.⁴

This system that has recently become globalized is not a new creation; it is the inevitable culmination and outcome of the ten thousand year march of civilization. The system *is* civilization, and civilization itself is not sustainable.⁵ The word ‘civilization’ is derived from the Latin root *civitas*, referring to ‘city.’ Civilization is essentially the culture of cities – city and especially urban lifestyles. It will be illuminating to trace the rise of civilization into its present global form, and from there to propose that once the structural pattern of the city became established and ubiquitous, the eventual appearance of the highly unsustainable ‘global system’ was virtually ensured, because these are fractal images of one another. Both are abstract, disconnected from Nature, rationally conceptualized, highly centralized, hierarchical power structures designed to colonize and exploit natural living systems for the sole benefit of a few. The city arose, not as a thoughtful, sophisticated cultural achievement, but simply because human population pressure *forced* people to exist in ever more densely packed living situations; civilization was not a matter of choice – it was the conceptual, technically and philosophically *adaptive* response to severe, debilitating over-crowding.⁶

⁴ The Meadows’, et al, 1992, from which this systems perspective was gleaned, state clearly on p.208, “The longer the world economy takes to reduce its throughputs and move toward sustainability, the lower the population and material standard that will ultimately be supportable. At some point delay means collapse...There is no time to wait for unmistakable signals, recognizable by everyone everywhere, that force an end to growth. Given the delays in the system, by the time those signals appear, it will be too late to avoid collapse.” Since, as I am writing this, 8 years later, a president has been chosen who declares, “we do not have enough evidence yet to make decisions about global warming,” I must conclude we are heading for collapse.

⁵ At least not civilization as we know it. I know this statement may sound extreme because many people are fond of civilization and take it as a given. I am basing my conclusion upon a thorough reading of Schmookler’s *Parable of the Tribes: The Problem of Power in Social Evolution*. This whole report is using material and ideas from his book. If you read this scholarly work you may come away with the same conclusion.

⁶ This may also be controversial. I am reversing the usual assumption that first there were advances in technology, then people came along to benefit from them. I am proposing that first there was population pressure then there were technical advances to deal with it. This is important for the coming argument. I am basing this proposition on the observation that people are generally conservative, not wanting too much

On the plains of ancient Mesopotamia, hunter-gatherer bands increased in size until the game was depleted, necessitating the move to sedentary, horticultural and pastoral farming settlements where a steady food supply could be assured by the arduous work of tilling the land and domesticating animals. Over thousands of years, these horticultural, village-scale settlements nestled and settled into their various biogeographical localities, intentionally, creatively achieving states of dynamic equilibrium with and harmonious integration into their supporting ecologies. Richard Critchfield, the expert on villages, confirms:

Archaeological digs in southwestern Iran show the first villages on the eastern edge of the Mesopotamian plain were extremely stable social units, surviving pretty much unchanged for the span of four thousand years, about 8000 to 4000 B.C. (1983, p. 210).

But on the plains of Mesopotamia and elsewhere, human beings continued to breed and multiply, pressing forward to a population crisis requiring advances in technology to adapt. The people initially spread out (decentralizing) so as not to disrupt ecological balance but then eventually were compelled to intensify into pockets of population pressure large enough to be considered towns, then cities. Critchfield continues:

The invention of irrigation...quickly shattered this stability [of the village societies] leading, in a relatively short time, to the settlement of the land between the Tigris and the Euphrates. Or, as the Bible quite accurately tells it, "And as men migrated in the east, they found a plain in the land of Shinar and settled there." And history began. Irrigation, soon followed by the introduction of the plow, led to a surplus food supply, the emergence of towns and cities, a rapid expansion of population and...an actual decline in the absolute number of villages. For intercity warfare began almost along with the first Mesopotamian temple communities, as did the construction of defensive walls, the abandonment of small outlying villages, migration to ever-larger urban centers and the rise of soldiers,

change unless it is absolutely necessary. Most writers take the tone that the people willingly and enthusiastically plunged head on into civilization as if they knew where they were going. I don't think the first cities were pleasant places to live and I don't think the residents were there by choice because they believed they were making qualitative improvements in their lives. Or as Schmookler says, "Civilized peoples have been compelled to live in societies organized for the maximization of competitive power; there is no reason to expect the design to correspond with the needs of human beings. People become the servants of their evolving systems rather than civilized society being the instrument of its members." (p.29)

organized armies, generals and, at last, kings and sovereign states (1983, p. 211).

The rest is quite literally history. Once the citifying momentum kicked-in, spurred by population pressure, it could not be contained until it reached global proportions, or, “once mankind had begun the process of developing civilization, the *overall direction* of its evolution was inevitable” (Schmookler, 1984, p. 26). Here again we encounter the “tipping point,” that subtle line of population density that, once crossed, rapidly shoots toward chaos. There was an “upwards of tenfold increase in [the] central Euphrates floodplain within two centuries” (Taylor, 1999, p. 67). I am not exaggerating when I say that the people would have been better off, if they could, remaining at village-scale; for, as Schmookler theorizes:

As people stepped across the threshold into civilization, they inadvertently stepped into a chaos that had never before existed. The relations among societies were uncontrolled and virtually uncontrollable. Such an ungoverned system imposes unchosen necessities: civilized people were compelled to enter a struggle for power...The anarchy among civilized societies meant that the play of power in the system was uncontrollable. In an anarchic situation like that, no one can choose that the struggle for power shall cease. But there is one more element in the picture: *no one is free to choose peace, but anyone can impose upon all the necessity for power...*The evolution of civilization is therefore marked by a perpetual (though sometimes interrupted) escalation in the level of power a society must possess to survive intersocietal competition. (pp. 20,21,24).

And so the point of this section: cities, civilization, and the global system constitute fractal images of each other – there is an isomorphic continuity between them. Civilization is not sustainable because once this cultural pattern is initiated it will be only a matter of time before the power-consolidating necessity of survivable societies reaches the proportion and scale of the highly unsustainable global system, climactically resulting in collapse. When culture is created at the scale of ‘city,’ previously harmonious, balanced social and ecological conditions are altered dramatically; a major dysfunctional disturbance takes place in the relationships between human beings and between human beings and their environment that cannot be continued indefinitely.

On the other hand, villages last: “Of all humanity’s social institutions, villages have the most staying power” (Critchfield, 1983, p.212). The majority of the world’s population still lives, or would prefer to live, in these kinds of settlements today. There is something about this structural pattern that offers the best chance for continuation into the indefinite future. For that reason, “Village Design,” or Ekistics for the 21st century,⁷ will become a productive, worthwhile, and increasingly relevant field of intellectual inquiry.

The City vs. the Village: A Social Critique

Horticultural, village-scale settlements are generally egalitarian in nature. All of the people are engaged in the daily and seasonal affairs of sustaining and enhancing quality of life. A diverse and specialized economy may emerge depending on settlement size – and there may be very real social distinctions – but no individual can hoard wealth or power at the *expense* of other members. This is so because the village-scale settlement is family-, clan-, and tribe-based, and people tend “to treat and think of others in terms of kin relationships” (Mignon & Boxberger, 1990, p. 128). Everyone is known; everyone has an ancestry; everyone is connected to everybody else and to all the other interwoven life forms in those symbiotic kinds of relationships necessary to sustain an ecological collective whole. It is just not profitable to set oneself apart, to deem oneself more important or superior, or to covet an inequitable share of the collective wealth, because everyone is accountable and accessible to one another. Everybody will be looking into your eyes someday so those eyes better reflect a semblance of honesty and goodwill. Certain individuals may possess organizational skills or oratory talents that enable them to be an administrator or spokesperson for the group, as decided by the group, but those positions are no more holistically exalted than the field worker or the

⁷ “Ekistics” is a title coined in 1977 by Greek architect/planner Constantinos Doxiadis to describe a scientific, multi-disciplinary approach to human settlements.

artist or the grandmother, because each is an essential component-person in the healthy functioning of the whole. In the horticultural, village-scale settlement size, members share relationships of symbiotic attunement and cross-generational identification, and are fundamentally, recognizably interdependent with one another so that individual hubris is met with disassociation or banishment; individual hubris, like deeming oneself more important or superior, is not healthy for the long-term, sustainable maintenance of the group. Capable members will be given authority but their mandate is to serve the needs of the whole.⁸

Could the brain or heart be considered more important or superior than the kidneys or intestines in the healthy functioning of a body? Could any of the individual cells in the heart or brain be considered qualitatively superior to any of the other cells? Could the beetle or fir be considered more important or superior than the moss or salmon in the healthy functioning of a temperate rainforest ecosystem? No, every constituent has an equally vital part to play in sustainable bio-ecological systems, and if we are to design sustainable *human* systems we must model this wisdom of Nature and create a framework for relatively egalitarian socioeconomic structures that limit the rewards of avaricious behavior.

Consider the social systems of the Northwest Coast tribes. These people lived in a complex and intricate village society immersed in a rich resource base that enabled them to enjoy a comfortable, high quality life. The abundance of resources also allowed for relatively dense population concentrations resulting in ritualized warfare and differences in status and wealth:

There has been considerable disagreement as to whether the Northwest Coast societies were “class” societies or “rank” societies. Indeed some groups, such as the Nuu-chah-nulth and Kwakiutl, carried ranking to an extreme. But for most groups the distinctions between individuals were not so clearly defined. (Mignon and Boxberger, p.463)

⁸ Although somewhat romanticized and idealized to spur the imagination, these assertions are based on objective anthropological field-work. Once again drawing on Critchfield, in the final section of his book *Villages*, he lists some village characteristics. Among them “...fear of neighbors’ censure or “what people will say” is a much more potent force in holding a village together than government fiat or fear of God; there is some degree of mutual cooperation; it is understood that each villager has a part to play in an organic whole; there is little or no difference in the outward aspect of the houses and clothing of the rich and poor; an unexpected characteristic of most villages is that the richer families tend to work harder and stay a bit aloof; social life revolves around births, marriages and deaths, the local school and the village church, temple, or mosque; there may be envy of successful neighbors, who tend to conceal gains if possible; above all, there is a restraint on individual self-seeking in favor of family and village.” And he

Even in the wealthiest villages, where differences in status and position were most pronounced, the culture had a built in leveling mechanism in the form of the 'potlatch.' The potlatch was a "ceremonial distribution of wealth and goods that took place on numerous occasions: naming ceremonies, funerals, weddings, house or totem pole raisings...[P]otlatching was an important part of the socioeconomic system prior to contact with Europeans" (Mignon & Boxberger, pp. 463-64). In this ceremony, status and rank was conferred on those members of the community who could *give the most away*. This created a strong unification between kinship and economy. Even the highest ranking members in these societies held an unshakably strong allegiance to their kin group, their totem clan, and their native village, but never to just themselves. And status was never self-chosen but was publicly demonstrated and acknowledged through psychologically meaningful ceremony. These high status people remained an integral, organic component of the collective whole.

In contrast to village society, compare the social and economic arrangements in those first early cities of Mesopotamia. There grew to be so many people that the traditional, egalitarian social structure began to erode, and the seeds of social anarchy were sown. The family-, clan-, and tribe-based familiar relationships that had ensured social cohesion ever since *Australopithecus* had ventured out into the savannahs were severely tested and strained by an accumulation and eventual saturation of strangers, people with no discernible connection to each other or to the whole. Many of these strangers were dispossessed, hurting, or alienated by the rapid cultural transformation, needing to beg, borrow, or steal for their survival. A growing mood of fear, distrust, and impersonal defensiveness prevailed in the populace as nobody could be sure of the intentions or motivations of so many strangers. This is the effect of population pressure; this is the result of over-crowding; this is the social condition of the city – people living as if caged in a zoo.

In the new climate of civilized social anarchy, with its severe economic uncertainty, the self-organizing, self-directing, and self-regulating characteristics of the organic, human-scale settlement patterns were no longer effective or operative; there was just too much chaos. It became necessary to administer organization, design, and direction from outside the body, the way a machine is assembled and controlled. Shrewd, opportunistic, calculating individuals took advantage of the situation and competed with one another over the power to influence and direct the amorphous and confused collectivity. Many of these individuals were strangers or outcasts themselves. The qualities that proved successful in this anarchic power grab were not the same as those that were effective in the egalitarian, village-based authoritative positions –

closes, "History suggests that there may be no adequate substitute for this universal village culture...It just could be the most harmonious way of life for human beings who choose to live in groups" (pp.341-46).

qualities like prudence, fairness, wisdom, honesty, trustworthiness, virtue, openness, etc. Instead, what worked best in the new, crowded, chaotic, citified arrangement was the sheer willingness to arbitrarily set oneself apart or above, to deem oneself more important or superior, and to use the persuasive power of unrestrained force. Violence or the threat of violence captured people's attention and elicited their cooperation. And so, conterminously developing with the ascendancy of the city and civilization was the rise of institutional 'rulership,' the hierarchical patriarchy, and vindictive monotheistic gods.⁹

The situation was compounded and aggravated by the growth of other population centers to the scale of 'city.' The city, by definition, is so large that it exceeds the carrying capacity of its local, encompassing ecosystem. Cities need to reach out and forcefully extend far beyond their borders to obtain the required resources needed to maintain their continued existence and perceived need for growth. The sphere of influence of cities in proximity will eventually overlap and these cities will need to compete with one another over access to resources.¹⁰

The precedent that was set in the competition of the early cities of Mesopotamia discounted the options of diplomacy and regional cooperation in favor of aggression and opportunism. The individual 'rulers' of a city, "naturally selected" for their capacity for self-aggrandizement and their readiness to wield violence in pursuit of their goals, were filled with power fantasies and materialistic territorial ambitions, leading to an attitude of imperialism. These 'rulers' had grossly inflated, egocentric self-images of grandeur and 'divine appointment' that needed to be satisfied. The heritages of these psychopomps have evolved into the so-called 'elite' of today. Other cities were full of anonymous, faceless strangers, easily demonized and prejudiced, and then attacked. What resulted was the *inter*-societal anarchy called civilization. What is tragic is that, once the option of aggressive imperialism was played, there really was no other choice for an alternative. Once one city-region over-militarized and chose to take by force what

⁹ "In proportion as war became chronic, kingship became necessary. Concentration of political authority in the hands of a single man seems to have become the rule in Sumerian cities by 3000 B.C....[T]he institution of kingship stabilized itself in Sumer by superimposing military relationships upon an older religio-political system. The authority of a field commander over his army served as a prototype for the king's authority over the city." (William McNeill as quoted in Schmookler, 1984, p.98).

¹⁰ "In a finite world, societies seeking to escape death-dealing scarcity through expansion will inevitably come to confront each other. Civilized societies, therefore, though lacking inherent limitations to their growth, do encounter new external limits – in the form of one another...If an expanding society willingly stops where its growth would infringe upon neighboring societies, it allows death to catch up and overtake its population. If it goes beyond those limits, it commits aggression. With no natural order or overarching power to prevent it, some will surely choose to take what belongs to their neighbors rather than to accept the limits that are compulsory for every other form of life" (Schmookler, 1984, p.20).

was not theirs, all others needed to follow suit, or else be swallowed up or vanquished.¹¹

Tactical advantage in the anarchic, inter-societal competition was won by the city-state that could technologize the most advanced weaponry. The idea that linearly continual, incrementally more sophisticated, scientific technological advancement is a measure of progress, in the sense of improved quality of life, is simply fallacious. Quality of life may actually be inversely proportional to technological prowess because highly technological societies require their citizens to become efficient, orderly, obedient 'subunits' in the machine – automatons. To this day, the overarching thrust of new technology development is driven by the need to stay one-step ahead in the development of advanced killing power, with a majority of scientists and technicians employed by the military-industrial complex. Only as subsequent development is new technology converted into commercial uses. Even now, we can be assured that new advances in bio- or communications technology are being funded and scrutinized for their potential military advantage. There is no moral judgement in this – it's just the way things are and always have been, since the advent of civilization. Once oppressive human population pressure reaches a certain tension, the society that is most capable of wielding unrestrained violence will have the greater survival potential.¹²

¹¹ This is the moral of *The Parable of the Tribes*. "The word civilization speaks of cities, and the first urban cultures arose many millennia ago in Mesopotamia. These first cities could coordinate networks of production and power exceeding what had preceded them. This new power imposed upon neighboring areas the imperative to imitate the new organization. As the primal cities grew stronger and more aggressive in both trade and warfare, the populations in other areas were forced to aggregate to meet the threat...the only workable adjustment was the elaboration of similar complex organizations" (Schmookler, 1984, p.53).

¹² "We find that in the history of civilization, important innovations in technology, in political structure, in economic organization, in ideology, were created consciously by people striving to armor themselves to survive a hostile intersocietal environment. Thus it is that, in the domain where necessity impinges, the ability of humans to create new cultural forms to achieve their purposes, far from restoring to people the choice of their destiny, magnifies the impact of the selective process and speeds the evolution of civilization still further in the unchosen direction of power maximization (Schmookler, pp.72-3).

The City Evolves Into Empire: A Condensed History

Once the essential structural configuration of civilization had been set – that is, the concentration and consolidation of arbitrary power by the set-apart ‘elite’ of densely packed urban centers – it was only a matter of time before the materialistic, territorial conquests of these power structures reached the scale of ‘empire.’¹³ Empire marked a quantitative advancement and fractal complexification of the fundamental centralized pattern of the city, expanding the sphere of influence beyond the immediate region to include sub-continental, then continental, then eventual global-scale control.

Back to that ‘cradle of civilization,’ Mesopotamia: What was left of those first primal proto-cities was eventually incorporated into a forced confederation of city-states called the Babylonian empire, ‘ruled’ by a patriarchal lineage who assumed for themselves “celestially-derived authority and power” under the rubric of ‘divine right.’ Continued warfare and tests of power from the Phoenician empire to the east, the declining Egyptian empire (a unique case) from the west, the irritating parochial Hebrew elitists close by, and marauding Mongol and Turk invaders, necessitated an ongoing

¹³ Taylor (1999, p.71) provides a more complete list of “characteristics defining cities and civilization: 1) extensive and densely populated settlements, 2) specialization of crafts and labor, 3) concentration of capital wealth, 4) monumental public architecture, 5) a class-structured society, 6) writing and systems of notation, 7) beginnings of true science, 8) great art styles, 9) long-distance trade, and 10) formation of the state.” I have been focusing on the distinct power-maximizing mandate of a central authority, and the social and psychological implications of such an arrangement.

posture of military readiness and forced internal social cohesion. This is an inescapable consequence of the city/civilization/empire/global system nexus – institutionalized standing armies and perpetual, unrelenting warfare, because these centralized structural patterns all occur in a context of competitive over-population. Unfortunately, for all their stoic preparedness, all these empires eventually collapsed due to internal corruption and decadence, and the depletion and impoverishment of their local ecologies resulting in deserts where fertile conditions had once prevailed. This same pattern would be repeated over and over again, and would come to be the hallmark of civilization.

After the Middle East was ravaged and laid to waste, the torch of civilization was passed to Greece. The Classical Greeks produced some remarkable achievements, most notably in abstract, philosophical thought. As Taylor elaborates:

As our Western world-view has been erected upon Hellenic conceptual foundations, it is important to understand a significant divergence that took place between the Greek and previous world-views. During the final stage in the evolution of the Rational Mind the subjective knower is fundamentally separated from the objective known...Where earlier societies were monistic in their orientations and belief systems – as expressed in terms of I/Thou – the Greeks perceived the world in dualistic terms – as I/It (p.79).

This is the beginning of the mind/body split that would go on to haunt Western civilization, coming to be epitomized in the Cartesian dictum, “I think, therefore I am.” This sort of dichotomy is not perceived by nature-based, village-scale societies. Despite all their profound analytical thinking, the Greek empire soon began a decline because of the jealousies and wars between rival internal city-states, and from various economic, political, and moral causes. But there was also ecological impoverishment: The Greeks transformed their forested islands and fertile peninsulas into bare rock in just thirty to forty generations. “The Greeks could have postponed their downfall for centuries...if they had conserved the resources inherited from nature...It is a tragic fact of history that the Greeks did not direct more of their brilliant intellectual efforts toward conservation of the land that made their civilization possible” (Carter & Dale, 1974, p.108).

After the Greeks, the torch of civilization was passed to Rome. The Romans, using all the lessons gained from past empires, were able to extend their civilization further than any previous, coming to set up a ‘world-state.’ Quelling and subduing a vast portion of the world population with the terror of advanced, improved military and administrative technologies, they were able to funnel the resources of widely scattered,

distant lands into their highly centralized, self-serving, ever-more mechanistic power structure.¹⁴ The legacy of external control achieved by the Romans, a more refined example of the power consolidating and concentrating essence of civilization, has remained a useful model for all subsequent empires up to the globalized power structure entrenched today.

The Romans were extremely adept at *engineering* their city-settlements; they were the first to build whole new cities from scratch, from detailed geometric plans like the blueprints that precede the construction of a machine. But for all their cleverness and lavish (slavish?) self-indulgence, despite all their technical advances, even with all the expropriated riches from the hinterlands, they too succumbed to the recurring final chapter of civilization – collapse from internal corruption and decadence, over-extension, greed, hubris, “decline in economic productivity, progressive loss of administrative efficiency, mounting social dislocation and psychological tensions, and destabilizing pressures exerted by peoples pressing on the imperial perimeter” (Taylor, 1999, p.80). Of course, ecological degradation also contributed to the decline with “the exhaustion of the soil of Italy, Sardinia, Sicily, and Roman Africa” (E.L. White, as quoted in Carter & Dale, p.138).

The power vacuum that resulted from the decline of the Roman Empire has been called, in Europe, the Dark Ages. But it was not necessarily ‘dark’ for all the people living there. The vast majority carried on their lives as usual, as all people and other living things carry on their lives. They lived in pastoral plenty, honoring their Earth-based pagan rituals and ceremonies, communing with Nature spirits, breathing air and growing food all without the need for centralized, city-based control. The people are fine when left to themselves. The Dark Ages were only ‘dark’ for their conspicuous absence of advances in civilized, centralized control. Europe, for the most part, reverted back to sustainable, village-scale communities, but was continually harassed and often terrorized by the remnants of empire – the centralized, divinely self-appointed Roman Catholic church.¹⁵

¹⁴ Imagine the Caesar, sitting at his throne in the Coliseum, approvingly nodding as Christians and other slaves were battered and gored below as the crowd roared on. Beneath his emperor’s accoutrements, he was just a human being with the same needs and wants as all human beings. Yet his arbitrary fancies could mean life or death to countless other people. The power-maximizing mandate of civilization corrupts and distorts human nature.

¹⁵ Taylor, as a civilized intellectual, has a somewhat different take of the so-called Dark Ages. He writes, “The western half of the socio-cultural system was shattered, and “fell” to a subsistence level.” He goes on to say “The advent of the so-called “Dark Ages” was marked by a loss of population, breakdown of the Roman road and communication systems, decline and often disappearance of towns and commerce, and an end of imperial administration of an intercontinental polity. The societal center of gravity shifts from the city to the countryside...[t]he cultural landscape had been transformed. The disappearance of a unified political system resulted in geopolitical fragmentation...with *power exercised locally*” (emphasis added). Taylor takes the tone that these were unfortunate developments, but according to the thesis forwarded in this paper, these are exactly the kinds of developments most beneficial. Taylor goes on to say, “The early

But, of course, this pastoral situation couldn't last forever. The highly successful species *Homo sapiens* continued to breed and multiply until population pressures forced people to once again congregate into filthy, virulent cities. New centralized power structures emerged with a revised, northern European version of 'lust for power;' the empire of Charlemagne, centered in Germany, rose as an early victor. But the essence of civilization (city-based culture) is an inescapable inter-societal anarchy, with continuous warfare a byproduct, so no empire is destined to last for long. New challengers arose, new centralized power structures gained dominance, population pressure continued to increase, and access to available resources continued to decline propelling Europe into a perpetual bloodbath of war vs. counter-war.

At one point, Britain emerged as the torchbearer of civilization, exceeding the Romans by claiming a truly global empire. Ever been to London? A large proportion of their civic buildings and upper class row-house fronts display the Doric columns of ancient Rome. There was no hiding that the ambitions of imperialist Britain were inspired and modeled upon the dominance achieved by imperialist Rome. Both used terror and violence to subjugate distant populations, forcing them into submission. Both used advances in technology and engineering to produce superior weaponry to defeat their rivals. Both depended on an impoverished populace as a military labor-pool. Both mercilessly funneled the resources of distant regions into their centralized coffers, solely for the benefit of an ever more consolidated and concentrated, privileged few – the "lords."

After WWII, the center of civilized control was decisively passed to the United States. From metropolitan urban centers there, the so-called elite manipulated military and economic power to gain domination over the entire world – the ultimate goal of civilization was realized. This culmination of 'western' civilization – worldwide control from a concentrated power core – was the inevitable outcome of the momentum that was initiated in those first civilized societies on the plains of Mesopotamia. The actual geographical center of the power structure shifted steadily West – roughly from Sumeria to Greece to Rome to Germany to Britain to Washington D.C. – but the essential pattern remained the same and became more refined over time.

Now, at the dawn of the Third Millennium, even the United States' empire has been eclipsed by the rise of the "New World Order." The centralized power structure has become even more concentrated and insidious but has lost a geographical base, and

Middle Ages had reached a new equilibrating level, marked by dominance of the one universal institution, the Church, which alone penetrated every parish and whose teaching and mission gave meaning and direction to every medieval man and woman." [!] I know this man is intelligent but he is making a glaring oversight here – did the Church's "teaching and mission" give "meaning and direction" to the millions who were burned or tortured during the Inquisition? These were people who simply sought to maintain their pastoral, nature-based ways despite the imposition of oppressive, dogmatic, centralized authority.

this could be a sign that civilization has reached its limits. These days the wheel of civilization is steered by predatory, avaricious men and women perched high atop droning skyscrapers in lifeless urban cores scattered about the globe. Unbelievably, their goal is the same as the 'elite' in those first urban centers 5000 years ago – to concentrate and consolidate ever more power for themselves by colonizing and sucking the life out of natural biological, ecological, and cultural living systems. These people, descendents of long lineages of urban power mongers, have become so separated from Nature that they are unable to see the tremendous harm they cause. They don't realize that by depleting and undermining the very resources upon which they depend, they are ultimately setting up their own collapse. Ironically, the final success of civilization forebodes its own downfall.

Any Other Options?

“Sustainable Cities” is an oxymoron because the urban pattern cannot be continued indefinitely. When a settlement reaches the scale of ‘city’ it is a sign of severe human population pressure. When there gets to be this many people, socioeconomic and socio-cultural relationships take on abstract, impersonal, divisive characteristics that leave room for the worst kinds of hubris and superficial ego exaltation. Once superior/inferior, classist, unequal power relationships become institutionalized in a society, the framework is created for the ever-increasing consolidation and concentration of arbitrary power culminating in the highly unsustainable global system. That is one conclusion of this paper: that once human population pressure reaches the point where city-size settlements are needed to contain all the people, a succession of power manipulations automatically ensues which will inevitably climax in a highly concentrated, disconnected, global power structure, what we call today the New World Order.

If we were looking for places to intervene in this global system dynamics, to prevent the collapse of this global world order, our most effective action would have taken place 5,000 years ago when those first cities appeared. We would have needed to convince the people to stop breeding and go back to their villages, to warn them that if they continue to multiply they will set up an exponential population growth curve that will result in the proliferation of cities all over the globe – civilization – with its concomitant inter-societal anarchy, perpetual war, and life-threatening degradation and exploitation of natural living systems. We could have shown them pictures of the 20th century: genocide, global war, clear cuts, radioactive waste, famines, metropolises, or their own green river valleys finally completely desertified. We could have pleaded with them to stop their settlements from growing, or else these images will be their future – but would they have listened? Nah; the Earth was plunging into the Kali Yuga, a Dark Age of materialism. These people would need to go on and discover for themselves what civilization, empire, and the global world order was like – figuratively, to know the wrath of Kali – so they would need to go ahead and energetically build their cities and start the whole self-consuming cycle rolling.

Yet, nonetheless, that was the critical transition zone, the potent point of intervention. The villages these people had grown from were self-organizing, self-maintaining, and self-regulating – embodying the characteristics of true living systems. They were organic, anthropomorphic outgrowths of particular ecosystems. As living systems, they were nestled and integrated into larger living supra-systems, and were constituted of supporting specialized subsystems. This is the *sustainable* scale of settlement – *village*-scale. This scale has the best chance of being continued into the indefinite future because it mimics and reflects the patterns, processes, and structures of its underlying, supporting biological and ecological substructures.

The people that went on to build their cities were becoming increasingly dependent on mechanical systems and so the settlements they constructed were increasingly mechanical as well. This is fundamentally so because these settlements were no longer *self-organizing*, *self-maintaining*, or *self-regulating*: They were getting to the scale where, incrementally, *externally coercive* organization, maintenance, and regulation were needed by ever more distant-from-the-people-and-land ‘rulers,’ ‘leaders,’ administrators, papacy, and specialists to ensure *control* so that the whole system ran as smoothly and efficiently as possible, without the annoying spontaneity of living systems. These social engineers needed a fine-tuned, well-oiled machine that could compete in the anarchic power grab. Eventually, cities would come to be laid out and planned with blueprints, where, usually, a rigid square grid was arbitrarily imposed upon a once voluptuous, verdant, living landscape to symbolically snuff out any sign of life. The square is not to be found in Nature, except in a few crystals; the square grid is not the way to integrate a settlement into its biological and ecological substructures so as to make it sustainable. Square-gridding is a statement of domination, control, and machination – in short, patriarchy. Since all mechanical structures are destined for breakdown, the ‘city’ is not a useful pattern from which to begin designing for sustainability. “Sustainable City” is an oxymoron: these two words contradict each other.

Conclusion

Civilization (city-based culture) has enabled the biological component of the Earth, in the form of *Homo sapiens sapiens*, to rapidly subdue and transmute the material component, turning it into so much random order, but expelling much entropy along the way. How are we to judge this process? Perhaps it is a cycle-phase on every living planet? So what that the by-products of this process are global weather change, the exploitation and depletion of living systems, loss of genetic diversity through massive species extinction, the transformation of diverse cultures into a bland, homogenous monoculture, and the robotization and mechanization of human beings, among other things. How are we to know whether or not all this is necessary in the evolution of a living planet, that civilization actually has a beneficial hidden purpose? After all, the result has been a globalized consciousness and a one-Earth point of view. Do the ends justify the means?

I don't want to judge civilization; I can accept that it happened – civilization, cities, megalopolises, empire, the global system and the New World Order. They are all isomorphic manifestations of the same, unnatural centralization of arbitrary power phenomenon. In contrast, Nature is a highly decentralized arrangement where power is distributed throughout the system. I can also accept, after a careful reading of Donella and Dennis Meadows, et al., that this centralizing system now culminating in the global system is destined for collapse. This is just the nature of unchecked exponential growth in a materially closed system; there never were any effective negative feedback moderation loops incorporated into the system, so it has no way to even sense, much less turn away from, overshoot. Instead, the system has been driven by self-reinforcing *positive* feedback loops encouraging ever-accelerating growth, and calling this 'progress.' This is no emotional statement: the current global system we are living under/with has a limited time span and will, at one point, begin to decay and roll back, like all the civilized empires that came before. Accept it.

As the whole system begins to breakdown, as one subsystem after another begins to unravel, there will be much chaos. Those unfortunate souls trapped in the mechanical contraptions of mega-cities will be especially hard hit by the transformation, and it could get ugly. Those people who are still living in relatively self-reliant, organic,

village-scale settlements should be able to ride the change with minimal difficulty and will emerge into the post-civilization phase intact. The best thing we can do now as we consciously approach an inevitable major planetary transformation is to begin, in the words of H.T. Odum (1995) “preparing for a prosperous way down.”

This means designing and growing full-featured ecological villages – ecovillages. I want to be clear: this does not mean that everybody needs to head for the woods and start setting up intentional communities. In most cases, settlements have no reason to be in the woods: the woods and all unsettled areas are better left free of human intervention so that ecological succession can be restored and then proceed in all its glory. Human settlements are most beneficially located along waterways, especially at the juncture of waterways, along sea-coasts, and at transportation or communication nodes. Unfortunately, these choice spots are where the cities have sprawled. The best thing we can do, then, is to begin organically sub-organizing the city into village-scale neighborhoods of no more than 5000 – *urban* villages. Each of these subunits must strive to achieve self-reliance – in energy, food, water, and economy. The primary goal will be to break up the hegemony of the entrenched, consolidated power structures because their centralized planning, control, and regulation – the hallmark of civilization – deviates so thoroughly from the organization of natural living systems.¹⁶ As we have seen, with living systems each part benefits and contributes to the health of the whole so all can prosper. Each of the decentralized, village-scale settlements within the large population centers formerly organized along the highly centralized city pattern will operate as an interdependent organ within a larger body; that is, each will play a part in the healthy functioning of the whole, but none will come to dominate or be superior to any other. This is the only way it can work: organic, self-reliant, human-scale, ecologically integrated, egalitarian, cooperative, highly decentralized, interdependent settlement patterns with a purpose higher than immediate personal gain – we could call this a *spiritual* purpose. These qualities contradict the city in all regards but are the foundations for conceptualizing the truly *sustainable* settlement pattern.

But now, reliance on the village pattern is not a reversion to some ‘primitive’ subsistence level – no, the goal is to thrive and live with optimal abundance. Unfortunately, to be realistic, this can only happen with a substantial decrease in human population pressure. If the early village could be considered the ‘thesis’ and civilization

¹⁶ Or as Schmoekler says, “The challenge... is to design systems that use power to disarm power. Only in such an order can mankind be free.” (p.34) What sort of power will this be? The power of Love? Of Truth? Of Forgiveness? The power of the People? The power of the Galactic Center? I still think it is going to take a leap in collective consciousness, and that is all the more reason to begin designing and growing ecologically embedded, cosmically imprinted, spiritually saturated, full-featured 21st century style living situations, because the people working, breathing, thinking, creating, loving, dancing, animating, and evolving, etc. in these living situations will have the best chance to learn what this ‘true’ power is.

the 'antithesis,' then the new ecological village is the *synthesis*, or the combining of all the best of both worlds: cohesive communities *and* appropriate technology; high culture *and* equitable social conditions; peace *with* justice. It will be a shift of priorities from quantity to *quality* of life. It will be a remarkable leap forward from the present situation, but can only correspond with an evolutionary leap in consciousness. We may find that we didn't need all those corroded machines and dehumanizing draining technologies to prosper, to realize our full potential as divinely creative children of the Earth. Perhaps we will be better off cultivating our inherent 'mind' and 'body' technologies.

Still, the entrenched power structure that craves even more power for themselves, the real cause of all the strife, will not let go of their control simply because it is a good idea. They have too much at stake in their ego-vanity and in perpetuating the system as it is, so we may be driven into a period of "turbulation." In the mean time, it will be necessary to create workable models of what the ecoconsciousness wants to bring forth, outside of the degenerating, alienating influence of the city, so that the world may see what is possible. These demonstration sites will be the 'ecovillages' of the 21st century.

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