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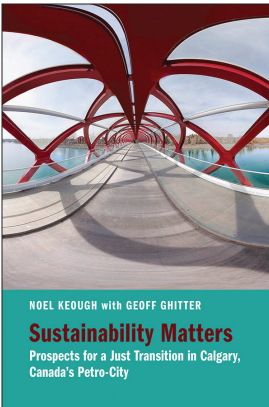
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SUSTAINABILITY MATTERS: PROSPECTS FOR A JUST TRANSITION IN CALGARY, CANADA'S PETRO-CITY

by Noel Keough with Geoff Ghitler

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Five Reasons Why Sustainability Matters

In this book, we acknowledge the spectacular nature of cities and the processes of urbanization. We also identify some of the most challenging aspects of urban life and some disturbing trends in cities around the world that became topics of conversation in our essay series. These themes include limits to growth, the machine metaphor versus the organic metaphor, and the undeniable reality that cities are the engines of the consumption that has brought us to the edge of catastrophe via climate change and biodiversity and ecosystem loss. Though cities provide unparalleled opportunities for an enriching, cosmopolitan lifestyle, they also isolate us from the rest of nature. While we celebrate diversity in cities around the world, city dwellers are also witnessing the most devastating effects of climate change and of war and violence. In this chapter, we take up these themes in a global context and propose a reframing of sustainability, with five propositions of why sustainability matters.

As was noted in chapter 2, some people, with justification, consider the term *sustainable development* oxymoronic. They interpret it as an exhortation to society to sustain a form of development that is demonstrably unsustainable and that is, in fact, the very reason why we have had to focus our attention on strategies to sustain human civilization in the first place. Critics point out that all too often, the capitalist expansionist project continues, with the adjective *sustainable* attached to whatever noun we are qualifying—“sustainable growth” being the most egregious example. I would concur with those critics.

However, I believe the concept of sustainability still holds potential. As we have seen, those who originally sought to define and popularize the concept did envision sustainability as a radical challenge to infinite

economic expansion and growth at all costs. In my teaching, research, and advocacy work, I am often confronted by the question, Why does sustainability matter? I would like to propose that embedded in the emergence of the sustainability discourse in general and the recurring themes in this book's essays are five key reasons why sustainability matters—reasons that show the concept of “sustainability” to be a radical alternative to the capitalist expansionist project.

1. Endless Economic Growth on a Finite Planet

Growth is considered the *sine qua non* of modern capitalist economies. No nation-state exists that does not pursue the holy grail of economic growth. To propose an economic policy of no growth or degrowth would certainly be the death knell for any modern Western government. Adam Smith is credited with describing, in *The Wealth of Nations*, the economic logic of markets as the engine of growth, along with the famous metaphor of the hidden hand. Self-interested individual behaviour and the market are assumed to be the surest path to prosperity for all.¹ But markets are not exclusive to capitalism. Karl Marx's *Das Kapital* is the seminal description of the capitalist system, arguing that capitalism is, by design, exploitive of nature and workers.² In *Economics for Everyone*, Canadian economist Jim Stanford describes capitalism as a system built on greed and competition and the belief that individuals acting in their own self-interest will magically ensure the common good.³ Stanford notes that though capitalism is the foundation of modern economies, it is rarely referred to by name. Yet even the left-leaning Stanford is obliged to see capitalism, with all its faults, as the only viable economic model for modern industrial economies.

Though hegemonic, the growth doctrine of capitalism is not without its challengers. Herman Daly was one of the first to describe our current state of affairs, with diminishing social and environmental returns from capitalism, as “non-economic growth” and to articulate an alternative steady-state economy.⁴ Contemporary ecological economists, including Tim Jackson and Giorgos Kallis, now propose a degrowth economy, along with a framework for such a contracting economy that nevertheless delivers livelihoods and well-being.⁵

While some pursue the idea of capitalism without growth, I am persuaded that an economic system without growth will no longer resemble

capitalism. A capitalist invests capital in order to produce profit via the production and sale of goods and services, and then takes that profit (a larger sum of capital) and invests it yet again to produce even more profit. For this endless chain of increased profit to work, ever-greater human and natural resources need to be exploited and put to work. On a finite planet, it is obvious that an infinitely expanding economy is an impossibility. At some point, the system fails: resources are depleted, ecosystems destroyed, and human labour exhausted. The question remains, of course, whether we are now at this point in history, or whether capitalism can continue expanding into the foreseeable future. Some claim that we can extend capitalist growth long into the future by developing new and more efficient technologies and processes. This is referred to as dematerialization. Factor four—reducing the material input per unit of output fourfold—is one model of dematerialization proposed by von Weizsäcker, Lovins, and Lovins.⁶ The jury is out as to whether such a theoretical model can be achieved in practice. Ultimately, such a strategy can at best extend the life of capitalist growth.

Sustainability contradicts the idea of infinite growth on a finite planet. It puts the onus on capitalism to demonstrate that it can function in a no-growth world. Given the evidence of climate change, soil loss, biodiversity loss, and ocean depletion, sustainability's proposition is that we have reached the limits to growth.

2. War and Violence

On War, by Carl von Clausewitz, is considered by many to be the quintessential book on war-making. Clausewitz argued that “war is merely a continuation of policy by other means.”⁷ Colin Powell, Secretary of State under President G. W. Bush, described *On War* as “a beam of light from the past, still illuminating present day military quandaries.”⁸ It was Powell's application of the Clausewitzian “strategy of annihilation” in carrying out George Bush's disingenuous desire to use war to advance democracy in the 1992 invasion of Iraq that led to the horrors of Iraq, Afghanistan, Yemen, and Syria in the subsequent twenty-five years. It was the application of these same ideas by European generals that led to the horrors of trench warfare in the First World War.

According to the Stockholm International Peace Research Institute's (SIPRI) *Opportunity Cost of Military Spending*, humanity spent, collectively, \$1.8 trillion on the military in 2018.⁹ The United States alone spent almost \$650 billion—as much as the next twenty-six nations combined. (Canada spent \$21.6 billion on the military in 2018.)¹⁰ According to the Brookings Institute, just \$54 billion could fund all public school education in the forty-six poorest countries in the world.¹¹ In 2016 SIPRI researchers estimated that just 4 percent of annual military spending globally could fund the estimated annual costs to achieve all seventeen UN Sustainable Development Goals.¹²

SIPRI reports that US weapons manufacturers, like Boeing and Lockheed, account for over half of the arms sold internationally.¹³ From 2011 to 2013, Eastern Europe, North Africa, and the Middle East all spent more on the military than on health.¹⁴ The UN High Commission on Refugees reports that there are over twenty-one million refugees in the world today—most of them displaced by war and state-sponsored violence. Countries like Jordan and Lebanon, who host enormous numbers of refugees, find their own social, economic, and ecological stability threatened.

In his review of Christopher Clark's *The Sleepwalkers*, Ian Pindar writes that the author “suggests that European elites who vied to prove their virility in battle were suffering from a ‘crisis of masculinity.’”¹⁵ Clark himself states that they were “blind to the reality of the horror they were about to bring into the world.”¹⁶ Canadian anthropologist Wade Davis, in *Into the Silence*, gives one of the most visceral accounts of the horrors of the First World War. Davis describes the “quartered limbs hanging from shattered branches of burnt trees, bodies swollen and blackened with flies, skulls gnawed by rats, corpses stuck in the sides of trenches that aged with each day into the colors of the dead.”¹⁷

In *War*, Gwynne Dyer challenges the idea of the utility of war as a tool of diplomacy for nation-states, arguing that with the power of weapons at our disposal today, and the urgency of existential threats such as climate change, war has no practical political value. Dyer writes, “We have reached a point where our moral imagination must expand again to embrace the whole of mankind or else we will perish.”¹⁸

A sustainability perspective begins with a belief that violence in any form—domestic, schoolyard, against nature, or war—is intolerable. War is

not heroic. It should not be celebrated. It should never be deployed in cold hard calculation as political strategy. War is a tragic failure of civilization, and the abolition of war is vital for the vision of a sustainable world.

3. Global Justice and Equity

The growth doctrine of capitalism has always relied on the notion of trickle-down economics, wherein the benefits of capitalism are supposedly realized by making the pie bigger and allowing everyone to benefit from growth, even if the lucky or ambitious few continue to take more and more of the pie. In *Capitalism in the Web of Life*, Jason Moore demonstrates that capitalism has flourished and come to dominate the planet through violence, slavery, racism, and the marginalization of others—whether it be based on ethnicity, gender, or religion.¹⁹ The slave trades from West Africa provided the human labour for the industrialization of the cotton industry in North America, the sugar industry in the Caribbean, and the precious metal mines of South America. Moore argues that capitalism flourishes with, and in fact requires, exploitation of nature and human labour on a global scale as it relentlessly seeks out and appropriates new frontiers of cheap labour and resources. On a finite planet, he contends, we have probably reached the end point of this model of exploitation. There are no more frontiers to exploit.

We are all familiar with the notion of the 1 percent of the population who hold almost all of society's wealth. Recent research has produced startling statistics: eight men own the same wealth as 3.6 billion people (half of humanity); seven out of ten people live in countries that have seen rising inequality over the past thirty years; the two richest Canadians own the same wealth as the bottom third (eleven million) Canadians.²⁰

There is a growing list of renowned mainstream economists, including Thomas Piketty, Robert Reich, and Nobel economists such as Paul Krugman and Joseph Stiglitz, who argue that inequality is perhaps the most problematic characteristic of today's capitalist economies, and unless addressed, it threatens the stability of capitalism.²¹ Most of these authors demonstrate the links between economic inequality, deteriorating democracy, evaporating trust in our democratic institutions, and health and social outcomes. In *The Spirit Level*, Richard Wilkinson and Kate Pickett demonstrate that inequality explains uneven social and health outcomes

better than any other factor and that in unequal societies, wellness suffers—even for the wealthiest.²²

Sustainability demands attention to inequality and recognizes that making a more just world requires robust democracies. Many would argue that the disturbing emergent trends in global politics, including the distrust of institutions of government and the search by marginalized groups for even more marginalized scapegoats, is a direct result of growing inequality in the world's democracies. Human societies suffering from extreme and growing inequality cannot sustain themselves.

4. Human Exceptionalism

Our species, *Homo sapiens*, has generally considered itself superior to the rest of nature. We tell ourselves a story about evolution being a process toward ever more complex life forms, with humans at the top of the pyramid or the “great chain of being.”²³ At worst, we tell ourselves that the rest of nature exists as nothing more than a resource for our development and progress. At best, enlightened religious doctrine calls on us to be responsible stewards over God's creation.

The writing of *On the Origin of Species* by Charles Darwin, inspired by his famous voyage on *HMS Beagle*, was a watershed moment in this story of human exceptionalism.²⁴ Darwin demonstrated a truth that many found hard to accept—that humans, like all other species, co-evolved over millions of years of the existence of life on earth, and that we are in fact relative newcomers on this planet. That we had most recently evolved from the apes was heresy when first proposed. Very few dispute this fact today.

We do, however, continue to search for attributes that make us exceptional. Frans de Waal and Derrick Jensen are two prominent writers who explore this issue in depth.²⁵ Many theories have been proposed—only humans feel pain; only humans grieve the loss of others of our species; only humans use technology; humans have the biggest brain to body ratio; only humans are capable of language; only humans are problem solvers; no other species can conceive of the future. One by one, these theories have been challenged. Even more crucially, environmental philosophers point out that the attributes by which we have compared ourselves are self-servingly chosen. We have deemed ourselves to be exceptional based on attributes for which we consider ourselves to be exceptional.

But why not consider others' attributes as defining superiority—longevity, numbers, sight, hearing, speed, or size? Other species are clearly superior to us in all of these attributes. Humans are certainly unique, as is every one of the millions of species on the planet. But as the Indigenous peoples of North America have insisted from first contact, other species are “all our relations.” The emerging field of biomimicry recognizes that other species have evolved ingenious “technologies” to assist in making their way in the world.²⁶ Sustainability challenges us to look beyond the myth of exceptionalism and to find ways of living in harmony with the diversity of life on earth.

5. The Clockwork Universe

The beginnings of Western science are often traced back four hundred years to the mid-1600s. Immediately preceding this period, Europe was just emerging from the Dark Ages. Plagues had ravaged the continent and killed a large portion of the population, and nation-states did not yet exist. Europe had not yet embarked upon the Age of Discovery. Asian and Middle Eastern societies rivalled those of Europe. Science ultimately came to embody and enable the Age of Discovery, the rise of capitalism, the Industrial Revolution, and imperialist and colonial aggression.

The giants of the emerging scientific world view included Nicolaus Copernicus, who first challenged religious doctrine in claiming that the earth was not at the centre of the universe; Johannes Kepler, who mathematically described the motion of planets around the sun; and Francis Bacon, who first proposed the scientific method of observation as the secret to understanding our world. In his *Meditations on First Philosophy*, René Descartes penned his famous dictum “I think, therefore I am,” proposing that our rational minds and our untrustworthy sensuous bodies are completely separate. He claimed that it was our minds that separate us from animals and enable us to understand and exercise control over the natural world. He proposed our exceptionalism to be not so much about our special relationship with God but about the power of our mind.²⁷

But it is through Isaac Newton and his formulation of the laws of motion in *Philosophiae Naturalis Principia Mathematica* that our scientific understanding has been most profoundly shaped by the metaphor of the clockwork universe. Since Newton, the disciplines of Western science have

sought to advance based on this machine metaphor. The iconic laboratory experiment underlay the belief that any organism or natural phenomenon could be described by methodically isolating and studying its parts.²⁸ In the early 1800s, French scholar Pierre-Simon Laplace, author of *Celestial Mechanics*, dreamed of the discovery of the one equation that would allow us to describe all change in the universe with omniscient precision.²⁹ Western science assumed that the world was ultimately orderly and predictable. Even the brilliant Albert Einstein, who challenged our belief in the uniform unfolding of time, held to the belief that God does not play dice and that the universe is ultimately predictable, even as evidence in modern physics mounted in support of a random and unpredictable universe.

German scientist Ernst Haeckel first coined the term *ecology* in 1866.³⁰ Ecology is the study of the interactions between living beings and their environment. Ecologists understand that any phenomenon—whether it is a human being, another living creature, an entire ecosystem, or a city—is more than the sum of its parts. The base metaphor in ecology is not the inanimate machine but the complex evolving living system.

The science of ecology is founded on two key ideas. First, living systems evolve over time. Darwin's concept of species evolution through natural selection offered some of the first empirical evidence of this critical insight. Darwin challenged the commonly held belief that the earth and all its life forms had always inhabited the earth, remaining unchanged through time. Early ecologists focused on an encyclopedic description of the existing world, but over time, the emphasis has shifted to the processes of change that govern the planet and all its diverse systems and life forms.

Second, the most profound elements of study are not discrete objects but the relationships among components of living systems. Ecology is more interested in the processes by which life and systems evolve than in describing how an object or life form exists at any particular point in time. In the early 1970s, Barry Commoner, one of the founders of the modern environmental movement, captured the systems view in *The Closing Circle* with the simple phrase “everything is connected to everything else.”³¹ More recently, our ecological world view has been advanced through the science of complexity, through which we now understand the world to be not only relational but profoundly unpredictable.³² In such a world, “predict and control” is of limited value. We need to be more attuned to the

ecological processes in which we are embedded and be ready to adapt to those processes as they unfold.

Sustainability matters because it invites us to question the hubris, violence, and assumed power and certainty of the deterministic Western scientific understanding of the world and to embrace, with a measure of humility, an indeterministic, evolutionary, relational, and process-oriented ecological world view.

NOTES

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- 19 Jason W. Moore, *Capitalism in the Web of Life: Ecology and the Accumulation of Capital* (New York: Verso, 2015).
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- 32 John Holland is one of the pioneers in the science of complexity. See John H. Holland, *Complexity: A Very Short Introduction* (Oxford: Oxford University Press, 2014). For a survey of the development of the science of complexity, its key concepts, and its most influential exponents, see M. Mitchell Waldrop, *Complexity: The Emerging Science at the Edge of Order and Chaos* (New York: Simon and Schuster, 1992).

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