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Government-Sponsored Perversity

Perverse Subsidies: How Tax Dollars Can Undercut the Environment and the Economy. Norman Myers and Jennifer Kent. Island Press, Washington (DC), 2001. 240 pp., $40.00 (ISBN 1-55963-834-6 cloth).

Norman Myers and Jennifer Kent have written a comprehensive and engaging book about one of the biggest impediments to environmental quality and sustainability—perverse subsidies. The book does a splendid job of documenting and quantifying perverse subsidies in six main sectors globally. One thing it lacks, however, is a really concise definition of perverse subsidies.

Here is what is meant: A subsidy is a payment by a government to an individual or firm, the intent of which, theoretically, is to *decrease* the divergence between private and social costs and benefits—to internalize externalities. (An externality is a cost or benefit that is not paid for—i.e., it is external to the market. Private costs and benefits are usually internal, and social costs and benefits are usually external to the market.) A *perverse* subsidy is therefore a payment by a government to an individual or firm that, instead, *increases* the divergence between private and social costs and benefits. These subsidies can be direct or indirect.

Direct subsidies are direct government payments to agriculture, fossil fuel and nuclear energy, road construction, water, fisheries, and forestry (the six major sectors documented in Myers's book). Some of these subsidies are, of course, not perverse. They serve the intended purpose of reducing the divergence between private and social costs and benefits. But a large proportion of current direct subsidies are perverse. Myers and Kent estimate that globally 60 percent of conventional subsidies are perverse. This amounts to $860 billion annually.

Indirect subsidies are the failure of government to internalize externalities (especially environmental externalities)—leaving an unaddressed divergence between private and social costs and benefits. All indirect subsidies are (by definition) perverse, and Myers and Kent estimate their total at $1,090 billion annually.

The total direct and indirect perverse subsidies worldwide are therefore estimated to be almost $2 trillion annually. As Myers and Kent point out, this is almost three times global military spending, larger than the annual sales of the 20 largest corporations, and four times the annual incomes of the 1.3 billion poorest people on earth. In other words, perverse subsidies are a huge problem, but an inherently solvable one, the elimination of which would yield a double dividend: It would first help to reduce the divergence between private and social costs and benefits, thus making the economy function more efficiently, and second, it would free up funds to help solve other pressing problems.

All of the perverse subsidies documented by Myers and Kent have either direct or indirect connections to environmental concerns. The largest category of perverse subsidies, according to Myers and Kent's estimates, is road transportation, at $780 billion per year. Road construction directly destroys habitat (2 percent of total land area in the United States is covered by roads) and burning fossil fuels in cars causes a significant portion of total air pollution, including global warming–causing CO_2. The next largest category of perverse subsidy is agriculture, at $510 billion per year. Agricultural subsidies lead to overuse of herbicides and pesticides and excessive soil erosion, among many other environmental problems. The next largest category is fossil fuels and nuclear energy, at $300 billion per year. These subsidies lead to overconsumption of energy, air and water pollution, and the failure to develop renewable alternatives. Likewise, perverse subsidies to water ($230 billion per year), fisheries ($25 billion per year), and forestry ($92 billion per year) can be shown to be the causes of a host of significant environmental problems.

Critics will, of course, argue that these estimates are far too uncertain and "mushy" to have any meaning. Myers and Kent acknowledge the huge difficulties, but point out that

> As long as the issue of perverse subsidies remains untackled, there tends to be an implicit presumption that their total must effectively be zero: There is the asymmetry of evaluation at distortional work. Of course, this is not what is intended. But as long as a problem is not accorded adequate attention, it is implicitly viewed as if it is not a problem at all. (p. 21)

Myers and Kent "resist the temptation to say we simply cannot appraise perverse subsidies in quantified fashion at all" (p. 21). Instead, they take on the challenge and ask the reader to accept the well-documented qualifications that must always accompany any difficult analysis such as this one. They also point out that their estimates are almost certainly conservative—further analysis and better data would reveal even larger numbers.

Why do perverse subsidies persist? The answer is obvious, given the way our political systems work. One example is enough to demonstrate the magnitude and recalcitrance of the problem. Between 1993 and mid-1996, the American oil and gas industry gave $10.3 million to political campaigns and received $4 billion in tax breaks (Drew 1999). This represents a benefit–cost ratio of about 400 to 1. Few investments in our economy are anywhere near as lucrative as this! Given these kinds of returns, it is little wonder that perverse subsidies exist and that they

will be very difficult to eliminate. But they can be eliminated if they are exposed to the light of day and if the substantial public benefits of their removal are brought into the political debate. Campaign finance reform is finally beginning to be seriously considered in the United States, and the removal of perverse subsidies could be next in line.

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THE WONDERFUL WORLD OF CICHLIDS

The Cichlid Fishes: Nature's Grand Experiment in Evolution. George W. Barlow. Perseus Publishing, Cambridge (MA), 2000. 335 pp., illus. $28.00 (ISBN 0-7382-0376-9 cloth).

With wry humor, illustrative anecdotes, and an acknowledged tendency to anthropomorphize, George W. Barlow describes the reproductive behavior of cichlids from species recognition and mate selection to parental care of vulnerable young. Barlow begins by introducing us to the diversity of cichlids in terms of numbers, noting that they are changing as data from both field studies and molecular analyses are accumulated. The focus of his book is not so much the rapid evolutionary radiations of cichlids, "but [is] rather about what cichlids do and what makes them so special" (p. 4). To understand why cichlids are special, however, one must first understand some of the basics of fish biology. The obvious starting point for the reader unfamiliar with fishes in general or with cichlids in particular is to learn exactly what a cichlid is. The clear explanations, descriptions, and simple, well-executed line drawings in chapter 1 set up the remaining chapters and will certainly be of value to the aquarist, introductory biology student, or interested reader whose ichthyology course was years ago.

The success of the cichlid fishes is due in no small part to their morphological adaptations to various sources of food (Galis and Metz 1998). In terms of trophic differentiation, cichlids may be, among other things, vegetarians, detritivores, corpse-mimickers, planktivores, or even scale rippers. Each specialized feeding style has associated with it particular jaw or behavioral adaptations, several of which are briefly described in chapter 2. Barlow is careful to point out, however, that even specialized cichlids are opportunists and can readily take advantage of an overabundant food supply should one appear. Cichlid success may also be associated with the ability of an individual to change its sex in certain conditions, a process perhaps best known from examples of tropical reef fishes. In the chapter titled "Plastic Sex," cichlids that are capable of changing their sex, including an African tilapia and an Asian chromide, are described, as are the effects of pH and water temperature on sex ratios. The concept of sexual plasticity may be new to some readers. It does, however, help explain why the two female Midas cichlids in your tank are suddenly rearing a clutch of fry in the absence of a known producer of sperm.

Mating systems, aggression, communication, and mate selection are the topics of chapters 4 through 8. Fertilization and care of eggs and fry are covered in chapters 9 through 11, and chapter 12 is the primary section in which potential processes underlying cichlid evolution are discussed. The closing chapter of the book, "Fish at Risk," is grim. In the vein of Rachel Carson's *Silent Spring* (1962),