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“Consumption and the Environment” by Jonathan Harris

The consumption of the average U.S. citizen requires eighteen tons of natural resources per person per year, and generates an even higher volume of wastes (including household, industrial, mining, and agricultural wastes). Some of these wastes are released to the atmosphere, rivers, and oceans; others are landfilled or incinerated; a small proportion are recycled. The standard conception of economic development envisions the rest of the world's population as moving steadily up the ladder of mass consumption, eventually achieving levels similar to those achieved by the United States and some European economies. Clearly, the environmental implications of the global spread of mass consumption for resource use and environmental waste absorption are staggering. Should not this promote some rethinking of economic theories of consumption, which for the most part have ignored resource and environmental implications?

The articles in Section 8 address both theoretical and practical aspects of this question. We have already become familiar with critiques of the simple economic theory of utility maximization through consumption of goods. The hypothetical consumer at the center of this theory is devoid of social relationships, ethical principles, or any relationship to the natural world. His or her satisfaction is measured only in terms of quantities of goods and services consumed, and the science of utility maximization is concerned primarily with the choice of how to balance consumption among various alternatives offered in the marketplace. The individual's role as consumer is independent of involvement in the productive process, in which capacity his or her labor is sold in the market for the best possible wage. The only link between the two activities is that the money earned through work provides a budget for consumption. Income may also be saved, but savings serve ultimately to support future consumption via the increased production that results from investment.

The limitations of this abstract perspective in explaining the real-world growth of mass consumption have been extensively explored in earlier sections of this volume. In this section we will find that there is a significant overlap between the socially-oriented critique of consumption theory and the ecologically-oriented analysis of the impact of mass consumption on the natural world.

One of the few economists to draw attention to this overlap at an early stage was John Kenneth Galbraith, whose prescient article "How Much Should a Country Consume?" appeared in 1958. Galbraith called for an investigation into resource and environmental problems which might be posed by ever-growing consumption; he argued for a reorientation from consumption patterns

"which have a high materials requirement to those which have a much lower requirement [such as] education, health services, sanitary services, good parks and playgrounds, orchestras, effective local government, a clean countryside." He deplored the economic forces which concentrate "an inordinate concentration of our consumption on what may loosely be termed consumer hardware".¹ In this short article, Galbraith prefigured by several decades themes that have more recently been developed in detail, motivated by a sharper awareness that the resource and environmental problems of consumption are now not hypothetical but well advanced and continuing to grow exponentially.

THE SOCIAL AND ENVIRONMENTAL IMPLICATIONS OF MARKET CONSUMPTION

The initial article summarized here, by Mark Sagoff, focuses on one such essential theme in the overlap between social and ecological critiques of consumption theory. Sagoff distinguishes between the individual as consumer and the individual as citizen. In the arena of public policy, we may make choices that are significantly different from those related to individual consumption. In particular, Sagoff envisions an individual who participates in mass consumption patterns while supporting an environmentally oriented public policy. At one level, this might be taken simply as evidence of hypocrisy --being prepared to advocate collective sacrifice in a good cause, but at the same time being unwilling to give up personal comforts. But this would be to oversimplify, ignoring the essential role of institutional change. Faced with a crumbling public transit system and highways unsafe for bicycling, people will naturally drive. Given a well-run and convenient public transit system, and safe bicycle paths, many more "individual" choices will be made in favor of non-automotive transportation. (U.S. citizens who believe that "a well-run and efficient public transportation system" is an oxymoron might consider the systems of many European cities.)

This brings up the issue of what we mean by an "individual" choice. Almost any seemingly "individual" decision to purchase a good is tied to a web of public policy choices. An economic textbook example might present the consumer making a choice to purchase a pound of butter. But behind that simple choice lie many institutional factors. Is the butter local or has it been shipped from a long distance? That may depend on whether the state has a policy of preserving farmland, taking into account environmental and aesthetic externalities. It also depends on whether the national government taxes or subsidizes energy production, affecting long-distance hauling costs. Is the butter produced with artificial chemicals and hormones? This depends on agricultural and environmental policies. Does the consumer know whether or not artificial chemicals and hormones are used in production? That depends on food labeling laws. Will a cholesterol-conscious consumer aim at cutting down butter consumption? This may depend on public health policies and information. Has the butter been produced under humane conditions on the farm? That will depend on agricultural regulations and public sentiment. Has the butter been adequately refrigerated and is it free from contaminants? Those will depend on food inspection laws. In even the simplest consumption decision, a multitude of factors are involved; only a small portion of the information relating to these issues can be conveyed to the consumer through the economic "information carrier" of market price.

The economic doctrine of "consumer sovereignty" is thus put in a different light. Consumers can exercise their power through the market by selecting purchases based on price and other

information easily available to them. But to affect the multitude of other factors shaping the market itself, they must be involved in public policy issues. This reality is especially evident in the area of environmental policy, as Sagoff emphasizes. The environmental issue is thus linked to a broader critique of the economist's concept of a "utility function" which somehow balances all of an individual's needs and desires. It has been well established in economic theory that it is impossible to derive a "social welfare function" that somehow adds up all of the individual preferences of consumers.² The area of social relations and public policy has, so to speak, a life of its own, which cannot be reduced to individual preference functions. The ethical values that provide the basis for social cohesion cannot, therefore, be excluded from any theory of consumption in the pursuit of a "value-free" science. Sagoff clearly makes this point by using examples concerning consumption and the environment, but its implications must extend to all aspects of consumption theory and of economic theory in general. Once the myth of the sovereign individual consumer falls to the ground, the many "free market" policies that it serves to justify are thrown into question.

This line of thought is developed further by Mario Cogoy. He introduces the idea of a "boundary" between market and non-market aspects of consumption which can be generalized to apply to the boundary between market and non-market elements of human life. The over-extension of the market sphere, he argues, has negative implications both for social life and for the environment. But it is very difficult for the individual to resist the institutional forces promoting excessive marketization. Thus the individual purchases and relies on an automobile for transportation, depends on the utility company to deliver home energy, and relies on prepackaged foods from the supermarket. The implications of these choices (such as excessive fuel use, generation of carbon emissions or nuclear waste, energy used in processing, and increased waste from packaging material) are remote from the individual purchasing the products. Were he or she instead to walk or bicycle, spend time insulating the house, and cook meals from basic ingredients, the environmental impacts would be lessened -- but the time pressures of work make such a lifestyle impossible for many people.

In accepting increasing marketization as normal, and recommending it strongly to developing nations as a route out of poverty, we tend to ignore such negative correlates. Again, the effects on resource consumption and the environment are especially evident, but the insidious effects of the shifting boundary are more general. The undermining of community and family, as well as the replacement of spiritual values with commercial ones (effects which have been discussed extensively in other sections of this volume) are now joined by the distancing of the individual from the natural world, with attendant environmental degradation.

It is, of course, possible to think of counter examples, in which increased marketization benefits the environment through the spread of resource-saving technology. Most such examples, however, involve the replacement of one set of environmental problems with another. "Modernized" agriculture may help limit conversion of forest and savannah by making possible higher yields on existing acreage, but the tradeoff involves increased fertilizer and pesticide pollution. Modern sawmills waste less wood, but may increase overall timber exports by raising their profitability. The replacement of wood and dung fuels with oil-based fuels limits pressure on agro-ecosystems, but increases carbon emissions. Overall, the more common tendency is for marketization to promote more intensive resource use.

MACROECONOMIC PERSPECTIVES ON CONSUMPTION

Herman Daly puts the microeconomic rethinking of consumption into a macroeconomic perspective. He draws on Alfred Marshall, who unlike most modern economic theorists emphasized the physical nature of the process of production and consumption. This provides a link to the ecological approach to economics, which Daly has pioneered.³ Rather than focusing only on the value added to matter or energy by human labor and the use of human-made capital, he emphasizes the inherent limits on low-entropy matter or energy resources to which value is added in the economic process. This suggests that some limits to consumption are advisable and eventually inescapable. If, as Daly argues, the scale of the macroeconomy has expanded to the point where natural resources and environmental waste absorption, rather than human-made capital, are the scarce factors, then consumption itself needs to be rethought.⁴ Rather than maximize consumption in the pursuit of welfare, we need to seek ways to maximize welfare with minimum consumption. Hitherto the market system has been better at the former goal than the latter, and economic theory has measured success primarily in terms of greater consumption (or greater investment today in the cause of increased consumption tomorrow). This does not mean that the market system is not up to the new challenges; but it does suggest that it needs new direction. Daly proposes a shift to resource and energy taxes, rather than taxes on labor and capital, to encourage resource-conserving development. He also clearly agrees with Cogoy's warning about overextension of the market system; Daly is particularly wary of calls to extend the market system globally through untrammelled free trade.⁵

These theoretical perspectives suggest, then, that consumption must be seen in its social and ecological context, and that it should be subject to limits in relation to its destructive effects in either context. This provides an interesting contrast to the current efforts by many economists to extend market valuation to the environment. Through techniques of "contingent valuation", economists seek to transform aspects of the environment into quasi-goods which potential consumers are then asked to value. This is recommended for cases in which the environment cannot actually be transformed into goods through privatization. In effect, this takes a theory that is primarily suited to the consumption of economic goods under conditions of institutional stability and resource abundance, and attempts to apply it to problems that have arisen for exactly the reason Daly identifies -- the environmental stress caused by an expanding macroeconomy. The alternative approach is to look to the physical laws of the ecosystem and to higher social values for guidance in reforming and limiting consumption.

CONSUMPTION AND ECONOMIC DEVELOPMENT

These contrasting theoretical perspectives give rise to different interpretations of economic development. Clive Ponting's Green History of the World offers an application of the environmentalist's perspective on economic history. Here we can see some of the practical realities which give rise to the theoretical issues discussed in the first three articles. We are accustomed to hearing the industrial revolution of the nineteenth century and the economic modernization of the twentieth discussed primarily in terms of technological progress and rising living standards; Ponting emphasizes the massive increase in resource use which accompanied economic growth. This inevitably means that impacts on ecosystems have multiplied, but Ponting also suggests that the momentum of economic growth makes it difficult for industrialized nations to step off the path of ever-growing resource use. In a finite world,

inequality of resource use may actually increase with economic growth. Economic power implies command over resources; greater power for some means less power for others. (Consider the issue of carbon emissions, where a global emissions limit would only permit developing nations to increase fossil fuel use if advanced nations actually decrease emissions). Ponting cites the dramatic inequalities between "developed" and "less developed" economies, but would surely reject the implication of these terms -- that eventually all will reach high levels of "development" and resource use. He suggests rather that the evolution of an affluent global consumer class has locked in inequalities of resource control, constraining the economic futures of most of the world's people.

This theme is picked up in Alan Durning's article, which further indicts the global "consumer class" (roughly, the richest fifth of the world's population) as the source of most environmental problems. While some aspects of economic development are seen as environmentally positive -- in particular the shift toward improved technologies and services in developed economies -- these effects are not enough to reduce overall environmental impacts, merely to limit their growth. Durning's primary point is the impossibility of global "development" as conceived by economic theory. The resource and environmental demands of bringing all the world's people up to "consumer class" standards of living would be catastrophic. This is all the more true in the context of planetary population growth up to an eventual 8 or 10 billion,⁶ which would nearly double resource and environmental requirements even with *no* increase in living standards.

Lest one might think that Ponting and Durning are over-generalizing or exaggerating the problem, the World Resources Institute biennial report provides a wealth of specific detail to support these assertions. The problem is not, as originally conceived in the Club of Rome's 1972 Limits to Growth report,⁷ foreseeable shortages of specific non-renewable resources -- at least for the next 50 years or so. Rather, it is the impacts of industrial growth on renewable natural resource systems, including the atmosphere, which pose the greatest dangers. Global inequality accentuates environmental impacts at both ends of the scale: the rich damage the environment through their high consumption levels, and the poor damage the environment by being forced to utilize marginal and fragile ecosystems. If indeed it is impossible for all to ride the escalator up to mass consumption, then some form of development which will reduce inequality while lessening environmental impacts seems essential.

CONSUMPTION, RESOURCE EFFICIENCY, AND SOCIAL PRIORITIES

Some suggestions of how greater sustainability in consumption might be achieved emerge from the article by Young and Sachs. They address only the technical feasibility issue in their discussion of sustainable materials use, but their vision of improved industrial ecology is an essential component of a global alternative to rising consumption of resources. It is difficult, if not impossible, to imagine any scenario in which goods consumption does not rise, if only to keep pace with rising population. Young and Sachs suggest, however, that the environmental impacts of consumption might be dramatically reduced by extensive recycling and use of secondary rather than virgin materials. A partial solution to the "addiction" to growth is offered by the labor-intensive nature of a recycling economy. Recycled materials generally use less energy and have less environmental impact, but require more labor. This higher labor cost is one reason why such systems are not more widely adopted -- it is cheaper to exploit virgin resources and externalize environmental costs. Daly's proposal for a tax shift from labor and

capital to resources would greatly expedite the transition to the kind of materials and energy-efficient economy that Young and Sachs propose.

However, this can be at best only a part of the solution. The most resource-efficient economy will eventually be overwhelmed by the high material demands of a world population growing towards eight or ten billion people, unless more sweeping alternatives to the mass consumer lifestyle evolve. Paul Ekins points out, for example, that technological progress would need to reduce the environmental impact of consumption by a factor of sixteen over the next 50 years to offer any significant environmental improvement in the face of projected population and consumption growth.⁸ Environmentally sound technology is undoubtedly crucial. But as Sagoff, Cogoy, and Daly have argued, the forces that drive markets towards ever-higher levels of consumption will have to be tamed if the underlying conflict between consumer desires and biophysical realities is ever to be resolved. This can come about only by redrawing the boundary between market consumption and community life, between the individual as consumer and the individual as participant in the social and natural world. Individual motivations toward greater goods consumption will have to shift in favor of deriving fulfillment from community and nature. This inner shift in priorities is the greater challenge. In the next two sections of this volume we will explore the forces driving consumerism world-wide, and the possible alternatives to an insatiable consumer society.

Notes

1. John Kenneth Galbraith, "How Much Should a Country Consume?" in Henry Jarrett ed., *Perspectives on Conservation: Essays on America's Natural Resources* (Johns Hopkins Press, 1958).
2. The classic demonstration of this is the "Impossibility Theorem" developed in Kenneth J. Arrow, *Social Choice and Individual Values* (2nd ed., Wiley, New York, 1963).
3. See selections by Herman Daly in Volume I of this series: Krishnan, Harris, and Goodwin, eds., *A Survey of Ecological Economics* (Washington, D.C.: Island Press, 1995).
4. A biological perspective on the issue of macroeconomic scale is provided by Vitousek et al. in the article "Human Appropriation of the Products of Photosynthesis," which estimates that "nearly 40% of potential terrestrial net primary productivity is used directly, co-opted, or foregone because of human activities" (Vitousek et al., in *Bioscience* Vol. 36 No. 6, June 1986).
5. See Herman E. Daly, "The Perils of Free Trade," *Scientific American* 269 (November 1993): 50-57, summarized in Krishnan et al. eds., op. cit.
6. This figure is consistent with U.N. low to median estimates (*United Nations Long Range World Population Projections: 1950-2150*, United Nations 1992). If fertility levels do not fall rapidly, ultimate world population levels could be much higher, above 12 billion.
7. Meadows, Donella H. et al., *The Limits to Growth*. (New York: Universe Books, 1972).
8. See Paul Ekins, "The Sustainable Consumer Society: A Contradiction in Terms?" (*International Environmental Affairs*, Fall 1991). Ekins uses the famous $I = P \times A \times T$ equation introduced by Paul Ehrlich, which states that environmental impact equals population (P) times per capita consumption (A) times environmental impact per unit of consumption (T). If population doubles, and per capita consumption grows at 3 per cent for fifty years, $P \times A$ increases by a factor of eight. T must then decrease by a factor of eight to keep environmental impacts unchanged, and by a factor of sixteen to achieve a "sustainable" lower-environmental-impact global economy.