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THE AGE *EXPLOSION:* BABY BOOMERS AND BEYOND

Preface by Derek Bok
President Harvard University

Paul Hodge, Founding Editor
Chair, Global Generations Policy Institute
Director, Harvard Generations Policy Program

Cambridge,
Massachusetts

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The Age Explosion: Baby Boomers and Beyond is a *pro bono* public service publication whose mission is to develop and implement creative, intergenerational national policies that will prepare the country for the aging of its baby boomers.

Older Consumers and the Ecological Dilemma

Juliet Schor
Professor of Sociology, Boston College

The signs of environmental crisis are mounting. There is now considerable evidence that current and projected patterns of production and consumption are destroying our planetary ecology. According to the Union of Concerned Scientists in their "World Scientists' Warning to Humanity,"

> Human beings and the natural world are on a collision course . . . current practices put at serious risk the future we wish for human society and for the plant and animal kingdoms and may so alter the living world that it will be unable to sustain life in the manner that we know. Patterns of resource use, particularly now with respect to renewable resources, environmental impacts, such as pollution, and the earth's capacity to absorb and regenerate the so-called pollution sinks, are at unsustainable levels.
>
> (Union of Concerned Scientists 1993. For other empirical evidence supporting this point, see Meadows et al. 1992; Vitousek et al. 1986, 1997: 494–499; Wilson 2002; Arrow et al. 2002; Wackernagel et al. 2002: 9266-9271.)

What, then, are the options? How can consumers transition to a more sustainable way of living? Although all consumers affect the environment, there are generational differences in consumer patterns and the environmental impacts of those patterns. The more sustainable consumption levels of the current older generation of the US population present important opportunities for positive environmental change. This generation can lead the way for the generations that follow them—starting with the baby boomers.

A necessary first step is to understand the full scope of the crisis. Environmental degradation has accelerated dramatically in the last few decades. The most salient problem is global warming. The scientific consensus is now clear that greenhouse-gas emissions, which have quadrupled since 1950 alone, are heating up the earth. Warming has been occurring at a range of about four to five degrees per century, a trend that is unprecedented in the last thousand years (NAST 2000:132). Seventeen of the 18 warmest years of the twentieth century have occurred since 1980; 1997 and 1998 set records for high temperatures. The National Assessment Synthesis Team, which studies this problem, is now estimating a rise in US temperatures between 5 and 9 degrees in the next 100 years.

Environmental degradation has accelerated dramatically in the last few decades.

The effects of warming are increasingly visible. Sea levels have risen by four to eight inches since 1900, placing coastal habitats, both human and non-human, at serious risk. Arctic ice is melting, putting species and ecosystems in jeopardy (NAST 2000:80, 76). Coral reefs are becoming extinct, in part, because oceans have warmed already (WRI et al. 2000:16). Warmer climate is associated with toxic algae blooms, increased flooding and droughts, thawing of the permafrost, increased weather uncertainty, deforestation through insect damage, and a variety of other adverse environmental impacts (NAST 2000:38). The United States, with 4 percent of the world's population, is responsible for about a quarter of carbon-dioxide emissions (Taylor and Tilford 2000:468).

The second problem is species extinction. Extinction rates among birds and mammals are estimated to be 100 to one the natural rates (WRI et al. 2000:14). One in eight known plant species is now threatened with extinction (Taylor and Tilford 2000:468), and the destruction of habitat and bio-invasion, much of it caused by global trade, are considered to be the major two causes of extinction (on extinction, see also Lawton and May 1995).

A third issue is ecosystem depletion. Since 1970, freshwater ecosystems have declined by 50 percent and marine by 30 percent. World forests have declined by 10 percent. This rate of depletion is unprecedented in human history (World Wide Fund for Nature 1999). *The Comprehensive Analysis of*

World Ecosystems Indicators, published in 2000, finds that in virtually all types of ecosystems around the world, the quality of those ecosystems is deteriorating (WRI et al. 2000). Hardly any ecosystems anywhere are maintaining or improving.

The fourth problem is water shortages. Apparently, one-third of the world's population now lives in areas with moderate to heavy stress on water supplies and, if current trends continue, that number is expected to be two-thirds in 30 years (Worldwide Fund for Nature 1999). Water will be to the twenty-first century what oil was to the twentieth. Already, 28 percent of the world's population lacks access to safe drinking water, and 5 million people die each year from inadequate access, numbers which are expected to rise considerably (WRI 2002:12).

Figure 1: Key Environmental Problems

Problem	***Effect***
Global Warming	Accelerated warming creating rising seas, melting arctic ice, coral reef demise, problematic climate changes
Species Extinction	Extinction rates for birds, mammals, and plants excessive
Ecosystem Depletion	Hardly any world ecosystems maintaining or improving
Water Shortages	Lack of safe drinking water in 28 percent of world's population; deaths in millions
Deforestation and Soil Erosion	Up to 50 percent of forest cover lost; two-thirds of agricultural land degraded
Toxic Chemical Use	One million tons of hazardous waste generated daily

Continued deforestation and soil erosion emerge as a fifth critical issue. Although precise estimates are not available, some researchers believe that humans have now reduced the earth's original forest cover by up to 50 percent (WRI 2000:90). The World Resources Institute estimates that we are losing 9 million hectares a year, and rates of deforestation in tropical forests have accelerated, not declined, in the last ten years (WRI et al. 2000: 252–3). Despite all the public attention to the rain forests and the need to preserve

rain forests, we are falling even further behind in that goal. It is now estimated that two-thirds of the world's agricultural land has been degraded in the past 50 years and 40 percent has been strongly—or very strongly—degraded (WRI et al. 2000: 54).

A sixth problem is toxic chemical use, which has rapidly expanded in the last half-century. There are now more than 65,000 industrial chemicals in regular commercial use, and toxicology data is available on only 1 percent of them. One million tons of hazardous waste is generated every day, the vast majority of it in the industrialized countries (Meadows et al. 1992: 91). And the long-term impacts are yet to be thoroughly examined.

Surveying the state of ecological resources around the world, it is hard to avoid the conclusion that our planet is dying.

The foregoing does not exhaust the list of global or local environmental problems. Other serious issues include depletion of the ozone layer, the loss of green space, and the destruction of wild places and virgin nature. Surveying the state of ecological resources around the world, it is hard to avoid the conclusion that our planet is dying.

Why are we seeing such a rapid degradation of planetary ecology? The disequilibrium between pollution sources and sinks—that which is being generated relative to what the earth's renewable ecosystems can cope with—has been caused primarily by a rapid increase in economic output over the last half-century. This was made possible, in large part, by advances in production technology which make it possible for us to produce so much more output with any given level of labor input. World industrial production has been accelerating at an exponential rate, increasing six-fold between 1950 and 1990. Since 1980, global consumption alone tripled and, at the current rate of growth of the world economy (roughly 3 percent), there is a doubling of output approximately every 21 years. Of course, both per capita output and population are expected to increase very dramatically in coming decades. Projections cite a world population of 9 to 10 billion, and per capita income and consumption is expected to grow very rapidly as well (Engelman 2002: 193–208). These combined

projections will bring dramatic increases in the already considerable stresses and strains on the environment if nothing is done.

It is important to recognize that each of these ecological impacts has links to consumption rather than being solely production-driven because all production is ultimately carried out for the purpose of consumption by individuals. We are often very removed from the source of production for the things we consume, and we are often very removed from the waste and disposal end of it, so we see little of that cycle. But it is a cycle, and there is nothing that we consume that ultimately has not come from the earth or does not return to it.

To truly grasp the problem of environmental degradation, we need to broaden our focus and think about that whole cycle. For instance, in Columbia, sun-produced coffee, which yields much higher output more rapidly, has depleted 95 percent of the bird species in those coffee fields. Drinking two cups per day requires the annual output of 12 trees, 11 pounds of fertilizer, plus pesticides, and results in 43 pounds of coffee pulp being dumped into local rivers in the source country (Ryan and Durning 1997: 7–12).

To take another example, what about the clothes we wear? Apparel is not an item that we typically think of as being connected to environmental issues. But it turns out that processing cotton, which is the number one textile used in apparel production, involves a major use of pesticides. Cotton production, which is just about 3 percent of world acreage, uses 10 percent of the total pesticides expended globally. It is energy and water intensive (Schor 2002: 45–60). Apparel production also relies on highly toxic dyes, only some of which are beginning to be banned and regulated. For instance, the most popular—yet highly carcinogenic—azo dyes (which represent about 20 percent of current dyes used in cotton production) are now banned in Europe. Still, they are widely in use in clothes imported into the United States (Schor 2002: 45–60).

Third, what about computers? We often think about the shift to high technology as a shift toward cleaner production with less environmental impact. Yet a 55-pound computer requires 139 pounds of waste to produce it, 49 pounds of which are hazardous waste. It requires 7,300 gallons of water as well as 2,300 kilowatt-hours of energy. In addition, we are generating millions of surplus computers as we change computers rapidly in step with market pressures to replace our technology. We must also take into account the many unregulated toxic chemicals that go into producing computers (Ryan

and Durning 1997: 43–52). These emerge clearly during the disposal side of the computer's life cycle, as children in Asia dismantle them and become exposed to lead, mercury, and other deadly chemicals.

Other more widely recognized environmental impacts that stand out are energy usage both for housing and for transport. The size of the average US home has increased by more than 50 percent since the 1970s, rising from 1,900 square feet to 2,322 square feet in 1999. Per capita residential energy consumption has begun to rise even with improvements in energy efficiency and new technologies. In addition, the proliferation of larger luxury cars and, most importantly, sport-utility vehicles, has led to a decrease in average fleet mileage in the United States.

Although it is difficult to obtain summary measures of environmental impact, one overall measure is called the ecological footprint analysis. The ecological footprint attempts to take the measure of an individual's footprint on the earth. If we are to tread more lightly on the earth, we need to see what footprint we currently leave. The footprint is a land-based measure that identifies the amount of land area necessary to support a given standard of living and pattern of resource use. The analysis begins with an egalitarian idea that supposes every person is allocated an equal share of the available land and its resources for his or her standard of living. How much could each of us have if we shared equally around the globe? At the current population of 6 billion, and given available land estimates, the equitable distribution in terms of land is now about five acres per person. That reduces to three acres in the year 2050 with a projected world population of 10 billion (Wackernagel and Rees 1996; Wackernagel et al. 1999: 375–390).

What are the current patterns of consumption? At the top of the global scale, the United States is far beyond the five acres in terms of our ecological footprint. Americans currently use 30 acres per person, or about six times our global allotment. By contrast, Canadians use about ten and a half acres. Altogether, the rest of the world's non-industrialized countries use less than a quarter of what the US consumes. According to ecological footprint analysis, the planet exceeded sustainable resource use in 1978 and is now in the zone of "ecological overshoot" (Wackernagel et al. 2002: 9266–9271).

Another thought-provoking weight measure of how much Americans consume computes the average daily consumption in terms of resources used by Americans in 1997—excluding water but including energy, construction

materials, industrial materials, metals, forestry, and agriculture, along with total US business production apportioned to each individual. The individual share is 56 kilograms per day, or about 124 pounds per day. Of course, only a fraction is represented by the household level, about one-third of that found at the production site (Wernick 1997: 30–31).

What does the foregoing imply about the relationship between consumption and ecological sustainability? How can we shift these trends and move to a sustainable economy? It is possible. We should not be depressed, but instead energized to think about what we need to do to move into an ecologically sustainable consumer pattern. In the wealthy countries, the US in particular, we need to look at our resource use to bring greater global equity. Most importantly, we must curb our appetite for growth since current rates of resource use already are exceeding sustainable levels in the United States. In actuality, only a sustainable economy will ensure long-term jobs and security, because, if we continue ignoring the environmental costs, the planetary costs, and using up resources, we will ultimately undermine our ability to grow. Sustainability needs to be built into the very incentives of the economy. Our current incentives are to use resources—such as oil—unsustainably, because that's the most profitable way.

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Some with a pro-growth point of view argue that the ecological considerations of the environment do not pose a fundamental challenge to the dominant ethos of growth. They do not worry about the environment since they believe that technological progress and the market together will solve the problem. Theirs is the dominant view about the environment and how we need to respond to it.

There is no question that technological development is essential for achieving sustainability and that currently available super-efficient technologies, if used, would have major environmental impacts. For example, designers are building so-called closed-loop systems, in which everything that gets used comes back and is re-used in another way without pollution or toxic (or

non-toxic) waste. This is happening in factories and homes. There are companies that take a carpet back, recycle it, and return it brand new. Plastic bottles are turned into polar fleece sweaters. Waste products are being used to create energy. And new hyper-efficient automobiles can traverse the country on a tank of gas (on closed-loop systems, see McDonough and Braungart 2002).

Closed-loop systems avoid both depletion of the earth's resources and pollution. Unquestionably, then, in the field of green technology, there is a positive story (in terms of potential) to dramatically reduce the impact of production and consumption on the earth. But the question is whether green technology will be sufficient if we continue to espouse an ethos based on growth and the insatiability of consumer wants. The dominant approach to environmental problems emphasizes the idea that we can embrace market-driven growth with no attempt to restrain consumer desires. It is certainly held by field economists, politicians, business people, and even a whole group of environmentalists. There is a kind of technological superstition associated with the idea that an imagined machine is going to appear and save us from this problem.

Technology is an important part of the solution, yet it is asking too much for it to solve the whole problem itself.

Technology is an important part of the solution, yet it is asking too much for it to solve the whole problem itself. And why is that? Green products are still too expensive. New technologies become diffused slowly. And, if we examine our recent history, what we find is that every time we put in a new technology, with a substantially good impact, we increase the scale of production and wipe out the gains from it. With emission control devices, for example, we've dramatically decreased the quantity of emissions per car, but we have many more cars and we drive many more miles. Likewise, when we look at the efficient technologies we have put in the household, we see they have reduced the energy required. Still, our houses have grown so much bigger and include Jacuzzi's as well as air conditioning and large freezers. Residential energy use is now rising notably (Taylor and Tilford 2000: 463–487). Finally, the introduction of computers was supposed to give us the paperless office, but paper use in

the United States has continued to rise to the highest per capita paper use in the entire world (Taylor and Tilford 2000: 463–487).

Basically, growth is undoing the benefits of technological progress. Growth in incomes, in particular, is leading households to upscale their consumer patterns which, on average, leads to a higher environmental impact.

What does any of this have to do with the demographic revolution and older consumers? A stronger voice and more leadership from the current over-65 generation could have a major impact directing our country back toward more sustainable consumer patterns.

The older generation's consumption habits and patterns are far more ecologically sustainable than those of younger generations.

The older generation's consumption habits and patterns are far more ecologically sustainable than those of younger generations. Consumers over 65 take on less debt and, despite much lower incomes, save more, except at the very end of life when there are high medical costs. They spend their incomes on less environmentally damaging goods and services. They are less involved in material acquisition. They use products longer, and their patterns of time use are much more associated with ecologically sustainable life-styles. Those over 65 also direct a significantly lower share of their income to the major expenditure category of transport than do those under 65. They buy significantly less gasoline and drive fewer miles. They put a far lower share of expenditures toward apparel production. They have a lower expenditure share than those under 65 for eating out (which is more environmentally damaging than eating in) and for furniture, an important source of deforestation. This group uses more reading materials, which are less environmentally damaging. Overall, those over 65 spend more on basic needs and less on luxury items.

In sum, older consumers do less acquiring and more divesting—downsizing rather than upscaling. By contrast, the baby boomers and earlier generations replace furniture as well as apparel and other consumer products at much greater rates. Although polls show the boomer generation holds good environmental attitudes, boomers have clearly led the way in consumer

upscaling without much attention to its actual environmental impact. The rushed, time-scarce, dual or single earner lifestyles of this cohort tend to be much more ecologically damaging. In general, as you try to save time, you use more energy (on time-scarce lifestyles, see Schor 1992).

The good news is that boomers are moving out of their intense acquisitional phase. They are starting to move into the downsizing phase. Some are even downshifting—rejecting the materialistic work-and-spend treadmill—to move to more ecologically sustainable life-styles because they want more time and less stress. They are not willing to work so hard for money (on downshifting, see Schor 1998 and 2000).

Downshifting is the key to transition to a lower-growth, sustainable economy. As people supply fewer hours a week to the labor market, they have more time to participate in their communities and contribute to the non-market side of the economy—the volunteer and care activities, which are much less ecologically damaging than industrial production.

Upscaling, then, is a substantial problem leading to consumer impact on the environment. For the current 65+ generation, both generational and life cycle effects—most notably their experience of economic deprivation in the Depression—have disciplined them to practice far more ecologically sustainable patterns than younger generations. Starting with the baby boomers, generations that grew up only with affluence fail to appreciate how incredibly wealthy we are, how historically unprecedented our wealth is, and what detrimental environmental impacts this wealth spawns.

The older generation can play a vital role by joining with those who are devoting time, energy, and money to a growing movement in this country for sustainable consumption. There is currently a flowering of many organizations—organizations such as The Center for a New American Dream (www.newdream.org) and Coop America—but this movement is filled with younger people. To help build a solid constituency for change, more wisdom and leadership are sorely needed from generations that still have connections to far more sustainable ways of living.

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