Conspiracy Theory or Automatic Pilot:

The Economic Roots of Environmental Destruction

By

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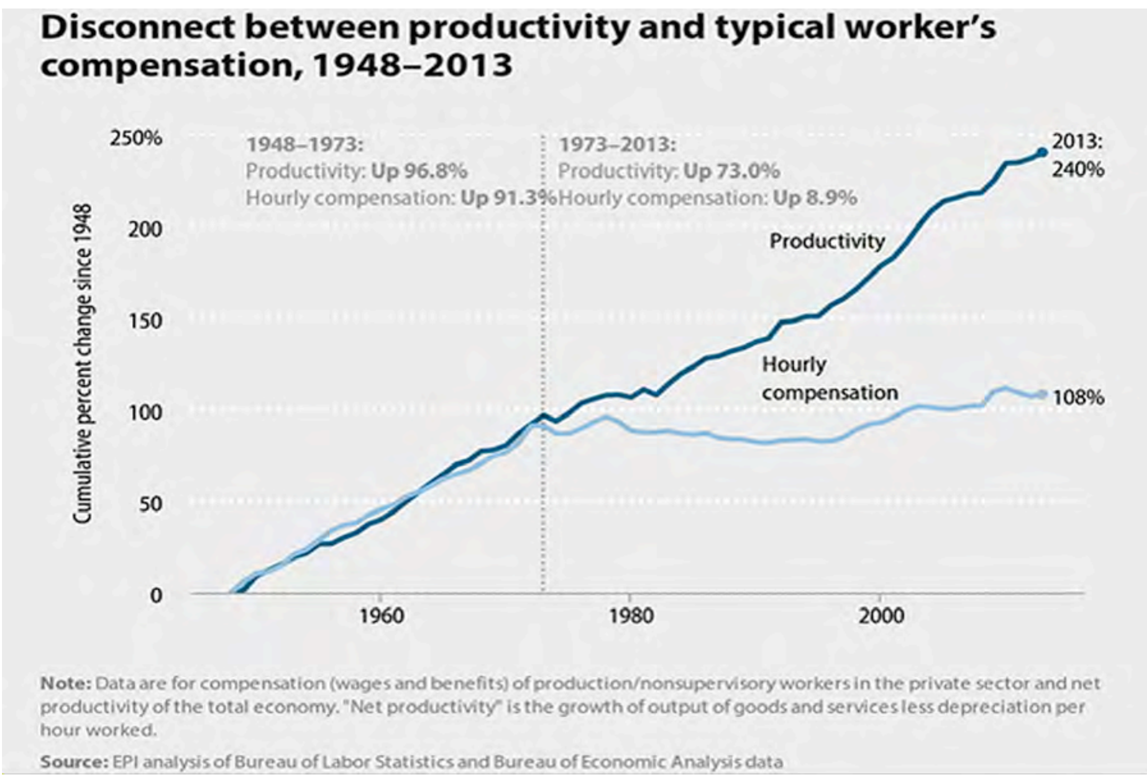
Foreword to the 2017 Edition

The original version of this paper was written fifteen years ago. At that time the most egregious example of the manipulation of financial markets described here was the savings and loan scandal. The dot com bubble had not yet burst, and the financial meltdown of 2008 was not even a consideration. The Supreme Court had not yet decided the Citizens United case, but the corporate plunder occurring as described here was picking up steam. Although "flash trading" was occurring in 2000, it had still not reached the level of danger to the economy that it did in the mid-2000s and early 2010s - much of it aided and abetted by the spectacular growth of computer power and telecommunications speed.

However, the foundation elements of this report remain solid. The references are still meaningful. Some new books have been written, such as Thomas Piketty's tome, "Capital in the Twenty-First Century" about income inequality. Recent attempts have been made to pass transactions taxes such as the Robin Hood Tax on Wall Street. I've updated this paper where relevant. But, sadly, the basics have not really changed in fifteen years - they've actually gotten worse! When I was a young man essays were being written about how society would cope with all the free time we would have due to increased productivity and automation. People would only have to work 30 hours a week to have the good life! The assumption was that the increased economic productivity due to technology would be shared equally with the working folks. Because of the basic tenets of predatory capitalism, this turned out not to be the case. The simple chart below shows the perversion of the economic system that resulted.



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I. Introduction

A. Purpose

My objective in this paper is to explain to myself the structure of influence that is at the heart of environmental problems (including the welfare of individual human beings). From the ideas developed in the publications listed in the reference section, as well as my own personal experience, I conclude that the *root cause* of all social and environmental problems is the structure and influence of global financial markets. There are many proximate causes of environmental degradation, but I submit that they are fundamentally financially-driven, based on incorrect economics combined with income inequalities, exacerbated by population growth, fueled by overconsumption, and supported by the mythology-based propaganda of the "free market/globalization at any cost" advocates.

This paper is not meant to be an academic or scientific exercise for economists or policy makers. I will shamelessly borrow from the referenced books and articles. It is meant to create a "conversion experience" for the reader. It describes simple, elegant, and obvious (once you think about them) reasons for our present condition. I call it my "flat forehead" paper. Take your hand and slap it against your forehead repeatedly as you chant, "Why didn't I think of that?," "It's so obvious!," "How could they get away with that?" And then, if you feel sufficiently inspired to learn more, please read the first five to ten books in the references. Believe me, they are exciting and will fundamentally change the way you perceive the world around you.

And people are intimately involved in it all. I've been fortunate in my career to be able to travel internationally. I often think that sending enough Americans on selected international trips to Central and South America, Africa, and Asia would dramatically increase support for the environmental and social justice movements. When I travel I like to experience the way people live. I always ask myself how I would feel if I were in their situation. One experience stands out for me as emblematic of our present state.

On a business trip to sell telephone systems to the Indonesian government, I took a side trip to a market in a poor part of Jakarta. The smell was horrid. The narrow alleyways were dirt turned to mud by a recent rain. Garbage was rotting before my eyes. The people were curious but friendly – this was just how they lived. In a meat and fish section a man was butchering a pig next to trays filled with dry and "fresh" fish. It was hard to see the meat and fish because of the swarms of flies that covered them. The man's young son had the task of sweeping a palm frond over the meat and fish to make the flies leave long enough for the shoppers to see the product. The boy appeared to be proud of his responsibility and his father talked to him kindly while he continued butchering. Several days later, while watching my then six-year old son learning to use our new computer, I was emotionally overwhelmed by the dichotomy between the lives of these two young boys!

B. Philosophy

Since language often drives perception, we must make it clear that environmental groups are not *special interest* groups. They don't build boats or run sawmills. Environmental organizations are ***universal interest*** groups with a special mission and responsibility in the growing "social sector" of society. There is more universal truth in a forest or an ocean than in any chainsaw or drift net, and these universal truths are what sustain human life – literally! Environmental groups are advocates for the very life support system of the earth, which must be healthy for the rest of civil society to flourish.

I believe that assemblies of people variously described as volunteer agencies, non-profits, non-governmental organizations (NGOs) should be viewed as an important new sector of society – the social sector. The concept of the Social Sector (civil society) as a formally recognized sector of society - equal in status to the Public Sector (government) and the Private Sector (business) - gives legitimacy to social institutions that have too often been condescendingly thought of as simply volunteer groups. But the social sector must take precedence over the public sector, which in turn must take precedence over the private sector.

Much of the most important work in America is not done for pay. This includes not just the home, but also the broader realm of neighborhood and community. Work done here is the nation's informal safety net, the invisible social matrix on which a healthy market economy depends. Whether each additional lawyer, broker, or advertising executive represents a net gain for the nation is arguable. But there is little question that workers in the under-served community and volunteer sectors - the social sector of churches and synagogues, civic associations, environmental groups, and informal neighborly efforts – are doing work that is desperately needed. It logically follows that some mechanism must be developed to guarantee sufficient funding for this sector.

We hear about "sustainable this" and "sustainable that" almost everywhere. Paraphrasing former Labor Secretary Robert Reich, rarely has a term of public discourse gone so directly from obscurity to meaninglessness without any intervening period of coherence. But the word sustainability, defined clearly, is still the most comprehensive term we have for the process. There are several good definitions and the one you like may just be a matter of style. The "Three E's" – Environment, Economy, and Equity (Social Justice) - are being used by many sustainability advocates as a unifying concept. Elkington [12], discussing sustainable business practices, refers to the Three E's as the "triple bottom line" of sustainability.

A simple yet elegant definition, derived from Redefining Progress, is given by Sustainable Sonoma County:

> Sustainability means securing a high quality of life within the means of nature. Sustainability secures people's quality of life within the means of nature in a way that is fair and equitable to all humanity, to other species, and to future generations. Sustainability recognizes the interrelatedness of the economy, society, and environment. It requires that we not consume resources faster than they can be renewed nor produce wastes faster than they can be absorbed.

Another short definition is:

Sustainability is the balanced approach to integrating the environment, the economy, and social equity which allows present generations to meet their needs and to achieve a high quality of life within the biological carrying capacity of the earth without negatively affecting the ability of future generations to do the same.

But pushing the supposed "moral superiority" of sustainability will not make it happen. I heard a saying once that if you're not liberal when you're young, you don't have a heart; but if you're not conservative when you're older, you don't have a mind. I think we can develop a single organ that combines the best of heart and mind, call it the soul if you want, that puts us squarely on the right path. Sustainability will remain a hard sell until we can show that people have more to gain than to lose by changing their ways. Change flows from necessity, hope, realizable aspirations, and joy, not shame and blame.

It's useless to think we always have to harm what we touch. We're going to touch it as long as we exist. The romantic fantasy of humans as an irremediably nasty plague on the Earth needs to go the way of other adolescent self-indulgences. It may stem from genuine regret and dismay, but it's no more useful than sulking silently when asked not to monopolize a conversation. And for those dedicated to imposing their more ascetic solutions on the rest of us let me quote one of the most basic economic principles given by Herman Daly, "We can surely eat lower on the food chain, but we cannot eat recipes."

Finance and economics are the keys. Without understanding this we can only become frustrated if our recycling group can't seem to get our local supermarket to put more effort into such an "obvious" need as recycling plastic bags. But is it all a conspiracy? Rather than just a simple conspiracy, I believe we are witnessing another evolutionary struggle of ideologies. An ideology is a belief-system – a set of beliefs, myths, and hypotheses with some internal coherence – that seeks to shape the fundamental thought processes of a society. Once an ideology is dominant and internalized by the majority, an automatic pilot syndrome can control a society's path with almost no one paying attention to, much less questioning, the outcomes.

Ignorance is remediable, but it does take work. Ideology may be based on ignorance, but it takes much more than work to change. It usually takes a conversion experience. There are no easy solutions to any of the problems covered in this paper. Some might say there are no solutions at all – that it's already too late. The downside of analyzing the Siamese twins of environmental/social problems and their root causes is that it can bring on a state of emotional helplessness. The situation is so breathtakingly complex that sometimes it feels as if the only thing we can do is sit back and admire the problem.

Why do we really care about what happens to the earth, to our children, after we die? Motivational studies over decades have confirmed that everyone, given the choice, wants to do the best they can. Good educational and business environments are designed to allow for individual initiative in solving problems and achieving optimal solutions. Why, then, is there so much apparent conflict, especially in the environmental area? Paul Hawken's book, The Ecology of Commerce [16], addresses this issue, especially for small businesses:

> "It's like being a single parent when the dog has run away, the children are fighting, the dinner is burning, the baby-sitter hasn't shown up, we are late for the PTA meeting, and have just spilled gravy on the carpet when someone doing a survey knocks at the door and wants to know how we feel about the proposed landfill at the edge of town."

Once there were hippies, yippies, and yuppies, and maybe we've all been some of one or the other or all. But now I think we're cultivating a group of MOPIs - Moderately Old and Philosophically Incapacitated. This applies directly to the financial and corporate people fostering the festering. But even in the environmental community, there are some who mope around finding things to complain about and standing in the way of imaginative, integrative solutions. Although the right to be heard does not include the right to be taken seriously, too much negativity can damage credibility. Because of the fragmentation of our political system, our operating reality is "majority rule by the minority who care", and we who care must be effective.

Positive environmentalists recognize that solving any problem requires carefully defining the root cause of the real problem and understanding its impact on society and the economy. The goal is not ascetic self-discipline, but a sort of unadorned grace. Solutions don't need to be the result of some dialectical struggle between good and evil. Many years ago, philosopher/logician Francisco Varela [24] described the "Star" hypothesis in which he proposed that for every duality in apparent conflict there is a larger whole within which the duality is integrated and to which it contributes stability. He pointed out that in Hegelian dialectics dual interactions are of the zero sum form: what one side gets the other side loses. But the operational form of real interactions seems almost universally to be of non-zero sum form: every participant can win (by playing the game of the whole).

When we look at natural systems, nowhere do we find opposition apart from our own projection of values. The apparent conflict pair, predator/prey, for example, does not operate in opposition. Both generate a whole unity, their ecosystemic domain, where there is complementarity, mutual stabilization, and benefits in survival for both species (although not necessarily for individual members of the species). So although we can project values to the apparent duality of predator/prey, the inclusive whole is really ecosystem/species interaction. A humorous example can illustrate this point. Recently several endangered peregrine falcons were released in the San Francisco Bay Area. Within days a distraught person called the local Audubon Society to report that the falcons were killing and eating some beautiful little quail that lived nearby. This person demanded that someone come to kill the hawks and save the quail!

To simplify, if you really think there's a basic conflict that can't be resolved, you're not thinking at a high enough system level. I've always tried to approach conflict with this philosophy (it's really not that complex or radical). But it often takes a lot of work to educate the other side in an apparent conflict situation. I prefer to think of working strenuously toward a solution I believe is correct as a "strategy of aggressive balance" rather than compromise. I have a cautious optimism about our future. The reason I'm cautious is because it will take a lot of work on the part of many people to make a difference, and I know how lazy I can get. That's why part of the final solution is to maximize citizen involvement at every level possible.

C. Structure

Although there are possible solutions to specific problems sprinkled throughout the paper and in the final section, I don't really discuss specifically environmental issues such as wetlands preservation, for example. I believe environmental organizations are one of the most important types of social sector institution. If we understand economics as a subsystem of the environment, environmental organizations take on special significance since they are the vanguard bringing the concepts of natural capital, ecosystem services, carrying capacity, and ultimate survival-mode issues into the conversation. Based on the Star hypothesis above, I look at a local "conflict" of wetlands preservation versus a sprawl housing development, for example, as an opportunity to raise the system level of the discussion. Convincing everyone of the importance of critical ecosystem services rendered by wetlands, combined with the fact that people need humane places to live, can lead to a change in the fundamentals of land use, community design, and architecture. This may not be easy, but through a strategy of aggressive balance environmental groups may be able to lead their communities (some of them kicking and screaming, to be sure) into a more sustainable future.

It may seem strange for a paper on environmental economics and sustainability to put that section near the end. But when we understand the full impact of the present financial and economic systems, the need for an alternative becomes very obvious and much easier to understand. Although many concepts in this paper are intimately interrelated, its structure attempts to show how some of those interrelationships evolve from specific approaches to reality.

So I begin with some of the very basic ideas of economics which have become mythologized as the fundamental rules of the game. Then I discuss money, how it's created, and how it's used in support of these rules. If you have money and rules, you next must evolve a financial system to track and facilitate economic activity. The financial system itself, and the people who run it, will create new rules, goals, and assumptions. The section on growth attempts to show how the financial system has created an assumption of the need for growth in contradiction to many indicators of its negative consequences. I include a section on corporations next because they are the basic agents through which economic activity and cultural change are driven. The section on globalization follows irresistibly from the forces unleashed by the logic of the world view described in the previous sections.

Finally, the last two sections describe the basics of environmental economics and sustainability followed by proposed solutions. Formulating solutions to complex problems is always difficult. That's why they always seem so radical, especially when economics is involved – there's a built-in massive inertia inherent in the status quo. But the solutions proposed have widespread and growing support. Environmental organizations must work to create "conversion experiences" in everyone they can reach. It's critical for as many people as possible to contribute in every large or small way they can in every area of the social sector. Hopefully the conversion experience for society doesn't have to wait for some avoidable disaster to trigger it.

II. Financial Principles for Fun and Profit

David Korten [2] says, "I first encountered economics in college when I chose it as my undergraduate major. I soon found it mechanistic, boring, and detached from reality, so I switched to the study of human behavior and organization. I've since come to realize that economic systems are the dominant systems for organizing behavior in modern societies and are most appropriately studied as behavioral systems." Economics as a "social science" means it involves people, and that it strives to be considered a scientific discipline. But "people" is a notoriously complex concept to bring under supposedly objective and predictive scientific scrutiny. Therefore, certain abstractions have been used to simplify the process. These abstractions have become principles and, finally, beliefs. These beliefs, or more accurately, myths, are what drive the financial system because they are used to make real people act, unquestioningly, in the best interests of the financial system itself.

A. Homo Economicus: The Sanctification of Greed

The most important abstraction basic to contemporary economic theory is that of *Homo economicus*. The chief feature of the abstract *Homo economicus* is extreme individualism combined with the insatiability of total wants.

There are explicit underlying assumptions about this abstract *Homo economicus*:

- Humans are motivated by self-interest, which is expressed primarily through the quest for financial gain.
- The action that yields the greatest financial return to the individual or firm is the one that is most beneficial to society.
- Competitive behavior is more rational for the individual and the firm than cooperative behavior; consequently, societies should be built around the competitive motive.
- Human progress is best measured by increases in the value of what the members of society consume, and ever higher levels of consumer spending advance the well-being of society by stimulating greater economic output.

To put it in harsher language, these ideological doctrines assume that:

- People are by nature motivated primarily by greed.
- The drive to acquire is the highest expression of what it means to be human.
- The relentless pursuit of greed and acquisition leads to socially optimal outcomes.
- It is in the best interest of human societies to encourage, honor, and reward the above values.

I, among many others, think this picture of human beings is profoundly erroneous and conclusions drawn by economists about the real world from this model must be deeply suspect. On a very personal level, is this the real you? People almost everywhere, when asked about the essential elements of a good life come up with much the same list:

- A secure means of livelihood that provides for our basic material needs while earning us a place of respect in our community;
- A strong, nurturing family, friends, and a supportive, peaceful, and secure community that allows us to explore and develop our capacity for loving relationships;
- The opportunity to learn and to give expression to our awareness and understanding of ourselves and the world around us both intellectually and artistically;
- Good physical health and the opportunity to engage in athletics, dance, and other forms of physical expression that make our bodies tingle with life's energy;

- A sense of belonging to place, community, and life, yet with the freedom to make personal choices- and sometimes to wander and explore without the obligations of place;
- A clean and healthy environment vibrant with the diversity of life; and
- An assurance that our children will have an opportunity for the same.

B. The Invisible Hand: Is It Picking Your Pocket?

So why do many economists use this model? Because they believe *Homo economicus* is close enough to reality to support their theories. And because they have a nearly religious belief in the "free market." Morality and community have been replaced by Adam Smith's "invisible hand." In 1776, Scottish scholar Adam Smith published his pathbreaking book, *An Inquiry into the Nature and Causes of the Wealth of Nations*. Modern economics may be dated from that historic year, which was also notable for the Declaration of Independence.

Smith's message was clear. Private markets should be liberated from the tyranny of government control. In pursuit of their private interests, individual producers would make the goods that consumers want. It is not, said Smith, "from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest." There is an "invisible hand," he wrote, that causes the producer to promote the interests of society. Indeed, "by pursuing his own interest he frequently promotes that of society more effectually than when he really intends to promote it." In general, said Smith, the government should be cautious in interfering with the operations of the private market. According to Smith the best policy is *laissez faire* – leave it alone. George Soros [14] has termed this philosophy *market fundamentalism* (akin to religious fundamentalism). This economic theory has become the ingrained philosophy/mythology of the financially powerful and is being accepted uncritically by the media and the people. All you need to do is strive to become rich yourself and all good things will automatically come to society and the world!

But in reality, *market theory,* as articulated by Smith and those who subsequently elaborated on his ideas, developed into an elegant and coherent intellectual construction grounded in *carefully articulated assumptions* regarding the conditions under which such self-organizing processes would indeed lead to socially optimal outcomes. For example,

- Buyers and sellers must be too small to influence the market price.
- Complete information must be available to all participants and there can be no trade secrets.
- Sellers must bear the full cost of the products they sell and pass them on in the sale price.
- Investment capital must remain within national borders and trade between countries must be balanced.
- Savings must be invested in the creation of productive capital.

Herein lies the catch: the conditions of what we currently call a *capitalist economy* directly contradict the assumptions of market theory in every instance. Bear in mind that the optimally efficient market exists only as a theoretical construction. No economy has ever fully satisfied its assumptions and probably none ever will. The challenge facing those who would create an economy that approximates the market's promised outcomes of fair but modest returns to capital, full employment at a living wage, and socially-optimal allocation of society's productive resources is to establish a framework of rules that create as closely as possible the conditions that market theory assumes. Korten [3] attempts to do this with his concept of "mindful markets" discussed later.

C. The Free Market: Greed as Religion

Doug Henwood in his book Wall Street [9] points out that:

> “Studying economics also seems to make you a nastier person, not surprising based on the definition of *Homo economicus* given above. Psychological studies have shown that economics graduate students are more likely to "free ride" in classroom simulations - shirk contributions to an experimental "public goods" account in the pursuit of higher private returns - than the general public. Economists also are less generous than other academics in charitable giving. Undergraduate economics majors are more likely to defect in the classic prisoner's dilemma game than are other majors. And on other tests, students grow less honest, expressing less of a tendency, for example, to return found money after studying economics, but not after studying a control subject like astronomy.”

The beliefs espoused by free-market ideologues are familiar to anyone who is conversant with the language of contemporary economic discourse [2]:

- *Sustained economic growth,* as measured by gross national product, is the path to human progress.
- *Free markets,* unrestrained by government, generally result in the most efficient and socially optimal allocation of resources.
- *Economic globalization,* achieved by removing barriers to the free flow of goods and money anywhere in the world, spurs competition, increases economic efficiency, creates jobs, lowers consumer prices, increases consumer choice, increases economic growth, and is generally beneficial to almost everyone.
- *Privatization,* which moves functions and assets from governments to the private sector, improves efficiency.
- The primary *responsibility of government* is to provide the infrastructure necessary to advance commerce and enforce the rule of law with respect to property rights and contracts.

A number of valid ideas and insights have become twisted into an extremist ideology that raises the baser aspects of human nature to a self-justifying ideal. But economic efficiency is not synonymous with social desirability. Although this ideology denigrates the most basic human values and ideals, *it has become so deeply embedded within our values, institutions, and popular culture that we accept it almost without question*. It exists all around us and plays a critical role in shaping nearly every aspect of public policy.

In a self-justifying twist of moral logic, market fundamentalists commonly argue that *rich countries best help poor countries by increasing their own consumption* to increase demand for the exports of poor countries, thus stimulating their economic growth and lifting their poor up from poverty. Denying or ignoring the existence of environmental limits, they maintain that there is no moral or practical basis for reducing the consumption of the rich to relieve the deprivation of the poor. To the contrary, they argue, it is the moral duty of the rich to consume more to create more growth to provide more opportunities for the poor - a convenient rationalization for tax breaks for investors and the colonization of ever more of the world's resources to support self-indulgent consumption by those who can afford it. *The Economist* magazine argued that it is *a moral duty of the rich countries to export their pollution to poor countries* because this provides poor people with economic opportunities of which they would otherwise be deprived.

In a more despicable example, a brief segment in a television documentary from some years ago on overpricing in the drug industry illustrates the extent to which some academic economists are revising economic theory to defend monopoly pricing. The documentary looked into a case in which a drug company was charging a price far above its costs for a patented drug that a small number of desperate patients depended on for their lives. An economist who was invited to comment argued that because the patients who used the drug had no alternative, the drug company had a fiduciary responsibility to its shareholders to raise the price to the highest level the users considered their lives to be worth. Because the drug's current high price was clearly below this amount, the company was in fact underpricing the product. Adam Smith, a staunch foe of monopoly pricing, must have been turning in his grave. (And you can believe the drug company was lobbying to have government and private health insurance help pay for the drug.)

Benjamin Barber [7] states:

> "There is today a disastrous confusion between the moderate and mostly well-founded claim that flexibly regulated markets remain the most efficient instruments of economic productivity and wealth accumulation, and the zany overblown claim that naked, wholly unregulated markets are the sole means by which we can produce and fairly distribute everything human beings care about, from durable goods to spiritual values, from capital investment to social justice, from profitability to sustainable environments, from private wealth to the essential commonweal. This second claim has moved profit-mongering privateers to insist that goods as diverse and obviously public as education, culture, penology, full employment, social welfare, and ecological equilibrium be handed over to the profit sector for arbitration and disposal."

But even one of the most respected and successful capitalist investors in the world, George Soros, believes we are in a crisis of global capitalism [14]:

> "There are people who question whether the collective interests of society exist at all. Society, they maintain, consists of individuals, and their interests are best expressed by their decisions as market participants… The functions that cannot and should not be governed purely by market forces include many of the most important things in human life, ranging from moral values to family relationships to aesthetic and intellectual achievements. According to market fundamentalism, all social activities and human interactions should be looked at as transactional, contract-based relationships and valued in terms of a single common denominator, money. Activities should be regulated, as far as possible, by nothing more intrusive than the invisible hand of profit-maximizing competition. Market fundamentalism has become so powerful that any political forces that dare to resist it are branded as sentimental, illogical, and naïve. Yet the truth is that market fundamentalism is itself naive and illogical. To put the matter simply, market forces, if they are given complete authority even in the purely economic and financial arenas, produce chaos and could ultimately lead to the downfall of the global capitalist system."

Markets don't tell people with substantial incomes to consume no more than their rightful share of ecosystem resources. They don't tell retailers not to sell guns to children. They don't tell producers that their wastes must be recycled. They don't give priority in the allocation of scarce resources to the basic needs of those with little or no money before providing luxuries for those who have great wealth. Indeed, in each instance, they generally do exactly the opposite. There is no substitute in a complex modern society for the market as an efficient mechanism for setting most prices, motivating productive activity, and processing routine economic transactions. However, although markets are useful institutions for *implementing* public priorities, they are inappropriate institutions for *setting* them.

Assumptions for a Perfect Free Market

- All participants have equal access to perfect information.
- There is perfect competition.
- Prices are absolutely accurate and up-to-date.
- Price signals completely reflect every cost to society.
- There is no monopoly (sole seller).
- There is no monopsony (sole buyer).
- No individual transaction can move the market and prices.
- No resource is unemployed or underemployed.

- There's nothing that can't be readily bought and sold.
- Any deal can be done without "friction" (no transaction costs).
- All deals are instantaneous (no transaction lags).
- No subsidies or other distortions exist.
- No barriers to market entry exist.
- There is no regulation.
- There is no taxation (or taxes don't distort resource allocations).
- All investments can be uniformly traded and exchanged.
- At the appropriate interest rate, capital is available to everyone.
- Sole motivation is maximizing personal "utility" (wealth).

D. Free Trade: Ricardo's Comparative Advantage Debased

Many economists use David Ricardo and his concept of "comparative advantage" to support the concept of unfettered free trade. Ricardo showed how free trade could be mutually beneficial for countries even where there were dramatic one-sided differences in how expensive it would be to produce the same goods in each country. Consider his example of England and Portugal in the eighteenth century. It was cheaper to produce both wine and cloth in Portugal, in absolute terms, than in England. But it was also true that England's cloth industry was - relative to its wine industry - significantly more efficient. England's disadvantage relative to Portugal in cloth production was less than its disadvantage relative to Portugal in wine production. England had a comparative advantage in cloth, Portugal a comparative advantage in wine. Ricardo showed that each country would be better off specializing in the product in which it had a comparative advantage and trading for the other, regardless of absolute advantage. Free trade between the countries, and competition within each country, would lead to this mutually beneficial result.

Modern economists seem to have forgotten one of Ricardo's basic premises. Ricardo was very careful to base his comparative advantage argument for free trade on *the explicit premise that capital was immobile between national communities*. Capital, as well as labor, stayed at home, only goods were traded internationally. It was the fact that capital could not, in this model, cross national boundaries that directly led to replacement of absolute advantage by comparative advantage. Capital follows absolute advantage as far as it can within national boundaries. But since by assumption it cannot pursue absolute advantage across national boundaries, it has recourse to the next best strategy, which is to reallocate itself within the nation according to the principle of comparative advantage. Among other required conditions, trade must be balanced between the two countries, both countries must have full employment, and investors must not be able to transfer their production facilities from one to the other.

Ricardo's reasoning is quite straightforward. If trade between countries is balanced, labor is fully employed, and investors are unable to transfer their assets abroad, the investors who find they cannot compete against foreign imports in one industry will shift their investment and the related jobs to another industry in which their country has some natural comparative advantage. For example, if for reasons of climate Portugal has an advantage in growing grapes and producing wine, and if for reasons of climate, technology, cheap energy, and labor skills England has an advantage in growing wool and producing woolen cloth, both countries stand to benefit if Portuguese woolens producers shift to wine production and English wine producers shift to production of woolen cloth, and the products are then exchanged through trade. Workers and capital remain fully employed in both countries, the British are able to enjoy more wine, and the Portuguese are able to enjoy more woolen clothing.

It's an entirely different matter if both investments and goods are free to flow where they will - which is the goal that the new global capitalists are advancing through international trade and investment agreements and organizations with names like NAFTA, GATT, WTO, OECD, APEC, and the MAI. Negotiated without public discussion and ratified by legislative bodies with limited debate and no opportunity for amendment, these agreements are used to eliminate economic borders and regulatory restraints on the power of the institutions of capitalism to move goods and capital freely, without regard to national interests or trade balances, wherever they see prospects for quick profit.

Assume under a regime of completely open borders that Portugal has both a more favorable climate and a substantial labor surplus that keeps wages deeply depressed, and that the retail prices of both cloth and wine tend to be higher in England. In this instance British investors will find it profitable to move their looms and wine presses to Portugal and ship both cloth and wine back to England.

Unable to compete with the lower-cost imports, the remaining British wine and textile producers will likely be driven out of business - depressing wages, increasing unemployment, and ultimately substantially reducing the British market for Portuguese wine and cloth. In the meantime, the Portuguese may find their economy increasingly controlled by British investors intent on keeping Portuguese wages low and repatriating as much profit as possible back to England to finance purchases of Portuguese textiles and wine by the remaining elite. This may result in additional wage employment in Portugal, but with wages low and much of the output exported to a narrow market, Portuguese workers may find they are unable to afford to buy the products of their own labor. The only winners are the investor classes, who point out that the Portuguese workers should be happy to have any kind of job at all given the sad state of both the British and Portuguese economy. It is toward this latter world that economic globalization has moved us.

For Ricardo it is the capitalist's attachment to his national community that keeps capital at home. Adam Smith held the same view, and, interestingly, it is in the context of his discussion of the international immobility of capital that the famous “invisible hand" passage occurs. As Smith put it:

> “By preferring the support of domestic to that of foreign industry, he (the capitalist) intends only his own security; and by directing that industry in such a manner as its produce may be the greatest value, he intends only his own gain, and he is in this, as in many other cases led by an invisible hand to promote an end which was no part of his intention.”

As Daly points out [1]:

> “*When the self is constituted by internal relations in community it is not so surprising that pursuit of self-interest should promote the community welfare*.”

Ricardo emphasized that he would be sorry to see these feelings of community weakened. But of course they have in fact been greatly weakened, in no small part by the globalist ideology ironically justified by misunderstandings of Ricardo's own comparative advantage argument. Nowadays, in the twentieth century's globally integrated view of free trade, it no longer makes sense to think of national teams of labor and capital - both become global. Formerly national capitalists in the United States now communicate with their former domestic workers by mobile telephone in the manner of the following conversation imagined by David Korten [2]:

> “Sorry, old Union Joe Six-Pack, but we live in a global economy - I can buy labor abroad at one-tenth the wage your union wants, and with lower environmental and social taxes, and still sell my product in this market or any other. Your severance check is in the mail. Good luck.... What do you mean, "bonds of national community"? I just told you that we live in a global economy, and have abandoned all that nationalistic stuff that caused two world wars. Factor mobility is necessary for maximum efficiency, and without maximum efficiency we will lose out in global competition.... Yes, Joe, of course there will be a tendency to equalize wages worldwide, but profits will also equalize.... Well, yes, of course wages will be equalized downward and profits equalized upward. What else would you expect in a global economy that reflects world supply and demand? Don't you want the Chinese and Mexican workers to be as rich as you are? You're not a racist, are you, Joe? Furthermore, economists have proved that free trade benefits everyone.

So be grateful.... Now that you have some extra time, Joe, sign up for Economics 101 at your local community college. You'll learn about comparative advantage. It'll help you feel better."

E. Moral Hazard: Uncle Melvin's Problem

Moral hazard in financial markets is the risk (hazard) that the borrower might engage in activities that are undesirable (immoral) from the lender's point of view because they make it less likely that the loan will be paid back. Frederic Mishkin gives a simple example of moral hazard. [19]

> "Suppose that you made a $1000 loan to a relative, Uncle Melvin, who needs the money to purchase a word processor so that he can set up a business typing students' term papers. Once you have made the loan, however, Uncle Melvin is more likely to slip off to the track and play the horses. If he bets on a 20-to-1 long shot and wins with your money, he is able to pay you back your $1000 and live high on the hog with the remaining $19,000. But if he loses, as is likely, you don't get paid back, and all he has lost is his reputation as a reliable, upstanding uncle. Uncle Melvin therefore has an incentive to go to the track because his gains ($19,000) if he bets correctly may be much greater than the cost to him (his reputation) if he bets incorrectly. If you knew what Uncle Melvin was up to, you would prevent him from going to the track, and he would not be able to increase the moral hazard. However, because it is hard for you to keep informed about his whereabouts - that is, because information is asymmetric (economic jargon for the borrower knowing something the lender doesn't) - there is a good chance that Uncle Melvin will go to the track and you will not get paid back. The risk of moral hazard might therefore discourage you from making the $1000 loan to Uncle Melvin, even if you were sure that you would be paid back if he used it to set up his business."

The greatest recent example of the sanctification of greed creating a moral hazard was the savings and loan debacle in the United States. Who were the Uncle Melvins of that disaster? As a *Wall Street Journal* piece on the thrift disaster noted, the list of malefactors is "so long that some observers conclude there is something profoundly wrong with the country's political and financial systems, which appear easily undone by feckless and reckless behavior." In fact, they say, "the behavior of this legion calls into question the performance of this nation's professional class itself".

As Doug Henwood notes [9]:

"Every institution that was supposed to watch the S&Ls botched the task. Topping the roster of failures are the regulators, federal and state, in the grip of the early-Reagan-era euphoria, who failed to supervise the institutions - often run by dim provincials - that they had just set free to enter businesses they'd never been in before. Congress had long been in the industry's pocket. Even a president's son, Neil Bush, helped drive an S&L into the ground, Denver's Silverado. The administration with the complicity of an uncurious press successfully kept Silverado out of the 1992 campaign, no doubt helped by equal Democratic political and financial collusion in the disaster.

> But it's wrong to blame only the government, despite the American habit of doing so. Virtually every high-end profession around was involved. Auditors repeatedly certified fictitious financial statements, lawyers argued on behalf of con artists and incompetents, investment banks bilked naive S&L managers, and consultants testified as character witnesses for felons. One of these character witnesses was Alan Greenspan, then an undistinguished economist from whom "you could order the opinion you needed." Greenspan praised thrift-killer Charles Keating's "seasoned and expert" management team for rescuing a "badly burdened" thrift through "sound and profit-able" investments. Every word of this was untrue. Greenspan's reputation, however, survived intact (just as it did his earlier demented jottings for Ayn Rand's *Objectivist* newsletter).

> Deregulation was the proximate cause, but moral hazard was the engine of destruction. The laws and regulations governing the thrifts had long been written by industry lobbyists, and their regulators were in thrall to the S&Ls as well, but this cozy relationship became particularly dangerous, as they were free to go wild. That wildness, as everyone knows by now, included showering money on superfluous shopping centers in the middle of nowhere, windmill farms, prostitutes, speculative housing, speculative office buildings, cocaine, junk bonds, art for the CEO's house, the Nicaraguan contras, and yacht parties on the Potomac. Hot for funds to get into these pursuits, and subsequently hotter for funds to cover losses, thrifts pushed up interest rates to attract deposits from Wall Street and other investors."

The price of the S&L bailout, paid by US taxpayers in another transfer of wealth from the middle class to the rich, would have funded the presence of 10 full-time bank examiners in every thrift in the country for close to 200 years. Extend this concept to the present global movement of trillions of dollars a day and tell me not to worry! Tell me that the "invisible hand" will protect what's left of the rain forests!

You would think some people would have learned their lesson, but the financial crisis of 2008 would prove you wrong.

The collapse of Lehman Brothers, a sprawling global bank, in September 2008 almost brought down the world's financial system. It took huge taxpayer-financed bail-outs to shore up the industry. Even so, the ensuing credit crunch turned what was already a nasty downturn into the worst recession in 80 years. As with the savings and loan crisis, taxpayers paid a huge price for other people's greed.

Per the Economist in 2013:

> "With half a decade's hindsight, it is clear the crisis had multiple causes. The most obvious is the financiers themselves—especially the irrationally exuberant Anglo-Saxon sort, who claimed to have found a way to banish risk when in fact they had simply lost track of it. Central bankers and other regulators also bear blame, for it was they who tolerated this folly.
>
> Start with the folly of the financiers. The years before the crisis saw a flood of irresponsible mortgage lending in America. Loans were doled out to "subprime" borrowers with poor credit histories who struggled to repay them. These risky mortgages were passed on to financial engineers at the big banks, who turned them into supposedly low-risk securities by putting large numbers of them together in pools.
>
> Low interest rates created an incentive for banks, hedge funds and other investors to hunt for riskier assets that offered higher returns. They also made it profitable for such outfits to borrow and use the extra cash to amplify their investments, on the assumption that the returns would exceed the cost of borrowing.
>
> When America's housing market turned, a chain reaction exposed fragilities in the financial system. It became difficult to sell suspect assets at almost any price, or to use them as collateral for the short-term funding that so many banks relied on. Trust, the ultimate glue of all financial systems, began to dissolve in 2007—a year before Lehman's bankruptcy—as banks started questioning the viability of their counterparties."

III. Money: Is It Wealth or Ilth?

The following is an excerpt from an article By David Korten in *Yes!* [20, pg.14]:

> "What is this madness? The economy is booming. The stock market is setting new records. The US is again heralded as the world's most competitive economy. We are assured that we are richer than ever before and getting richer by the day.
>
> We are also told there is no longer enough money to provide an adequate education for our children, health care and safety nets for the poor, protection for the environment, parks, a living wage for working people, public funding for the arts and public radio, or adequate pensions for the elderly. According to the official wisdom, even though richer, we can no longer afford what we once took for granted. How is this possible? What's gone wrong?
>
> A quick hint. The problem most definitely is not a lack of money. The world is awash in it. The world's 450 billionaires alone have combined financial assets greater than the combined annual incomes of half of humanity. The problem is this: a predatory global financial system, driven by the single imperative of making ever more money for those who already have lots of it, is rapidly depleting the real capital - the human, social, natural, and even physical capital -on which our well-being depends.
>
> The truly troubling part is that so many of us have become willing accomplices to what is best described as a war of money against life. It starts, in part, from our failure to recognize that money is not wealth. Wealth is something that has real value in meeting our needs and fulfilling our wants. Modern money is only a number on a piece of paper or an electronic trace in a computer that by social convention gives its holder a claim on real wealth. In our confusion we concentrate on the money to the neglect of those things that actually sustain a good life.
>
> It is striking how difficult our very language makes it to express the critical difference between money and real wealth. Picture yourself alone on a desert island with nothing to sustain yourself but a large trunk filled with bundles of hundred dollar bills. The point becomes immediately clear.
>
> Think of a modern money economy as comprised of two related subsystems. One creates wealth. It consists of factories, homes, farms, stores, transportation and communications facilities, the natural productive systems of the planet, and people going to work in factories, hospitals, schools, stores, restaurants, publishing houses, and elsewhere to produce the goods and services that sustain us. The other creates and distributes money as a convenient mechanism for allocating wealth. In a healthy economy the money system serves as dutiful servant of wealth creation, allocating real capital to productive investment and rewarding those who do productive work in relation to their contribution.
>
> In a healthy economy, money is not the dominant value, nor is it the sole or even dominant medium of exchange. Indeed, one of the most important indicators of economic health is the presence of an active economy of affection and reciprocity in which people do a great many useful things for one another with no expectation of financial gain. Such voluntary sharing creates and maintains the fabric of trust and mutual caring of which the social capital of any healthy family, community or society is comprised.
>
> Pathology enters the economic system when money, once convenient as a means of facilitating commerce, comes to define the life purpose of individuals and society. The human, social, and natural capital on which the well-being of any society depends becomes subject to sacrifice on the

> altar of money making. Those who already have money prosper at the expense of those who don't. It is a social pathology called finance capitalism.
>
> The biggest profits are going to those who deal in pure finance. For 1996, the shareholders of the seven largest US money center banks reaped an average total return of 44 percent. Mutual funds specializing in finance averaged a 26.5 percent return, besting all other industry categories by a wide margin. Funds specializing in much-touted technology stocks turned in a poor second at 21 percent.
>
> The growing dominance of money is also revealed in the increasing monetization of human relationships. Not long ago, even in the most supposedly advanced countries, half of the adult population worked without pay to maintain home and community. These are among the most fundamental and important of functions in a healthy economy. Now, it typically takes two adults holding two to three paid jobs between them to support a household. Child and home care is either left undone or hired out. Community service becomes the work of public employees - to the extent there is public money to pay them. As the social capital of caring relations is depleted, family and community life fall into disarray."

To understand what has happened to the global financial system, we must begin with an understanding of the nature of money. Money is one of humanity's most important inventions, created to meet an important need. Economists define money as *anything* that is generally accepted in payment for goods or services or in the repayment of debts. It has three primary functions: as a *medium of exchange*, a *unit of account* (price), and a *store of value*. The earliest market transactions were based on the direct exchange of things of equal value, which meant that a transaction could occur only when two individuals met who each possessed an item they were willing to trade for an item possessed by the other. The useful expansion of commerce was greatly constrained. This constraint was partially relieved when people began to use certain objects that had their own intrinsic value as a medium of exchange-decorative shells, blocks of salt, bits of precious metals or precious stones. Eventually, metal coins provided more standardized units of exchange based on the amount of precious metal, generally silver or gold, they contained. Later, the idea emerged that it was more convenient to keep the precious metal in a vault and issue paper money that could be exchanged for the metal on demand. In a sense, the paper bill was the equivalent of a receipt showing that the bearer owned an amount of precious metal, but the paper was more convenient and transportable.

Each of these innovations was, however, a step toward *delinking money from things of real value*. On August 15, 1971, President Richard Nixon declared that the United States would no longer redeem dollars on demand for gold. The dollar was no longer anything other than a piece of high-grade (though tree-free) paper with a number and some intricate artwork issued by the U.S. government. The world's currencies were no longer linked to anything of value except the shared expectation that others would accept them in exchange for real goods and services. Once computers came into widespread use, the next step was relatively obvious - eliminate the paper and simply store the numbers in computers. Although coins and paper money continue to circulate, more and more of the world's monetary transactions involve direct electronic transfers between computers. Money has become almost a pure abstraction. And the creation of money has been delinked from the creation of value. There are two common ways to create money without creating value. One is by creating debt. Another is by bidding up asset values. The global financial system is adept at using both of these devices to create money delinked from the creation of value.

A. Debt: The Source of Most Money

The way in which the banking system creates money by pyramiding debt is elementary economics. Say Person A, a wheat farmer, sells $1,000 worth of wheat and deposits the money in Bank M. Retaining 10 percent of the deposit as a reserve, Bank M is able to loan $900 to Person B, which Person B deposits in her account in Bank N. Now Person A has a cash asset of $1,000 in Bank M and Person B has a cash asset of $900 in Bank N. Keeping a 10 percent reserve, Bank N is able to make a loan of $810 to Person C, who deposits it in Bank 0, which then loans $729 to Person D, and so on. The deposit of the original $1,000 earned from producing a real product for consumption by real people ultimately allows the banking system to generate $9,000 in additional new deposits by generating a corresponding $9,000 in new debt - *new money created without a single thing of value having necessarily been produced*.

The banks involved in this series of transactions now have $9,000 in new outstanding loans and $10,000 in new deposits on the loans on the basis of the original deposit of $1,000 from the sale of wheat. They expect to receive the going rate of interest, let's say 6 percent. This means that the banking system expects to obtain a minimum annual return of $540 on money that the system has basically created out of nothing. This is part of what makes banking such a powerful and profitable business!

In this instance, we have used the classic textbook example of how banks create money, taking into account the 10 percent reserve (the actual average is a bit less) that under present law must be deposited with the U.S. Federal Reserve system. Without such a reserve requirement, the banking system could, in theory, pyramid a single loan without limit, which is essentially what happened (accelerated by profound "moral hazard") during the Japanese real estate bubble and its subsequent collapse.

B. The Meaning of Debt: Debts Sink to the Bottom-Wealth Rises to the Top

Despite the greater public visibility of stock markets, the financial heart of capitalism is in the credit markets, a term covering loans arranged through a variety of instruments and institutions, from simple bank loans to complex bond products. Debts, mere promises to pay, are nonetheless transformed into commodities in the eyes of creditors. This capitalization of promised incomes allows nearly everything, from an industrial plant to an unspoiled wilderness to a human life, to be modeled as a quasi-credit, whose value today is the value of its future earnings stream - profits or wilderness services or wages, adjusted for value over time using prevailing interest rates and maybe an estimate of risk.

Per Henwood [9]:

> "Back in the 1980s, you used to read about the rising debt burden on households; for some reason, you don't read about it much in the 1990s anymore, even though the burden has continued to grow… Because of the decline in real hourly wages, and the stagnation in household incomes, the middle and lower classes have borrowed more to stay in place; they've borrowed from the very rich who have gotten richer. *The rich need a place to earn interest on their surplus funds, and the rest of the population makes a juicy lending target*."

Remember that money is created when banks lend it into existence. When a bank provides you with a $100,000 mortgage, say at 7% interest, it creates only the principal (which may have come from someone else's interest payments), which you spend and which then circulates in the economy. The bank expects you to pay back $240,000 over the next 30 years, but it doesn't create the additional $140,000 – the interest. Instead, the bank sends you out into the tough world to battle against everyone else to bring back the $140,000.

Mortgage loans are designed to provide quick returns to lenders. For the $100,000 loan discussed above, your regular monthly payment would be $665, of which $583 is interest and only $82 is principal. Only after 20 years of payments do the principal and interest part of your payment become equal, and by that time you have paid $117,000 in interest but still owe $57,000 on your original $100,000 loan.

The following statistics are from Henwood [9]:

> "In 1983, leaving aside the primary residence and mortgage debt on it, over half of all families were net debtors, and fewer than 10% accounted for 85% of the household sector's net lending.

The few lend to the many. At the end of 1995, U.S. households spent a total of 16.7% of their after-tax incomes on debt service - $903 billion. This represents a massive upward redistribution of income. But this borrowing has been a tremendous stimulus to consumer demand; between 1950 and 1995, the growth in consumer credit (excluding mortgages) financed nearly 20% of the growth in consumption; in 1995, the figure was 52%, eclipsing the mid-1980s record of 36%."

Why do people borrow? Again per Henwood [9]:

> "The bottom 40% of the income distribution borrowed to compensate for stagnant or falling incomes (called "necessitous" or "compensatory" borrowing), while the upper 20% borrowed mainly to invest (or speculate, if you prefer). (Example: Margin loans in your brokerage account allow you to borrow money against the present value of your stock portfolio to buy more stock!) A survey of Britain's households concluded, "Credit fulfills two different roles in household budgets. Poorer families, on the whole, use credit to ease financial difficulties; those who are better off take on credit commitments to finance a consumer life-style. Both would use it to improve their lot: one to reduce their poverty, the other to increase their prosperity."
>
> Economically, then, *consumer credit can be thought of as a way to sustain mass consumption in the face of stagnant or falling wages*. But there's an additional social and political bonus, from the point of view of the creditor class: it reduces pressure for higher wages by allowing people to buy goods they couldn't otherwise afford. It helps to nourish both the appearance and reality of a middle-class standard of living in a time of polarization. And debt can be a great conservatizing force; with a large monthly mortgage and/or MasterCard bill, strikes and other forms of troublemaking look less appealing than they would otherwise."

C. What is Interest and Why Do We Deserve It?

Interest is the reward received by savers (bank savings accounts, government or corporate bondholders) to let others use their surplus money for other investments. Compound interest is the concept of getting interest on our interest. By allowing our original money to be used for someone else's investment and being paid interest on it, we now have even more money in our account. We can lend our new amount of money again and get still more back. Therefore, the money in our account can grow at an accelerated rate even *though we have done nothing productive ourselves to earn it*.

What did we do to deserve compound interest? Do we really believe that we should continue to get something for nothing indefinitely? The answer is usually "Yes!", and the reasons for most of us are very understandable.

1. Very Personal Problems of Interest!

Many of us are probably doing, or have done, something relatively productive (let's not try to define that term yet – most people would be afraid to look too deeply into it) and received money for it. Say I'm the father of a young family who wants to save for our future. Putting money in the bank at zero interest would be the same as stuffing it in our mattress – but we would still accumulate money for the future. If a friend or relative (not Uncle Melvin!) wanted to borrow some of our money, we could let them have it and get it back later, especially since it's our savings and we don't intend to use it for a long time. In times past we wouldn't expect to ask for more back than we lent out, that was called usury and was a sin. After all, we didn't really need it while our friend was using it.

But it sure would be nice if our money could grow faster than we can add additional savings to it! Aha! If we let someone else use the money that we don't need now, doesn't that mean our money is "working" for someone? Shouldn't we be paid for the work our money does, especially since we worked so hard for it in the first place? Of course! It's only fair. And if someone uses our money and makes it work really hard, shouldn't our money be paid even more? I want my money to grow really fast (for my kids' education, for my new home to fit the kids into…). If I'm retired, I know I deserve to live off my interest because I worked hard for my money in the first place and now I want my money to work hard for me. I'm going to look for "professionals" who will make my money work the hardest and get the best return - maybe that mutual fund, even though it owns stock in a Philippine logging company. I hear the ones with companies opening new markets for cigarettes in Asia, corn flakes in India, and cola in Africa are pretty good. Besides, according to my investment manager, money can do no wrong. I never realized that the economic theory of the "invisible hand" proved long ago that anything done to make more money only makes the whole world a better place!

2. Is the Surface of the Earth Growing at the Rate of Compound Interest?

The ruling passion of the age is to convert wealth into debt in order to derive a permanent future income from it - to convert wealth that perishes into debt that endures, debt that does not rot, costs nothing to maintain, and brings in *perennial interest*. Although debt can follow the law of compound interest, the real energy revenue from future sunshine, the real future income against which the debt is a lien, cannot grow at compound interest for long. The idea that people can live off the interest of their mutual indebtedness is just another perpetual motion scheme. Herman Daly [1] believes:

> "What is obviously impossible for the community - for everyone to live on interest - should also be forbidden to individuals, as a principle of fairness. If it is not forbidden, or at least limited in some way, then at some point the growing liens of debt holders on the limited revenue will become greater than the future producers of that revenue will be willing or able to support, and conflict will result.
>
> I invite the economist to increase the scale of the carbon cycle and the hydrologic cycle in proportion to the growth of industry and agriculture. I will admit that if the ecosystem can grow indefinitely then so can the aggregate economy. ***But until the surface of the earth begins to grow at a rate equal to the rate of interest, one should not take this answer too seriously*.**"

Too many accumulations of money are seeking ways to grow *exponentially* in a world in which the physical scale of the economy is already so large relative to the ecosystem that there is not much room left for growth of anything that has a physical dimension.

D. The Interest Rate (AKA Discount Rate): A Cause of Species Extinction

Economists discount the future value of a resource by a rate of interest to arrive at an equivalent present value of that resource. The present value of a future sum is the amount of money that, if invested today at today's interest rate, would grow to equal that future sum at the specified future date. In its simplest terms, if I can cut down and sell a grove of redwood trees today for $100,000 and put that money in the bank at 10% interest, compounded annually, I would have $161,051 in the bank after five years. If market research showed that by waiting five years to cut down and sell the same redwood grove, the price I got for the wood would only be $125,000, it is economically rational that I cut the trees now. *Money may not grow on trees, but it can grow faster than trees.*

David Korten [2] describes a visit to Malaysia:

> "I met the minister responsible for forestry. In explaining Malaysia's forestry policy he observed that the country would be better off once its forests were cleared away and the money from the sale stashed in banks earning interest. The financial returns would be greater. *The image flashed through my mind of a barren and lifeless world populated only by banks and their computers faithfully and endlessly compounding the interest on the profits from timber sales made long ago*."

A Japanese journalist once told Paul Ehrlich, “You are thinking of the whaling industry as an organization that is interested in maintaining whales; actually it is better viewed as a huge quantity of financial capital attempting to earn the highest possible return. If it can exterminate whales in ten years and make a 15% profit, but it could only make 10% with a sustainable harvest, then it will exterminate them in ten years. After that the money will be moved to exterminating some other resource.”

But how can we choose a discount rate and assume it will remain stable for five years any more than we can predict what the price of redwood will be in five years? Discounting is not a law of nature, but is based on a number of questionable judgments of both value and fact. Most directly it is based on the belief that there exists a concrete process of depositing money in a bank where it grows at a given rate of interest. In their models economists seem to consider all good things as equivalent to a sum of money in a bank and ignore the long-run consequences of everyone behaving this way.

The market players who are busily exterminating resources are utterly economically rational. What they are doing makes complete sense, given the rewards and constraints they see from the place they occupy in the system. Some say the fault is not with the people, it is with the system. But we support the system whenever we, as the people, believe that we ourselves deserve the compound interest that supports discounting the future. *It’s because the majority of the people have come to believe that they deserve something for nothing that this system can persist in the face of its obvious damage to the earth.*

E. Inflated Asset Values: More Phony Money

Albania recently suffered a national crisis brought on by the collapse of fraudulent pyramid schemes. Westerners wise in the ways of the market were bemused by the naiveté of the Albanians who fell for “investment” schemes promising returns as high as 25 percent a month with no real business activity behind them. During the course of the nationwide speculative frenzy, farmers sold their flocks and urban dwellers their apartments to share in the promised bonanza of effortless wealth. The inevitable collapse sparked widespread riots, arson, and looting when the Albanian government failed to make up the losses. So does the free market make its first philosophical foray into an emerging nation.

Those inclined to laugh at the innocence of the Albanians should first consider their own response to proposals that social security contributions be invested in a stock market that even Federal Reserve Chairman Alan Greenspan said is substantially over valued. The speculative financial bubble, which involves bidding up the price of an asset far beyond its underlying value, is little more than a sophisticated variant of the classic pyramid scam. The price of a stock or of a tangible asset such as land or a piece of art is determined by the market's demand for it. In an economy awash with money and investors looking for quick returns, that demand is substantially influenced by speculators' expectation that other speculators will continue to push up the price (also known as the “greater fool” theory). *Then that inflated value is used as collateral to buy another asset*. The process tends to feed on itself. As the price of an asset rises, more speculators are drawn to the action and the price continues to increase, attracting still more speculators - until the bubble bursts as in the crash of the Japanese real estate market or when the crash of the over-inflated Mexican stock market caused the 1995 peso crisis.

As David Korten points out [20, pg.16]:

> “Investing in a bubble is a form of gambling and it isn't entirely naive. Who cares if there is nothing behind it? The bubble is the action. The trick is to place big bets and get out before it bursts. It is a game of nerves. The action gets especially exciting when banks are willing to accept the inflated assets as collateral and lend new money into existence to stake further play, which pushes prices ever higher. This process of borrowing into bubbles with newly created money is key to making financial wealth increase faster than real wealth. Furthermore, when a leveraged bubble bursts and banks are left with substantial portfolios of uncollectible loans, governments are almost forced to step in with a bailout to stop a banking collapse - as the US government did

> in the case of the Great Depression, the Savings and Loan crisis, and the most recent financial meltdown of 2008.
>
> Betting on financial bubbles is only one of the lucrative games that attract players to the global finance casino… While economists have become exceedingly facile in rationalizing how such activities actually benefit society, in truth they are more accurately described as forms of legal theft by which a clever few expropriate rights to the real wealth of society while contributing more to its depletion than to its creation."

By the way, when someone is able to sell their house for twice what they paid for it, after only a few years of ownership, why do they believe they deserve that new money? Did they do something to earn it? Did that house actually produce something of real value during that time (food, bicycles, an Internet browser…) for which the owner is now being compensated?

Korten again [2]:

> "Vast changes in the buying power of people who own such assets can occur within a very short time, with no change whatever in the underlying value the asset represents or in the ability of society to produce real goods and services. On October 19, 1987, the New York Stock Exchange's Dow Jones Industrial Average fell by 22.6 percent in one day. If measured from the height of the full market in August 1987, investors lost a little over $1 trillion on the New York Stock Exchange in a little more than two months. Yet the homes, factories, office buildings, roads, and improved real estate *did not change in any way*. In fact, this $1 trillion could not have fed the world for even five minutes for the simple reason that *people can't eat money*. They eat food, and the collapse of stock market values did not in itself increase or decrease the world's actual supply of food by so much as a single grain of rice. Only the prices at which shares in particular companies could be bought and sold changed. There was no change in the productive capacity of any of those companies or even in the cash available in their own bank accounts."

You can't buy much with a stock certificate. You cannot, for example, give one to the checkout clerk at your local grocery store as payment for your purchase. You first have to convert the stock to cash by selling it. Now, although any one individual can sell a stock certificate at the prevailing price and spend the money to buy groceries, if everyone with money in the stock market decided to convert their stocks into money to buy groceries the aggregate value of their stock holdings would deflate like a pricked balloon. The "money" - the buying power - would instantly evaporate.

IV. The Financial System: Why Bad Things Happen to Good People

So now we understand how vast amounts of money can be created out of nothing. This is not to deny that standard economics has value in some of its methodology when describing the creation of real wealth from labor and capital transforming resources into products. But an enormous financial industry has developed only to manipulate money. And the decisions of the financial system are increasingly being made by computers on the basis of esoteric mathematical formulas with the sole objective of replicating money as a pure abstraction. It is a long way from the invisible hand of the market Adam Smith had in mind. It is the reality of a world ruled by "free-market" forces in the 1990s. The global financial system has become a parasitic predator that lives off the flesh of its host - the productive economy.

A. The Corruption of the System

Four developments are basic to the corruption of the financial system [2]:

1. The United States financed its global expansion with dollars, many of which now show up on the balance sheets of foreign banks and foreign branches of U.S. banks. These dollars are not subject to the regulations and reserve requirements of the U.S. Federal Reserve system.

2. Computerization and globalization melded the world's financial markets into a single global system in which an individual at a computer terminal can maintain constant contact with price movements in all major markets and execute trades almost instantaneously in any or all of them. A computer can be programmed to do the same without human intervention, automatically executing transactions involving billions of dollars in fractions of a second.

   The people making the money from stock transactions are NOT the companies creating jobs. They are predatory high frequency traders using software robots. Sixty percent of trades are now automated, using algorithms that can cause flash-crashes and liquidity crunches.

   Stock exchanges can now execute trades in less than a half a millionth of a second—more than a million times faster than the human mind can make a decision. Financial firms deploy sophisticated algorithms to battle for fractions of a cent. Designed by the physics nerds and math geniuses known as quants, these programs exploit minute movements and long-term patterns in the markets, buying a stock at $1.00 and selling it at $1.0001, for example. Do this 10,000 times a SECOND and the profits add up.

   Computer programs send and cancel orders tirelessly in a never-ending campaign to deceive and outrace each other, or sometimes just to slow each other down. They might also flood the market with bogus trade orders to throw off competitors, or stealthily liquidate a large stock position in a manner that doesn't provoke a price swing. It's a world where investing—if that's what you call buying and selling a company's stock within a matter of seconds—often comes down to how fast you can purchase or offload it, not how much the company is actually worth. These types of trades have been shown to often decrease a company’s value – on purpose.

3. Investment decisions that were once made by many individuals are now concentrated in the hands of a relatively small number of professional investment managers under enormous competitive pressures to yield nearly instant financial gains. The pool of investment funds controlled by mutual funds doubled in three years to total $2 trillion at the end of June 1994, as individual investors placed their savings in professionally managed investment pools rather than buying and holding individual stocks. Meanwhile, there has been a massive consolidation of the banking industry - more than 500 U.S. banks merged or closed between September 1992 and September 1993 alone - concentrating control of huge pools of funds within the major international "money center" banks. Pension funds, now

estimated to total more than $3 trillion in assets, are managed mostly by trust departments of these giant banks, adding enormously to their financial power. The pension funds alone account for the holdings of about a third of all corporate equities (stocks) and about 40 percent of corporate bonds.

4. Investment horizons have shortened dramatically. The managers of these investment pools compete for investors' funds based on the returns they are able to generate. Mutual fund results are published on a daily basis in the world's leading newspapers, and countless services compare fund performance on a monthly and yearly basis. Individual investors have the ability to switch money among mutual funds with the push of a button on an electronic phone or with their personal computers on the basis of these results. *For the mutual fund manager, the short term is a day or less and the long term is perhaps a month*. The time frames involved are far too short for a productive investment to mature, the amount of money to be "invested" far exceeds the number of productive investment opportunities available, and the returns the market has come to expect exceed what most productive investments are able to yield even over a period of years. Consequently, *the financial markets have largely abandoned productive investment in favor of extractive investment* and are operating on autopilot without regard to human consequences.

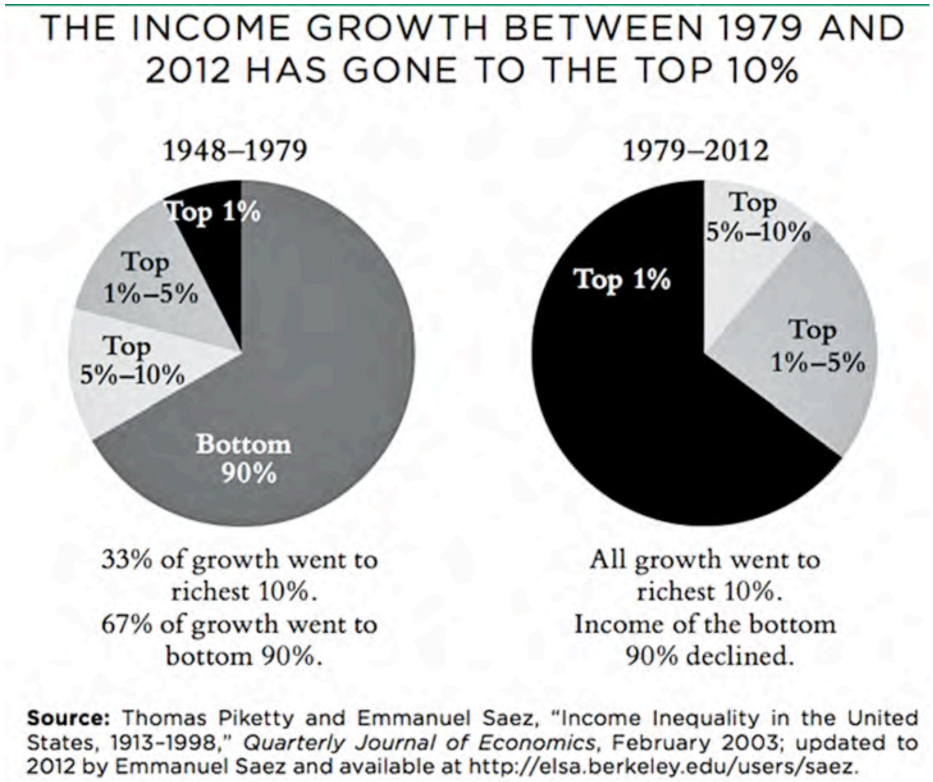
The financial system increasingly functions as a world apart at a scale that dwarfs by orders of magnitude the productive sector of the global economy, which itself functions increasingly at the mercy of the massive waves of money that the money game players move around the world with split-second abandon. Joel Kurtzman, formerly business editor of the *New York Times* and currently editor of the *Harvard Business Review,* estimates that ***for every $1 circulating in the productive world economy, $20 to $50 circulates in the economy of pure finance*** - though no one knows the ratios for sure. In the international currency markets alone, some $800 billion to $1 trillion changes hands each day, far in excess of the $20 billion to $25 billion required to cover daily trade in goods and services. According to Kurtzman [2]:

> “Most of the $800 billion in currency that is traded...goes for very short-term speculative investments - from a few hours to a few days to a maximum of a few weeks... That money is mostly involved in nothing more than making money... It is money enough to purchase outright the nine biggest corporations in Japan - overvalued though they are - including Nippon Telegraph & Telephone, Japan's seven largest banks, and Toyota Moto... It goes for options trading, stock speculation, and trade in interest rates. It also goes for short-term financial arbitrage transactions where an investor buys a product such as bonds or currencies on one exchange in the hopes of selling it at a profit on another exchange, *sometimes simultaneously* by using electronics.”

This money is unassociated with any real value. Yet the money managers who carry out the millions of high-speed, short-term transactions stake their reputations and careers on making that money grow at a rate greater than the prevailing rate of interest. This growth depends on the ability of the system to endlessly increase the amount of money circulating in the financial economy, independent of any increase in the output of real goods and services.

Individuals may be able to set aside money for the future, but not a society as a whole; a society guarantees its future only by real physical and social investments. But the financial markets are demanding cutbacks in both public and private investment in the name of "financial prudence.” The whole idea of creating huge pools of financial capital should be the focus of attack, not the uses to which these pools are put.

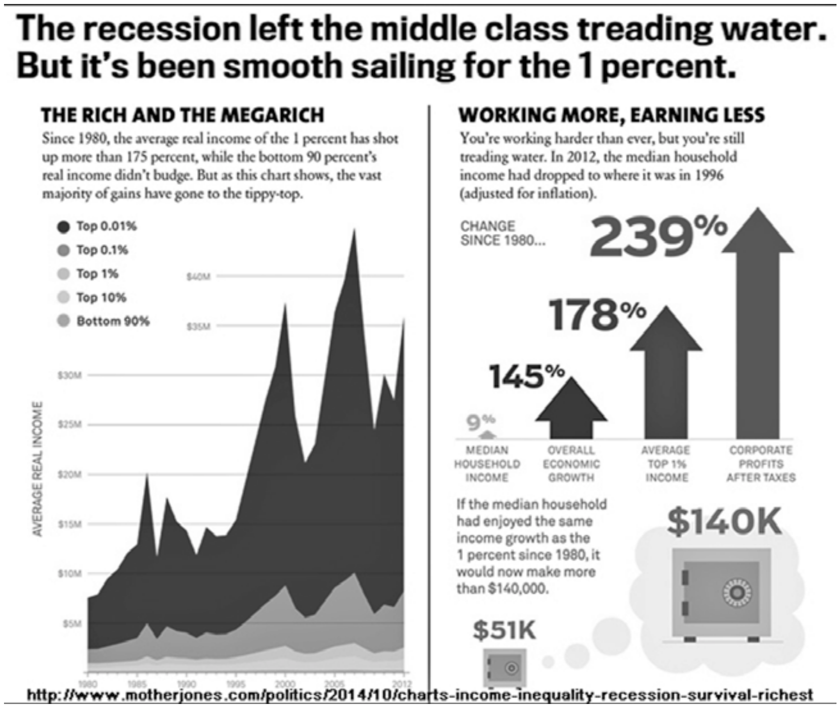
B. So Who Really Owns the Money?

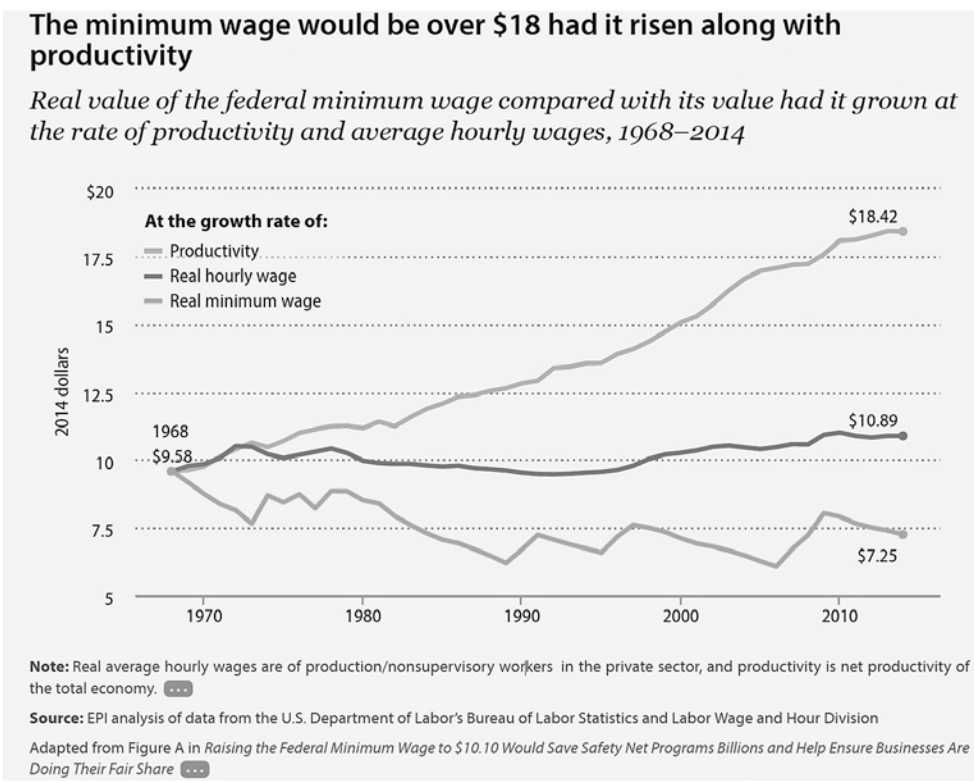


Some of the best data to answer this question has been published by United for a Fair Economy in Shifting Fortunes: The Perils of the Growing American Wage Gap [8]:

> "In the past, egalitarian democracy has been coupled with inegalitarian capitalism on the assumption that government would do three things. First, government guaranteed that first-class educations and skills would be available to children of parents who did not have first-class income and wealth. The next generation would be better skilled and able to earn more than the last. Second, it would insure that those who cannot compete for whatever reason do not get driven into economic or physical extinction (hence the social safety net). Third, government would use the tax system to make after-tax distributions of income and wealth more equal than before-tax distributions of income and wealth. For the last two decades, the American government has been backing away from all three of those commitments.
>
> Behind the hoopla of the booming 1990s and early 2000s, most Americans have actually lost wealth. Most households have lower net worth (assets minus debt) than they did in 1983, when the stock market began its record-breaking climb. From 1983 to 1998, the stock market grew a cumulative 1,336 per-cent. The wealthiest households reaped most of the gains.
>
> The top 1 percent of households have soared while most Americans have been working harder to stay in place, if they have not fallen further behind. Since the 1970s, the top 1 percent of households have doubled their share of the national wealth at the expense of everyone else. Using data from the Federal Reserve Survey of Consumer Finances, economist Edward Wolff of New York University says that the top 1 percent had 40 percent of the nation's household wealth as of 1997. The top 1 percent of households have more wealth than the entire bottom 95 percent.
>
> Financial wealth is even more concentrated. The top 1 percent of households have nearly half of all financial wealth (net worth minus net equity in owner-occupied housing). Wealth is further

concentrated at the top of the top 1 percent. The richest 1/2 percent of households have 42 percent of the financial wealth.





Statistics from Henwood [9], show that:

> "Ownership of financial assets like stocks and bonds is densely packed in the upper crust. In 1992, the *richest 1%* of households - about 2 million adults - *owned 39% of the stock* owned by individuals, and *42% of the bonds*. *The top 10% together own well over 80% of both*.
>
> Those numbers are based on sorting households by their net worth; if you sort households by their stock ownership, the concentration is even more intense. In 1992, the top 0.5% of stockowners held 58.6% of all publicly traded stock; the next 0.5%, 11.7%; the next 4%, 24.2%; add those together and you discover that ***the top 5% owns 94.5% of all stock held by individuals***. Despite myths of affirmative action and upward mobility, the tendency of wealth to concentrate, for advantage to breed advantage, makes it hard on people who start with nothing."

C. Stratos Dwellers: The Global Overprivileged

David Korten calls the extremely wealthy of the world the Stratos Dwellers, those global overprivileged who are disconnected from the reality of real people [2]:

> "Of any country I have visited, Pakistan most starkly exemplifies the experience of elites living in enclaves detached from local roots. The country's three modern cities - Karachi, Lahore, and Islamabad - feature enclaves of five-star hotels, modern shopping malls, and posh residential areas within a poor and feudalistic countryside governed by local lords who support private armies with profits from a thriving drug and arms trade and are inclined to kill any central government official who dares to enter. Health and education indicators for Pakistan's rural areas are comparable to those for the most deprived African nations.
>
> On two of my visits to Pakistan, I was the guest of some of the country's most successful businessmen. Widely traveled and graduates of the best British and American universities, they spoke and moved with the confidence, demeanor; and sense of hospitality typical of cosmopolitan aristocrats who are fully at ease with their money and position. My hosts regularly traveled the world to supervise their widespread business interests, moving easily among the global business elites and feeling as much at home in New York or London as in Karachi, Lahore, or Islamabad.
>
> Particularly striking, however, was the extent to which - in contrast to their knowledge of and interest in the rest of the world - they had little knowledge of or interest in what was happening in their own country beyond the borders of their enclave cities. It was as though the rest of Pakistan were an inconsequential foreign country unworthy of notice or mention. They were almost completely detached from any sense of national interest. What I failed to realize at the time was that this phenomenon was not an aberration of underdevelopment so much as the cutting edge of a global social and political trend - a melding of the world's financial elites into a stateless community in the clouds, detached from the world in which the vast majority of ordinary mortals live."

We have long thought of the world as divided into rich and poor countries. As economic globalization progresses, we find growing islands of great wealth in poor countries and growing seas of poverty in rich countries. President Clinton's former Secretary of Labor, Robert Reich, has drawn a disturbing American portrait in which privileged information/communication workers increasingly withdraw public support from the larger society. His grim analysis portrays them moving to insular suburbs and buying private recreational, schooling, security and sanitation services for their own gated communities, which the public at large cannot afford. They are then positioned to refuse to pay taxes for the declining public services they no longer need. Their withdrawal (Reich labels it the politics of secession) leaves the poor poorer; the public sector broke, and society ever more riven by economic disparities. A similar pattern of "secession" by the new symbolic elites can be discerned on a global scale where elite nations secede from their global public responsibilities as fast as elite professionals secede from their public responsibilities within elite nations. The Third World becomes a series of urban ghettos within every First World society as well as a series of poor nation ghettos within international society.

The isolation of the rich and powerful is exemplified by the annual gathering of the directors of the World Bank and the International Monetary Fund (IMF). The following is an account by journalist Graham Hancock from one such meeting [2]:

> "I had come to Washington, D.C. simply to attend the joint annual meeting of the Boards of Governors of the World Bank and the International Monetary Fund - two institutions that play a central role in mobilizing and disbursing funds for impoverished developing countries. The total cost of the 700 social events laid on for delegates during that single week was estimated it $10 million. A single formal dinner catered by Ridgewells cost $200 per person. Guests began with crab cakes, caviar, smoked salmon and mini beef Wellingtons. The fish course was lobster with corn rounds followed by citrus sorbet. The *entree* was duck with lime sauce, served with artichoke bottoms filled with baby carrots. A hearts of palm salad was also offered accompanied by sage cheese soufflés with a port wine dressing. Dessert was a German chocolate turnip sauced with raspberry coulis, ice-cream bonbons and flaming coffee royale. Washington limousine companies were doing a roaring trade."

If the delegates had indeed made an effort to look at their world through the eyes of the most underprivileged, they might well have lost their appetites. Take, for example, this simple interview with a sharecropper's child in nearby Selma, Alabama, by Raymond Whetter of CBS TV [2]:

> "Do you eat breakfast before school?"
> "Sometimes, sir. Sometimes I have peas."
> "And when you get to school, do you eat?"
> "No, sir."
> "Isn't there any food there?"
> "Yes, sir."
> "Why don't you have it?"
> "I don't have the 35 cents."
> "What do you do while the other children eat lunch?"
> "I just sits there on the side" (his voice breaking)
> "How do you feel when you see the other children eating?"
> "I feel ashamed" (crying).

D. Stock Market Myths

I want to focus on the stock market in a bit more detail because it is a major driving force in the way corporations behave. Breaking through the myths fed to the general public by the financial media can bring a revelation akin to that of an old time Catholic who finally realized he wouldn't go to hell for eating meat on Friday!

The stock market is not the hub of capitalism, as some believe. In fact trading in bonds and foreign exchange dwarfs stock market trading. There are three alleged purposes for the stock market. The first is that it provides a way for some new companies to raise large amounts of capital. The second is that it provides an additional source of capital, if needed, after a company has gone public, through a secondary issue of stock into the marketplace. And third, it provides a measure of the "market value" of a company when one company decides to buy another, through an acquisition or merger.

In the first case, a company basically sells its soul in an initial public offering (IPO). This is the process of "going public." It raises millions of dollars with the benefit of not having to pay the money back to anyone – it's not a loan. But going public does affect the soul of the company because everything the company now does must be done in public under the scrutiny of the government and the shareholders.

This is not necessarily good. The simplest example of the negative aspect of being a public company is that the managers of a private company have the freedom to make rational decisions. They can decide to lower their profit margin - to invest in new people or equipment or to avoid a layoff, for example - without causing any impact on an arbitrary stock price. I have been in situations where we did just that.

The real incentive to go public is the large amounts of money the financial backers and each employee of the company, not just the managers, can make because of their stock options. The goal of most new startup companies is to go public for that reason, and the case can be made that it creates very strong incentives for the employees to work diligently to make the company a success. But when big money is the ultimate goal, the law of unintended consequences often bares its fangs

The case of the secondary stock offering is simple – more stock sold in the public market equals more money in the company's bank account. But it obviously drives the company to keep the stock price high now if it plans to sell more stock later. The third purpose, providing an objective value of a company, has some relative validity in the way the game is played today. But is not the only, nor necessarily the best, mechanism for that valuation. Consider Internet company stocks in 1999, for example. But none of the three purposes discussed above leads to significant financial activity compared to the vast amounts of money traded daily in the stock market. What no one wants you to know, and what only a small percentage of people understand, is that the stock market is nothing more than a big gambling casino with the large financial companies as primary owners, fund mangers as the dealers, and stock analysts as the lounge singers. Large and small investors wander among the various game tables with the only real difference being the cash needed to bankroll one of the games. In the broadest sense, the stock market provides no real productive value to an economy.

1. Stocks Support Company Growth – Not: Whose IPO Is It Anyway?

Both civilians and professional apologists would probably say that the stock market raises capital for investment. *In fact it doesn't*. Per Henwood [9], between 1981 and early 1996, U.S. nonfinancial corporations retired over $700 billion more in stock than they issued, thanks to takeovers and buybacks. Most of the daily trading in the stock market is of *existing* shares, not newly issued ones. Over the long haul, almost all corporate capital expenditures are internally financed, through profits and depreciation allowances. Of course, some individual firms do issue stock to raise money, but surprisingly little of that goes to real investment either. The process we all hear about is an Initial Public Offering (IPO). However, once the IPO takes place, the stock, mostly "common stock" which often pays no dividends if the company is small, is traded in the "secondary" stock market (98% of NYSE and almost all of NASDAQ is common stock). *This means that the stock is traded among individuals with no real connection to the original company*.

I was a senior manager in a startup telecommunications company that went through an IPO. I have to admit that I felt the power of the dark side of that abstract *Homo economicus*. After almost four years of intensely hard work (often 10 hour days, 6 day weeks), every employee stood to make a lot of money, and many would become quite wealthy (a couple of dozen millionaires), at least on paper.

A company doesn't sell its stock on the open stock market. In reality, a consortium of investment banking and brokerage firms (the underwriters) helps determine the amount of stock and the guaranteed initial price of the stock to be offered (called "taking the company public"). The underwriters then buy the stock from the company at the guaranteed IPO price (for example, 5 million shares at $25 per share for $125 million to the company). Once that happens the company, as a company, has no more special ownership of the stock – it has the money in the bank. But individual employees in the company, especially senior management, with thousands or tens of thousands of stock option shares (each at a cost anywhere from a nickel to a dollar a share), have an extremely keen personal interest in the outcome of the IPO. The final price in the market is what they will get for their shares when they are finally able to sell them (usually over a four-year vesting period).

Take a real life example. An engineer who joins a startup company may get an option for 5,000 shares at $0.05 per share. He or she works incredibly hard for 3 or 4 years (Thanksgiving, Christmas, and Easter holidays included). The stock splits once before the IPO and once after the IPO. Our engineer now has 20,000 shares at $0.0125 per share. In the boom times the stock is at $42 per share and the engineer is looking at $840,000 profit, before taxes. (However, if the stock crashes to $4 per share, as this one did less than two years later, the profit drops to only $80,000.) Perform the same calculation for a senior manager who joined the company at the same time as the engineer but got an original option for 20,000 shares! Even assembly workers and test technicians received stock options worth tens of thousands of dollars. Many people bought new cars for cash after the IPO. Although not as extreme, normal profit sharing and stock option plans in established companies can also be very strong incentives to drive up profits and stock prices at all costs, especially for top management.

The original underwriters also has a deep interest in the IPO because they were the ones who actually paid the initial price and will only make a profit if the price of the shares increases (for example, to $35 per share, for a $50 million profit on the original five million shares) as they are sold into the open stock market. Of course, the members of this investment group are also usually members of the initial capital financing of the IPO company and so may also own millions of low-priced stock option shares from their initial investment in the startup. For example, if the IPO is for five million shares, there may be an additional thirty million shares, at an average cost of $1, in the hands of employees and the financial backers. (Exercise: multiply thirty million by $35.) Although the company makes a significant amount of money in the initial round, the large financial market players are the big winners in the game.

How the IPO stock is initially priced is somewhat esoteric, but is based on the company's multi-year plan for revenue and profit growth. The more rapid the revenue and profit growth projected over the following three to five years, the higher the IPO price. In our case, the revenue and profit projections were so "aggressive" that it would be extremely difficult to grow the company as fast as the plan required - *doubling* in size every year for several years - which is known in the trade as a "stretch objective" or BHAG (Big, Hairy Audacious Goal). Therefore, the employees of the company, including the managers, were trapped in a multiyear business plan primarily driven by the stock price desires of the large financial corporations, even though abetted by their own personal desires.

To be fair, we all took part in the planning process, and we knew it would be tough. However, aside from the "rah-rah" of how much better we were than the competition, of how well we could meet the "challenge" of an "aggressive growth plan", of exciting and interesting career opportunities for all employees, the final driving force which shaped all "reality" was the stock price and how much money everyone personally would make over a relatively short time frame. The stock price did increase beyond our wildest dreams, but wild dreams can lead to wild actions. Working all night for days is common near the end of a quarter. To guarantee high revenues, there were times the V.P. of Engineering tested circuit boards in the Test Department, and the CEO helped pack boxes in the Shipping Department. And it wasn't because of egalitarianism or because the customer necessarily needed the product. Customers were often asked to accept shipments early so the quarterly numbers could be met. This type of activity is not unique in the corporate world.

This is one example of how the short term profit requirements of financial markets control even relatively environmentally benign telecommunications companies, including the intelligent and usually socially-conscious people in those corporations. It gives an insight into the forces driving extractive industries like lumber and mining or the cultural-imperialist corporations of fast food and fashion.

2. The Small Investor: Gambler/Sucker/Believer (Choose One)

Despite the stories about delivery drivers getting rich off stocks traded online, the boom has bypassed most Americans. As of 2015, as a previous chart showed, 40 percent of households owned stock directly and indirectly - including through a mutual fund, individual retirement account and defined contribution pension plan, for example. This is a significant increase from 32 percent in 1989, but still less than half of all households.

A growing number of Americans own stock, but most still don't own much. Less than one-third of households (29 percent) owned stock worth more than $5,000 in 1995. Almost 90 percent of the value of all stocks and mutual funds owned by households was in the hands of the top 10 percent. Wealth projections through 1997 suggest that 86 percent of the benefits of the increase in the stock market between 1989 and 1997 went to the richest 10 percent of households, with 42 percent going to the top 1 percent alone.

But what drives individual stocks? Again, especially since it's a casino, it's simply a perception of a company or industry segment. If I think a stock will go up because I think other people will think it will go up, I buy now. When it does goes up, I sell, take my profits, and look for something else I think will go up. If it goes down, I sell, take my losses against my income tax, and look for something else I think will go up. Since it's so simple, a ritual has grown up around this activity to make it seem complex, scientific, or logical. The mythmakers will say that a company has a value based on its future revenues and profits. This is called determining the "market fundamentals" of a company. (Even George Soros [14] points out that market fundamentals are no longer meaningful – Internet stocks again.)

Through "analysis" the "professionals" will judge the future sales projections in a company's "target market", their potential profitability based on their "efficiency", the capability of their "management team" to meet their plan, and peg a stock price. Any stock price is essentially arbitrary. The final driver for the stock to go up or down over time is primarily the change in short term profitability of the company which drives the herd mentality of the market players.

So why do normal people invest in the stock market? Many have no choice since their pension funds and 401K money is invested in stocks but not controlled by them. For others with a choice, it's not just raw greed, but a "reasonable" desire to have more. If others have done it, why can't I? But there are risks. Say you have $10,000 in a CD at 5%, you make $500 interest in a year with no risk. With a CD from a bank you actually get the $500 deposited in your bank account at the end of the year, as well as your principal back, for a new total of $10,500. Then you can decide to buy another CD or not.

But the financial media tell you that only conservative little old ladies own CDs and you can get twice the return by buying stock. If you buy 500 shares of some stock selling at $20 per share, you've now fully invested your $10,000. If you're lucky, the stock goes up $2 (or 10%) during the year and you "make" $1,000 (instead of the CD's $500). But remember you only get the money if you now sell the stock. And typical stocks are notorious for movements of several dollars at a time. At the end of the year the stock may just as likely be selling for only $18 per share and your original investment is now down to only $9,000. You lost $1,000 by trying to make an additional $500. Some gamble if you really need your money! Mutual funds do limit your risk by spreading it over many more stocks, but the principle is the same.

E. Financial Cannibals: The Headwaters Example

"Is it progress," the Polish poet Stanislaw Lec asked, "if a cannibal uses a fork?" Finding ways to create new value in a sophisticated modern economy is seldom easy. Finding ways to create new value that will produce returns in the amount and with the speed demanded by a predatory financial system many times larger than the productive economy is virtually impossible. The quickest way to make the kind of profit the system demands is to capture and cannibalize existing values from a weaker market player. In a free market, the "weaker" player is often the firm that is committed to investing in the future; providing employees with secure, well-paying jobs; paying a fair share of local taxes; paying into a fully funded retirement trust fund; managing environmental resources responsibly; and otherwise managing for the long-term human interest. Such companies are a valuable community asset, and in a healthy economy, they pay their shareholders solid and reliable - but not extravagant - dividends over the long term. They do not, however, yield the instant shareholder gains that computerized trading portfolios demand.

It is all played out with a chilling sense of moral detachment. In the words of Dennis Levine, a Wall Street high-flyer who was imprisoned for insider trading [9]:

> "We had a phenomenal enterprise going on Wall Street, and it was easy to forget that the billions of dollars we threw around had any material impact upon the jobs and, thus, the daily lives of millions of Americans. All too often the Street seemed to be a giant Monopoly board, and this game-like attitude was clearly evident in our terminology. When a company was identified as an acquisition target, we declared that it was "in play." We designated the playing pieces and strategies in whimsical terms: white knight, target, shark repellent, the Pac-Man defense, poison pill, greenmail, the golden parachute. Keeping a scorecard was easy - the winner was the one who finalized the most deals and took home the most money."

The acquisition of the Pacific Lumber Company and its holdings of ancient redwoods on the California coast exemplify what all too often happens after an acquisition is complete by corporate raider Charles Hurwitz. Before Hurwitz acquired it in a hostile takeover, the family-run Pacific Lumber Company was known as one of the most economically and environmentally sound timber companies in the United States. It was exemplary in its pioneering development and use of sustainable logging practices on its substantial holdings of ancient redwood timber stands, was generous in the benefits it provided to its employees, overfunded its pension fund to ensure that it could meet its commitments, and maintained a no-layoffs policy even during downturns in the timber market. These practices made it a prime takeover target.

After establishing control of the company, Hurwitz immediately doubled the cutting rate of the company's thousand-year-old trees. According to *Time,* "In 1990 the company reamed a broad, mile-and-a-half corridor into the middle of the Headwaters forest and called it, with a wink and a snicker, 'our wildlife-biologist study trail.'" On a visit to Pacific's mills at Scotia, Hurwitz told the employees, "There's a story about the golden rule. He who has the gold rules." With that pronouncement, he drained $55 million from the company's $93 million pension fund. The remaining $38 million was invested in annuities of the Executive Life Insurance Company, which had financed the junk bonds used to make the purchase – and which subsequently failed. And he was able to blackmail hundreds of millions of dollars from the government, which bought a small part of his overall holdings.

F. Socially Responsible Investing: An Oxymoron?

People who have amassed large fortunes through hard work or inheritance can, and should, make a significant contribution to society. Many do – Ted Turner, Bill Gates, and George Soros are prime examples. There's even an organization named Responsible Wealth whose brochure states that: "We are business leaders and wealthy individuals, among the top five percent of income earners and asset holders in the U.S. We are concerned about the rise in powers of large corporations and the growing gap between the rich and everyone else." My boss of many years, one of the finest human beings I've ever met, started a family charitable foundation and supports many social organizations. One day he was complaining about how complex his personal finances had become and I chided him that he just had too much money! He agreed, but pointed out that if he didn't make it and use it for good, someone else would make it and waste it. I wonder what Donald Trump's answer to that question would be? (Authors note: This was written in 2000.)

But besides contributing to volunteer organizations, what can the more modestly financially comfortable do with their money? Socially responsible investing has its historical roots in the battle to end apartheid in South Africa. Initially, a few stock mutual funds had refused to invest in companies which dealt with South Africa. In 1982 a social investment fund was set up within the Calvert Investment Group. It was the first stock fund that tried to *screen* companies to avoid bad corporate practices generally. Over the years, the search for a list of guidelines to judge whether a company was socially responsible has evolved into the present Coalition for Environmentally Responsible Economies (CERES) principles discussed later.

1. Socially Responsible Mutual Funds: A Moral Niche Market

Socially responsible investing is often promoted to the conscience-stricken. But is it really possible based on what we've seen above? Remember, mutual funds are just pools of company common stock; and they are pools in a secondary market which has minimal effect on the operation of companies themselves. (Most bonds are also traded on secondary markets.) And do the companies really care who owns their stocks or bonds? Will they become more environmentally-friendly if they know one or the other of several ostensibly socially-responsible mutual funds owns the stock? This has not been the case to date.

The 1998 annual report of Becton-Dickinson, a major health care products company, for example, shows that during the last five years they *have bought back* 50 million of their 300 million outstanding shares (how much influence do your 1,000 shares have?). It's 1998 net income was $237 million on revenue of $3.1 billion – a very respectable 7.6%. It paid a dividend of $0.29 per share, or $7.6 million (3.2% of their profit). Cash from operations continued to be it's primary source of funds to finance operating needs and capital expenditures. It also sells commercial paper and bonds as well as has at least $600,000 in lines of credit (that were not being used as of the date of the report!). Why would it really care about the stock market or its stock price? One major reason is that managers are judged professionally based on how well they influence stock price and shareholder value. But the most direct reason is because managers with stock options obviously want to sell at the highest price. The company has about 30 million stock option shares outstanding to employees, managers, and directors at an average price of $18.22. As of this writing their stock price was $38 per share – quite an incentive.

Screening sets the context for almost all social investing strategies. The goal of social investing, on the screening side, is to one day make screening a company out of a fund a punishment so high that irresponsible companies' stock prices would get pushed lower, and screening a company into a fund a reward such that responsible companies' stock prices would sell at a premium. Screening has created an industry of social investment managers and research firms who are creating the infrastructure to continually advance the state of the art for evaluating companies, analyzing companies, asking them questions every year, putting the information on databases for the public, and trying to help everybody figure out, based on the information, how to make their investment decisions. Screening establishes a set of researchers, analysts, and investors who evaluate a company on its social and environmental performance. They are there year in and year out. They don't go away. This creates higher expectations for corporate behavior and pushes companies to be better corporate citizens. Screening sets the context that makes shareholder advocacy possible in a number of different ways. Almost all of the major money managers who do screening engage in some level of advocacy to try to improve the companies they hold.

So what is the really socially responsible investor to do? And there's the catchword, "do." To have an impact you must be active, not passive (with a passively clear conscience because you read the prospectus from the mutual fund). If you own stock you can attend a stockholders meeting. If you own enough stock, you can make public proposals to be voted on at the stockholders meeting. Even if you don't own stock you can take actions (boycotts, protests) that are designed to drive stock prices down, thus affecting management decisions. Shareholder advocacy is an important strategy for people who hold stock in companies they're locked into, either on an individual level because of tax considerations, or on an institutional level because of the policy of the investment committee, or maybe on a pension plan level because the Employee Retirement Individual Security Act (ERISA) requirements don't allow them to divest certain kinds of companies.

2. Alternative Investment Strategies?

This is a difficult problem in the modern financial arena. There are "alternative" financial institutions, such as community development banks (CDB) and loan funds. The most prominent CDB is the South Shore Bank of Chicago whose promoters say it has revived a declining urban neighborhood while turning in a sterling financial performance. It is held up as a model for the free-market era, a private-sector alternative to "discredited" old social programs. Another is the Vermont National Bank. South Shore Bank has also supported a new fund in the Pacific Northwest to make loans to environmentally-oriented small businesses.

Community Development Funds also accept money from socially minded investors to make loans to fund housing rehabilitation, nonprofit housing development, and small businesses. Although the industry is quite small ($108 million in outstanding loans as of 1995), it has had relatively impressive effects on housing and job growth, as well as a loan loss experience of only 0.92%.

For investors with significant amounts of capital, there are venture capitalist groups such as Social Venture Network and Investors Circle which specialize in funding socially-responsible startup companies that are developing environmentally-oriented new technologies or environmentally-friendly small businesses.

V. Growth: Anatomy of a Panacea

Richard Jolly, author of the United Nations Development Program's Human Development Report of 1996, points out that there are five types of growth that give people less and not more. Unfortunately, these tend to be the present major types of growth. They are:

- Jobless growth, where the overall economy grows, but does not expand opportunities for employment.
- Ruthless growth, where the fruits of economic growth mostly benefit the rich.
- Voiceless growth, where economic growth is not matched by democracy or individual empowerment.
- Rootless growth, where cultural identity withers as the economy grows.
- Futureless growth, where economic growth consumes its very foundations, squandering resources needed for future generations.

A. The Poor Need It (Like a Hole in the Head)

Any mention of the need to end growth elicits protests that this would condemn the poor to perpetual deprivation. Ironically, the argument that the well-being of the poor depends on economic growth comes mainly from professional development workers, economists, financiers, corporation heads, and others who have no problem putting food on their tables. When the poor speak for themselves, they more often talk of secure rights to the land and waters on which they live and from which they obtain their livelihoods. They seek decent jobs that pay a living wage. They want health care and education for their children.

Policies that favor economic expansion commonly shift income and assets to those who own property at the expense of those who depend on their labor for their livelihood. Although growth itself does not necessarily cause poverty, the policies advanced in its name often do. Per David Korten [2], the following policy outcomes are typically associated with economic growth:

- Increasing the rate of depletion of natural resources provides financial gains for the economically powerful at the expense of people whose livelihood base is disrupted.
- Shifting activities from the social (non-money) economy to the money economy increases the dependence of the working classes on money and thereby on those who own assets, provide professional services, and control access to jobs.
- Shifting control of agricultural lands, forests, and fisheries from those engaged in creating subsistence livelihoods to property owners engaged in investing for profit adds to measured economic output, redistributes the ownership of these assets to the capital-owning classes, expands the pool of low-cost wage labor, and pushes wages downward.

Korten illustrates this with a story from the Philippines

> "For centuries, the indigenous Igorot ("people of the mountains") of Benguet province, Philippines, have engaged in small-scale "pocket mining" of the rich gold veins found on their ancestral lands. The men dig small round caves into the mountain. Women and children hammer the gold-bearing rocks into nuggets the size of corn kernels. Their lands are now dominated by huge open-pit mines operated by the Benguet Corporation – owned in approximately equal shares by wealthy Filipinos, the Philippine government, and U.S. investors – to produce gold for export. Dozens of bulldozers, cranes, and trucks cut deep gashes into the mountain, stripping away the trees and topsoil and dumping enormous piles of rocky waste into the riverbeds. The local people tell visitors how, with their water sources destroyed, they can no longer grow rice and bananas and must go to the other side of the mountain for water to drink and bathe. Even their own mining grounds are threatened, their rights ignored.

> Instead of using water to separate the gold from the rock, as the Igorot do, the mining company uses toxic chemicals, including cyanide compounds, and flushes them down the river, poisoning the water and killing the cattle that drink it. Downstream, rice farmers in the affected area of Pangasinan province are losing an estimated 250 million pesos a year as the mine tailings cover their irrigated fields and cause sharp declines in yields, resulting in a net population exodus. Still farther on, fisherfolk in the gulf report substantial reductions in their catch as tailings smother the coral reefs. It's good for growth. Benguet and the other major mining companies involved earn combined net profits of 1.1 billion pesos a year – a massive resource transfer from the poor to the rich. Countless such stories are told wherever mining companies operate."

As opportunities for industrial employment have declined in high-income countries, economists have looked to the service economy to pick up the slack. Little note is taken of the fact that much of the expansion of the service economy results from appropriating the services originally performed by households and communities. Providing these real services once productively engaged more than half the working hours of the adult population, mostly women, in meeting many of the basic needs of families and carrying out the countless neighborly functions essential to the maintenance of healthy, caring communities. As productive and reproductive functions such as child care, health care, food preparation, entertainment, and physical security are transferred from the social economy to the market economy, they show up as additions to economic output and thus contributors to economic growth – though they do little, if anything, to improve the quality of the services we receive.

B. Gross National Product (GNP): It's Grosser Than You Think

It's like taking your paycheck, then adding all your bills to it, and saying that the bigger this total is, the better off you are. Do you really run your business or your family finances that way? The GNP has been the touchstone of economic policy for so long that most Americans probably regard it as a kind of universal standard. Actually the GNP is just an artifact of history, a relic of another era. It grew out of the challenges of the Depression and the Second World War, when the nation faced economic realities very different from today's. As Herman Daly [1] points out:

> "We might say that GNP, technically a measure of the rate at which money is flowing through the economy, might also be described as a ***measure of the rate at which we are turning resources into garbage***."

A major portion of what shows up as growth in GDP is a result of:

- Shifting activities from the non-money social economy of household and community to the money economy-with the consequent erosion of social capital;
- Depleting natural resources stocks - such as forests, fisheries, and oil and mineral reserves - at far above their recovery rates (much of present our income is derived from liquidation of natural capital); and
- Counting as income the costs of defending ourselves against the consequences of growth, such as disposing of waste, cleaning up toxic dumps and oil spills, providing health care for victims of environmentally caused illnesses, rebuilding after floods resulting from human activities such as deforestation, and financing pollution-control devices.

1. Gross Domestic Product (GDP): Are You a Conspiracy Theorist?

In a groundbreaking study of Indonesia in 1989, the World Resources Institute, of Washington, D.C., explored the implications of growth for natural resources. Since the 1970s Indonesia had been a success story for the conventional development school, achieving an exceptional growth rate of 7% a year. But such an amphetamine pace cannot be sustained forever. Indonesia was selling off precious nonrenewable mineral wealth. Clear-cutting its forests and exhausting its topsoil with intensive farming, it was in effect robbing the future to finance the current boom. After adding in these and other factors, the institute found that the country's real, sustainable growth rate was only about half the official rate. And that wasn't counting the broader spectrum of environmental and social costs, e.g., Igorot people above, which would have brought the growth rate down even more.

Here was another warning for those disposed to heed it. Yet the international development establishment did nothing of the sort. In fact, what is being measured has grown more partisan than ever. Specifically, in 1991 the GNP was turned into the GDP - a quiet change that had very large implications.

Per Art Kleiner in Whole Earth Review [22]:

> “Under the old measure, the gross national product, the earnings of a multinational firm were attributed to the country where the firm was owned - and where the profits would eventually return. The GNP of a country measures national production, that which provides income to the citizens of that country, regardless of where that production occurs. The GDP measures production, that which occurs within the borders of a country, regardless of who owns the units of production. Under the gross domestic product the profits are attributed to the country where the factory or mine is located, *even though they won't stay there*. This accounting shift has turned many *struggling nations into statistical boomtowns*, while aiding the push for a global economy. Conveniently, it has hidden a basic fact: the nations of the North are walking off with the South's resources, and calling it a gain for the South.”

2. The GDP Today: How Down Becomes Up

The following is from a seminal article, *If the GDP is Up, Why is America Down* [21], which introduced the concept of the Genuine Progress Indicator.

> “If the chief of your local police department were to announce today that "activity" on the city streets had increased by 15 %, people would not be impressed, reporters least of all. They would demand specifics. Exactly what increased? Tree planting or burglaries? Volunteerism or muggings? Car wrecks or neighborly acts of kindness? The mere quantity of activity, taken alone, says virtually nothing about whether life on the streets is getting better or worse. The economy is the same way. "Less" or "more" means very little unless you know of what. Yet somehow the GDP manages to induce a kind of collective stupor in which such basic questions rarely get asked.
>
> By itself the GDP tells very little. Simply a measure of total output (the dollar value of finished goods and services), it assumes that everything produced is by definition "goods." It does not distinguish between costs and benefits, between productive and destructive activities, or between sustainable and unsustainable ones. The nation's central measure of well being works like a calculating machine that adds but cannot subtract. It treats everything that happens in the market as a gain for humanity, while ignoring everything that happens outside the realm of monetized exchange, regardless of the importance to well-being.
>
> By the curious standard of the GDP, the nation's economic hero is a terminal cancer patient who is going through a costly divorce. The happiest event is an earthquake or a hurricane. The most desirable habitat is a multibillion-dollar Superfund site. All these add to the GDP, because they cause money to change hands. I t is as if a business kept a balance sheet by merely adding up all "transactions," without distinguishing between income and expenses, or between assets and liabilities.
>
> The perversity of the GDP affects virtually all parts of society. In 1993 William J. Bennett, who had been the Secretary of Education in the Reagan Administration, produced a study of social decline. He called it "The Index of Leading Cultural Indicators," a deliberate counterpoint to the

Commerce Department's similarly named regular economic report. His objective was to detail the social erosion that has continued even as the nation's economic indicators have gone up.

The strange fact that jumps out from Bennett's grim inventory of crime, divorce, mass-media addiction, and the rest is that much of it actually adds to the GDP. Growth can be social decline by another name. Divorce, for example, adds a small fortune in lawyers' bills, the need for second households, transportation and counseling for kids, and so on. Divorce lawyers alone take in probably several billion dollars a year, and possibly a good deal more. Divorce also provides a major boost for the real-estate industry. "Unfortunately, divorce is a big part of our business. It means one [home] to sell and sometimes two to buy," a realtor in suburban Chicago told the Chicago Tribune. Similarly, crime has given rise to a burgeoning crime-prevention and security industry with revenues of more than $65 billion a year. The car-locking device called The Club adds some $100 million a year to the GDP all by itself, without counting knock-offs. Even a gruesome event like the Oklahoma City bombing becomes an economic uptick by the strange reckonings of the GDP. "Analysts expect the share prices [of firms making anti-crime equipment] to gain during the next several months," The Wall Street Journal reported a short time after the bombing, "as safety concerns translate into more contracts."

Bennett cited the chilling statistics that teenagers spend on average some three hours a day watching television, and about five minutes a day alone with their fathers. Yet when kids are talking with their parents, they aren't adding to the GDP. In contrast, MTV helps turn them into ardent, GDP-enhancing consumers. Even those unwed teenage mothers are bringing new little consumers into the world (where they will quickly join the "kiddie market" and after that the "teen market," which together influence more than $200 billion in GDP). So while social conservatives like Bennett are rightly deploring the nation's social decline, their free-marketeer counterparts are looking at the same phenomena through the lens of the GDP and breaking out the champagne.

Something similar happens with the natural habitat. The more the nation depletes its natural resources, the more the GDP increases. This violates basic accounting principles, in that it portrays the depletion of capital as current income. No businessperson would make such a fundamental error. When a small oil company drains an oil well in Texas, it gets a generous depletion allowance on its taxes, in recognition of the loss. Yet that very same drainage shows up as a gain to the nation in the GDP. When the United States fishes its cod populations down to remnants, this appears on the national books as an economic boom--until the fisheries collapse. As the former World Bank economist Herman Daly puts it, the current national accounting system ***treats the earth as a business in liquidation***.

Add pollution to the balance sheet and we appear to be doing even better. In fact, pollution shows up twice as a gain: once when the chemical factory, say, produces it as a by-product, and again when the nation spends billions of dollars to clean up the toxic Superfund site that results. Furthermore, the extra costs that come as a consequence of that environmental depletion and degradation - such as medical bills arising from dirty air - also show up as growth in the GDP. This kind of accounting feeds the notion that conserving resources and protecting the natural habitat must come at the expense of the economy, because the result can be a lower GDP. That is a lot like saying that a reserve for capital depreciation must come at the expense of the business. On the contrary, a capital reserve is essential to ensure the future of the business. To ignore that is to confuse mere borrowing from the future with actual profit. Resource conservation works the same way, but the perverse accounting of the GDP hides this basic fact.

No less important is the way the GDP ignores the contribution of the social realm - that is, the economic role of households and communities. This is where much of the nation's most important work gets done, from caring for children and older people to volunteer work in its many forms. It is the nation's social glue. Yet because no money changes hands in this realm, it is invisible to conventional economics. The GDP doesn't count it at all - which means that the more our families and communities decline and a monetized service sector takes their place, the more the GDP goes up and the economic pundits cheer.

Parenting becomes child care, visits on the porch become psychiatry and VCRs, the watchful eyes of neighbors become alarm systems and police officers, the kitchen table becomes McDonald's--up and down the line, the things people used to do for and with one another turn into things they have to buy. Day care adds more than $4 billion to the GDP; VCRs and kindred entertainment gear add almost $60 billion. Politicians generally see this decay through a well-worn ideological lens: conservatives root for the market, liberals for the government. But in fact these two "sectors" are, in this respect at least, merely different sides of the same coin: both government and the private market grow by cannibalizing the family and community realms that ultimately nurture and sustain us.

These are just the more obvious problems. There are others, no less severe. The GDP totally ignores the distribution of income, for example, so that enormous gains at the top - as were made during the 1980s - appear as new bounty for all. It makes no distinction between the person in the secure high-tech job and the "downsized" white-collar worker who has to work two jobs at lower pay. The GDP treats leisure time and time with family the way it treats air and water: as having no value at all. When the need for a second job cuts the time available for family or community, the GDP records this loss as an economic gain.

Then there's the question of addictive consumption. Free-market fundamentalists are inclined to attack critics of the GDP as "elitists." People buy things because they want them, they say, and who knows better than the people themselves what adds to well-being? It makes a good one liner. But is the truth really so simple? Some 40 percent of the nation's drinking exceeds the level of "moderation," defined as two drinks a day. Credit-card abuse has become so pervasive that local chapters of Debtors Anonymous hold forty-five meetings a week in the San Francisco Bay area alone. Close to 50 percent of Americans consider themselves overweight. When one considers the $32 billion diet industry, the GDP becomes truly bizarre. It counts the food that people wish they didn't eat, and then the billions they spend to lose the added pounds that result. The coronary bypass patient becomes almost a metaphor for the nation's measure of progress: shovel in the fat, pay the consequences, add the two together, and the economy grows some more.

So, too, the O. J. Simpson trial. When The Wall Street Journal added up the Simpson legal team ($20,000 a day), network-news expenses, O. J. statuettes, and the rest, it got a total of about $200 million in new GDP, for which politicians will be taking credit in 1996. "GDP of O.J. Trial Outruns the Total of, Say, Grenada," the Journal's headline writer proclaimed. One begins to understand why politicians prefer to talk about growth rather than what it actually consists of, and why Prozac alone adds more than $1.2 billion to the GDP, as people try to feel a little better amid all this progress."

3. GDP as Cough Index: The Heisenberg Principle of Mismeasurement.

Herman Daly [1] gives a dark humor example to describe GDP and the perverse results of the Law of Unintended Consequences as applied to measurements:

"The act of measurement always involves some interaction and interference with the reality being measured. This generalized Heisenberg uncertainty principle is especially relevant in economics, where the measurement of a success index on which rewards are based, or taxes calculated, nearly always has perverse repercussions on the reality being measured. Consider, for example, the case of management by quantified objectives applied to a tuberculosis hospital, as related to me by a physician. It is well known that TB patients cough less as they get better. So the number of coughs per day was taken as a quantitative measure of the patient's improvement. Small microphones were attached to the patients' beds, and their coughs were duly recorded and tabulated. The staff quickly perceived that they were being evaluated in inverse proportion to the number of times their patients coughed. Coughing steadily declined as doses of codeine were more frequently prescribed. Relaxed patients cough less. Unfortunately the patients got worse, precisely because they were not coughing up and spitting out the congestion. The cough index was abandoned."

The cough index totally subverted the activity it was designed to measure because people served the abstract quantitative index instead of the concrete qualitative goal of health. Perversities induced by quantitative goal setting are pervasive in the literature on Soviet planning: set the production quota for cloth in linear feet, and the bolt gets narrower; set it in square feet, and the cloth gets thinner; set it by weight, and it gets too thick. But Daly doesn't believe one needs to go as far away as the Soviet Union to find examples.

"The phenomenon is ubiquitous. In universities a professor is rewarded according to number of publications. Consequently the length of articles is becoming shorter as we approach the minimum publishable unit of research. At the same time the frequency of co-authors has increased. *More and more people are collaborating on shorter and shorter papers*. What is being maximized is not discovery and dissemination of coherent knowledge but the number of publications on which one's name appears."

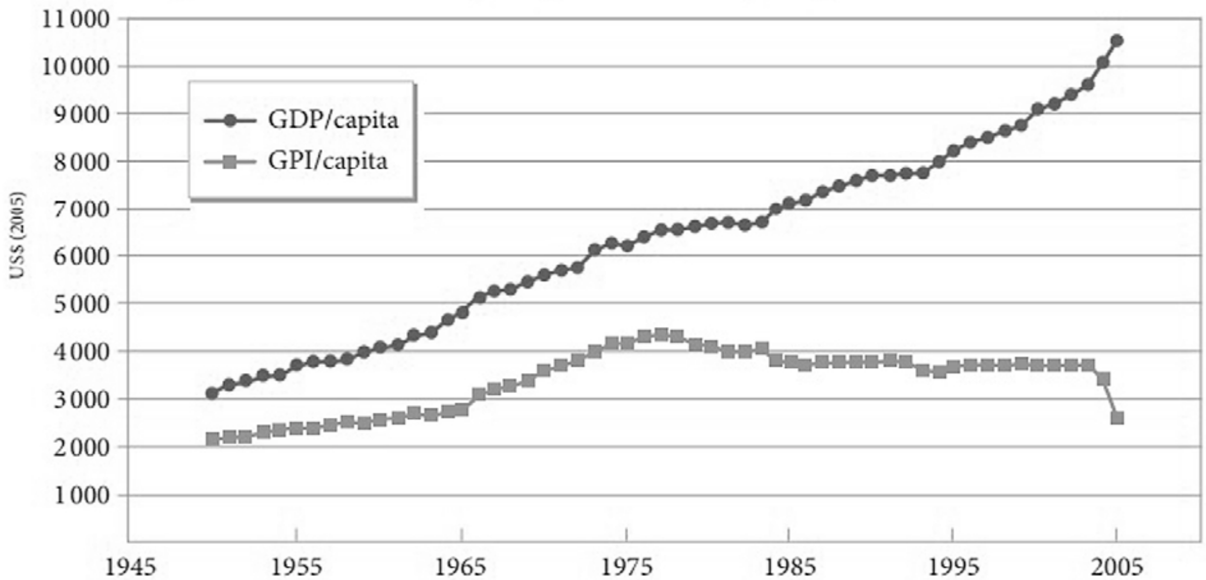
The purpose of these examples of the treachery of quantified success indexes is to suggest that, like them, GDP is not only a passive mismeasure *but also an actively distorting influence* on the very reality that it aims only to reflect. GDP is an index of throughput, not welfare. Throughput is positively correlated with welfare in a world of infinite sources and sinks, but in a finite world with fully employed carrying capacity, throughput is a *cost.* To design national policies to maximize GDP is just not smart. *It is practically equivalent to maximizing depletion and pollution*.

C. Genuine Progress Indicator (GPI): Cough Medicine

The Genuine Progress Indicator (GPI) developed by Redefining Progress of San Francisco is a new measure of the economic well-being of the nation from 1950 to present. It broadens the conventional accounting framework to include the economic contributions of the family and community realms, and of the natural habitat, along with conventionally measured economic production. The GPI takes into account more than twenty aspects of our economic lives that the GDP ignores. It includes estimates of the economic contribution of numerous social and environmental factors which the GDP dismisses with an implicit and arbitrary value of zero. It also differentiates between economic transactions that add to well-being and those which diminish it. The GPI then integrates these factors into a composite measure so that the benefits of economic activity can be weighed against the costs. The GPI is intended to provide citizens and policy-makers with a more accurate barometer of the overall health of the economy, and of how our national condition is changing over time.

Figure 1: Genuine progress splits from GDP in the 1970s

Genuine Progress Indicator (GPI) per capita and GDP per capita, 1950–2005



Source: Kubiszewski 2013, p. 63

While per capita GDP has more than doubled from 1950 to present, the GPI shows a very different picture. It increased during the 1950s and 1960s, but has declined by roughly 45% since 1970. Further, the rate of decline in per capita GPI has increased from an average of 1% in the 1970s to 2% in the 1980s to 6% so far in the 1990s. This wide and growing divergence between the GDP and GPI is a warning that the economy is stuck on a path that imposes large - and as yet unreckoned - costs onto the present and the future. The GPI strongly suggests that the costs of the nation's current economic trajectory have begun to outweigh the benefits, leading to growth that is actually uneconomic.

The GPI starts with the same personal consumption data the GDP is based on, but then makes some crucial distinctions. It adjusts for certain factors (such as income distribution), adds certain others (such as the value of household work and volunteer work), and subtracts yet others (such as the costs of crime and pollution). Because the GDP and the GPI are both measured in monetary terms, they can be compared on the same scale.

1. Crime & Family Breakdown

Social breakdown imposes large economic costs on individuals and society, in the form of legal fees, medical expenses, damage to property, and the like. The GDP treats such expenses as additions to well-being. By contrast, the GPI subtracts the costs arising from crime and divorce.

2. Household & Volunteer Work

Much of the most important work in society is done in household and community settings: childcare, home repairs, volunteer work, and the like. These contributions are ignored in the GDP because no money changes hands. To correct this omission, the GPI includes, among other things, the value of household work figured at the approximate cost of hiring someone to do it.

3. Income Distribution

A rising tide does not necessarily lift all boats -- not if the gap between the very rich and everyone else increases. Both economic theory and common sense tell us that the poor benefit more from a given increase in their income than do the rich. Accordingly, the GPI rises when the poor receive a larger percentage of national income, and falls when their share decreases.

4. Resource Depletion

If today's economic activity depletes the physical resource base available for tomorrow's, then it is not really creating well-being; rather, it is just borrowing it from future generations. The GDP counts such borrowing as current income. The GPI, by contrast, counts the depletion or degradation of wetlands, farmland, and non-renewable minerals (including oil) as a current cost.

5. Pollution

The GDP often counts pollution as a double gain; once when it's created, and then again when it is cleaned up. By contrast, the GPI subtracts the costs of air and water pollution as measured by actual damage to human health and the environment.

6. Long-Term Environmental Damage

Climate change and the management of nuclear wastes are two long-term costs arising from the use of fossil fuels and atomic energy. These costs do not show up in ordinary economic accounts. The same is true of the depletion of stratospheric ozone arising from the use of chlorofluorocarbons. For this reason, the GPI treats as costs the consumption of certain forms of energy and of ozone-depleting chemicals.

7. Changes In Leisure Time

As a nation increases in wealth, people should have increasing latitude to choose between more work and more free time for family or other activities. In recent years, however, the opposite has occurred. The GDP ignores this loss of free time, but the GPI treats leisure as most Americans do - as something of value. When leisure time increases, the GPI goes up; when Americans have less of it, the GPI goes down.

8. Defensive Expenditures

The GDP counts as additions to well-being the money people spend just to prevent erosion in their quality of life or to compensate for misfortunes of various kinds. Examples are the medical and repair bills from automobile accidents, commuting costs, and household expenditures on pollution control devices such as water filters. The GPI counts such "defensive" expenditures as most Americans do: as costs rather than as benefits.

9. Lifespan Of Consumer Durables & Public Infrastructure

The GDP confuses the value provided by major consumer purchases (e.g., home appliances) with the amounts Americans spend to buy them. This hides the loss in well-being that results when products are made to wear out quickly. To overcome this, the GPI treats the money spent on capital items as a cost, and the value of the service they provide year after year as a benefit. This applies both to private capital items and to public infrastructure, such as highways.

10. Dependence On Foreign Assets

If a nation allows its capital stock to decline, or if it finances its consumption out of borrowed capital, it is living beyond its means. The GPI counts net additions to the capital stock as contributions to well-being, and treats money borrowed from abroad as reductions. If the borrowed money is used for investment, the negative effects are canceled out. But if the borrowed money is used to finance consumption, the GPI declines.

D. Ethicosocial Limits: Does Your Conscience Bother You Yet?

Even when growth is, with enough ingenuity, still possible, ethicosocial limits may render it undesirable. Four ethicosocial propositions limiting the desirability of growth are briefly considered below and come from Daly [1].

1. **The desirability of growth financed by the drawdown of geological capital is limited by the cost imposed on future generations.**

In standard economics the balancing of future against present costs and benefits is done by discounting. A time discount rate (the interest rate paid for invested money) is a numerical way of expressing the value judgment that beyond a certain point the future is not worth anything to presently living people. The higher the discount rate, the sooner that point is reached. *The value of the future to future people does not count in the standard approach.*

Perhaps a more discriminating, though less numerical, principle for balancing the present and the future would be that the basic needs of the present should always take precedence over the basic needs of the future but that *the basic needs of the future should take precedence over the extravagant luxury of the present.*

2. **The desirability of growth financed by takeover of habitat is limited by the extinction or reduction in number of sentient subhuman species whose habitat disappears.**

Economic growth requires space for growing stocks of artifacts and people and for expanding sources of raw material and sinks for waste material. Other species also require space, their "place in the sun." The instrumental value of other species to us, the life-support services they provide, is enormous. Another limit derives from the intrinsic value of other species, that is, counting them as sentient, though probably not self-conscious, beings which experience pleasure and pain and whose experienced "utility" should be counted positively in welfare economies, even though it does not give rise to maximizing market behavior.

The intrinsic value of subhuman species should exert some limit on habitat takeover in addition to the limit arising from instrumental value. But it is extremely difficult to say how much. Clarification of this limit is a major philosophical task, but if we wait for a definitive answer before imposing any limits on takeover, then the question will be rendered moot by extinctions which are now occurring at an extremely rapid rate relative to past ages. If we attribute intrinsic value in some degree to other sentient creatures, then the optimal scale of the human niche would be smaller than if only human sentience counted. Investment in natural capital would then have the additional benefit of increasing life-support services to non-human species whose enjoyment of life would no longer be counted as zero. *A person is worth many sparrows, but for that statement to mean anything a sparrow's worth cannot be zero*. But not even theology, much less economics, can say how many sparrows are worth a human.

3. **The desirability of aggregate growth is limited by its self-canceling effects on welfare.**

Keynes argued that absolute wants (those we feel independently of the condition of others) are not insatiable. Relative wants (those we feel only because their satisfaction makes us feel superior to others) are indeed insatiable, for, as Keynes put it, "The higher the general level, the higher still are they." Or, as J. S. Mill expressed it, 'Men do not desire to be rich, but to be richer than other men." At the current margin of production in rich countries it is very likely that welfare increments (increments in well-being) are largely a function of changes in relative income (insofar as they depend on income at all). Since the struggle for relative shares is a zero-sum game, it is clear that aggregate growth cannot increase aggregate welfare. To the extent that welfare depends on relative position, growth is unable to increase welfare in the aggregate. It is subject to the same kind of self-canceling trap that we find in the arms race.

4. **The desirability of aggregate growth is limited by the corrosive effects on moral standards resulting from the very attitudes that foster growth, such as glorification of self-interest and a scientistic-technocratic worldview.**

On the demand side of commodity markets, growth is stimulated by greed and acquisitiveness, intensified by the multibillion-dollar advertising industry. On the supply side, technocratic scientism proclaims the possibility of limitless expansion and preaches a reductionist, mechanistic philosophy which, in spite of its success as a research program, has serious shortcomings as a worldview. As a research program it very effectively furthers power and control, but as a worldview it leaves no room for purpose, much less for any distinction between good and bad purposes. Anything goes is a convenient moral slogan for the growth economy because it implies that anything also sells. To the extent that growth has a well-defined purpose, then it is limited by the satisfaction of that purpose. Expanding power and shrinking purpose lead to uncontrolled growth for its own sake, which is wrecking the moral and social order just as surely as it is wrecking the ecological order.

VI. Corporations: Puppets to the Financial Markets

David Korten [2] does an outstanding job describing the far-reaching effects of modern corporations. (For some astonishing details of corporate culpability see Ralph Estes' book *Tyranny of the Bottom Line* [11])

Small businesses, which account for the majority of the economic activity in most local areas, face a different set of sustainability issues from those of large corporations. In many ways they are the pawns of the puppets. The stresses of being a "successful" small business, i.e., making a basic living, leave little time for implementing many sustainability practices. To their great credit, a significant number of small businesses, as shown through California's Waste Reduction Awards Program (WRAP), for example, are taking some action to promote sustainability goals.

A. The Corporation: A Disembodied Body

The 1880s and 1890s were the days of men such as John D. Rockefeller, J. Pierpont Morgan, Andrew Carnegie, James Mellon, Cornelius Vanderbilt, Philip Armour, and Jay Gould. Wealth begat wealth as corporations took advantage of government disarray to buy tariff, banking, railroad, labor, and public lands legislation that would further enrich them. Citizen groups committed to maintaining corporate accountability continued to battle corporate abuse at state levels, and both courts and state legislatures revoked corporate charters. [Note: Several modern organizations are attempting to revive this strategy. The Media Foundation (Adbusters) is fighting to revoke the corporate charter of Philip Morris in the state of New York. In 1998 the Lawyer's Guild and thirty other groups filed a 127-page petition requesting the California Attorney General to revoke Unocal's charter because the company forcibly relocated villages and used slave labor on a natural gas pipeline they are building in Burma in partnership with the military dictatorship there.]

Gradually, however, corporations gained sufficient control over key state legislative bodies to virtually rewrite the laws governing their own creation. Legislators in New Jersey and Delaware took the lead in watering down citizens' rights to intervene in corporate affairs. They limited the liability of corporate owners and managers and issued charters in perpetuity. Corporations soon had the right to operate in any fashion not explicitly prohibited by law. Step-by-step, the court system put in place new precedents that made the protection of corporations and corporate property a centerpiece of constitutional law. Judges sympathetic to corporate interests ruled that *workers were responsible for causing their own injuries on the job*, limited the liability of corporations for damages they might cause, and *declared wage and hours laws unconstitutional*.

In 1886, in a stunning victory for the proponents of corporate sovereignty, the Supreme Court ruled in *Santa Clara County V. Southern Pacific Railroad* that a ***private corporation is a natural person under the U.S. Constitution*** - although, as noted above, the Constitution makes no mention of corporations - and is thereby entitled to the protections of the Bill of Rights, including the right to free speech and other constitutional protections extended to individuals. Thus corporations finally claimed the full rights enjoyed by individual citizens while being exempted from many of the responsibilities and liabilities of citizenship. The subsequent claim by corporations that they have the same right as any individual to influence the government in their own interest pits the individual citizen against the vast financial and communications resources of the corporation and mocks the constitutional intent that all citizens have an equal voice in the political debates surrounding important issues.

During the Reagan administration the full political resources of corporate America were mobilized to regain corporate control of the political agenda and the court system. High on the political agenda were domestic reforms intended to improve the global competitiveness of the United States by getting government "off the back" of business. Taxes on the rich were radically reduced. The number of billionaires in the world increased from 145 in 1987 to 358 in 1994. By denying any government role in economic planning and priority setting, the Reagan administration left the economic future of the United States entirely in the hands of corporations that were being *pressed by the capital markets to focus only on short-term profits*. This was not the result of a conspiracy. Major shifts in national policy do not come about as a consequence of corporate and political elites gathering in a conference room to define a strategy for imposing global adjustment. They are far too independent minded and represent too broad a range of conflicting interests. What usually occurs is a much more complex social process in which ideology mediates between interests and policy. An ideology is a belief-system - a set of theories, beliefs, and myths with some internal coherence - that seeks to universalize the interests of one social sector to the whole community.

Markets and politics are both about governance, power, and the allocation of society's resources. But the political reality is that in a political democracy, each person gets one vote. In the market, one dollar is one vote, and you get as many votes as you have dollars. *No dollar, no vote*. Behind its carefully crafted public-relations image and the many fine and ethical people it may employ, the body of a corporation is its corporate charter, a legal document, and money is its blood. It is at its core an *alien entity* with one goal: to reproduce money to nourish and replicate itself. Individuals are dispensable. It owes only one true allegiance: to the financial markets, which are more totally creatures of money than even the corporation itself.

The marvel of the corporation as a social innovation is that it has the ability to bring together thousands of people within a single structure and compel them to act in concert in accordance with a corporate purpose that is not necessarily their own. Those who revolt or fail to comply are expelled and replaced by others who are more compliant. The contemporary corporation increasingly exists as an entity apart - even from the people who compose it. Every member of the corporate class, no matter how powerful his or her position within the corporation, has become expendable - as growing numbers of top executives are learning. As corporations gain in autonomous institutional power and become more detached from people and place, the human interest and the corporate interest increasingly diverge**.** *It is almost as though we were being invaded by **alien beings** intent on colonizing our planet, reducing us to serfs, and then excluding as many of us as possible.*

B. Effects of Corporations: The Aliens Have Landed

Massive economic and political power has been concentrated in the hands of an elite few whose absolute share of the products of a declining pool of natural wealth continues to increase at a substantial rate - thus reassuring them that the system is working perfectly well. An active propaganda machinery controlled by the world's largest corporations constantly reassures us that consumerism is the path to happiness, governmental restraint of market excess is the cause our distress, and economic globalization is both a historical inevitability and a boon to the human species.

These forces have transformed once beneficial corporations and financial institutions into instruments of a market tyranny that is extending its reach across the planet like a cancer, colonizing ever more of the planet's living spaces, destroying livelihoods, displacing people, rendering democratic institutions impotent, and feeding on life in an insatiable quest for money. As our economic system has detached from place and gained greater dominance over our democratic institutions, *even the world's most powerful corporations have become captives of the forces of a globalized financial system*. Eventually, that power evolves beyond the ability of any mere human to control, and the corporation becomes an autonomous entity unto itself, using its power to create its own culture, using the *lens of career* to focus corporate culture on profit, size, and power. The dynamics of this system have become so powerful and perverse that *it is becoming increasingly difficult for corporate managers - to manage in the public interest, no matter how strong their moral values and commitment*. Acts that would bring stiff prison sentences or even death for individuals result - at worst - in small fines for corporations that are generally inconsequential in relation to corporate assets.

For example, in 1986, Union Carbide's chemical plant in Bhopal, India accidentally released methyl isocyanate into the air, injuring some 200,000 people and killing more than 6,ooo. Soon after the accident, the chair of the board of Union Carbide, *Warren M. Anderson, was so upset at what happened he informed the media that he would spend the rest of his life attempting to correct the problems his company had caused and to make amends*. Only one year later, however, Mr. Anderson was quoted in *Business Week* as saying that he had "overreacted," and was now prepared to lead the company in its legal fight *against* paying damages and reparations. What happened? Very simply, Mr. Anderson at first reacted as a human being. Later he realized (and perhaps was pressed to realize) that this reaction was inappropriate for a chair of the board of a company whose obligations are not to the poor victims of Bhopal but to shareholders; that is, to its profit picture. If Mr. Anderson had persisted in expressing his personal feelings or acknowledging the company's culpability, he certainly would have been fired.

Korten [2] is strongly critical:

> "The owners and managers of corporations have the full rights of any citizen - in their capacity as citizens - to participate in defining public goals and policies. However, corporations themselves, as non-human legal entities created to serve the public interest, have no place using their resources to influence the processes by which citizens define the public interest and set the rules of corporate conduct. ***Corporations are not people***. They are alien to the ways of life and blind to the complex nonmaterial needs of human societies. They should be wholly barred from any form of political participation. A corporate charter represents a privilege - not a right - that is extended in return for the acceptance of corresponding obligations. It is up to the people, the members of civil society-not the fictitious persona of the corporation - to define these privileges and obligations."

C. Citizens United: Perversion of Democracy - One Dollar, One Vote!

The Supreme Court's decision in *Citizens United v. Federal Election Commission,* the court opened the campaign spending floodgates. The justices' ruling said political spending is protected under the First Amendment, meaning corporations and unions could spend unlimited amounts of money on political activities…Disembodied corporations were now transformed into real people.

In his opposing argument, Supreme Court Justice Stevens echoed Korten's statement above:

". . . corporations have no consciences, no beliefs, no feelings, no thoughts, no desires. Corporations help structure and facilitate the activities of human beings, to be sure, and their 'personhood' often serves as a useful legal fiction. But they are not themselves members of "We the People" by whom and for whom our Constitution was established."

~Supreme Court Justice Stevens, January 2010

The campaign to overturn Citizens United is an ongoing political struggle whose outcome is unknown at this time.

D. Corporate management: Can the Automatic Pilot Be Controlled?

Something like a prisoners' dilemma prevails in relations between managers and the stock market. Even if participants are aware of an upward bias to earnings estimates, and even if they correct for it, managers still have an incentive to try to fool the market. If you tell the truth, your accurate estimates will be marked down by a skeptical market. So, it's entirely rational for managers to boost profits in the short term, either through accounting gimmickry or by making only investments with quick paybacks.

If the markets see high costs as bad and low costs as good, then firms may shun expensive investments because they will be taken as signs of managerial incompetence. Throughout the late 1980s and early

1990s, the stock market rewarded firms announcing write-offs and mass firings since the cost-cutting was seen as contributing rather quickly to profits. Firms and economies can't get richer by starving themselves, but stock market investors can get richer when the companies they own go hungry - at least in the short term. As for the long term, well, that's someone else's problem the week after next.

Managers facing a market that is famous for its preference for quick profits today rather than patient long-term growth have little choice but to do its bidding. Otherwise, their stock will be marked down, and the firm will be ripe for takeover. Surveys have shown that U.S. executives ranked share price increases as their second most important objectives out of nine choices, ahead of such alternatives as improved product portfolio, market share, or company image.

Korten points out that behind their bold public defense of an economic system in an advanced stage of self-destruction, there are growing reports of unease and concern even among the most elite of the Stratos dwellers. In 1980-82, 79 percent of managers reported that their job security was "good" or "very good." By 1992-94, that figure had fallen to 55 percent. It is not simply that their own positions are increasingly at risk. It is a sense that something simply isn't right, that they are leaving their children a deeply troubled world. Many face growing conflicts between their personal values and what their corporate positions demand of them. In 1994, Paul Hawken asked a roomful of senior managers from Fortune 500 companies a few questions: Do you want to work harder in five years than you do today? Do you know anyone in your office who's a slacker? Do you know any parents in your company who are spending too much time with their kids? The only response was a few embarrassed laughs. Then it was quiet – perhaps numb is a better word.

Again from Korten [2]:

> "When justifying outrageous executive salaries, the press commonly notes the importance of such rewards in motivating the heads of corporations to exert their best efforts. When William A. Anders, the chairman of General Dynamics Corporation, was granted a $1.6 million bonus for having kept his company's stock price above $45 for ten days, a company spokesperson told the *Washington Post* that the bonus plan was needed to give top executives the incentive to change the company's business strategy and focus on maximizing returns to shareholders. *It is an extraordinary claim that the most privileged and well-paid professionals in the world require million-dollar bonuses to motivate them to do their jobs*.
>
> Derek Bok, the former president of Harvard University, offers a telling explanation. He suggests that top corporate executives must be paid such outrageous sums to ensure that they place the short term interests of shareholders above all other interests that they might otherwise be tempted to consider - such as those of employees, the community, and even the corporation's own long-term viability. *In short, top executives have to be paid outrageous salaries to motivate them to not yield to their instincts toward social responsibility*. Viewed from this perspective, these salaries are an indicator of how distasteful the job of top corporate managers has become in the era of corporate downsizing."

A former Texas commissioner of agriculture, Jim Hightower, made the following suggestion: "Let's keep our factories and jobs here and move our corporate headquarters to Mexico, Korea, or wherever else we can get some *reasonably priced chief executives*." Or maybe we could allow free immigration of cheap chief executives along with cheap labor. Not likely. More likely is that we will witness a further writing off of the laboring class in this country, an increasing disdain toward uneducated and rural people by the corporate and university elite.

E. The CERES Principles: A Charter for Corporate Responsibility

Who will satisfy the demand for caring capitalism? The Coalition for Environmentally Responsible Economies (CERES) believes success in solving environmental problems depends on the willingness of corporations to lead, rather than be led, in the transition to a more ecologically sound economy. They believe corporations exert an influence over human decisions and behaviors that is often more profound than that of schools, governments or religious communities. From the beginning, a distinctive strategy of CERES coalition members was the use of shareholder resolutions to initiate discussions of environmental responsibility at the highest corporate levels. Such resolutions are often the first step in beginning the process of dialogue that eventually leads to formal endorsement of the CERES Principles. The ten CERES Principles - originally known as the Valdez Principles - remain at the heart of CERES's work. By endorsing the Principles, companies not only formalize their dedication to environmental awareness and accountability, they actively commit to an ongoing process of continuous improvement, dialogue and comprehensive, systematic public reporting. Companies sign the following statement:

> "By adopting these Principles, we publicly affirm our belief that corporations have a responsibility for the environment, and must conduct all aspects of their business as responsible stewards of the environment by operating in a manner that protects the Earth. We believe that corporations must not compromise the ability of future generations to sustain themselves.
>
> We will update our practices constantly in light of advances in technology and new understandings in health and environmental science. In collaboration with CERES, we will promote a dynamic process to ensure that the Principles are interpreted in a way that accommodates changing technologies and environmental realities. We intend to make consistent, measurable progress in implementing these Principles and to apply them to all aspects of our operations throughout the world.
>
> <u>Protection of the Biosphere</u>
> We will reduce and make continual progress toward eliminating the release of any substance that may cause environmental damage to the air, water, or the earth or its inhabitants. We will safeguard all habitats affected by our operations and will protect open spaces and wilderness, while preserving biodiversity.
>
> <u>Sustainable Use of Natural Resources</u>
> We will make sustainable use of renewable natural resources, such as water, soils and forests. We will conserve non-renewable natural resources through efficient use and careful planning.
>
> <u>Reduction and Disposal of Wastes</u>
> We will reduce and where possible eliminate waste through source reduction and recycling. All waste will be handled and disposed of through safe and responsible methods.
>
> <u>Energy Conservation</u>
> We will conserve energy and improve the energy efficiency of our internal operations and of the goods and services we sell. We will make every effort to use environmentally safe and sustainable energy sources.
>
> <u>Risk Reduction</u>
> We will strive to minimize the environmental, health and safety risks to our employees and the communities in which we operate through safe technologies, facilities and operating procedures, and by being prepared for emergencies.

Safe Products and Services
We will reduce and where possible eliminate the use, manufacture or sale of products and services that cause environmental damage or health or safety hazards. We will inform our customers of the environmental impacts of our products or services and try to correct unsafe use.

Environmental Restoration
We will promptly and responsibly correct conditions we have caused that endanger health, safety or the environment. To the extent feasible, we will redress injuries we have caused to persons or damage we have caused to the environment and will restore the environment.

Informing the Public
We will inform in a timely manner everyone who may be affected by conditions caused by our company that might endanger health, safety or the environment. We will regularly seek advice and counsel through dialogue with persons in communities near our facilities. We will not take any action against employees for reporting dangerous incidents or conditions to management or to appropriate authorities.

Management Commitment
We will implement these Principles and sustain a process that ensures that the Board of Directors and Chief Executive Officer are fully informed about pertinent environmental issues and are fully responsible for environmental policy. In selecting our Board of Directors, we will consider demonstrated environmental commitment as a factor.

Audits and Reports
We will conduct an annual self-evaluation of our progress in implementing these Principles. We will support the timely creation of generally accepted environmental audit procedures. We will annually complete the CERES Report, which will be made available to the public."

Various other "green business planning" organizations such as Business for Social Responsibility and Social Ventures Network are also active. The business community is also slowly adopting the ISO 14000 international standard for environmental management systems.

F. The Natural Step: Backcasting the Future

The Natural Step Framework (www.thenaturalstep.org) has emerged as one of the most imaginative, yet logical, approach to strategic environmental management within organizations. The Framework helps with planning and decision-making to reach sustainability. It is also used as a tool to successfully integrate environmental questions into the over-all business. It works as a shared mental model for dialogue, a tool for prioritizing and solving problems and a way of evaluating various investments or other actions. With the help of the Natural Step Framework, many organizations have been able to reduce costs, improve quality and identify new customers and markets [6].

The most common way of planning is to look in the rear view mirror to help analyze what is happening in the present and then extrapolate remedies for perceived problems in the future. We call this forecasting. As a planning technique, projecting the present into the future has many disadvantages. Perhaps its most crucial flaw is that whatever seems important in the present comes to define the future. This is particularly risky because the present trends are the main drivers of the problems themselves. Acting in this way, we risk bringing today's problems into the future.

When the Natural Step Framework is used, operations are specified with the help of a 'future perspective' known as backcasting. Backcasting is a method of looking back from a point of time in the future. To begin with, we envisage a successful result in the future. Then, we ask: What can we do today to reach this goal?

Planning with backcasting is especially effective if there is a high level of complexity, a pressing need for fundamental change or if dominant trends are part of the problem. But if backcasting is to be effective, there must first be a basic outline to work from - a clear description of the conditions that need to be in place in any sustainable society. This outline for sustainability is defined by the System Conditions, the first order principles for sustainability.

The process for using The Natural Step Framework is simple:

1. How do we find common ground in our environmental planning? Disseminate the Natural Step Framework among all participants.

2. How does the organization look today? Analyze current operations in relation to the System Conditions with the help of an environmental review. Map out and list critical flows of raw materials and energy.

3. How does the organization look in a sustainable society? Analyze how operations will look in a sustainable society, through the application of the System Conditions. List all measures.

4. How do we launch environmental programs with targets and measures to improve profitability? Prioritize measures from 3 which optimize long-term flexibility while also improving short-term profitability.

The Four System Conditions are based on a scientific rationale which shows that there are essentially only three mechanisms by which human society can damage nature:

1. Nature is damaged if concentrations of substances are continually rising in the environment because they are dispersed in nature from the earth's crust faster than they are returned (redeposited in the earth's crust).
2. Nature is damaged if concentrations of substances produced by society are continually rising in the environment because society disperses them faster than they can be broken down and built into new resources by nature (or deposited in the earth's crust).

Nature is damaged if the physical basis for natural cycles and biological diversity is continuously diminishing. This occurs either by extracting more than nature can build up again (for instance, more timber or fish than can be regenerated) or by other forms of ecosystem manipulation (for instance, altering the water table, soil erosion, of covering fertile land with asphalt).

In addition, a sustainable society has the essential characteristic that it is good at satisfying human needs, but within the framework of reversing the previous three destructive mechanisms.

These four insights lead to the four System Conditions of The Natural Step [6]:

In order for a society to be sustainable, nature's functions and diversity must not be systematically:

1. subject to increasing concentrations of substances extracted from the earth's crust,

2. subject to increasing concentrations of substances produced by society,

3. impoverished by physical displacement, over-harvesting or other forms of ecosystem manipulation,

4. and resources are used fairly and efficiently in order to meet basic human needs globally

John Elkington in *Cannibals With Forks* [12] posits a necessary evolution of corporate responsibility and the potential for clear-thinking forward-looking businesses to actually help bring about a sustainability revolution:

“The sustainability agenda, long understood as an attempt to harmonize the traditional financial bottom line with emerging thinking about the environmental bottom line, is turning out to be much more complicated than some early business enthusiasts imagined. Increasingly, we think in terms of a "triple bottom line," focusing on economic prosperity, environmental quality and - the element which business has tended to overlook - social justice.

Simply stated, the triple bottom line is the emerging 21st century business paradigm. Sustainable development is proposed by governments and business leaders as a solution for a wide range of problems now racing up the international agenda. These range from global warming, ozone depletion, and the collapse of some ocean fisheries through to social problems such as the deaths of 37,000 children under the age of five every day (mostly from diseases for which there are inexpensive cures) and the death of some 585,000 pregnant women and mothers every year. The first UN Global Environmental Outlook report, published in 1996, argued that the world still lacks "the necessary sense of urgency" needed to pull back from the "environmental precipice."

Many business people will argue that it is not their business to save the world. But the expectation is growing around the world that business will deliver. In part, this flows from the activities of organizations like the World Business Council for Sustainable Development (WBCSD), but it also flows from a recognition that business needs stable markets - and, uniquely, has the technology, finance, and management skills needed to achieve the sustainability transition. The triple bottom line agenda is fast evolving - and on a broad front, with one of the most challenging tasks being to ensure both efficiency and effectiveness in resource use.”

VII. Globalization: Wanted – Two More (Phantom) Planets

As Mathis Wackernagel and William Rees show in *Our Ecological Footprint* [4], if everybody lived like today's North Americans, it would take at least two additional planet Earths to produce the resources, absorb the wastes, and otherwise maintain life-support. Unfortunately, good planets are hard to find. The notion that the current lifestyle of industrialized countries cannot be extended safely to everyone on Earth will be disturbing to some, especially all those people with television sets in developing countries.

A. Global Competition: A Race to the Bottom

Herman Daly, along with many other observers, believes that nearly all policies for sustainability involve internalizing external environmental and social costs at the national level, which makes prices higher. Therefore free trade with countries that do not internalize these costs, or do it to a much lesser extent, is not feasible. "Global competitiveness" (frequently a thought-substituting slogan) usually reflects not so much a real increase in resource productivity as a standards-lowering competition to reduce wages, externalize environmental and social costs, and export natural capital at low prices while calling it income. The current thrust toward economic globalization by free trade, free capital mobility, and free (or at least uncontrolled) migration is in effect the erasure of national boundaries for economic purposes. This greatly undercuts the ability of nations to put into effect any policies in support of sustainable development, including population control and including domestic enforcement of international treaties that may have been signed in support of efforts to combat irreducibly global environmental problems. The power vacuum created by the weakening of national communities will be filled by the transnational corporations, which, in the absence of a world government, will be unconstrained by any community interests. (Refer again to the previous discussion of Ricardo's Comparative Advantage.)

Respected pro-free trade economists such as Jagdish Bhagwati disagree as to the extent of this standards lowering outcome. Bhagwati believes there are legitimate reasons for the diversity of environmental standards in different countries. This diversity of standards will follow from differences in tradeoffs between aggregate pollution and income at different levels of income, as when richer Americans prefer to save dolphins from purse-seine nets whereas poorer Mexicans want to raise the productivity of fishing and hence accelerate the amelioration of Mexican poverty by using such nets. Again, countries will have natural differences in the priorities attached to which kind of pollution to attack, arising from differences of historical and other circumstances: Mexicans will want to worry more about clean water, as dysentery is a greater problem, than Americans, who will want to attach greater priority to spending pollution dollars on clean air. He also points out that a simple solution to some of the potential disagreements would be for the rich countries to buy the required nets and turtle excluder devices (TEDs) and give them to the Third World fishers.

A proposal that Bhagwati makes is to adapt the so-called Sullivan principles approach to the problem at hand. Under Sullivan, U.S. firms in South Africa were urged to adopt U.S. practices, not the South African apartheid ways, in their operations. If this principle that the U.S. firms in Mexico be subject to U.S. environmental policies were adopted by U.S. legislation, that would automatically remove whatever incentive there was to move because of environmental burden differences. This proposal that one's firms abroad behave as if they were at home - do in Rome as you do in New York, not as the Romans do - can be either legislated unilaterally by any high standards country or by a multilateral binding treaty among different high standards countries. Again, it may be reduced to an exhortation, just as the Sullivan principles were, by single countries in isolation or by several as through a non-binding but ethos-defining and policy-encouraging World Trade Organization (WTO) code.

I believe the views of Daly and Bhagwati are not irreconcilable. Typically, the environmental standards in question are the obvious ones of air and water pollution, which have real costs to companies due to EPA standards in the U.S., for example. Air scrubbers and water purification plants have assignable dollar costs. But once these costs are capitalized and amortized over many years they typically don't add significantly to the cost of the final products. Labor, material, and other plant operating costs such as energy most heavily influence the final costs. In reality every company in every country is operating in a low standards regime since accurate costs have never been applied to their products – including the costs of their depletion of natural resources and the effects of all their forms of waste production. The largest economic driving force is not environmental standards but the desire of financial markets to make the biggest return in the shortest period of time. This typically occurs when natural resources are rapidly liquidated/transformed using large amounts of cheap labor. Controlling environmental and labor standards should not be the main focus of the new international trade agreements. Controlling the unrestricted machinations of the global financial markets and transnational corporations, as exemplified by the WTO, should be the priority.

B. Global Trade: Let Them Eat Recipes

When economists talk about trade balances they refer only to money flows, not ecological flows. The fact is that some areas constantly give up ecological productivity, while others continuously draw on it. For example, Hong Kong, Switzerland, and Japan provide little ecological productivity to the world, while importing a great deal from other places to maintain their high levels of consumption. Expanding world trade leads to increased global resource flows, which stimulates total economic production and accelerates the depletion of the planet's natural resources - and there are other problems. People who live on ecological goods imported from afar (and on "common pool" ecological functions such as climate control, which are shared by everyone) *are spatially and psychologically disconnected from the resources that sustain them*. They lose any direct incentive to conserve their own local resources and have no hand in the management of the distant sources of supply. In fact, they remain blissfully unaware of both the ecological and social effects of prevailing terms of trade.

The countries that are consuming beyond their own environmental means control the rule-making process of the international economy. They adjust the rules to ensure their own ability to make up their national environmental deficits through imports - often without being mindful of the implications for the exporting countries. As Korten [2] points out:

> "El Salvador and Costa Rica grow export crops such as bananas, coffee, and sugar on more than one fifth of their cropland. Export cattle ranches in Latin America and southern Africa have replaced rain forest and wildlife range. At the consumer end of the production line, Japan imports 70 percent of its corn, wheat, and barley, 95 percent of its soybeans, and more than 50 percent of its wood, much of it from the rapidly vanishing rain forests of Borneo.... [In the Netherlands] millions of pigs and cows are fattened on palm-kernel cake from deforested lands in Malaysia, cassava from deforested regions of Thailand, and soybeans from pesticide-doused expanses in the south of Brazil in order to provide European consumers with their high fat diet of meat and milk.
>
> The lands used by Southern countries to produce food for export are unavailable to the poor of those countries to grow the staples they require to meet their own basic needs. The people who are displaced to make way for export-oriented agriculture add to urban overcrowding or move to more fragile and less productive land that quickly becomes over-stressed. The grains that many Southern countries import from the North in exchange for their own food exports are used primarily as feedstocks to produce meat for upper-income urban consumers. The poor are the losers on both ends. These dynamics are invisible to Northern consumers, who - if they do raise questions - are assured that this arrangement is providing needed jobs and income for the poor of the South."

Economic globalization has greatly expanded opportunities for the rich to pass their environmental burdens to the poor by exporting both wastes and polluting factories. This has been a particularly common practice among Japanese companies - with countries of nearby Southeast Asia being their victims. Korten [2] provides the details of this Japanese strategy:

> "The figures are striking. Japan has reduced its domestic aluminum smelting capacity from 1.2 million tons to 140,000 tons and now imports 90 percent of its aluminum. What this involves in human terms is suggested by a case study of the Philippine Associated Smelting and Refining Corporation (PASAR). PASAR operates a Japanese-financed and -constructed copper smelting plant in the Philippine province of Leyte to produce high-grade copper cathodes for shipment to Japan. The plant occupies 400 acres of land expropriated by the Philippine government from local residents at give-away prices. Gas and wastewater emissions from the plant contain high concentrations of boron, arsenic, heavy metals, and sulfur compounds that have contaminated local water supplies, reduced fishing and rice yields, damaged the forests, and increased the occurrence of upper respiratory diseases among local residents. Local people whose homes, livelihoods, and health have been sacrificed to PASAR are now largely dependent on the occasional part-time or contractual employment they are offered to do the plant's most dangerous and dirtiest jobs.
>
> The company has prospered. The local economy has grown. The Japanese people have a supply of copper at no environmental cost to themselves. The local poor - the project's professed beneficiaries - have lost their means of livelihood and suffered impaired health. The Philippine government is repaying the foreign aid loan from Japan that financed the construction of supporting infrastructure for the plant. And the Japanese are congratulating themselves for the cleanliness of their domestic environment and their generous assistance to the poor of the Philippines. There is nothing particularly special about this case, other than the fact that it has been documented. There are thousands of such stories illustrating the realities of corporate colonialism that economic globalization is advancing around the world."

C. Transnational Corporations: "My Country 'Tis Not of Thee…"

In their day-to-day operations, the allegiance of the world's largest corporations is purely to their own bottom lines. However, for the purposes of seeking tax breaks, research subsidies, or governmental representation in negotiations that bear on their global marketing and investment interests, they wrap themselves in national flags and call for support from their "home" governments in the name of advancing "national" global competitiveness. There is a continuing tension between the *multinational* and the *transnational* view of the global corporation. A multinational corporation takes on many national identities, maintaining relatively autonomous production and sales facilities in individual countries, establishing local roots and presenting itself in each locality as a good local citizen. Its globalized operations are linked to one another but are deeply integrated into the individual local economies in which they operate, and they do function to some extent as local citizens.

The trend, however, is toward *transnationalism*, which involves the integration of a firm's global operations around vertically integrated supplier networks. For example, when Otis Elevator set about to create an advanced elevator system, it contracted out the design of the motor drives to Japan, the door systems to France, the electronics to Germany, and small geared components to Spain. System integration was handled from the United States. Although a transnational corporation may choose to claim local citizenship when that posture suits its purpose, local commitments are temporary, and it actively attempts to eliminate considerations of nationality in its effort to maximize the economies that centralized global procurement makes possible. Forty-seven of the top one hundred economies in the world are actually transnational corporation. Seventy percent of global trade is controlled by just five hundred corporations. Modern transnational corporations in quest of global markets cannot really comprehend “foreign policy” because the word foreign has no meaning to the ambitious global businessperson. How can the physical distinction between domestic and foreign have resonance in a virtual world defined by electronic communications and intrinsically unbounded markets?

Korten characterizes the ideal world of the global dreamers as one in which:

- The world's money, technology, and markets are controlled and managed by gigantic global corporations;
- A common consumer culture unifies all people in a shared quest for material gratification;
- There is perfect global competition among workers and localities to offer their services to investors at the most advantageous terms;
- Corporations are free to act solely on the basis of profitability without regard to national or local consequences;
- Relationships, both individual and corporate, are defined entirely by the market; and
- There are no loyalties to place and community.

Two pungent quotes give the flavor of this global solidarity. A senior executive of Colgate-Palmolive told the *New York Times* in 1991: "The United States does not have an automatic call on our resources. There is no mindset that puts this country first.” Not only Americans are so free of patriotic sentiment. "To be in business," said Frank Stronach, chair of Magna International, a Canadian auto-parts maker that has shifted its production to Mexico, "your first mandate is to make money, and money has no heart, soul, conscience, homeland.”

D. Cultural Imperialism or Democracy Through Fast Food and Sneakers?

Benjamin Barber in *Jihad vs. McWorld* [7] posits two scenarios for what is transpiring in the modern international world. The first scenario rooted in race holds out the grim prospect of a retribalization of large swaths of humankind by war and bloodshed: a threatened balkanization of nation-states in which culture is pitted against culture, people against people, tribe against tribe. It is a *Jihad* in the name of a hundred narrowly conceived faiths against every kind of interdependence, every kind of artificial social cooperation and mutuality: against technology; against pop culture, and against integrated markets; against modernity itself as well as the future in which modernity issues. The second scenario paints that future in shimmering pastels, a busy portrait of onrushing economic, technological, and ecological forces that demand integration and uniformity and that mesmerize peoples everywhere with fast music, fast computers, and fast food - MTV, Macintosh, and McDonald's - pressing nations into one homogenous global theme park, one *McWorld* tied together by communications, information, entertainment, and commerce.

Barber gives examples of his thesis:

> “The tendencies of both Jihad and McWorld are at work, both visible sometimes in the same country at the very same instant. Iranian zealots keep one ear tuned to the mullahs urging holy war and the other cocked to Rupert Murdoch's Star television beaming in Dynasty, Donahue, and The Simpsons from hovering satellites. Chinese entrepreneurs vie for the attention of party cadres in Beijing and simultaneously pursue KFC franchises in cities like Nanjing, Hangzhou, and Xian where twenty-eight outlets serve over 100,000 customers a day. The Russian Orthodox Church, even as it struggles to renew the ancient faith, has entered a joint venture with California businessmen to bottle and sell natural waters under the rubric Saint Springs Water Company. Serbian assassins wear Adidas sneakers and listen to Madonna on Walkman headphones as they take aim through their gunscopes at scurrying Sarajevo civilians looking to fill family watercans. Orthodox Hasids and brooding neoNazis have both turned to rock music to get their traditional messages out to the new generation, while fundamentalists plot virtual conspiracies on the Internet.”

The claim that democracy and markets are twins has become a commonplace of statesmanship, especially in light of the demise of state socialism, which has left capitalism's zealots free to regard themselves not only as victors in the Cold War but as the true champions of a democracy that (they are certain) markets alone make possible. *But the right to choose between nine VCR models or a dozen automobile brands does not necessarily feel like freedom to workers whose monthly salaries can hardly keep up with the rising price of bread*, let alone to women and men with no jobs at all. Cynics might even suggest that some of the recent revolutions in Eastern Europe had as their true goal *not liberty and the right to vote but well-paying jobs and the right to shop.* Shopping means consumption and consumption depends on the fabrication of needs as well as of goods.

Barber’s McWorld is a product of popular culture driven by expansionist commerce:

> “Its template is American, its form style. Its goods are as much images as material, an aesthetic as well as a product line. It is about culture as commodity, apparel as ideology. Music, video, theater; books, and theme parks - the new churches of a commercial civilization in which malls are the public squares and suburbs the neighborless neighborhoods - are all constructed as image exports creating a common world taste around common logos, advertising slogans, stars, songs, brand names, jingles, and trademarks. Hard power yields to soft, while ideology is transmuted into a kind of videology that works through sound bites and film clips.
>
> The dynamics of the Jihad-McWorld linkage are deeply dialectical. Japan has, for example, become more culturally insistent on its own traditions in recent years even as its people seek an ever greater purchase on McWorld. In 1992**,** the number-one restaurant in Japan measured by volume of customers was McDonald's, followed in the number-two spot by the Colonel's Kentucky Fried Chicken. Ambivalence also stalks India. Just outside of Bombay, cheek by jowl with villages still immersed in poverty and notorious for the informal execution of unwanted female babies, or even wives, can be found a new town known as SCEEPZ-the Santa Cruz Electronic Export Processing Zone-where Hindi-, Tamil-, and Mahratti-speaking computer programmers write software for Swissair, AT&T, and other labor-cost-conscious multinationals. India is thus at once a major exemplar of ancient ethnic and religious tensions and "an emerging power in the international software industry" To go to work at SCEEPZ, says an employee, is

"like crossing an international border." Not into another country but into the virtual nowhere-land of McWorld."

One example of the law of unintended consequences stands out for me in India. The family culture of many working Indians supported the practice of workers going home for a hot lunch. An infrastructure of cooking and delivering hot lunches provided thousands of low wage jobs to otherwise jobless men. As with almost any part of Indian life, it was a form of organized chaos that succeeded in its goal – some deliverymen even traveled by train daily to deliver hundreds of lunches from central cooking areas. The introduction of fast food franchises has nearly wiped out this part of a true "service" economy. Rather than go home for lunch, Indian workers, especially office workers who are under the same international pressure to produce more in a competitive world, are taking short lunches at McDonalds so they can return more quickly to the office.

But nowadays an ambitious company cannot simply capture global consumer markets by aping their ideologies and accommodating their tastes: it must also be prepared to create global markets by careful planning and control. According to Barber [7]:

> "Now thirst cannot be manufactured but taste can. The world's thirsty can drink water. (Just as the world's footloose walkers can wear ordinary old shoes.) If they are to drink beverages that earn someone else an income, consumption has to be associated with new "needs," new tastes, new status. You must drink because it makes you feel (your choice): young, sexy, important, in, strong, sporty, smart, with it, cool, hot (as in cool), athletic, right on, part of the world as in we-are-the-world as in we-Americans-are-the-world. In sum, like a winner; like a hero, like a champion, like an American, which is to say, above all, fun-loving (as in blondes have more). The one reason you must not consume soft drinks is to quench your thirst in any decisive way. Water would accomplish that. In fact, if you're going to buy another soda, *the ideal soft drink should give you the feeling your thirst has been quenched while actually leaving you metabolically thirstier after you finish* than before you began. Within the right informational nexus, even $H_2 0$ can be sold for profit, as it is with so-called designer waters like Perrier. And if a *potable salted beverage could only be found*...!
>
> "How long can a company of our scope keep doubling its size?" asks Coca-Cola CEO Roberto C. Goizueta. [Note: Coke also belongs to the organization Business for Social Responsibility!] "Where will the next 10 billion unit cases come from? And the 20 billion after that?" Goizueta has an answer; which to him seems obvious. "The fact is," he observes, "that we are just now seriously entering and developing soft drink markets that account for the majority of the world's population. These new worlds of opportunity are not only heavily populated, but also culturally and climatically ripe for significant soft drink consumption." Climatically ripe, that's pretty obvious: where it is hot, people are thirsty, and if we can only get them off of water... But culturally ripe? What can this mean? Coke is anything but disingenuous: in Indonesia (whose Boy Scouts and Girl Scouts, Cokes in hand, are featured on the 1992 Annual Report's cover), "aggressive investment" can defeat local culture and force the nation to follow those "societies that have traditionally consumed beverages like tea" but have been brought to make "the transition to sweeter beverages like Coca-Cola." *Getting people off of water is a matter of economics (water is free), but getting them off of tea entails a cultural campaign*. The "decline in tea consumption," which might for cultural anthropologists signal a foreboding onset of erosion in a dominant local culture, is welcomed as a door ajar for sweet beverage sales. *If only every Indonesian could switch from tea to Coke and from sandals to Nikes and from rice to chicken McNuggets and from saris to Laura Ashley dresses and from oxen to Grand Cherokees and from indigenously produced movies to Arnold Schwarzenegger videos and from Buddhism to consumerism imagine what "worlds of opportunity" would be thrown open to McWorld's bold*

> *corporate adventurers*. And imagine what kind of homogenous and profitable McWorld-wide market those once distinctive regions would constitute."

Barber sees no conspirators here, no stealth tyrants using information to secure hegemony. He believes it would be silly to suggest that conspiracy or some ruthless political ambitions are at work here. Barber's McWorld runs on *automatic pilot*: that is the whole point of the market. It is rather a politics of inadvertence and unintended consequences in which the seemingly innocuous market quest for fun, creativity, and profits puts whole cultures in harm's way and undermines autonomy in individuals and nations alike. We are all increasingly having our "wherespace" violated, even down to the seemingly innocent new ads on the little stickers on bananas.

However, if not an actual conspiracy, the ideology of having fun does have practical outcomes for those trying to resist it. A good example is the work of The Media Foundation through its Adbusters subvertisements. It has attempted to place its "culture jammer" anti-consumerism advertising in the national media, but has had its ads rejected even though the organization is willing to pay the going rates. The Media Foundation is now taking its case to court. Conspiracy theorists may also wonder about Miss India "finally" winning the Miss Universe contest. The ensuing boom in Indian sales for the fashion and cosmetic industry was staggering! It also gave new life to Kellogg's' beachhead in the Indian breakfast market. There was a tremendous upsurge in middle and upper class Indian women turning to health clubs and other methods to improve their appearance. A bowl of Kellogg's cornflakes and milk, although completely antithetical to traditional Indian breakfast foods, is now regarded as a rational step to beauty and health.

Barber extrapolates the ad absurdum logic of sales to a single corporation that makes one product that satisfies every need: an athletic shoe equipped with a nutrition patch linked to sunglasses that inject Coca-Cola directly into the veins of the inner ear while flashing videos directly into wide-irised eyeballs. He believes that the political entailments of this logic are inadvertent: a kind of default totalitarianism without a totalistic government: everyone a subject, no one a ruler.

VIII. Environmental Economics and Sustainability (Finally)

Some writers connect economics to ecology by showing that they have the same root, *oikonomia*, the management of the household so as to increase its value to all members of the household over the long run. Paul Hawken expands this to include the larger community of the land, of shared values, resources, biomes, institutions, language, and history so that we have a good definition of “economics for community.” But the dictionary definition of economics is “a social science concerned chiefly with the description and analysis of the production, distribution, and consumption of goods and services.”

A. Open or Closed System: The Preanalytic Vision

Herman Daly’s belief is that the main issue in the sustainability controversy truly does revolve around what economist Joseph Schumpeter called "preanalytic vision." Analysis has to start somewhere – there has to be something to analyze. That something is given by a preanalytic cognitive act that Schumpeter called “vision.” This vision could be described as the basic pattern that the right brain abstracts from experience and supplies to the left brain for analysis. Whatever is omitted from the preanalytic vision cannot be recaptured by subsequent analysis.

Daly illustrates the conflict between economic preanalytic visions with the standard textbook diagram consisting of a square labeled "economy," with an arrow coming in labeled "inputs" and an arrow going out labeled "outputs” - nothing more. Daly suggested that there should be a larger box containing the one depicted, to represent the environment. Then the relation between the environment and the economy would be clear - specifically, that the *economy is a subsystem of the environment* and depends upon the environment both as a “source” of raw material inputs and as a "sink" for waste outputs. The chief economist of the World Bank responded "That's not the right way to look at it."

The preanalytic vision of standard economics is that the economy is an isolated system in which exchange value circulates between firms and households. The physical dimension of commodities and factors of production is at best totally abstracted from (left out altogether) and at worst assumed to flow in a circle, just like exchange value. Nothing enters from the environment; nothing exits to the environment. It does not matter how big the economy is relative to its environment. For all practical purposes an isolated system has no environment.

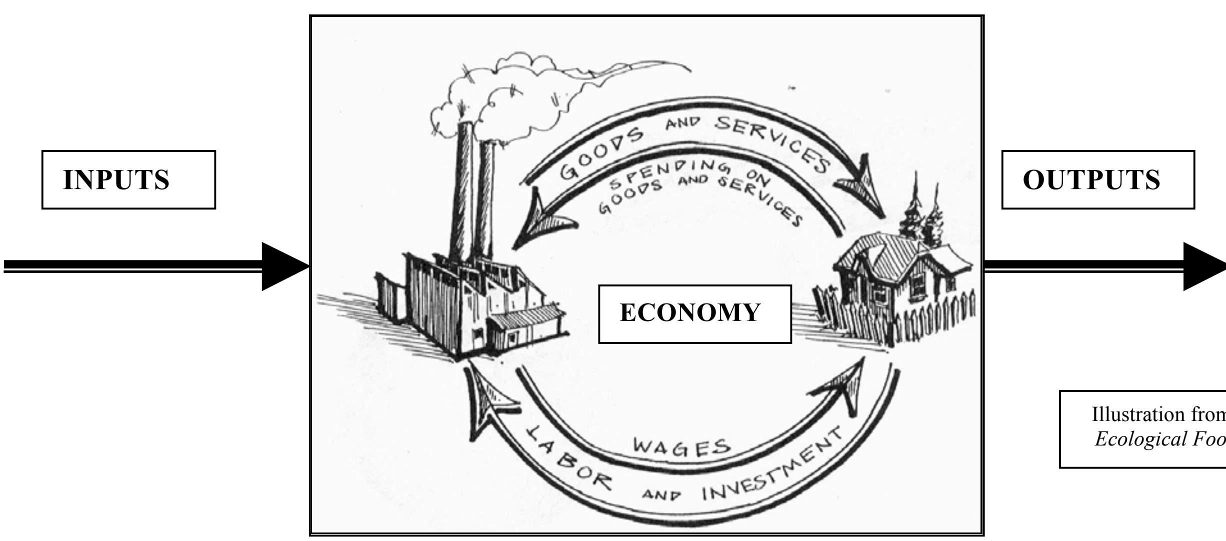


Illustration from: *Our Ecological Footprint*

For environmental economics, the preanalytic vision is that the economy is an open subsystem of a finite and non-growing ecosystem (the environment). The economy lives by importing low-entropy matter-energy (raw materials) and exporting high-entropy matter-energy (waste). Any subsystem of a finite non-growing system must itself at some point also become non-growing. At some optimal, or at least sustainable, scale the economic subsystem should be maintained in a steady state as far as possible.

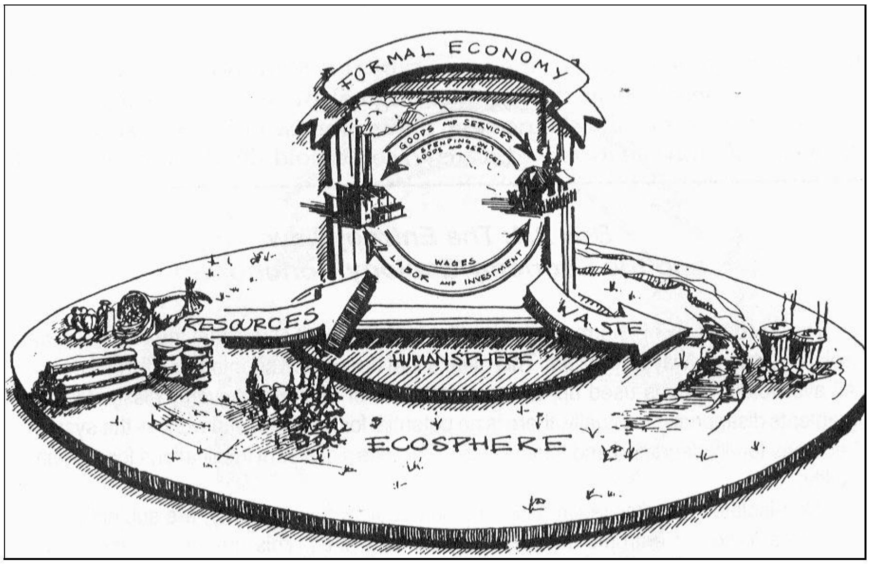


Illustration from: *Our Ecological Footprint*

If we start from the isolated circular flow as our preanalytic vision, then the issue of sustainable or optimal scale, and how to maintain a steady state at that scale, cannot arise. If we begin with the preanalytic vision of the economy as an open subsystem, then the issue of its optimal scale relative to the parent ecosystem, and its steady-state maintenance at that scale, cannot be avoided. It would be like studying physiology solely in terms of the circulatory system without ever mentioning the digestive tract. The dependence of the organism on its environment would not be evident. The absence of the concept of throughput in the economists' vision means that the economy carries on no exchange with its environment. It is, by implication, a self-sustaining isolated system, a giant perpetual motion machine.

Unless one has the preanalytic vision of the economy as subsystem, the whole idea of sustainability - of a subsystem being sustained by a larger system whose limits and capacities it must respect - makes no sense whatsoever. On the other hand, a preanalytic vision of the economy as a box floating in infinite space allows people to speak of "sustainable *growth"* - a clear oxymoron to those who see the economy as a subsystem. The difference between these two visions could not be more fundamental, more elementary, or more irreconcilable. It is interesting that such a huge issue should be at stake in a simple picture. Once you draw the boundary of the environment around the economy, you have said that the *economy cannot expand forever*.

Daly later characterized policies formulated by traditional economists to accelerate “sustainable growth” as “the unison snoring of supine economists in deep dogmatic slumber.” And when they’re awake they appear to be living in denial. Why there was such denial was proposed by another economist, Earl Cook, in 1982:

“The concept of sustainable development or limits to growth threatens vested interests and power structures; even worse threatens value structures in which lives have been invested... Abandonment of belief in economic perpetual motion was a major step toward recognition of the true human condition. It is significant that "mainstream" economists never abandoned that belief and do not accept the relevance to the economic process of the Second Law of Thermodynamics; their position as high priests of the market economy would become untenable did they do so."

B. Sustainable Development: The Economics of Quality of Life

Sustainable development, Daly argues, necessarily means a radical shift from a growth economy and all it entails to a steady-state economy (SSE). Growth, as here used, refers to an increase in the physical scale of the matter/energy throughput that sustains the economic activities of production and consumption of commodities. Growth is *quantitative* increase in the physical scale of throughput. *Qualitative* improvement in the use made of a given scale of throughput, resulting either from improved technical knowledge or from a deeper understanding of purpose, is called "development". "Development" refers to qualitative change, realization of potentialities, transition to a fuller or better state. The two processes are distinct - sometimes linked, sometimes not. For example, *a child grows and develops simultaneously; a snowball or a cancer grows without developing; the planet Earth develops without growing.* It is precisely the recognition that growth in scale ultimately becomes impossible - and already costs more than it is worth - that gives rise to the urgency of the concept of sustainability. Sustainable development is development without growth in the scale of the economy beyond some point that is within biospheric carrying capacity.

To develop a way of living that is fulfilling *and* sustainable within nature, we need to rethink our relationships with each other and with the rest of nature. The human enterprise cannot be separated from the natural world even in our minds because there is no such separation in nature. In terms of energy and material flows, there is simply no "out there". The premise that human society is a subsystem of the ecosphere, that human beings are embedded in nature, is so simple that it is generally overlooked or dismissed as too obvious to be relevant. But as the authors of *Our Ecological Footprint* [4] point out:

> "Taking this "obvious" insight seriously leads to some profound conclusions. The policy implications of this ecological reality run much deeper than pressing for improved pollution control and better environmental protection, both of which maintain the myth of separation. If humans are part of nature's fabric, the "environment" is no mere scenic backdrop but becomes the play itself. The ecosphere is where we live; humanity is dependent on nature, not the reverse. Sustainability requires that our emphasis shift from "managing resources" to managing ourselves - that we learn to live as part of nature. *Economics at last becomes human ecology*."

Daly [1] has given the definitive description of the scale issue with his analogy to the Plimsoll line:

> "The term scale is shorthand for "the physical scale or size of the human presence in the ecosystem, as measured by population times per capita resource use." Optimal allocation of a given scale of resource flow within the economy is one thing (a microeconomic problem). Optimal scale of the whole economy relative to the ecosystem is an entirely different problem (a macro-macro problem). The micro allocation problem is analogous to allocating optimally a given amount of weight in a boat. But once the best relative location of weight has been determined, there is still the question of the absolute amount of weight the boat should carry, even when optimally allocated. This absolute optimal scale of load is recognized in the maritime institution of the Plimsoll line. When the watermark hits the Plimsoll line the boat is full, it has reached its safe *carrying capacity*. Of course if the weight is badly allocated the waterline will touch the Plimsoll mark sooner. But eventually, as the absolute load is increased, the watermark will reach the Plimsoll line even for a boat whose load is optimally allocated. Optimally loaded boats will still sink under too much weight, even though they may sink optimally! The major task

of environmental macroeconomics is to design an economic institution analogous to the Plimsoll mark - to keep the weight, the absolute scale, of the economy from sinking our biospheric ark.

Many believe that the present scale is beyond long-term carrying capacity and that sustainable growth in its initial phase will require a period of negative growth. Even if one is a technological optimist and believes that development in the productivity of the resource throughput can increase faster than the volume of the throughput needs to diminish, this is still very radical. The term "sustainable growth" aims to deny this radical transformation, and to suggest that growth is still the number one goal, that *growth just needs to be a bit more environmentally friendly*. Sustainable growth is just one more adjustment to the standard view. Sustainable development is an alternative to the standard growth ideology and is incompatible with it. Sustainable development, development without growth, does not imply the end of economics - if anything, economics becomes even more important. But it is a subtle and complex economics of maintenance, qualitative improvement, sharing, frugality, and adaptation to natural limits. It is an economics of better, not bigger."

Per economic theory, we have three basic problems to consider: *allocation, distribution, and scale*. *Allocation* refers to the apportioning of resources among alternative product uses - food, bicycles, cars, medical care. An allocation is efficient if it corresponds to effective demand; that is, the relative preferences of the citizens as weighted by their relative incomes, both taken as given. An inefficient allocation will use resources to produce a number of things that people will not buy, and will fail to produce other things that people would buy if only they could find them. It would be characterized by shortages of the latter and surpluses of the former. *Distribution* refers to the apportioning of the goods produced (and the resources they embody) among different people (as opposed to different commodities). Distributions are just or unjust; allocations are efficient or inefficient. There is an efficient allocation for each distribution of income. *Scale* refers to the physical size of the economy relative to the ecosystem. The economy is viewed, in its physical dimensions, as a subsystem of the larger ecosystem. Scale is measured as population times per capita resource use - in other words total resource use - the volume of the matter/energy throughput (metabolic flow) by which the ecosystem sustains the economic subsystem. Scale may be sustainable or unsustainable. An efficient allocation does not imply a just distribution. Neither an efficient allocation nor a just distribution, nor both, implies a sustainable scale. The three concepts are quite distinct, although relations among them exist, as noted above

The tradable pollution permits scheme, explained below, is, per Daly [1], a beautiful example of the independence and proper relationship among allocation, distribution, and scale. Consider step by step what this policy requires in practice.

"First, we must create a limited number of rights to pollute. The aggregate or total amount of pollution corresponding to these rights is determined to be within the absorptive capacity of the airshed or watershed in question. That is to say, the scale impact is limited to a level judged to be ecologically sustainable - an economic Plimsoll line must be drawn as the very first step. Far from ignoring scale, this policy requires that the issue of sustainable or optimal scale be settled at the beginning. It may be done on the basis of a carrying capacity estimate, a safe minimum standards estimate, or a cost-benefit study, but *some limit to total pollution must be set*.

Second, the limited number of rights corresponding to the chosen scale must be distributed initially to different people. Perhaps equally to citizens, or to firms, or perhaps collectively as public property then to be auctioned or sold by the government to individuals. But there must be an initial distribution before there can be any allocation and reallocation by trading.

Only in third place, after having made social decisions regarding an ecologically sustainable scale and an ethically just distribution, are we in a position to allow reallocation among individuals

> through markets in the interests of efficiency. A separation between allocation and scale requires that the total quantity of permits be fixed, but that the price at which the permits trade be free to vary. If the total quantity were determined by a willingness-to-pay study that also gave a shadow price as well as an aggregate quantity, then the neoclassical economist who wants to avoid separating allocation and scale must insist that trading take place at the calculated shadow price. Otherwise there will be a separation between allocation and scale. In practice, the price is always free to vary, clearly indicating that the pragmatic, operational solution has been to separate allocation and scale.
>
> It is clear that scale is not determined by prices, but by a social decision reflecting ecological limits. Distribution is not determined by prices, but by a social decision reflecting a just distribution of the newly created assets. Subject to these social decisions, individualistic trading in the market is then able to allocate the scarce rights efficiently. For some reason economists have analyzed the tradable pollution permits scheme almost entirely in relation to the command and control allocative schemes. They have indeed shown it to be superior to command and control in terms of allocative efficiency. But with all the emphasis on allocation the critical role of scale went unnoticed, and the role of distribution, while certainly noticed, was not sufficiently emphasized. Tradable permits have been considered the individualistic 'free market" solution, without emphasizing that *this market is free only after having been firmly and collectively fixed within scale and distributive limits*.
>
> Environmentalists, too, have shown considerable misunderstanding of this scheme, condemning it as "giving away licenses to pollute." The point is that this scheme limits the total scale of pollution, need not give away anything but can sell the rights for public revenue, yet allows reallocation among individuals in the interest of efficiency. Some complain that under this scheme the rich have an advantage. The rich *always* have an advantage, but does this scheme increase or decrease the preexisting advantage of the rich? It could do either, it all depends on the initial distribution of ownership of the new assets, and not on the fact that they are tradable."

C. The Cowboy in the Spaceship

Everyone, including economists, knows perfectly well that the economy takes in raw material from the environment and gives back waste. So why is this undisputed fact ignored in the circular flow paradigm? Economists are interested in scarcity. What is not scarce is abstracted from (ignored). Environmental sources and sinks were considered infinite relative to the demands of the economy, which was more or less the case during the formative years of economic theory. Therefore it was not an unreasonable abstraction. But it is highly unreasonable to continue omitting the concept of throughput after the scale of the economy has grown to the point where sources and sinks for the throughput are obviously scarce.

Per Kenneth Boulding's analogy, the Cowboy of the infinite plains (frontier economy) lives off a linear throughput from source to sink, with no need to recycle anything. The Spaceman in a small capsule lives off of tight material cycles and immediate feedbacks, all under total control and subservient to his needs. For the Cowboy, scale is negligible; for the Spaceman, scale is total. But we are on a middle ground searching for optimal scale.

This is such a difficult question, and since we cannot go back to the Cowboy economy, we have acquired an unwarranted tendency to jump all the way to the Spaceman economy and take control of the Spaceship Earth. But David Orr points out that God, Gaia, or Evolution was doing a nice job of managing the earth until the scale of the human population, economy, and technology got out of control. We need to manage ourselves more than the planet, and our self-management should be, in Orr's words, "***more akin to child-proofing a day care center than to piloting spaceship earth***." The way to childproof a room is to build an optimal scale playpen within which the child is both free and protected from the excesses of its own freedom. It can enjoy the light and warmth provided by electrical circuits beyond its ken, without running the risk of shorting out those circuits, or itself, by experimenting with the ***"planetary management technique" of teething on a lamp cord***.

D. On Natural Capital

Natural capital refers to any stock of natural assets that yields a flow of valuable goods and services into the future. For example, a forest, a fish stock or an aquifer can provide a harvest or flow that is potentially sustainable year after year. The forest or fish stock is "natural capital" and the *sustainable* harvest is "natural income." Natural capital also provides such services as waste assimilation, erosion and flood control, and protection from ultraviolet radiation. (Thus, the ozone layer is a form of natural capital.) These life-support services are also counted as natural income. Since the flow of services from ecosystems often requires that they function as intact systems, the structure and diversity of the system may be an important component of natural capital.

Gretchen Daily [10] gives a comprehensive list of these ecosystem life-support services:

- Purification of air and water
- Mitigation of floods and droughts
- Detoxification and decomposition of wastes
- Generation and renewal of soil and soil fertility
- Pollination of crops and natural vegetation
- Control of the vast majority of agricultural pests
- Dispersal of seeds and translocation of nutrients
- Maintenance of biodiversity supporting agricultural, medicinal, and industrial enterprise
- Protection from the sun's harmful ultraviolet rays
- Partial stabilization of climate
- Moderation of temperature extremes and the force of wind and waves
- Support of diverse human cultures
- Providing aesthetic beauty and intellectual stimulation that lift the human spirit

Daly [1] expands on the importance of the concept of natural capital:

> "Researchers typically focus on three categories of natural capital: renewable, replenishable and non-renewable. Renewable natural capital, such as living species and ecosystems, is self-producing and self-maintaining using solar energy and photosynthesis. Replenishable natural capital includes surface and ground water supplies and the stratospheric ozone layer. These stocks are non-living but are continuously restored, often through some other solar mechanism. By contrast, non-renewable forms of natural capital such as fossil fuel (coal: the stored sunlight of paleozoic summers) and minerals are analogous to inventories. Any use implies liquidating part of the stock. Since adequate stocks of renewable and replenishable natural capital are essential for life-support (and are generally non-substitutable), we consider these categories of natural capital to be more important to sustainability than non-renewable forms.
>
> This proposition gives rise to the following thesis: that the world is moving from an era in which man-made capital was the limiting factor into an era in which remaining natural capital is the limiting factor. The production of caught fish is currently limited by remaining fish populations, not by number of fishing boats; timber production is limited by remaining forests, not by sawmills; barrels of pumped crude oil is limited by petroleum deposits (or perhaps more stringently by the capacity of the atmosphere to absorb $C0_2$), not by pumping capacity; and agricultural production is frequently limited by water availability, not by tractors, harvesters, or

> even land area. We have moved from a world relatively full of natural capital and empty of man-made capital (and people) to a world relatively full of the latter and empty of the former."

But how could the pattern of scarcity have changed so dramatically without economists noticing it? Several factors account for this development. First, exponential growth is deceptive. The surprising consequences of exponential growth have fascinated people for centuries. There is an old Persian legend about a clever courtier who presented a beautiful chessboard to his king and requested that the king give him in exchange 1 grain of rice for the first square on the board, 2 grains for the second square, 4 grains for the third, and so forth. The king readily agreed and ordered rice to be brought from his stores. The fourth square on the chessboard required 8 grains, the tenth square took 512 grains, the fifteenth required 16,384, and the twenty-first square gave the courtier more than a million grains of rice. By the fortieth square a million million rice grains had to be piled up. The payment could never have continued to the sixty-fourth square; it would have taken more rice than there was in the whole world.

A French riddle for children illustrates another aspect of exponential growth - the apparent suddenness with which an exponentially growing quantity approaches a fixed limit. Suppose you own a pond on which a water lily is growing. The lily plant doubles in size each day. If the plant were allowed to grow unchecked, it would completely cover the pond in 30 days, choking off the other forms of life in the water. For a long time the lily plant seems small, so you decide not to worry about it until it covers half the pond. On what day will that be?

On the twenty-ninth day! You have *just one day to act* to save your pond! (On the twenty-fifth of the month the plant covers just 1/32nd of the pond; on the twenty-first it covers just 1/512th of the pond. For most of the month the plant, though it is steadily doubling, is invisible or inconsequential. You can see how exponential growth, combined with inattention, can lead to overshoot!)

Second, as Daly points out, economists have considered man-made and natural capital to be substitutes, when they are basically complements. If factors are substitutes, then a shortage of one does not limit the productivity of the other. Neither factor can be limiting if they are good substitutes. So even as the world moves from 40% to 8o% full in the next roughly forty-year doubling time, technological optimists are counting on *man-made capital* to restore the conditions of relative emptiness by substituting for natural capital.

Third, if we subconsciously realize that production growth cannot continue, then the only way to cure poverty is to confront both sharing and population control. Since these are considered impossible by political "realists," it is gratuitously concluded that whatever argument gave rise to this conclusion must be wrong. The three biases discussed above may have kept us from seeing the obvious - namely, that man-made and natural capital are complements, and that natural capital has become the limiting factor.

Daly goes on to propose:

> "Nonrenewable natural capital cannot be increased either actively or passively. It can only be diminished. We can only divest nonrenewable natural capital itself, even though we invest in the man-made capital equipment that hastens its rate of extraction and divestment. Nonrenewable natural capital is like an inventory of already produced goods, rather than a productive machine or a reproducing population. For nonrenewable natural capital the question is not how to invest, but how to best liquidate the inventory, and what to do with the net wealth realized from that liquidation. Currently, we are counting this liquidated wealth as income (included in both gross national product and net national product), which is clearly wrong, because it is not a permanent or sustainable source of consumption.
>
> A better alternative would be to dedicate all or part of the net receipts of nonrenewable resource liquidation to finance waiting investments in renewable natural capital - that is, to allow reduction of the offtake of renewables in order to build up renewable stocks to larger levels producing

larger sustainable yields which represent true income. *The basic idea is to convert nonrenewable natural capital into a renewable substitute, to the extent possible*. The general rule would be to deplete nonrenewables at a rate equal to the rate of development of renewable substitutes. Probably a broad definition of "substitute" would be indicated initially - at least broad enough to encompass improvements in energy efficiency as a renewable substitute for petroleum depletion, and improvements in recycling as a renewable substitute for copper depletion."

E. On Natural Capitalism

What would our economy look like if it fully valued all forms of capital, including human and natural capital? What if our economy were organized not around the lifeless abstractions of neoclassical economics and accountancy but around the biological realities of nature? What if Generally Accepted Accounting Practice booked natural and human capital not as a free amenity in putative inexhaustible supply but as a finite and integrally valuable factor of production? What if, in the absence of a rigorous way to practice such accounting, companies started to act as if such principles were in force? This choice is possible and such an economy would offer a stunning new set of opportunities for all of society, amounting to no less than the next industrial revolution. This view is detailed in the book Natural Capitalism [5] which should become a primary reference for environmental and resource economists.

Natural capitalism and the possibility of a new industrial system are based on a very different mind-set and set of values than conventional capitalism. Its fundamental assumptions include the following:

- The environment is not a minor factor of production but rather is "an envelope containing, provisioning, and sustaining the entire economy."
- The limiting factor to future economic development is the availability and functionality of *natural capital,* in particular, life-supporting services that have no substitutes and currently have no market value.
- Misconceived or badly designed business systems, population growth, and wasteful patterns of consumption are the primary causes of the loss of natural capital, and all three must be addressed to achieve a sustainable economy.
- Future economic progress can best take place in democratic, market-based systems of production and distribution in which all forms of capital are fully valued, including human, manufactured, financial, and natural capital.
- One of the keys to the most beneficial employment of people, money, and the environment is radical increases in resource productivity.
- Human welfare is best served by improving the quality and flow of desired services delivered, rather than by merely increasing the total dollar flow.
- Economic and environmental sustainability depends on redressing global inequities of income and material well-being.
- The best long-term environment for commerce is provided by true democratic systems of governance that are based on the needs of people rather than business.

The following four central strategies of natural capitalism are a means to enable countries, companies, and communities to operate by behaving as if all forms of capital were valued. Ensuring a perpetual annuity of valuable social and natural processes to serve a growing population is not just a prudent investment but a critical need in the coming decades. Doing so can avert scarcity, perpetuate abundance, and provide a solid basis for social development; it is the basis of responsible stewardship and prosperity for the next century and beyond.

1. <u>Radical Resource Productivity</u>: Radically increased resource productivity is the cornerstone of natural capitalism because using resources more effectively has three significant benefits: It slows

resource depletion at one end of the value chain, lowers pollution at the other end, and provides a basis to increase worldwide employment with meaningful jobs. The result can be lower costs for business and society, which no longer has to pay for the chief causes of ecosystem and social disruption. Nearly all environmental and social harm is an artifact of the uneconomically wasteful use of human and natural resources, but radical resource productivity strategies can nearly halt the degradation of the biosphere, make it more profitable to employ people, and thus safeguard against the loss of vital living systems and social cohesion.

2. Biomimicry: Reducing the wasteful throughput of materials - indeed, eliminating the very idea of waste - can be accomplished by redesigning industrial systems on biological lines that change the nature of industrial processes and materials, enabling the constant reuse of materials in continuous closed cycles, and often the elimination of toxicity.
3. Service and Flow Economy: This calls for a fundamental change in the relationship between producer and consumer, a shift from an economy of goods and purchases to one of *service and flow.* In essence, an economy that is based on a flow of economic services can better protect the ecosystem services upon which it depends. This will entail a new perception of value, a shift from the acquisition of goods as a measure of affluence to an economy where the continuous receipt of quality, utility, and performance promotes well-being. This concept offers incentives to put into practice the first two innovations of natural capitalism by restructuring the economy to focus on relationships that better meet customers' changing value needs and to reward automatically both resource productivity and closed-loop cycles of materials use.
4. Investing in Natural Capital: This works toward reversing world- wide planetary destruction through reinvestments in sustaining, restoring, and expanding stocks of natural capital, so that the biosphere can produce more abundant ecosystem services and natural resources.

All four changes are interrelated and interdependent; all four generate numerous benefits and opportunities in markets, finance, materials, distribution, and employment. Together, they can reduce environmental harm, create economic growth, and increase meaningful employment.

F. Technological Saviorism

Many economists hang on to the infinite-resources assumption in one way or another, because otherwise they would have to admit that economic growth faces limits, and that is "unthinkable." The usual ploy is to appeal to the infinite possibilities of technology and resource substitution (ingenuity) as a dynamic force that can continuously outrun depletion and pollution. Therefore, much ingenuity is devoted to "proving" that ingenuity is unlimited. Every technical accomplishment, no matter how ultimately insignificant, is celebrated as one more victory in an infinite series of future victories of technology over nature. The Greeks called this hubris.

The basic science of thermodynamics teaches us that matter and energy can neither be created nor destroyed, only transformed from one into the other. It also teaches that matter and energy tend to disperse (increase in entropy). Material value is measured in concentration and structure. For example, a small bottle of ink and a large tub of pure water both have a value based on their potential use. However, if we pour the ink into the tub of water, the combination may no longer have any value at all. The only thing that can use external energy to create a net increase in concentration and structure from dispersed elements around it, and thus value, is the plant cell through photosynthesis. We can burn a log to keep us warm at night. Theoretically, we could capture all the solids, gases, and energy that resulted from burning that log and build a machine to put them all back together into a new log. The only problem is that no one can conceive of how to build a practical machine to do this. In fact, the only machine that exists that can create a new log for our fire is a tree!

Daly believes the technology argument is flawed in many respects:

> "First, technology and infinite substitution mean only that one form of low-entropy matter/energy is substituted for another, within a finite and diminishing set of low-entropy sources. Such substitution is often very advantageous, but we never substitute high-entropy wastes for low-entropy resources in net terms. Second, the claim is frequently made that reproducible capital is a near-perfect substitute for resources. But this assumes that capital can be produced independently of resources, which is absurd. Man-made capital (including technological innovation) is itself a physical transformation of natural resources which come from natural capital. Therefore, *producing more of the alleged substitute (man-made capital), physically requires more of the very thing being substituted for (natural capital).*
>
> Furthermore, it flies in the teeth of the obvious complementarity of capital and resources in production. The capital stock is an agent for transforming the resource flow from raw material into a product. More capital does not substitute for fewer resources, except on a very restricted margin. *You cannot make the same house by substituting more saws for less wood***.** One cannot build the same wooden house with half the timber no matter how many saws and carpenters one tries to substitute. Conversely, trees cannot become houses with no work! Also, to process more timber into more wooden houses in the same time period requires more saws and carpenters. Clearly the basic relation of man-made and natural capital is one of complementarity, not substitutability. Of course, one could substitute bricks for timber, but that is the substitution of one resource input for another, not the substitution of capital for resources. In making a brick house one would face the analogous inability of trowels and masons to substitute for bricks.
>
> The complementarity of man-made and natural capital is made obvious at a concrete and commonsense level by asking, What good is a saw-mill without a forest, a fishing boat without populations of fish, a refinery without petroleum deposits, an irrigated farm without an aquifer or river? We have long recognized the complementarity between public infrastructure and private capital - what good is a car or truck without roads to drive on? Following Lotka and Georgescu-Roegen, we can take the concept of natural capital even further and distinguish between *endosomatic* (within-skin) and *exosomatic* (outside-skin) natural capital. We can then ask what good is the private endosomatic capital of our lungs and respiratory system without the public exosomatic capital of green plants that take up our carbon dioxide in the short run, while in the long run replenishing the enormous atmospheric stock of oxygen and keeping the atmosphere at the proper mix of gases - that is, the mix to which our respiratory system is adapted and therefore complementary."

Many technological innovations have not reduced our use of resources, but only substituted capital – resources and machines – for labor. In present circumstances, gains in technological efficiency often encourage increased consumption. This is especially true when economic models based on traditional unit cost measures ***omit the massive substitution of fossil fuels for human labor that has underscored the nation's development of natural resources***. If new technology is to reduce our ecological footprint, it must be accompanied by policy measures to ensure that efficiency gains are not redirected to alternative forms of consumption.

G. The Ambivalent "Information Economy"

The much touted "information economy" is often presented as a strategy for escaping biophysical limits. Its modern devotees proclaim that "whereas matter and energy decay according to the laws of entropy... information is... immortal." And, further, "The universe itself is made of information - matter and energy are only simple forms of it." Such half-truths forget that information does not exist apart from physical brains, books, and computers, and, further, that brains require the support of bodies, books require library buildings, computers run on electricity, etc. At worst the information economy is seen as a computer-based explosion of the symbol manipulations of the paper economy. More occult powers are attributed to information and its handler, the computer, by the silicon gnostics of today, says Daly, “than any primitive shaman ever dared claim for his favorite talisman". Even well meaning advocates of environmental solutions can be seen fantasizing about the benefits of telecommunications and the Internet. Some extrapolate from the present ease of information exchange to the future existence of some great mass mind into which the human race will evolve - an organoelectric Gaia protector.

Daly [1] thinks information should be more widely accessible without excessive cost. He believes the best question to ask about the information economy is that posed by T. S. Eliot in “Choruses from ‘The Rock’”:

> Where is the wisdom we have lost in knowledge?
> Where is the knowledge we have lost in information?

Daly goes on to say:

> “Why stop with an information economy? Why not a knowledge economy? Why not a *wisdom economy*? Wisdom involves knowledge of techniques plus an understanding of purposes and their relative importance, along with an appreciation of the limits to which technique and purpose are subject. To distinguish a real limit from a temporary bottleneck, and a fundamental purpose from a wish or inclination, requires wise judgment. Growthmania cannot be checked without wise judgment. Since events are forcing us to think in terms of an information economy, it is perhaps not too much to hope that we will follow that thrust all the way to a wisdom economy, one design feature of which, I submit, will be that of a dynamic steady state.

Roughly half of world trade is intra-industry trade - that is, simultaneously exporting and importing basically the same commodity. For example, the United States imports Danish butter cookies, and the Danes import U.S. butter cookies. Somewhere on or above the North Atlantic the cookies pass each other. Surely the gains from trading such similar products cannot be large. But regardless of their size, could not these gains be had more efficiently simply by exchanging recipes?

In general, might not the free international flow of information be preferable to the flow of goods or capital? When you sell or give away information (as opposed to goods), you do not give it up - you still have it. What you give up is your monopoly, which is what gave the information its exchange value. But you still have the full use value. Once information exists, an argument can be made that its price should be zero for efficient allocation. But the cost of production of new knowledge is usually not zero, and so we reward inventors with a temporary monopoly. But might there not be a better way to reward creators of knowledge? Prizes? Grants? High salaries? Something that does not require that knowledge be kept artificially scarce?

> Knowledge is so largely a social product, in any case, that it is quite arbitrary and unjust to give property rights for minor applications of basic knowledge but not for the discovery of basic knowledge itself. Do the genetic engineers, eager to patent new organisms, share their royalties with Watson and Crick? Or with the teachers who taught them about the double helix? Or with the heirs of Gregor Mendel? The early Swiss economist Sismondi noted that inventions motivated by a desire to serve mankind are less likely to be socially destructive than inventions motivated by the desire for personal enrichment. Maybe he was right. Maybe the quality of the incentive is more important than the quantity. Maybe Thomas Jefferson was right in his statement, carved in stone at the University of Maryland's MeKeldin Library: "The field of knowledge is the common property of mankind”.

H. Sustainability Alert: A Bigfoot Sighting!

Humans are facing an unprecedented challenge: there is wide agreement that the Earth's ecosystems cannot sustain current levels of economic activity and material consumption let alone increased levels. At the same time, economic activity on the globe as measured by Gross World Product is growing at four percent a year, which corresponds to a doubling time of about 18 years. One factor driving this expansion is the growth of the world's population. In 1950, there were 2.5 billion people, while today there are 5.8 billion. There may well be 10 billion people on Earth before the middle of the next century.

Even more ecologically significant is the rise in *per capita* energy and material consumption, which, in the last 40 years, has soared faster than the human population. An irresistible economy seems to be on a collision course with an immovable ecosphere.

As described by Wackernagel and Rees [4], ecological footprint analysis is an accounting tool

> "that enables us to estimate the resource consumption and waste assimilation requirements of a defined human population or economy in terms of a corresponding productive land area. Typical questions we can ask with this tool include: how dependent is our study population on resource imports from "elsewhere" and on the waste assimilation capacity of the global commons? And will nature's productivity be adequate to satisfy the rising material expectations of a growing human population into the next century?
>
> To introduce the thinking behind Ecological Footprint analysis, let's explore how our society perceives that pinnacle of human achievement, "the city." No question, cities are among the most spectacular achievements of human civilization. In every country cities serve as the social, cultural, communications and commercial centers of national life. But something fundamental is missing from the popular perception of the city, something that has so long been taken for granted it has simply slipped from consciousness. Imagine what would happen to any modern city or urban region - Vancouver, Philadelphia or London - as defined by its political boundaries, the area of built-up land, or the concentration of socioeconomic activities, if it were enclosed in a glass or plastic hemisphere that let in light but prevented material things of any kind from entering or leaving. The health and integrity of the entire human system so contained would depend entirely on whatever was initially trapped within the hemisphere. It is obvious to most people that such a city would cease to function and its inhabitants would perish within a few days. The population and the economy contained by the capsule would have been cut off from vital resources and essential waste sinks, leaving it both to starve and to suffocate.
>
> How large would the bubble have to become, how much surface area consisting of all of nature's services, before the city could sustain itself indefinitely and exclusively on the land and water ecosystems and the energy resources contained within the capsule? In other words, what is the total area of the terrestrial ecosystem types needed continuously to support all the social and economic activities carried out by the people of the city as they go about their daily activities? The ecological footprint represents the corresponding population's total "appropriated carrying capacity"."

Carrying capacity is not defined here as a maximum population but rather the maximum "load" that can be safely and persistently imposed on the ecosphere. Human load is not only the function of population but also of per capita consumption. The latter is increasing more rapidly than the former due to expanding trade and technology. The world is being required to accommodate not just more people but "larger" people. Using averages often misses the point about population and carrying capacity. Some approaches are as statistically inept as the famous recipe for "fifty percent rabbit stew" (one rabbit, one horse).

The studies performed by Wackernagel and Rees show that the present ecological footprint of a typical North American represents *three times his/her fair share* of the Earth's bounty. Indeed, if everyone on Earth lived like the average American or Canadian, ***we would need at least three such planets to live sustainably***.

Acknowledging these facts presents us with any even bigger question. How do we provide for future generations? Robert Costanza [18] attempts to provide some insight:

> "In the age of exponential population growth, resource depletion, species extinction, and global environmental damage, the most adaptable and essential heritage which can be set aside for the future is large scale functioning ecologies, such as rain forests, estuaries, wild life sanctuaries, river basins, grasslands, wetlands, polar regions, and coral reefs. The important criterion for protecting ecologies is that they be large enough to provide contiguous habitats of air, land, and water needed by far ranging species. The policy instruments needed for intergenerational transfers of living ecologies should include economic incentives both to reduce environmental damage and to insure that part of the proceeds which result from activities which do result in environmental damage are used to acquire and protect offsetting environmental assets.
>
> The economics of intergenerational transfer has been discussed for decades. Determining the correct interest (discount) rate has been the focus of most research. This research recognizes and tries to deal with what is called the "conservationist's dilemma." Though high interest rates discourage the long term management of slow growing resources (forests) and the protection of long term environmental assets (biodiversity), high interest rates also discourage investments in projects which transform environments (dams) and in projects which are necessary to extract resources (oil wells). However, this dilemma results from a mispecification of the problem. Research shows that when rights are *consciously* reassigned between generations as the instrument of conservation and sustainability, interest rates are derivative – they themselves change. Unfortunately, neither economic rationality nor ecological rationality can provide the full set of data needed to determine human affairs. *The economy and the ecology of humans, the rights of future generations to the resources of their past, are embedded in politics and the exercise of political will*."

I. Three Uphill Battles to Achieve Sustainability

In a culture where much is good, more is better, and too much may not be enough, it may not seem possible to improve the quality of life while reducing our ecological footprint. We need to recognize that achieving sustainability will require fighting three uphill battles. Wackernagel and Rees [4] characterize these as *the boiled frog syndrome, mental apartheid, and the tragedy of the commons*.

> "First, our reductionist propensity to focus on mere symptoms of problems or on individual events detracts from our seeing the whole. We end up ignoring - or at least failing to anticipate - the cumulative effects of individual events. Neurologist Robert Ornstein and biologist Paul Ehrlich believe that our focus on isolated and immediate incidents is linked to the way the human brain functions: slow changes, long-term implications, and multiple connections cannot easily be perceived. This can be likened to the *boiled frog syndrome*. Ornstein and Ehrlich explain that "...frogs placed in a pan of water that is slowly heated will be unable to detect the gradual but deadly trend.... Like the frogs, many people seem unable to detect the gradual but lethal trend in which population and economic growth threaten to boil civilization...."
>
> If we do not wake up to the slow but steady deterioration of the planet, we will ultimately become victims of the "tyranny of now." Society's penchant for trading off the ecosphere in tiny bits to satisfy immediate wants is the ecological equivalent of the fire under the frog's pan. But that fire is now not just from the stove itself, but from the whole house burning down around the pan.

We also seem plagued by a form of *mental apartheid* that has erected an imposing psychological barrier between modern humans and the rest of reality. This perceptual dualism is clearly embedded in our language (which is itself a map of how we see the world). For example, the very term "environment" separates the really important stuff "in here" from everything else "out there." Our exemptionist attitude is also evident in the way we resist the notion that humankind is an integral part of nature, that we are just one of many millions of species occupying this planet. This artificial mind-body split is clearly dysfunctional at the ecological limits of a finite world; our mental apartheid must be broken down. Sustainability requires a profound sense that the fate of the ecosphere is the fate of humankind - we do not *have* a body, we *are* a body; we are not surrounded by an "environment," we are an intimate part of the ecosphere.

The third behavioral syndrome that inhibits us from acting sustainably is the so-called *tragedy of the commons* (more accurately *the tragedy of open access*). Ecologist Garrett Hardin reiterated Aristotle's wisdom that "...what is common to the greatest number gets the least amount of care..." and emphasized its tragic social implications. In general, this problem emerges whenever the benefits to an individual of (over-) exploiting an open-access resource exceed that individual's share of the resulting damage costs. Hardin compared an individual shepherd's gain from increasing his/her herd size on an open pasture to the same shepherd's share of the costs of doing so. Since the net benefits will always seem greater to the individual shepherd, each has a continuing incentive to add more animals to the pasture, eventually destroying it for all. Even if one good shepherd recognizes the imminent tragedy there is no incentive for him/her to exercise personal restraint - someone else will simply fill the void. We see this particularly clearly in the fate of today's ocean fisheries."

J. Do Real People Really Matter?

How do the issues we've discussed so far impact real people? If you're a real person, think about your own situation. The following stories are not meant to be lessons, but explorations. Feel yourself in these places, living and working. What are your hopes? What do you want for your family? What's your next career move? Do you have free will? What are the forces driving you?

1. Hong Kong: Boom Town

While working with an electronics manufacturing company in Honk Kong years ago, I was immersed in an environment of rapid growth, financial success, international business cooperation, and the palpable positive energy of the people. Many Hong Kong business people had become wealthy through the movement of manufacturing from the United States to Hong Kong. And I was moving even more - to continue to lower our costs. But we had a difficult time finding enough workers to perform manual electronics assembly, even offering free lunches, free lunchboxes, more training. Hong Kong's sustained boom had created an upwardly mobile population and Chinese parents had high aspirations (surprise!) for their well-educated children. They wanted better paying opportunities for them, as engineers, programmers, or bankers, for example. Much of Hong Kong's manual assembly work was transferred to Thailand, and subsequently to China.

2. China: Boom Country

While making a telecommunications proposal to the Chinese government in Beijing (before Tienanmen Square), I again felt the excitement of a society with a purpose, in the midst of an economic boom and some of the freedoms it brings. The streets were filled with people (mostly on bicycles) going to their jobs. I walked freely in neighborhoods made up of small but clean apartments, seeing men and women cooking, feeding their families (usually a single child), playing in the park. In Tienanmen Square, Americans were stopped by Chinese tourists who wanted to take a picture of them with their children. My Chinese friends said that many of the people who visited Beijing on vacation from remote parts of China had never seen a tall Caucasian.

One of the city-dwellers' frustrations at the time was that they could not get telephones fast enough because the government gave telecommunications priority to the agricultural areas and towns so the farmers could better distribute their products, nationally and internationally. Unfortunately, on trips to south China I passed through cities choking on smoke from factories and power plants. On one of these trips I was with a tour group of older retired Americans. We had stopped in one of the new Chinese cities (a whole city of 10,000 - built from scratch) in a special free trade zone. The outdoor market was brand new, with clean concrete floors and tables with running water. Fresh produce was everywhere. Well-dressed people from the nearby new apartment buildings were haggling over the price of fish. Butchers were chopping up animals, but the blood was washed away by flowing water. I flashed back to my Jakarta experience as I realized how nice this market was. But when we got back on the bus all the American women could talk about was how horrible the place was. "How could people live like that!"

3. Philippines: Boom Lost

I visited my son in Manila a few years ago. He was a fashion photographer there at the time. During his second week in the Philippines he was invited to a banquet and sat next to Imelda Marcos and her son. Imelda joked about how she would help her country with the hundreds of millions of dollars she had "accumulated" previously. Imelda is now rehabilitated as a Filipino heroine, especially since the newly-elected president at the time (a B-movie star) was her supporter. My son sat across from several rich land developers. One developer asked him to do a photo shoot of some young Filipino socialites at a resort on the island paradise of Boracay. Unfortunately he was artistically frustrated because the young ladies did not want to get up early or work very hard at being models.

At Easter we flew from Manila to Cebu to scuba dive and experienced the emotional impact of flying over literally dozens of islands with no trees. Deforestation has to be seen to be felt. As divers we knew about the reef and fish destruction being caused in the Philippines by dynamite and cyanide fishing, both for food and to supply the international aquarium trade. Two scuba divers had been killed by fishermen dropping dynamite on them. Cebu itself, which is the shipping center of the Philippines, is beautiful; the resorts on Mactan Island are great; and the diving is good.

There was still a serious drought while we were there and much of the island of Palawan was burning. International fire experts were assisting in the attempt to quench the blazes. The lack of food due to drought was so severe that people on one island were eating a known poisonous root to try to survive – apparently you became ill but only sometimes died. The president promised to send tons of emergency rice. On a deck overlooking the ocean on Mactan Island, surrounded by rich Filipinos, we had one of the best seafood buffet dinners I've ever eaten.

My son lived across from the Philippines Women's University in Malate, which is a "nice" section of Manila. But the sidewalks and curbs are filled with decaying trash. He tended to walk in the street to stay away from the garbage. Every now and then it smells as if a sewer has broken. The sky is black with smog, except after a rain, and the only snow he saw was one of fine ash and soot. Traffic clogs the streets – it takes an hour to go two miles. His Filipino friends like to take their cars out at Easter and Christmas when there is less traffic just to get the feel of driving around freely.

When you get to the business and banking section, Makati, everything is much nicer. Many foreign expatriates live there and the streets are even clean. The very rich live in another nice section of Manila, inside walled estates. One benefit of life in Manila is that you can have a live-in maid (young girls from the country) for only about two dollars a day.

The main river is a noisome sewer along which thousands of people live in shacks. An environmental movement exists but is weak. There was an environmental initiative to clean up the river, and donations were accepted in department stores. Nothing happened. Another strange sight was the line of hundreds of squatters' shacks built along the railroad tracks through the city. Main power lines follow the railroad right of way and almost every shack was pirating electricity by running wires up to the main power cable. (This is the case in many areas of India also.) But new office buildings, I counted six when I was there, were going up all over the city.

My son recently went diving in Mindoro, another Philippine island. He was told that in the last few years the average water temperature had increased to the point where sharks don't come around (considered a good thing by most divers) because they stay in the cooler depths. But the warm temperature also killed the algae that live in a symbiotic relationship with the coral organism causing massive die-offs (bleaching) of coral and creating vast areas of dead white coral heads. Having dived in many beautiful places around the world, he said that the sight of the bleached coral was eerie. He was told that it was much worse in the Gulf of Thailand. Of course, this is probably just a "statistical anomaly" and not really global warming!

4. Honduras: The Boom Comes Down

My sons and I went on a dive trip to Roatan, Honduras the year before Hurricane Mitch. The resort owner was a member of the Honduran government and prided himself on how ecologically-friendly he had designed his resort, including expensive water and sewage treatment systems. It was a paradise and a great place to dive with dolphins. (There were about 25 dolphins living voluntarily at the adjacent Institute for Marine Sciences.)

We took a side trip to go river rafting on the mainland near La Ceiba. A long bus trip through town and into the mountains took us past small houses built along the road and river. Although adequate, none of the dwellings would pass for a California lifestyle statement. But in several large fields along the road cardboard and tin villages had sprung up. Our guide told us these were squatter towns where landless poor people had built small shacks. Our guide happened to be an American from Colorado who had started a river-rafting company and bought land on a beautiful beach for his dream house in the tropics. He had partnered with a river rafting company in Colorado so that when it was winter in Colorado they would bring the rafts from the Colorado River operation down to Honduras – very synergistic.

Although the Honduran economy was mainly based on export crops, we saw new industrial parks (much clothing manufacturing) being built near the expanded and modernized airport in San Pedro Sula (better than the airport in Tegucigalpa, the capital). Apparently Honduras was considered a stable enough political environment for manufacturing investment by the international financial community, at least before the hurricane.

Hurricane Mitch later destroyed sixteen of sixty cabins at our resort and all the dolphins fled. It was closed for three months for repairs. All but five of the dolphins had returned within a week of the hurricane. The rest of Honduras did not fare as well, and I don't know what happened to our rafting guide's dream home. Commentators said the situation is like the United States having 40 million people homeless after a big storm! La Ceiba had heavy damage, as did the Sula Valley. People actually broke into the clothing plants in San Pedro Sula to scavenge material for clothes. It is commonly recognized that much of the flood damage was caused by excessive deforestation of the hillsides, not by logging companies but by the migrant poor clearcutting to build small houses and cook food. One Honduran leader, speaking on American television, proposed that his country now had an opportunity to rebuild without repeating its original mistakes and to create a society that was more sustainable. Unfortunately, stories of corruption and graft were also circulating – much food and money was not actually getting to the people who need it most.

My teenage son and I worked for several days at a local church packing donated food and clothing for Honduran relief. The donations never stopped. Truckloads of clothes and supplies were brought in by local people cleaning out their drawers and closets. Much of it was junk and inappropriate for use in Honduras (ski jackets, formal clothes, jewelry and makeup, outdated pharmaceuticals). From what I saw I couldn't understand why people had bought some of it in the first place.

5. Switzerland: Your Boom, My Boom

On a trip to Switzerland a few years ago I couldn't find any poor people (I think they're actually banned by law in Zurich)! Banking and skimming the froth off the top of international financial transactions appears to provide enough income to support even the least skilled but hard working citizen through various subsidies. The Swiss low-income housing was comparable to high-priced apartments in many other countries. No cardboard villages or muddy subsistence markets were in evidence, but they are no doubt part of the Swiss ecological footprint. It's an exceedingly beautiful country with houses and villages located on the sides of mountains I thought only an eagle could reach. Every square inch that can be is cultivated, and very aesthetically at that. A train ride from Brig to Laussane along Lake Geneva takes you through miles of vineyards with occasional huge natural gas pipelines and high voltage power lines dropping from over the mountains into the valley. Switzerland, which has a positive "dollar" trade balance, provides little ecological productivity (even if you could live on wine and chocolate) to the world, while importing a great deal from other places to maintain its high levels of consumption.

6. Gedanken Americans: What's Your Sympathy Factor?

After traveling the world, let's bring our economic principles closer to home. In science we do something called "gedanken" experiments – thought experiments – which let you create a set of assumptions and see where the physics leads you. I want to create just a few gedanken Americans and see where the economics leads you. Try to become these people. Again, these aren't lessons but hopefully your personal explorations of *Homo economicus*, the invisible hand, and fairness (if that can even be defined). You may want to consider them extra credit questions on your Economics 101 exam.

1. You're a factory worker. You just lost your job (choose one):
   - Your company moved production to Mexico or Malaysia.
   - Your company went out of business since it didn't move production to Mexico to lower costs.
   - There was a downturn in the Asian economy so your company's sales dropped.

   You have no savings because you've been paying your ex-wife child support. There are no jobs available. What do you do?

2. You're a bank teller who just lost her job to an ATM machine. Your ex-husband has not paid child support since he lost his job. You have no money or food, and your baby is crying. It's 4:30 PM Friday. What do you do?

3. You're a low-paid welfare worker for the county. It's 4:45 PM on Friday. You're looking forward to going home in fifteen minutes to spend the weekend with your family, although you need to go shopping for school clothes. You'll have to check the thrift stores because your credit card is at the limit. A crying woman with a baby comes into the waiting room asking for emergency assistance, which will take at least an hour of paperwork. What do you do?

4. You're a manufacturing manager who just laid off 200 workers in a cost cutting move. It's Friday at 6:00 PM. As you drive home past the Welfare Department, you stop for a woman with a baby in the

crosswalk. You wish you could spend time with your family this weekend, but you were told to finish that financial analysis, by Monday, to decide whether to move the rest of your manufacturing operation to either China or Mexico. What do you do?

5. You're the CEO of a company that has had a good but not exceptional year. You think you probably should have fired more workers sooner, but at least moving the rest of manufacturing to China should help because you can also get rid of a whole layer of middle management. Unfortunately, your bonus will only be $500,000 this year and the yacht you had your heart set on runs $750,000. What do you do?

6. You're a salmon fisherman with a 50-foot fishing boat, which is still mortgaged to the bank. The number of wild salmon has decreased. The price has also gone down due to competition with salmon from fish farms. You're barely breaking even and are thinking about buying new sonar gear to begin to fish for another species which you hope you can find more easily. The sonar costs as much as the new personal computer you'd been thinking about buying so you could get training for a new job. But the company in town you wanted to work for moved to Mexico. What do you do?

7. You're a restaurant owner in a logging part of the country. The sawmill isn't running anymore because the timber company has started sending whole logs to Japan rather than milling them locally. Your daughter is in college taking environmental studies and you're helping her with her tuition although business is getting worse. The local chamber of commerce is supporting the timber company's move to weaken the endangered species act, but you think something else may be the culprit. What do you do?

8. You're a lawyer working with several large corporations on mergers and acquisitions. You just built a new house in a semi-rural area. A large telecommunications company you work with wants to put up a huge microwave tower on the hill above your house and have the county build an access road along your property line. Your neighbors are concerned about the development and the possible electromagnetic radiation issues. They band together to fight the development and ask for your help. What do you do?

9. You're a teacher, bus driver, stockbroker, banker, carpenter, student, housewife, photographer, software engineer, marketing manager, sales person, economist, travel agent… Make one up yourself. What do you do?

10. You die without doing anything. Now what do you do?

IX. Any Solutions? (Always the Hardest Part)

The following sections presents civil society as a foundation for any comprehensive solutions and discusses the concept of the Social Sector as a formally recognized sector of society - equal in status to the Public Sector and the Private Sector - which gives legitimacy to social institutions that have too often been condescendingly thought of as simply volunteer groups. Much of this section is taken from David Korten [2,3], and is a thoughtful series of suggested national and international solutions, some of which are simple though not politically easy. Other similar sound proposals are given by Estes [11], Elkington [12], Gates [13], and Hawken [16]. All require each of us to do our part to create the civil society within which they can be accomplished.

A. Civil Society: Can We Retake Our Citizenship?

Herman Daly has asked, "Should we not be structuring the economy better to serve society rather than, as at present, restructuring society to serve the economy?" In the related question, "Who takes care of the social challenges of the knowledge society?" Peter Drucker [23] says the answer:

> "is neither the government nor the employing organization. The answer is a separate and new *social sector*. It is less than fifty years since we first talked in the United States of the two sectors of modern society – the "public sector" (government) and the "private sector" (business). In the past twenty years we have begun to talk of a third sector, the "nonprofit sector" – those organizations that increasingly take care of the social challenges of a modern society. Neither government nor business can do what this new "social sector" does.
>
> Government demands compliance; it makes rules and enforces them. But government and the traditional political parties can no longer integrate divergent groups and divergent points of view into a common pursuit of power. They have become battlefields between groups. Business expects to be paid. Its goal is simply profit. But social sector institutions aim at changing the human being. The "product" of a school is the student who has learned something. The "product" of a hospital is a cured patient. [Note: The product of an environmental organization is a community that understands the importance of a protected or restored ecosystem and takes the action required.]
>
> Increasingly these organizations of the social sector serve a second and equally important purpose. They create citizenship. All workers, including knowledge workers, need a sphere in which they can act as citizens and create a community. The workplace does not give it to them. As a volunteer in a social sector institution, the individual can make a difference."

The order of precedence among the three primary sectors of society is fundamental to the healthy and balanced function of society. A civic sector without government and an organized market is anarchy. This is why civil societies create governments and organized markets. Civil society is, however, the first sector – the Social Sector which takes precedence over the Public Sector and the Private Sector. The authority and legitimacy of all other human institutions flow from it. Since government is the body through which citizens establish and maintain the rules within which the market will function in the human interest, government is appropriately viewed as the second sector. The institutions of the market appropriately function as the third sector.

As Barber [7] describes it:

> "Civil society, or civic space, occupies the middle ground between government and the private sector. It is not where we vote and it is not where we buy and sell; it is where we talk with neighbors about a crossing guard, plan a benefit for our community school, discuss how our church or synagogue can shelter the homeless, or organize a summer softball league for our children. In this domain, we are "public" beings and share with government a sense of publicity and a regard for the general good and the commonweal; but unlike government, we make no claim to exercise a monopoly on legitimate coercion. Rather we work here voluntarily and in this sense inhabit a "private" realm devoted to the cooperative (non-coercive) pursuit of public goods. This neighborly and cooperative domain of civil society shares with the private sector the gift of liberty: it is voluntary and is constituted by freely associated individuals and groups; but unlike the private sector it aims at common ground and consensual (that is, integrative and collaborative) modes of action. Civil society is thus public without being coercive, voluntary without being privatized. It is in this domain that our traditional civic institutions such as foundations, schools, churches, public interest and other voluntary civic associations properly belong. The media too, where they take their public responsibilities seriously and subordinate their commercial needs to their civic obligations, are part of civil society."

Barber suggests turning again to schools, foundations, voluntary associations, churches and temples and mosques, community movements, and the media, as well as myriad other civil associations and removing them from the private sector repositioning them instead in civil society, or the social sector. He also suggests creating a new set of transnational civic associations that afford opportunities for nationally based civil societies to link up to one another and for individual citizens of different countries to cooperate across national boundaries in regional and global civil movements. One such organization is CIVICUS (http://www.civicus.org), a global alliance of citizens and their social sector organizations dedicated to pursuing a world in which:

- citizen action is a predominant feature of the political, economic, and cultural life of all societies;
- Private action for the public good is expressed by a rich and diverse array of organizations operating sometimes apart from and sometimes in dialogue with government and business; and
- A healthy society is one in which there is an equitable relationship among citizens, their associations and foundations, businesses, and governments.

Korten [3] suggests the design elements of a post-corporate world:

- Human-scale self-organization
- Village and neighborhood clusters
- Towns and regional centers
- Renewable energy self-reliance
- Closed-cycle materials use
- Regional environmental balance
- Mindful livelihoods
- Interregional electronic communication
- Wild spaces

B. Globally Thoughtful Local Action

The growing sustainability movement is benefiting from an historic convergence of ideas from many conceptual levels. Issues as disparate as recycling, traffic congestion, poverty, wetlands, jobs, and eco-vacations are coalescing into a new consciousness of the whole – and not just for those in the environmental movement. Through the great educator of hindsight we have the opportunity to weave the foresight of thirty years of grass roots activists and theorists into the fabric of the sustainable future. There are several historical trends that support this statement:

- Years of activism have raised the environmental and community awareness of every citizen.
- Growth, although often of value, has clearly destructive elements obvious to most citizens.
- Environmental destruction is visible to most citizens and has created unease with the status quo.
- More citizens are aware that affluence and over-consumption have many negative consequences.
- More citizens are aware that population growth is not an obvious good in any part of the world.
- Poverty, relative and absolute, still exists everywhere, including the developed world.
- More citizens recognize economic issues as reaching far beyond simply making a living.
- The rise of "green design" has catalyzed an integrated approach to the needs of people in their work environment, construction economics, and long-term environmental life cycle economics.
- Thought leaders in land development perceive the value of community versus "tract and run."
- Thought leaders in business recognize the need for a triple bottom line strategy (environment, economics, equity) to secure their future.
- Thought leaders in politics promote and support sustainability initiatives.
- Civil society continues to evolve more citizen action groups, often with similar goals.
- Various groups recognize their common interests and begin to coordinate actions.
- Most citizens finally realize that we're all in this together and we better do something about it.

Maybe that last item is a bit premature, but at least enough people have sufficient general knowledge of the issues to make it difficult for any special interest group to manipulate political processes unchallenged. And more organizations are beginning to coordinate their activities under the sustainability umbrella to create the critical mass needed to make the concept concrete and to begin work on the details of implementation. An exciting picture is beginning to take form, and I hope the reader gets a feel for the connections. But creating substance still depends on more hard work. The present situation may remind some of the old song title, "I Been Down So Long, It Looks Like Up To Me." But I think we've been down building the foundation and now it's time to work on the permanent structure.

C. Agenda for Change: Is Human Interest That Radical a Concept?

There are few rights more fundamental than the right of people to create caring, sustainable communities and to control their own resources, economies, and means of livelihood. These rights in turn depend on their right to choose what cultural values they will embrace, what values their children will be taught, and with whom they will trade. A globalized economy denies these rights by transferring the power to make the relevant choices to global corporations and financial institutions. Economic globalization is in the corporate interest. It is not in the human interest.

Korten's Rules for Mindful Markets, which are elaborated in his latest book [3], give a foundation for how to approach a new economic model:

Rule 1. Use life as the measure.

Rule 2. Put costs on the decision-maker.

Rule 3. Favor human-scale firms and stakeholder ownership.

Rule 4. Strive for equity.

Rule 5. Favor full disclosure.

Rule 6. Encourage the sharing of knowledge and technology.
Rule 7. Seek diversity and self-reliance.
Rule 8. Pay attention to your borders.
Rule 9. Honor government's necessary role.
Rule 10. Maintain an ethical culture.

This model requires restoring the rights of the living:

- Restore political democracy.
- End the legal fiction of corporate personhood.
- Establish an international agreement regulating international corporations and finance.
- Eliminate corporate welfare.
- Restore money's role as a medium of exchange.
- Advance economic democracy.

1. Reclaiming Our Political Spaces

Political rights belong to people, not to artificial legal entities. As instruments of public policy, corporations should obey the laws decided by the citizenry, not write those laws. *Corporations' claim to the same constitutional rights as natural born persons is a gross distortion of the concept of rights*. Particularly pernicious is the corporate claim to the First Amendment protection of the right of free speech, on which corporations base their right to lobby and carry out public campaigns on political issues. As Paul Hawken observes, by invoking this right, "corporations achieve precisely what the Bill of Rights was intended to prevent: domination of public thought and discourse."

We must give high priority to legislative and judicial action aimed at establishing the legal principle that corporations are public bodies created to serve public needs and have only those privileges specifically extended to them by their charters or in law. These privileges are properly subject to withdrawal or revision at any time through popular referendum or legislative action. If a corporation persistently seeks to exceed the privileges granted by its charter - such as knowingly selling defective products - or fails to honor its obligations under the law - such as consistently violating laws regarding toxic dumping - it is the right and responsibility of citizens, acting through their government, to disband it.

Shareholders, managers, employees, consumers, and others have every right in their capacity as private citizens to express their political views for or against the corporate interest. They also have the right to form and fund not-for-profit organizations for the purpose of advancing any cause they choose to support in their private capacities using their personal funds. Corporations have no such natural right. *They simply do not belong in people's political spaces*.

A first step toward removing corporations from the political sphere would be to eliminate all tax exemptions for corporate expenditures related to lobbying, public "education," public charities, or political organizations of any kind. The ultimate goal, however, should be a *flat prohibition on for-profit corporations' involvement in any activity intended to influence the political process or to "educate" the public on issues of policy or the public interest*. Even corporate giving to true public charities and the arts has become increasingly suspect. It is only natural that for-profit corporations would align their charitable giving with their own interests. *There is little other basis on which they can justify allocating shareholder profits for charitable purposes*.

Removing corporations from political participation is an essential step toward reclaiming our political spaces. It is not, however, sufficient. If democracy is to survive, reforms must not only get corporations out of politics but also limit the power of big money to influence the voting behavior of ordinary citizens. The ability to spend millions of dollars to saturate the electronic media, especially television, with negative messages about one's opponent has become a key to winning elections. So long as winning an election is excessively expensive and the only sources of adequate funding are powerful financial interests, policy will favor financial interests over the public interest. Setting term limits or voting incumbents out of office will accomplish very little. Three deep and sweeping campaign reforms are necessary.

1. Political advertising on television should be prohibited. It is enormously expensive, often misleading, and rarely informative. Its elimination would dramatically reduce the cost of running a successful campaign and the consequent dependence on special interest funding. This might improve the quality of the public debate as well.

2. Total campaign expenditures should be limited. Let candidates concentrate on competing to get their messages out as effectively as possible within a set spending limit. It is a better measure of their ability to spend public funds responsibly.

3. Campaign costs should be covered by a combination of public funding and small individual tax-deductible contributions. Political action committees should be abolished, and corporations should be prohibited from making any kind of political contribution or using corporate resources to favor any candidate in a political campaign.

In return for their right to use public airways, television and radio stations should be required to provide exposure for candidates for public office on issues-oriented interview programs and debates on an equal-time basis. [Note: The Media Foundation is directing a Two-Minute Media Revolution campaign to get the FCC to require broadcasters to set aside two minutes of airtime every hour for citizen-produced advocacy messages in exchange for a renewed lease on the public airwaves.] Print media might be provided with incentives to give space to substantive issues-oriented articles and op-ed pieces by political candidates on an equal-space basis. Informing the public regarding the views and qualifications of candidates for office is one of the most basic responsibilities of the news media in a democracy they should be held accountable for fulfilling it.

With their dominance of the mass media and their growing penetration of the classroom, corporations increasingly control and shape our primary institutions of cultural reproduction, constantly reinforcing the values of consumerism and the basic doctrines of corporate libertarianism - to align mainstream culture with the corporate interest. To reclaim our colonized political spaces, we must reclaim our colonized cultural spaces. Three measures require serious consideration:

1. <u>Antitrust legislation</u>. Special antitrust legislation for the media should establish that it is prima facie evidence of monopolistic intent for a single corporation to own more than one major public media outlet, whether it be a newspaper, radio station, TV station, or home cable service. No individual should be allowed to have a majority holding in more than one such media corporation. This would enhance the free-speech rights of the public by limiting the ability of a few powerful individuals and corporations to dominate access to the major means of public communication.

2. <u>Advertising</u>. In classical market economics, the role of business is to respond to market demand, not create it. Tax deductions for advertising provide a public subsidy for hundreds of billions of dollars a year in corporate advertising aimed at enticing people to buy things that they neither want nor need and creating a consumer culture that is alien to the needs of healthy societies. Advertising, other than purely informative advertising based on verifiable facts, is not in the public interest. Ideally, it should

be prohibited. At a minimum, it should not be deductible as an expense and should be taxed at a rate of at least 50 percent.

3. Schools. Schools should be declared advertising-free zones, administration of public schools should remain a public-sector function, and corporate-sponsored teaching modules should be banned from classroom use under the ban on in-school advertising.

2. Reclaiming Our Economic Spaces

The initiatives proposed above are of vital importance in building the foundations of healthy societies, but they are seriously disadvantaged by economic policies and institutions that favor the large, the global, and the predatory. Reclaiming our economic spaces requires that we transform such policies and institutions to shift the advantage in favor of the small and the locally accountable. To do so, we will need to restore the integrity and proper function of our financial institutions and systems, shift the social and environmental costs of production to producers and the users of their products, eliminate subsidies to big business, localize markets, deconcentrate capital ownership, establish corporate accountability, and restore market competition. The term transform is used advisedly. If these measures seem to run counter to the current trend toward the big and the global, that is precisely the intent.

0.5 Percent Financial Transactions Tax. A small tax on the purchase and sale of financial instruments such as stocks, bonds, foreign currencies, and derivatives would discourage very short-term speculation and arbitraging and remove an important source of unearned financial profit.

An international movement to institute a Financial Transaction Tax, the Robin Hood Tax, was born in the UK in 2010 and introduced in the US in 2011 as the Robin Hood Tax on Wall Street. Its intention was to make Wall Street pay its fair share for the recovery of the US economy and to continue to be a revenue source for improving American society. It's a minuscule tax on the purchase and sale of derivatives, options and stocks:

0.5% on stocks, just $.50 for each $100 of stock trades;

0.1% on bonds, just $.10 for each $100 of bond trades;

0.005% on derivative speculation in currencies, commodities, or other trades, just $.005 (half a penny) for each $100 of trades.

The United States had such a tax from 1914 until 1966. It imposed a tax of 2 cents on every $100 sale or transfer of stock.

Graduated Surtax on Short-Term Capital Gains. A capital gains surtax would make many forms of speculation unprofitable, stabilize financial markets, and lengthen investment perspectives without penalizing long-term productive investment. The surtax on the sale of an asset held less than a week might be as high as 80 percent, falling to 50 percent on gains from assets held more than a week but less than six months, 35 percent on those held for more than six months but less than three years, and 10 percent on assets held more than three years.

Increase Reserve Requirement on Demand Deposits. As far back as 1948, Henry C. Simmon, founder of the conservative University of Chicago school of economic monetarism, argued for a 100 percent reserve requirement on demand deposits to limit the ability of banks to create money and to give government greater control of the money supply. Many economists have since called for a similar measure. The reserve requirement in the United States currently averages less than 10 percent. Phased in over several years to allow the financial system to adjust, a significantly increased reserve requirement would help deflate the borrowing pyramid and help restore the connection between the creation of money and the creation of wealth.

Tight Regulation of Financial Derivatives. Many forms of derivatives are basically high-risk gambling instruments that serve primarily to generate fees for the investment houses that package and sell them. Like any other form of gambling, their creation, sale, and purchase should be tightly regulated and heavily taxed.

Preferential Treatment of Community Banks. The U.S. banking system was once made up of unitary or community banks that collected local savings deposits, made loans to local businesses, and financed mortgages to expand local home ownership. If the banking system is to serve local economies, the system of community banks must be restored by requiring money-center banks to divest their branches and by tightening community investment laws to require that a substantial majority of the investment portfolio of any bank covered by federal deposit insurance be invested within its service area and that all its investments meet federally mandated standards

Rigorous Enforcement of Antitrust Laws. Vigorous legal action should be taken to break up concentrations of corporate power. Buyout and merger proposals should be subject to intensive and skeptical governmental review, with the burden of proof resting on the proposing party to show that it will advance the human, in contrast to the corporate, interest.

Worker and Community Buyout Options. In most instances, the human interest is best served by patient and rooted capital. To this end, worker and community buyouts of corporate assets should be supported by public policy. For example, before a major corporation is allowed to close a plant or undertake a sale or merger, the affected workers and community should have a legal right of first option to buy out the assets on preferential terms.

Tax Shifting. Corporate tax law should be revised to shift taxes from things that benefit society, such as employment - including employer contributions to social security, health care, workers' compensation - to taxing activities that contribute to social and environmental dysfunction, such as resource extraction, packaging, pollution, imports, corporate lobbying, and advertising. Such taxes would cascade up through the system and discourage the use of socially and environmentally harmful products. For example, a tax at the source on coal, oil, gas, and nuclear energy would increase end-user prices and encourage conservation and conversion to solar energy sources, such as solar heating, wind, hydro, photovoltaic, and biomass.

The current system taxes heavily that which should be encouraged - enterprise and human labor. Meanwhile, it taxes lightly or even subsidizes the use of the natural resources that humanity needs to husband and conserve. To put it simply, the nation would cut - or if possible eliminate - taxes on work and enterprise and replace them with increased taxes on the use of natural resources. Such a system would diminish the need for environmental regulation, by building a semblance of environmental accounting right into the price system. Prices would include environmental and social costs. People would finally have a real choice in how to spend their money based on true prices.

Tax shifting [28] offers a coherent new rationale for taxation, one that is firmly grounded in common sense and shared values. The current tax system lacks any such rationale and therefore tends to undermine the legitimacy of government. A tax shift could help restore credibility and legitimacy to the tax system by declaring that individuals and corporations should keep more of the fruits of their toil, but should pay for the costs – environmental and social – that they pass on to present and future generations. In other words, personal responsibility and shared values could be promoted directly through the tax system.

Recent research [29] has shown that a modest tax reform in which environmental taxes equal to ten percent of federal receipts are collected has negligible impact on the income distribution when the funds are rebated to households through reductions in the payroll tax and personal income tax.

Annual Profit Payout. Corporate income taxes should be eliminated simultaneously with the introduction of a requirement that corporations pay out their net profits each year to their shareholders. Profits would thus be taxed as shareholder income at the shareholder's normal marginal rate. Depreciation would be adjusted for current replacement prices to allow sufficient retention of earnings to cover capital replacement. Research could also be funded from operating revenue (gross profits) by being expensed in the current year. The double taxation of corporate profits - once to the corporation and once to the shareholder - would be eliminated, along with the deferral of shareholder taxes and the many distortions that the corporate income tax introduces into corporate decision making. If this were carried out universally, corporations would have no incentive to shift profits around the world to the jurisdiction with the lowest tax rate.

Corporate Subsidies. Welfare reform should give top priority to getting dependent corporations off the welfare rolls. Corporate subsidies range from resource depletion allowances to subsidized grazing fees, export subsidies, and tax abatements. Such subsidies should be systematically identified and eliminated, with the possible exception of those needed to establish and nurture locally owned, community-based enterprises.

Corporate Accountability. All large corporations should provide a single annual Corporate Report [12] to stakeholders. It should contain several full sections devoted to information required by customers (product and customer data already required or provided in other reports would be consolidated here), information required by employees (data on layoffs, plant closings, health and safety, employee grievances, future plans), information required by communities (tax breaks sought, zoning exemptions, toxics release inventory, infrastructure costs), and information required by society (taxes paid, pollution and waste generated, political involvement through contributions and PACs, history of legal actions). Local Corporate Accountability Commissions could be established. If necessary a Corporate Accountability Act could be passed by Congress.

Intellectual Property. Information is the only resource we have that is non-depletable and can be freely shared without depriving anyone of its use. Every contemporary human invention necessarily builds on the common heritage of human knowledge accumulated over thousands of years and countless generations. This is the information commons of the species. The justifiable purpose of intellectual property right protection is to provide incentives for research and creative contribution, not to create protected information monopolies. Laws relating to intellectual property rights should be reformed to conform to this principle. Such rights should be defined and interpreted narrowly and granted only for the minimum period of time necessary to allow those who have invested in for-profit research to recover their costs and a reasonable profit. The patenting of life-forms or genetic processes, discoveries funded with public monies, or processes or technologies that give the holder effective monopoly control over a type of research or class of products should be precluded by law

Progressive Income and Consumption Taxes. Taxes on incomes up to the level required to meet basic needs in a comfortable, satisfying, and responsible way should be eliminated, as should sales or value-added taxes on basic food, clothing, shelter, health, personal hygiene, educational, and entertainment or recreational expenditures needed to sustain good living. There should likewise be a sharply graduated tax on incomes above the guaranteed minimum - going as high as 90 percent on top income brackets. Inheritance or trust income should be taxed the same as any other personal income. This would greatly reduce incentives for individuals to seek excessive incomes yet should not discourage anyone from doing socially useful work.

There should be a substantial luxury tax on nonessential consumption items that are socially harmful or environmentally wasteful or destructive. Personal charitable contributions, including to family foundations, should be fully tax exempt, thus providing a substantial incentive for individuals with excess incomes to support a strong independent sector as a counter to the power of the state. In fact, democratizing foundations, i.e., requiring by law that they include community activists on their Board of Trustees, might be as effective a way to redistribute wealth as taxing the rich directly.

3. Localizing the Global System

As we work at the national and subnational levels to reclaim our local political and economic spaces, we must also transform the global system to create a bias toward the local. This does not mean that global institutions will or can be eliminated. Although we can reduce environmental, technological, and economic interdependence, we cannot eliminate it, nor would we want to. Such interdependence is the foundation of the emerging global consciousness that is essential to both our collective survival and our evolutionary potential as a species. Our goal should be to create a multilevel system of institutions through which we can reduce unnecessary interdependence and manage the remaining interdependence in ways that maintain a persistent bias in favor of:

- Empowering the local to control and manage local resources to local benefit;
- Making it difficult for any locality to externalize its production or consumption costs beyond its borders;
- Encouraging cooperation among localities in the search for solutions to shared problems.

<u>International Debt Reduction for Low-Income Countries</u>. The poor of low income countries must be released from the national debt bondage that leaves them defenseless against the colonization of their economies and resources by the global system. This should begin with an orderly process of repudiating, under precedents already established in international law, "odious" debts that were incurred through *ultra vires* contracts (made by a person without proper authority) or used for purposes that were not beneficial to the people of the territory on whose behalf the obligations were incurred. Much of the outstanding international debt of low-income countries could be classified as odious under these principles - including a substantial portion of the debt owed to the multilateral banks. An international convention should be established under which governments of indebted low-income countries can declare such public international debts uncollectible, with the sanction and support of an appropriate international body.

<u>International Financial Transactions Tax</u>. A 0.5 percent tax should be collected on all spot transactions in foreign exchange, including foreign exchange deliveries pursuant to futures contracts and options, as proposed by James Tobin, winner of the 1981 Nobel Prize for economics. The 0.5 percent "Tobin" tax on foreign exchange transactions would help dampen speculative international financial movements but would be too small to deter commodity trade or serious international investment commitments. It would increase the weight given by market participants to the long term and give greater autonomy to individual countries in setting domestic monetary policies. (See Robin Hood Tax on Wall Street description above.)

<u>Regulation of Transnational Trade and Investment</u>. International agreements are needed regarding trade and the standards of conduct for transnational corporations to guarantee the right of countries and localities to manage their external trade relations and to set the rules and standards for businesses operating in their jurisdictions. These agreements should include provision for coordinating antitrust action among participating nations to break up large transnational corporations and take such other actions as required to ensure the competitiveness of international markets. These agreements should also ensure the right of each country and people to set their own rules regarding intellectual property rights within their own jurisdictions, while limiting the ability of any corporation or country to monopolize and

withhold beneficial information and technology from other people who might benefit from its use. In express opposition to the proposed Multilateral Agreement on Investment (MAI), these agreements should adhere to the basic principle that when transnational corporations participate in a local economy they come only as invited guests, not as occupying forces, and are expected to honor local rules and customs.

Environmental Resources Monitoring. One of the most difficult challenges of balancing economic needs with environmental limits is to make it difficult for localities to colonize the environmental spaces of others, either through cross-boundary discharge of environmental pollutants or through trade. There is an urgent need to develop environmental information systems that make such shifting of environmental burdens visible and thus encourage environmental self-reliance. With an appropriate strengthening of mandate and technical capacities, the United Nations Environmental Programme (UNEP) might coordinate the development and use of appropriate statistical and accounting methods and the negotiation of international agreements on standards, monitoring, and dispute adjudication relating to regional and national cost internalization. Use of such monitoring capacities should be largely decentralized, with each locality, district, nation, and region maintaining its own accounts. When disputes regarding the shifting of environmental burdens cannot be resolved directly through bilateral negotiations, they should be settled through submission to the appropriate judicial bodies, including the International Court of Justice, for adjudication.

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Specific attention will be required to restructure the system of global economic governance - in particular the Bretton Woods institutions. It is unworkable to have the functions of global governance divided among a number of independent global agencies with overlapping jurisdictions and conflicting mandates. Under the current arrangement, responsibility for dealing with global finance rests with the International Monetary Fund (IMF). Responsibility for setting and enforcing the rules of international trade and investment is assigned to the World Trade Organization (WTO). The dominant institution in setting development priorities in low-income countries is the World Bank. All three of the Bretton Woods institutions consistently give priority to the corporate interest over the human interest. Responsibility for the coordination of international economic, social, cultural, educational, health, and related matters rests with the Economic and Social Council of the United Nations, which leans more toward the human interest. Although the Bretton Woods institutions are designated specialized agencies of the United Nations, they are far more important and powerful than the other specialized UN agencies and reject any UN effort to coordinate or oversee their activities.

It is time to dismantle the Bretton Woods institutions and consolidate the functions of economic governance under bodies that are fully accountable to the United Nations. Whereas the mandates of the Bretton Woods institutions were to advance economic globalization, their successor agencies should be given mandates to advance economic localization by carrying out the activities recommended above. The internal governance processes of the successor agencies should be publicly transparent and open to participation by both governmental and citizen oversight organizations.

The World Bank. The World Bank should be closed. Its major function is to make loans to poor countries, which necessarily increases their international indebtedness. So long as the Bank remains in business, Southern economies will remain indebted to the international system. Creating indebtedness is not a useful function, and it is time to acknowledge that the World Bank was a bad idea. Closing it is an essential step toward assuring that as international debts are eliminated, they are not instantly re-created. Once freed from the corrupting influence of debt dependence and the dictates of the multilateral banks, low-income countries will be in a far better position to undertake people-centered structural reforms aimed at decolonizing their economies and moving toward greater self-reliance, environmental sustainability, and economic justice.

The International Monetary Fund (IMF). The IMF might be replaced by a United Nations International Finance Organization (UNIFO) responsible for (1) managing the process of repudiating and writing off the international debts of low-income countries; (2) regulating international financial markets; (3) providing a forum within which governments can coordinate policies aimed at keeping their foreign accounts in balance; (4) coordinating measures to establish enforceable reserve requirements for the lending of quasi-international currencies, such as Eurodollars, in instances when they are not presently regulated by national governments; and (5) collecting and administering the Tobin tax on foreign exchange transactions.

The World Trade Organization (WTO). The WTO should be replaced by a UN Regulatory Agency for Transnational Trade and Investment (UNRATTI). The prime mandate of UNRATTI should be to facilitate the negotiation of agreements relating to the regulation of transnational corporations and trade and to serve as a coordinating forum for governmental actions aimed at enforcing them. The performance of UNRATTI should be assessed in terms of progress toward increased local economic self-reliance and global equity. Transnational corporations should be barred from participating on national delegations to UNRATTI or from making other representations to it, except when they are specifically requested to provide information. In function and purpose, UNRATTI should be nearly the mirror opposite of the GATT-WTO.

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Corporate libertarians will doubtless point out that the measures suggested here will significantly interfere with the operations of transnational corporations and financial markets. That, of course, is precisely their intent. Our goal should be to create a system that works well for people. Corporations are only a means of meeting human needs. If, in doing what we believe will best serve our needs, we find useful roles for corporations, then we should by all means make such use of them. But the right to decide must reside with people.

There may also be complaints that these measures will create large global regulatory bodies at a time when the political sentiment is toward reducing governmental regulation. The intention in all instances is to create a framework in which actual regulatory action is taken at the lowest possible level. The function of global and regional level institutions is to support the local in such matters. We must keep in mind, however, that it is primarily the existence of powerful global corporations that creates a need for global regulatory bodies of sufficient power to hold them accountable to the public interest. The less obtrusive global corporate power becomes, the less the need for obtrusive global regulatory bodies. By reducing the size and power of global corporations and moving the system toward more rooted and patient capital, we limit the need for international bureaucracies and police powers.

By taking actions such as those suggested above by Korten and others, we can reclaim the power we have yielded to the global system and restore our ability to rebuild our communities and heal the earth as we work to create healthy societies that allow us to experience life in its fullness and diversity. Otherwise, we will continue to live under the tyrannical rule of a global financial system that is leading us in the direction of almost certain social and ecological collapse. We must hold one thought clearly in mind: The global institutions of money have only the power we yield to them. It is our power. We can reclaim it.

Appendix: President's Council on Sustainable Development: Fifteen Principles (1992) (with Herman Daly's Comments) and the United Nations Sustainable Development Goals (2015)

This original initiative was developed under President Bill Clinton in 1992 but is still relevant in 2016. In 2015 the United Nations created a set of Sustainable Development Goals (SDGs), a new, universal set of goals, targets and indicators that UN member states will be expected to use to frame their agendas and political policies over the next 15 years.

Below Daly [1] quotes each of the fifteen original principles, and adds a brief comment aimed at moving the principle toward more specificity and clarity. In most cases his comments would not receive the consensus accorded the original principle precisely because of the added specificity. Although it would be possible to impose a stricter order on the discussion than the one inherent in these fifteen principles, Daly thinks it is important to accept them as our framework, even if a loose one, in order to see the extent of present consensus and understanding in all its incompleteness, and to avoid any possible misrepresentation by paraphrase or summary.

The UN SDGs are listed after this commentary.

1. **We must preserve and, where possible, restore the integrity of natural systems - soils, water, air and biological diversity - which sustain both economic prosperity and life itself.**

Yes, indeed. Restoring natural systems requires reducing our physical demands on those systems (as sources and sinks for the economy) in order to allow them to recuperate. Continuing expansion of the scale of the human economy will require the takeover of ever more of the habitat of other species and is inconsistent with maintaining biodiversity and ecological life-support systems.

2. **Economic growth, environmental protection, and social equity should be interdependent, mutually reinforcing national goals, and policies to achieve these goals should be integrated.**

Maybe these goals should be mutually reinforcing, but frequently they conflict. To sort out conflicts and harmonies we must distinguish growth (quantitative increase by assimilation or accretion of materials) from development (qualitative improvement, realization of potential). The construct "gross national product" conflates these two totally different things, as does the usual concept of economic growth, thought of as growth in GNP. Quantitative increase of the scale of the economy by assimilation or accretion of material from the finite environment is not sustainable. Qualitative improvement and realization of potential may well continue forever - at least we cannot specify any obvious limits to its sustainability. Sustainable development therefore is development without growth-that is without throughput growth beyond the regeneration and absorption capacities of the environment. The path of future progress is development, not growth. This distinction must be made or confusion is inevitable.

3. **Along with appropriate protective measures, market strategies should be used to harness private energies and capital to protect and improve the environment**

Yes, the market should certainly be the main mechanism for solving the problem of efficient allocation of resources. There are two prior problems that have to be solved politically as the precondition for the market to work in this way. We must politically and socially limit the total scale of resource throughput for key resources to a level that is sustainable. This provides a sustainable scale. Second, the rights to deplete or pollute up to the scale limit are no longer free goods, but valuable assets. Who owns them? The just distribution of initial ownership has to be settled socially. Only after these context questions of a sustainable scale and a just distribution have been settled socially can the individualistic market solve the question of efficient allocation. We must use the market to solve the allocation question, but we cannot expect it to solve the scale and distribution questions.

4. Population must be stabilized at a level consistent with the capacity of the earth to support its inhabitants.

This is crucial. For clarity we should add,". . support its inhabitants at a level of per capita wealth sufficient for a good life." We cannot precisely define "a good life," but most would agree with Malthus that it should be such as to permit one to have a glass of wine and a piece of meat with one's dinner. Even if one is a teetotaler or a vegetarian that level of affluence is desirable, and would serve by it-self to rule out populations at or above today's level. What really must be stabilized is total consumption, which of course is population times per capita consumption. Both of the latter factors must be reduced.

The nation, not the earth, will be the effective unit in which population and consumption are controlled. Different nations will make different choices: some will not control either population or consumption, others will. Of those that do control total consumption, some will choose high per capita consumption and low population, others will choose the reverse. Free migration, or even free trade with free capital mobility, will undercut any national policies of self-discipline and restraint in consumption and population growth. The current thrust toward economic globalization is, short of the unappealing prospect of world government, likely to be contrary to sustainable development. Setting a successful national example for possible emulation may be the best contribution our own nation can make toward global sustainable development.

5. Protection of natural systems requires changed patterns of consumption consistent with a steady improvement in the efficiency with which society uses natural resources.

What is needed in the first instance are reduced levels of consumption, not just changed patterns. We certainly must improve the efficiency with which society uses resources (development), but the best way to do that is to limit the level of resource throughput (growth), thereby forcing progress onto the path of development rather than growth, as suggested in comment on point 2.

6. Progress toward elimination of poverty is essential for economic progress, equity, and environmental quality.

Elimination of poverty, in the absence of growth (which so far has failed to reduce poverty anyway), will have to come from greater sharing, more population control, and development in the sense of the term here defined. The political difficulty of facing up to sharing, population control, and qualitative development as the real cures to poverty will sorely tempt politicians to resurrect the impossible goal of growth - more for all with sacrifice by none, for ever and ever, world without end, amen. No doubt they will want to call it "sustainable growth"!

7. All segment's of society should equitably share environmental costs and benefits.

Yes. This should be done through internalization of environmental costs into prices so that the polluter and the depleter pay. One powerful way to move in this direction is to shift the tax base from income (value added) to throughput (that to which value is added). Why tax what we want more of-employment and income? Why not tax what we want less of-depletion and pollution? This shift could be revenue neutral, and supplemented with a stiff income tax on very high incomes and a negative tax on very low incomes in order to maintain progressivity. Since we have to raise public revenue somehow, and since almost all taxes are distortionary, why not induce the "distortions" we want instead of those we do not want? Equity is served because the polluter and the depleter pay, yet the inevitable regressivity of a consumption tax is countered by a negative income tax on very low incomes and a high tax on very high incomes.

8. All economic and environmental decision-making should consider the well-being of future generations, and preserve for them the widest possible range of choices.

The goal of preserving the range of choice of the present for future generations is certainly central to sustainable development, but it cannot be effected by piecemeal individualistic consideration of the effect of all micro economic and environmental decisions on the future. Protecting the range of options for the future has to be a macro, social decision, effected through a macro policy such as limiting the scale of throughput. Urging individuals to consider the future generations in their personal economic decisions is necessary but not sufficient.

9. Where public health may be adversely affected, or environmental damage may be serious or irreversible, prudent action is required in the face of scientific uncertainty.

Irreducible uncertainty about the environmental effects of new technologies or substances are real economic costs. Like other costs, they should he included in the price and paid for by the consumer of the commodity that has imposed the cost, rather than thrown on the general public. This could he better accomplished by requiring an assurance bond in the amount of possible damage, to be posted up front and then returned over time as experience reduces the uncertainty about damage. Currently the burden of uncertainty is too much borne by the public at large. Our liability laws operate only after the fact, and even then inability to pay is frequent.

10. Sustainable development requires fundamental changes in the conduct of government, private institutions, and individuals.

Yes. Some specific changes have been suggested in my comments here on these fifteen principles. While conduct or behavior needs to change, frequently the underlying principle remains the same. For example, it is an accepted principle in economics that in accounting income we must deduct for depreciation of capital in order to keep productive capacity intact. This principle remains, and only needs to be extended to natural capital as well as manmade. Depletion of natural capital is a cost and should be counted in the macro System of National Accounts, in micro project evaluation, and in the international balance of payments.

11. Environmental and economic concerns are central to our national and global security.

True, especially in the sense that countries that are living within a non-growing biophysical budget that is environmentally sustainable are much less likely to go to war with each other than countries that are expanding their consumption of and dependence upon resources belonging to other countries, or to mankind in general - petroleum in the Middle East, for example, or atmospheric capacity to absorb $C0_2$ or $S0_2$.

12. Sustainable development is best attained in a society in which free institutions flourish.

Yes. We must keep in mind that free institutions include not only the institution of individual freedom in the competitive marketplace (freedom from monopoly), but also the social, collective freedom to democratically enact rules for the common good. As emphasized above, the market solution to the efficient allocation problem presupposes a political solution to the problems of sustainable scale and just distribution.

13. **Decisions affecting sustainable development should be open and permit informed participation by affected and interested parties, that requires a knowledgeable public, a free flow of information, and fair and equitable opportunities for review and redress.**

In relation to the above, the old GATT (General Agreement on Tariffs and Trade) and the new WTO (World Trade Organization) are highly suspect, and require considerable changes to come into conformity with this requirement for transparency and other principles of sustainable development.

14. **Advances in science and technology are beneficial increasing both our understanding and range of choices about how humanity and the environment relate. We must seek constant improvements in both science and technology in order to achieve eco-efficiency, protect and restore natural systems, and change consumption patterns.**

No one can oppose the advancement of knowledge, but by now it should be clear that not every new technology that comes down the pike is a net benefit to the human race. As E. J. Mishan put it, ‘While new technology is unrolling the carpet of increased choice before us by the foot, it is often simultaneously rolling it up behind us by the yard." We need technologies of development, technologies that more efficiently digest a given resource throughput, not the technologies of growth, of larger jaws and a bigger digestive tract. And, once again, instead of vaguely calling for ‘changed consumption patterns" we need to specify 'reduced consumption levels" of resources and environmental services. Once the level of resource throughput is reduced to a sustainable level, the pattern of consumption will automatically adapt, thanks to the market. Controlling the pattern directly would require abrogation of the market and would not limit the level of consumption.

15. **Sustainability in the United States is closely tied to global sustainability. Our policies for trade, economic development aid, and environmental protection must be considered in the context of the international implications of these policies.**

The connection between sustainability and international trade is important, but rather different I think from what the council has in mind. Nearly all policies for sustainability involve internalizing external environmental and social costs at the national level. This makes prices higher. Therefore free trade with countries that do not internalize these costs, or do it to a much lesser extent, is not feasible. In such cases there is every reason for protective tariffs. Such tariffs would be protecting not an inefficient industry or firm but an efficient national policy of cost internalization. Free trade among differing regimes of cost internalization will result in a standards-lowering competition, leading to a situation in which more and more of total world product is produced in countries that do a less and less complete job of counting costs. Hardly a movement toward global efficiency! The current thrust toward economic globalization by free trade, free capital mobility, and free (or at least uncontrolled) migration is in effect the erasure of national boundaries for economic purposes. This greatly undercuts the ability of nations to put into effect any policies in support of sustainable development, including population control and including domestic enforcement of international treaties that may have been signed in support of efforts to combat irreducibly global environmental problems. The power vacuum created by the weakening of national communities will be filled by the transnational corporations, which, in the absence of a world government, will be unconstrained by any community interests.

<u>United Nations Sustainable Development Goals (SDGs)</u>

1) End poverty in all its forms everywhere

2) End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

3) Ensure healthy lives and promote wellbeing for all at all ages

4) Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

5) Achieve gender equality and empower all women and girls

6) Ensure availability and sustainable management of water and sanitation for all

7) Ensure access to affordable, reliable, sustainable and modern energy for all

8) Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all

9) Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation

10) Reduce inequality within and among countries

11) Make cities and human settlements inclusive, safe, resilient and sustainable

12) Ensure sustainable consumption and production patterns

13) Take urgent action to combat climate change and its impacts (taking note of agreements made by the UNFCCC forum)

14) Conserve and sustainably use the oceans, seas and marine resources for sustainable development

15) Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation, and halt biodiversity loss

16) Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

17) Strengthen the means of implementation and revitalise the global partnership for sustainable development

Within the goals are 169 targets, to put a bit of meat on the bones. Targets under goal one, for example, include reducing by at least half the number of people living in poverty by 2030, and eradicating extreme poverty (people living on less than $1.25 a day). Under goal five, there's a target on eliminating violence against women, while goal 16 has a target to promote the rule of law and equal access to justice.

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