



21st Century Strategies for Sustainability - Part 2

By Hazel Henderson

Editor's Note:

Is economics a science?

Do free markets exist?

Is nature suggesting a better way to bring goods and services to market?

Are Central Banks fossils of an industrial age?

The term "iconoclast" comes from two Greek words that translate as "statue breaker." Like a 21st century Abraham, Academy Fellow **Hazel Henderson** has been smashing simulacra for decades, though her targets belong to international economics and not the Chaldean moon god "Sin."

Still pagans are pagans, and in this masterful piece, she destroys a few score of statuary on her way to laying out a more thoughtful, and necessarily less conventional, approach to economic development.

She believes the dominant economic models continue to cause massive unsustainability because an interlocking system (from universities to Nobel prizes) replicates the malfunctioning "source codes" in the gene pool of traditional industrialism worldwide. She cites scientific research on the human brain and ecosystems that she believes now refutes most of economics' core tenets. Multi-disciplinary policies and appropriate metrics beyond money coefficients are needed for steering societies toward sustainability and quality of life.

Strategies for global sustainability must address current economic models driving today's unsustainable forms of globalization. Technological innovation is needed to shift from fossil fuels to renewable energy, recycling and redesigned industrial processes. Beyond this, fundamental strategy levels need re-examination. This includes policy models, assumptions, institutional inertia and cultural values accelerating today's course toward increasing unsustainability.

Capitalism's great proponent, Adam Smith, argued that markets could only work efficiently if all buyers and sellers had equal power and information and no market transactions harmed others. Smith might hardly recognize today's evolution of global markets or companies moving toward

Sustainability indexes regularly outperform the mainstream Dow Jones and the Standard and Poor's 500.

CERES GLOBAL REPORTING INITIATIVE Accounting For Sustainability			
COMPANY PERFORMANCE	ECONOMIC	SOCIAL	ENVIRONMENTAL
Diversity	Diversification	Employee Diversity	Resource - Use (Renewable or Non)
Added Value	Return on Capital Employed	Intangible Values & Knowledge	Re-using "Wastes"
Productivity	Profit Margins	Employee and Customer Retention Rates	Resource-Use Efficiency
Integrity	Disclosure Political Contributions	Complaints Lawsuits	Environmental Management
Health	Rating Agencies Reports	Employee Injury Benefits	Health Risks of Products, Facilities
Development	Innovation	Employee Education	Environmental Technologies

Figure 3

social and environmental responsibility. Similarly, such changes in corporate behavior have been driven by trillions of pension funds' dollars and millions of investors who care about their children's future and the state of our planet. Students and prospective employees also ask about companies' performance on human rights and the environment, while new auditing standards of the Global Reporting Initiative (GRI) prescribed "triple bottom line" accounting for people, profit and environment. Six hundred global corporations now comply with GRI accounting in their Annual Reports. (www.gri.org)

(Figure 3) Sustainability has become a buzzword and even Wall Street's venerable Dow Jones now has its Sustainability Group Index. The surprise to economists, mainstream financial players and media is that these new indices: London's FTSE4Good, the US Calvert Social Index and Domini Social 400 Index, as well as Brasil's New BOVESPA, regularly outperform the mainstream Dow Jones and Standard and Poor's 500 (www.

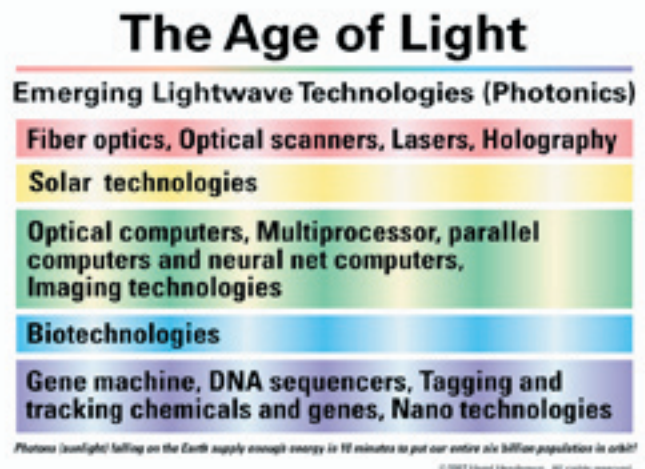


Figure 4

ethicalmarkets.com). Are we witnessing an evolution of human collective behavior toward moral sentiments and altruism? Or is cooperation for the common good now a condition of our survival? I submit that both are involved.

We are also entering the Age of Light (See Figure 4, The Age of Light). As we

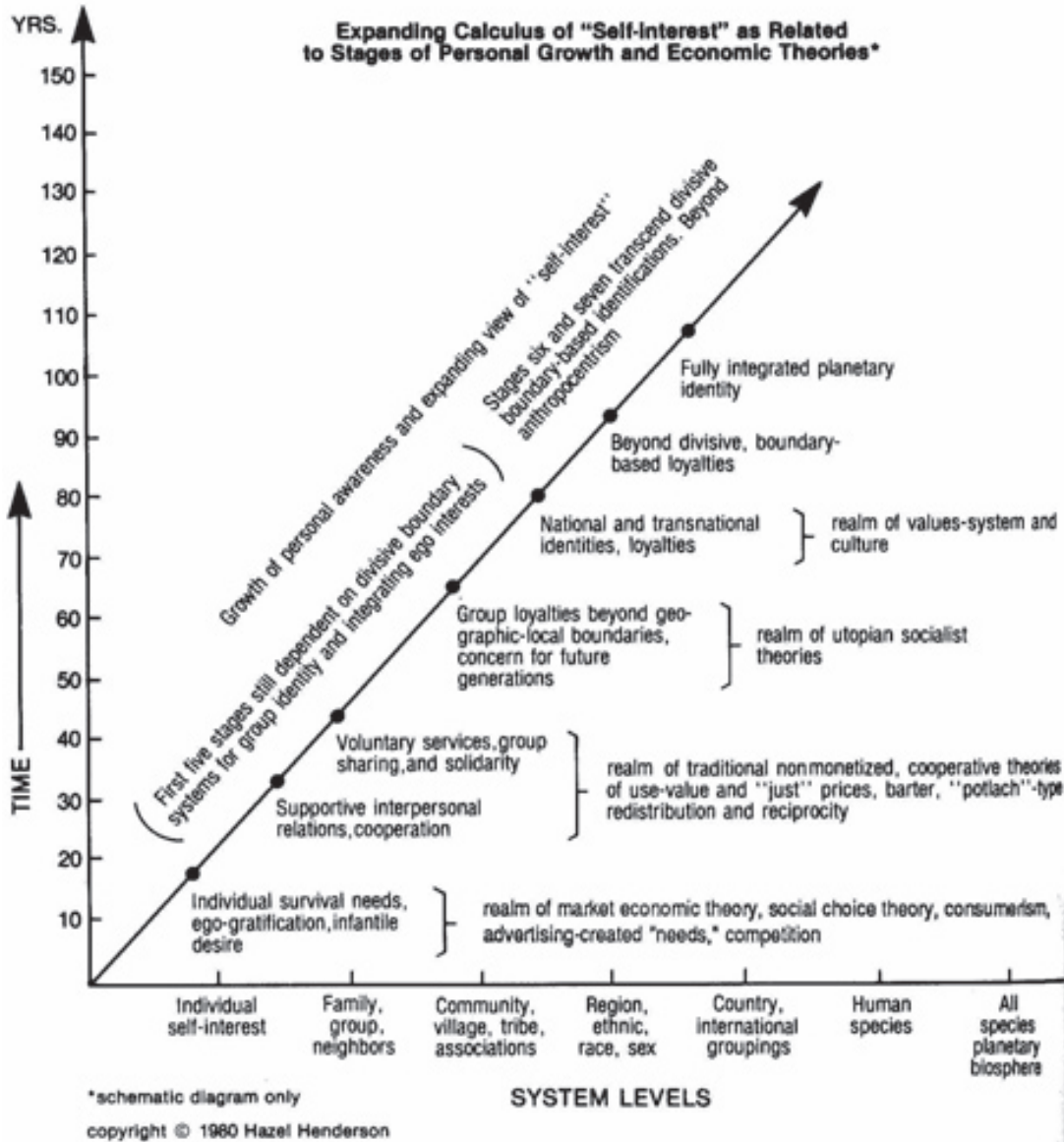


Figure 5

humans shape this current global stage in our development, our new awareness of our beautiful planetary home is calling forth an expanded identity, which I explored with Japanese Buddhist leader, Daisaku Ikeda of Soka Gakkai (with some 20 million members worldwide) in our *Planetary Citizenship*. (Henderson/Ikeda, 2004) (See Figure 5, Toward Planetary Citizenship). This larger identity enfolds and gives deeper meaning to our identity with our family, our community and companies, and the country of our birth. We are enriched by the unique expressions of so many other cultures in our world.

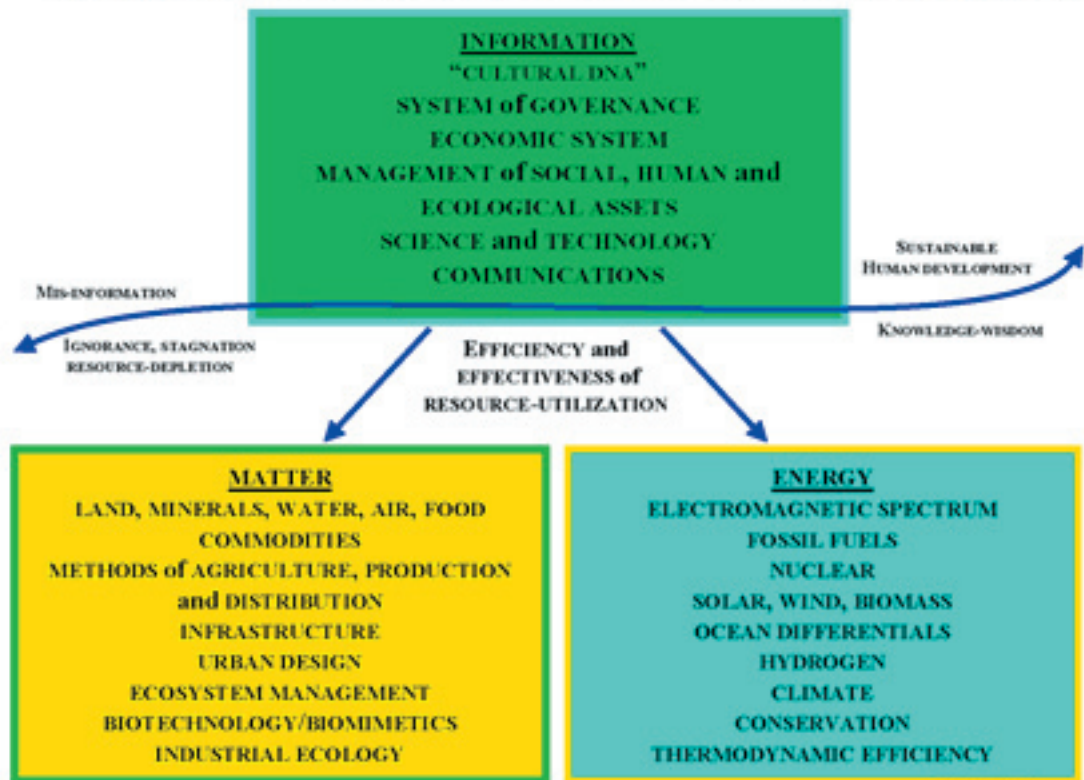
Are we witnessing an evolution of human collective behavior toward moral sentiments and altruism? Or is cooperation for the common good now a condition of our survival? I submit that both are involved.



We savor their art, dance, music, literature and especially their cuisine! This human mutual appreciation for diversity is the starting point for planetary citizenship and the necessary transition to global sustainability, as the online global debates of the Global Transition Initiative illustrate (www.gti.org). Fundamentally, we humans have three basic resources at our disposal for this transition – information, matter, and energy (See Figure 6, Three Modes of Resource Use). Of these, information is primary, since the quality of information drives our use of matter and energy.

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3 MODES OF RESOURCE-USE IN NATIONAL DEVELOPMENT



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The history of the social innovation of markets is instructive, since they are now evolving rapidly. Markets, of course, were created by humans, not by any deity. Adam Smith's "invisible hand" was in reality our own human invention, as recognized by historians of science. (Nadeau/Kafatos, 1999) Yet, this belief in an "invisible hand" persists in many economic textbooks – even today, buttressing neoconservative agendas expressed by such philosophers as Freidrich Hayak and Ayn Rand and her aficionados including Alan Greenspan, Chair of the US Federal Reserve. Not only are independent central bank policies obscure and driven by often obsolete general equilibrium models, central bankers are also politically motivated. For example, Italy's independent central bank president, Antonio Fazio, is accused of cronyism, condoning fraud in the Parmalat scandal and disregard for ethical standards.⁷

The organization of markets by the British Parliament three centuries ago fostered the rapid evolution of industrialism. (Polanyi, 1945) These early



markets described by Adam Smith sparked many innovations. The British laws that legitimized markets and protected property rights led to a revolution of individual entrepreneurship, creativity and innovation, which spread across the Atlantic Ocean and Europe. This 300-year-old wave of industrialism spread around the world and today is still changing Japan, China, India, and reaching the other ancient cultures of Southeast Asia from Vietnam and Cambodia to the Islands of Polynesia. (Landes, 1998) Yet, industrialism must be reshaped because it is socially and environmentally unsustainable.

The early markets of the Industrial Revolution and their business leaders created the infrastructure platforms of concrete, steel, electricity, mechanized production, shipping, roads and ports that still undergird today's societies. But the market freedoms provided by social legislation limiting companies' liabilities, enforcing property rights, upholding their patents to their inventions, also brought great harm to less fortunate, vulnerable members of society. Who can forget the history book pictures of those early sweatshops: the children chained to spinning machines in textile factories, the women dragging carts of coal on their hands and knees in Britain's coal mines? Industrialism's goal was labor-saving via investments in technology. Machinery, property rights and the Enclosure Laws drove peasants and small farmers off their ancestral common land and into factories. Then, as factories automated their production lines, workers moved into service sectors. Today, services are being automated. Full-employment promises fall short and unemployment remains an ironic *result* of industrialism. Today, economists are admitting that the flip side of their model of "labor-productivity" is more unemployment. The social costs of disruptive technological change are borne by employees unless governments and taxpayers cushion unemployment and provide retraining. Yet, as Chinese analysts rightly observe, markets are good servants but bad masters. If prices correctly include all external costs, they can guide resource allocation decisions efficiently. The other main feedback from individuals to decision centers -- votes -- must be uncorrupted by money, rigged elections, gerrymandering and other distortions.

In every country where industrialism took hold, the "tortoise" of social innovation lagged behind the "hare" of technological innovation. The history of the Industrial Revolution with all its good and bad news has included the lagging response of social rules to distribute the fruits of mechanized production and steer technological development and regulations to ameliorate its social costs and environmental damage. The very notion of an "invisible hand" inhibited broader views and visions of how economic systems could be steered to foster the common good, shared prosperity and protect nature's wealth. In the USA, lawyer Louis O. Kelso and philosopher Mortimer Adler challenged economists' Panglossian model of "frictionless" technological change. Kelso recognized that if a machine took over a worker's job, then the worker would need to own a piece of that machine. Employee Stock Ownership Plans (ESOPs) now exist in 11,000 US employee-owned companies. (Rosen/Case/ Staubus, 2005) A few industrialists evolved from their single-minded accumulation of money and material goods into philanthropists promoting wider access to education, health and other global public goods.

Markets are good servants but bad masters.



Economics is not a science.

The economist Joseph Schumpeter best described these processes of "creative destruction" that also drove this greatest period of technological innovation in human history. (Schumpeter, 1942, 1947) The Information Age superseded industrialism itself in the mid-20th century. This new wave of innovation has produced all the good and bad news of today's globalization of markets and technology. In my *Politics of the Solar Age* (1981, 1986), I documented the ideological biases of neoclassical economics and the unreality of many of the inaccurate assumptions underlying even today's economics textbooks. The new chorus of scientists in physics, mathematics, neurosciences and ecology joined their Swedish colleagues in calling for the Bank of Sweden Prize in Economics to be broadened, properly labeled and disassociated from the Nobel Prizes – or simply abolished. The objections from scientists who study the natural world and whose research findings are therefore subject to verification or refutation included scores of ecologists, biologists, natural resource experts, engineers and thermodynamicists. I documented their critiques of economics, building on the 1971 classic by Nicholas Georgescu-Roegen, *The Entropy Law and the Economic Process*, which I reviewed in the *Harvard Business Review* (1971).

Other scientists, including physicist Professor Dr. Hans Peter Durr of Germany's famed Max Planck Institute, agree that economics is not a science. Durr says "economics is not even bad science because its core assumptions are incorrect." I had previously asked Prof. Durr, "How could such a scandalous misuse of other sciences have continued unchallenged for over 40 years?" Durr replied that academic etiquette usually restrained scholars from other fields from straying into other disciplines, especially with such criticisms. The Austrian physicist, systems theorist, and author of *The Web of Life*, Fritjof Capra, asserts that "the dimension of meaning, purpose, values and conflicts is critical to social reality. Any model of social organization that does not include this critical dimension is inadequate. Unfortunately, this is true for most theoretical models in economics today."⁸

Even the growth of hybrid professions – so-called ecological economics, natural resource economics and others – cannot escape economics' fundamental errors. Many critics liken its postulates to religious beliefs. For example, I showed that economics' Pareto Optimality "principle" ignored prior distribution of wealth, power and information – and could lead to unfair social outcomes. Dressing up such concepts in fancy mathematics tends to disguise their underlying ideologies. Professor Robert Nadeau, a distinguished historian of science at George Mason University in the USA, examined such flaws in economics in his recent books, (Nadeau, 2003) and challenges economics' faculties to engage in public debates.

The temptation to mathematize concepts and faulty assumptions in economics is understandable because it obscures these value-laden biases. This conceals public issues as too "technical" for the public or even legislators to understand. Thus, economists can gain influence with central banks and other wealthy and powerful institutions in society. Neither have economists been held to the same standards of accountability as other professions. If a doctor makes a patient sick, a malpractice suit can be filed. Economists' bad advice can make whole countries sick – with impunity, as, for example, IMF



economists' advice worsened Indonesia's economic woes in 1997. Today, economists from the IMF and central banks to those serving financial firms all bemoan the trend toward spending rather than saving. They refuse to acknowledge that this behavior is shaped by advertising, credit cards and the constant barrage of consumerism on global mass media.

Neuroscientists, biochemists, and those studying the role of hormones, as well as psychologists, anthropologists, behavioral scientists and evolutionary biologists, are now dealing death blows to economics' most enduring error. This lies in its model of "human nature" as the "rational economic man" who competes against all others to maximize his own self-interest. This fear- and scarcity-based model is that of the early reptilian brain and the territoriality of our primitive past. Neuroscientist Paul Zak at Claremont University, California has linked trust, which enables humans to bond and cooperate and is crucial to markets, to the reproductive hormone, oxytocin.

Indeed, we now know from brain science why people are susceptible to behavior change via mass media, advertising and other forms of persuasion and lures to instant gratification. Opportunistic economists are now teaming up with brain researchers using MRIs (magnetic resonance imaging) to explore how the "reptilian" portions of the human brain (associated with the limbic system) are susceptible to irrational urges, instant gratification and short-sightedness. The discovery of "mirror" brain cells enabling humans to empathize with each other also accounts for human suggestibility and the power of persuasion in mass media and advertising. Now that economists' competitive self-interest models of human behavior are under attack by such brain research, this field is being colonized as "neuro-economics" or "behavioral economics" in the same way that economists captured other disciplines as "ecological economics" and "environmental economics." This tendency to colonize other disciplines with false claims of universality was due to the power and financial advantages of economists as apologists for the powerful interests of business and finance.

It remained for honest reporters to explain: Peter Coy in *Business Week*, "Why Logic Takes a Backseat" (March 28, 2005), and Justin Fox's "Why Johnny Can't Save for Retirement" in *FORTUNE* (March 21, 2005). Coy and Fox point out that humans are always "of two minds" about the signals in their lives and environments. They shift back and forth between their pre-frontal cortex (the seat of rational decision-making) and their reptilian, limbic brains. As yet, few have focused on the implications of this new brain research for the crucial role and responsibility of the advertising and commercial media industries. Over \$400 billion is spent annually on advertising to override our rational pre-frontal cortex and its longer-term decisions "to save for a rainy day" and tempt us to run up credit card debts to buy goods on impulse through sophisticated manipulation of our senses and limbic brains. Advertising in the USA is a pre-tax cost for companies to promote mass consumption. Today, mass consumption of goods as an engine of economic growth is unsustainable. (Henderson/Kay, 1998)

The critique of economics by mathematicians is that people don't behave like atoms, golf balls or guinea pigs. Unlike the economists' "rational eco-

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conomic man," people are often irrational and their motivations are complex, with many, especially women, enjoying caring, sharing and cooperating often as unpaid volunteers. Chaos theorist Ralph Abraham believes that economics may one day become a science. Abraham is researching with the Santa Fe Institute the new mathematics employed by some economists, by programming "agents" in computer models that are supposed to mimic human behavior. Prof. Abraham adds, "The so-called "Nobel Memorial" prize in economics should be broadened in line with the full spectrum of social sciences to which it belongs, and it should be distanced from the Nobel awards, like the Fields Medals in mathematics." Meanwhile, Peter Nobel maintains that economics is not a science. Riane Eisler, systems scientist and author of the best-seller, *The Chalice and the Blade*, agrees. The agent-based computerized efforts to make economics more scientific may pay off in the future. One recent model, "[Sugarscape](#)," funded by gullible foundations, simply recreated poverty gaps and trade wars. Clearly, if they had programmed half of their "agents" with the behavior females so often exhibit (by choice, or involuntarily in patriarchal societies) they might have produced different results. Economics is patriarchal to its core, which accounts for the rise of feminist economics.

To be concluded next week.

Footnotes

7. The Economist, "Please Go, Mr. Fazio," Aug. 13, 2005, p.13.

8. InterPress Service, Rome, Montevideo, Washington, DC, December 2004, Hazel Henderson "Abolish the Nobel Prize?"

About the author: Dr. Hazel Henderson is a world renowned futurist, evolutionary economist, a worldwide syndicated columnist, consultant on sustainable development, and author of "Beyond Globalization", and seven other books. Her editorials appear in 27 languages and more than 400 newspapers syndicated by InterPress Service, Rome, New York, and Washington DC. Her articles have appeared in over 250 journals, including (in USA) Harvard Business Review, New York Times, Christian Science Monitor, and Challenge, Mainichi (Japan), El Diario (Venezuela), World Economic Herald (China), and Australian Financial Review. Her books are translated into German, Spanish, Japanese, Dutch, Swedish, Korean, Portuguese, and Chinese.

She sits on several editorial boards, including Futures Research Quarterly, The State of the Future Report, and E/The Environmental Magazine (USA), Resurgence and Futures (UK), and WorldPaper (a Boston-based monthly insert in 25 major newspapers in Europe, Asia, Africa, and Latin America). She is a Fellow of the World Business Academy and co-edited, with Harlan Cleveland and Inge Kaul, the Report of the Global Commission to Fund the United Nations. She also serves on several boards, including Worldwatch Institute (1975-2001), Calvert Social Investment Fund, Cousteau Society, The New Economics Foundation (London, UK), and WETV (Ottawa, Canada). The first version of her Country Futures Indicators (CFI), an alternative to the Gross



National Product (GNP), is a co-venture with Calvert Group, Inc.: the Calvert-Henderson Quality-of-Life Indicators.

In addition, she has been Regent's Lecturer at the University of California (Santa Barbara), held the Horace Albright Chair in Conservation at the University of California (Berkeley), and advised the U.S. Office of Technology Assessment and the National Science Foundation from 1974 to 1980. She is an active member of the National Press Club (Washington DC), the Social Venture Network, and the World Futures Society (USA). Henderson also shared the 1996 Global Citizen Award with Nobelist A. Perez Esquivel of Argentina.

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428 Bryant Circle, Suite 109, Ojai, CA 93023
Academy Phone 805 640-3713 • Fax 805 640-9914 • Website www.worldbusiness.org
Senior Editor, David Zweig, davidz@worldbusiness.org • Phone 510 547-3223