Nature, Economy, and Equity:
Sacred Water, Profane Markets

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Mason Gaffney has developed the first steps toward a new framework for economics.[i] He avoids the usual assumptions that deem it appropriate to ignore both nature and society. He introduces a sacred dimension into his discussion, but that does not entail giving nature the status of a deity or valuing humans on the same level with microbes. Gaffney merely incorporates the value of nature from the start, not as an afterthought. He also shows how the treatment of nature is deeply connected with the treatment of humans. Abuse of one entails abuse of the other. Environmental quality and social equity are interconnected.

In Gaffney's framework, benefits from nature cannot be used privately unless the public is compensated for the loss, a principle ignored in our present economic system. The key villains in Gaffney's story are economists, lawyers, and other professionals who accommodate privatizers with clever doctrines that justify the ongoing theft and hoarding of the gifts of nature. In the process, he shows that the failure to integrate equal rights to nature into economic and legal theory undermines the goal of efficiency.

Although Gaffney reflects on a number of philosophical questions related to environmental and social equity, his approach is concrete and pragmatic. He delves deeply into one topic—the management of water in California—as a means of demonstrating principles that apply to a wide range of environmental issues. He is particularly adept at investigating the myriad forms of waste and inefficiency in irrigation systems (the primary users of water). He then shows how correcting localized sources of inefficiency could enable nations or states to avoid the need for many large-scale water projects and why self-managed irrigation districts with their own tax authority could solve problems more elegantly. Since giant dams that displace villagers implicitly constitute a form of warfare against civilian populations, Gaffney's analysis is of extreme importance in the global fight for justice. That is only one of many ways in which he draws connections between the arcane world of resource economics and the quest for a more equitable world.

The method that Gaffney uses to bring nature and economy into a new dialogue does not require an exhaustive analysis of whether nature has rights independent of human rights. The two elements are bundled together because the same principles and policies that benefit nature also benefit ordinary people. In the jargon of our day, Gaffney offers a "win-win" solution, but he also recognizes that some interests lose. The losing interests consist of individuals and businesses that have received unearned income by tapping a public resource for free and forcing others to pay them for it. To make the economy work on behalf of citizens and nature, the special privileges of the past will have to be terminated. Since the recipients of those privileges are in positions of power and deem their holdings to be "rights," there will be an intense struggle to achieve that goal. But if we truly want to make both nature and society healthy, the unjust beneficiaries of the past grants of privileged access to nature will have to start living without handouts.

Nature as Birthright

Since each child born into the world ought to be able to start fresh, with an equal share of what nature offers, private ownership of gifts of nature requires ethical justification. If parents wish to hand on to their children the fruits of their labor, that is understandable. By what logic should ancient land or water grants be allowed to displace the rights of those born today? This is similar to the doctrines of entail and mortmain (the "dead hand" of the past) that so disturbed Thomas Jefferson because they stifled the lives of people in the present.

We are so accustomed to private claims against nature that an assertion of alternatives is viewed as heretical. Yet, the burden of proof should lie with those who would deny each infant an equal share of earth's bounty. Why should private ownership of nature be the default position? Why should critics be required to provide evidence against a system that perpetuates inequality from one generation to the next from the start?

The theoretical rationale for private property in land (and other natural goods) can be found in John Locke's Second Treatise of Government ([1689] 1965: §§25–51). His argument implicitly justifies letting private titles to land deprive most people of their birthright. Initially, Locke's analysis defends the equal rights of all people to land. Locke (§27) states that owners have a nearly absolute right to it, "at least where there is enough, and as good, left in common for others." The phrase "enough and as good" makes Locke seem highly egalitarian because private ownership is justified only if everyone else can have a fair share. He continues in that vein (§§27–46), even stating that hoarding—taking more from nature than one can use—is a form of robbery. Owning too much land leads to growing more food than one can eat, and the resulting spoilage undermines the justification for hoarding land, according to his logic.

But Locke is not an egalitarian. His aim is to defend the property claims of the landed gentry who were amassing great estates. He must find a way to turn away from equality in order to endorse concentrated wealth in land holdings. Suddenly (§§47–51), he does an about-face and justifies hoarding of gold and silver, since they do not spoil. On that basis, he justifies the hoarding of everything that can be exchanged for metallic currency, including land, since food no longer need spoil, if it can be traded. With that bit of legerdemain, Locke justifies the concentration of wealth that we still live with today.

This question of initial rights or entitlements is central to Gaffney's thesis. Whereas Locke absolutizes property rights in all things, Gaffney differentiates according to source. He posits that value from nature belongs to everyone, whatever the chain of title might say. He proposes a specific balance between public ownership and private possession, whereby the latter is viewed as a privilege that requires the public to be compensated. Locke was right to regard as robbery any removal of land or water from common ownership because "enough and as good" is never left for others. Gaffney presumes that the public (including children and children-to-be) has a prior claim on nature and that subsequent private claims never supersede the original public entitlement. With respect to water, this is hardly a radical idea. It is embodied in many national, state, and provincial constitutions around the world. It is an old principle that has been neglected. Gaffney proposes to dust it off and put it to use.

If Gaffney's aim were merely to reassert a public claim for rights in common, he would join a number of other philosophers in doing so. His argument goes much further. He shows how the failure to respect that claim has endangered the economy by introducing forms of exchange that are not based on reciprocity. In effect, Gaffney's thesis is that the advocates of capitalism based on absolute rights in all forms of property are unwittingly promoting policies that are corroding the foundations of capitalism. If privileges are improperly treated as rights, the entire system is weakened.

Property: Public, Private, and Common

Many of the people who are intuitively dissatisfied with Locke's evisceration of common rights have imagined that a system of public ownership offers the only viable alternative to private property. In the process of fleeing capitalism and embracing socialism, however, critics have conflated two distinct elements of economic systems—markets and property rights. They are not identical, and they can be aligned with each other in various ways.

Critics of capitalism all too often target the "free market" rather than the system of ownership, as if the process of exchange were the source of inequality and exploitation. Not so, at least not if we take Marx's analysis as a definitive statement of the socialist position. David Harvey (1982: 23), one of the foremost analysts of Marx's writings, explains at the end of a discussion of how profit arises from the expropriation of the surplus value produced by workers: "There is, therefore, no exploitation in the sphere of exchange." In other words, Marx saw that exchange must always take place on the basis of equality: value for value. The exchange process is not the source of inequality and domination. It would be a great relief if other Marxists and progressives could see this point and stop criticizing "markets" as the source of the problems of capitalism. There are many limits to the ability of markets to resolve questions of value or distribution, but the wholesale attack on markets as an allocative mechanism is simply naive.

The confusion is not solely a product of socialist thought, however. University courses in economics emphasize from the start that efficiency (also known as Pareto optimality) occurs when all mutually beneficial exchanges are permitted to take place. The hidden premise in that seemingly innocuous statement is that exchange must begin with the existing distribution of wealth and income. Redistribution is a taboo because it is not mutually beneficial. In this way, the capitalist understanding of exchange imports a conservative theory of property rights without making it clear that the two elements—exchange and rights distribution—can and should be distinguished. It is possible to have 1) free exchange, with absolute private ownership, known as laissez-faire capitalism, 2) restricted exchange, with state ownership of land and industry, known as market socialism, 3) regulated exchange, with private ownership, high taxes, and many government services, known as democratic socialism, 4) free exchange, with public ownership of natural resources and private ownership of produced goods, known as physiocracy, and 5) state-managed exchange, with state ownership of land and industry, known as either communism or state capitalism. There are far more than two economic options in the world, and few of them require the central state to control production and the allocation of goods.

In a sense, the extreme privatization proposed by market fundamentalists and the extreme collectivization adopted by some communist regimes are mirror images of each other. They each gain their strength from opposition to a bogey man on the other side. In that way, each has created a horror from which every reasonable person recoils. Yet, the myth prevails: "There Is No Alternative."

Gaffney offers an alternative that comes closest to the fourth option—physiocracy. He favors the use of prices to measure scarcity and to assist in making exchanges, but he proposes two distinct categories of property rights: rights in common for things from nature, private rights for things made by people. This may seem like a trivial difference, but it is revolutionary. None of the other four categories takes nature into account. They are all based on human factors. The capitalist and the democratic socialist pay no notice when a few people tie up control of natural resources for private use. The market socialist and the communist are likewise indifferent because they allocate natural resources according to political criteria in five year plans, not scarcity and demand. Gaffney highlights property in nature and in that realm, he opposes the simplistic view that entitlements or inherited rights and privileges must be treated as sacrosanct. In fact, he makes clear that what is sacred is the recognition that nature belongs at all times to an entire society. It is only after that condition is taken into account that a truly "free" market can exist.

The California Connection

The result of acting as if public rights should be treated seriously—as a sacred trust—is far more than a transfer of asset values from one group of people to the citizenry. To end giveaways and insist that recipients of the public domain pay for their use of it would reorient all economic relationships, not just those immediately affected. Gaffney shows how the extreme waste and inefficiency associated with private water licenses in California have led to massive programs to build and manage dams and aqueducts at a cost of billions. The same narrow mindset that allows privatization of water with no reciprocal demands has led to falling water tables as groundwater is pumped in excess. The drought that continues to grip California in 2016 is natural, but the institutions that prevent better water use are entirely of human making.

Most resource economists are convinced that water or any other resource will be allocated to its highest and best use by simply creating a water market and letting trades take place. Yet, even by the standards of the economists themselves, water trading has been a failure. As Gaffney explains, the failure is not an accident. The farmers and water districts that hold licenses for surplus water are unmotivated. The price they demand (their WTA, or "willingness to accept") remains consistently higher than the price being offered by potential buyers (the WTP, or "willingness to pay"). So, the deals are not made. Water licenses remain firmly in the hands of entrenched interests.

Without the pressure caused by having to pay for water, the holders of licenses have little incentive to sell. Imposing a fee on the holders of water licenses would actually make the whole system work more efficiently, moving water to the end-users who most value it, increasing productivity and wages as well. In addition, where farmers have had to pay the full cost of impoundment and conveyance, the size of farms is much smaller than when farmers receive large subsidies. That much is known from the direct experience of irrigation districts organized under the Wright Act, which Gaffney discusses. Their experience with a kind of economic democracy, operated without subsidies, could be an example for the rest of the world.

By contrast, in the regions of California where water has been heavily subsidized, and farms are unusually large, productivity per acre remains relatively low, farms employ many landless workers, and the incidence of poverty is among the highest in the nation. Where historic grants of land and water have prevailed, a semi-feudal economy has arisen. Where farmers are required to pay their way, a thriving economy of small-scale agriculture arises. This is not simply a matter of theory. It is part of the historical record of California agriculture, even though it is rarely noticed.

The Larger Picture

Gaffney focuses on the water situation in California to give his story specificity. In this way, he avoids vague generalities about economic principles and instead focuses on the application of some new principles to the way nature is treated. Although there are surely some distinctive features about California, Gaffney's ideas have applicability in many other contexts.

First, Gaffney's ideas about water policy have direct applicability in many nations around the world. For example, the majority of economists think the initial assignment of water rights is irrelevant to efficient use, since an efficient allocation can be achieved by permitting transfers. But Gaffney shows the opposite is true. When rights to use nature are given away, without any reciprocal duties on the part of the permit or license holders, those rights are hoarded, and ownership of them becomes concentrated. The net result is inefficient use. That process needs to be understood wherever governments are giving away land and water rights in the belief that those actions will lead to more efficient use. When water is allocated to low-value uses, thereby depriving high-value uses of enough water, political pressure arises for government to build dams and regional water systems at taxpayer expense. Those costs, and the ensuing environmental damage, could be avoided if an equitable allocation of water caused more efficient use of it. Gaffney has developed principles of universal relevance, not quick fixes that apply only to a few unusual cases.

Second, there are many environmental and conservation issues that would benefit from even a small dose of Gaffney's wisdom. There are numerous proposals for "market solutions" that are likely to fail or operate at a suboptimal level, based on the problems that Gaffney outlines with respect to water markets. This cautionary note applies to the following categories:

- **Individual fishing quotas (IFQs) or individual transferable quotas (ITQs).** Since the 1970s, a number of nations, such as New Zealand and Iceland, have sought to prevent overfishing in territorial waters by setting quotas of fishing rights and allocating them, without any fee. The fishing permits can then be traded. This grant of de facto property rights is supposed to encourage monitoring of fisheries by quota holders, reduce the tendency toward overcapitalization of fishing fleets, and improve the efficiency of fishing. Although numerous studies describe the procedures and structures involved in ITQs, none demonstrates that transfers have increased the efficiency of fishing.

A simulation by Hoxnes (2006) indicates that auctioned seasonal quotas will improve efficiency and equity relative to ITQs. In other words, requiring payment for fishing rights would lead to socially better outcomes than giving the rights away. Cunningham (2005: 75–89) discusses Mauritania's state-owned fish marketing company, which may have been the only nation in the world capturing resource rents from fisheries for public purposes. (The rents provided around 20 percent of the Mauritanian government's annual revenues in recent years.) In keeping with Gaffney's observation that payment of fees to the state treasury also tilts the system in favor of small-scale producers, Mauritania's fisheries have become largely populated by artisanal operators instead of giant fishing fleets. Paying for services received from nature (access to fish, in this case) seems to have a miraculous benefit for all parties, especially the small-scale operators who are able to succeed in a system that is not rigged to favor large companies.

- **Tradable pollution permits.** Economists have long recommended abandoning the one-size-fits-all regulatory approach that requires pollution from every source to meet a specified standard. Since some sources can achieve the goal more easily than others, they favored tradable pollution permits (also known as "cap-and-trade" programs) that would enable overall pollution goals to be achieved at the lowest cost. In 1975, the U.S. Environmental Protection Agency (EPA) implemented an Emissions Trading Program, which effectively gave pollution rights to existing sources and allowed them to sell some of those rights to new polluters. The EPA then set up programs to reduce chlorofluorocarbons, sulfur oxides, and lead in gasoline using the same method. In 2005, the European Union (EU) set up an emissions trading system (ETS) for industrial greenhouse gas emissions.

  A standard feature of these programs has been the initial transfer of pollution permits to existing polluters at no charge, which a) reduces their incentive to trade, b) provides them with a bonus when they decide to trade, and c) enables existing industry to block the entry of new industry. In a few cases, the permits have been auctioned, but that method of allocation has played a minimal role until recently. The ETS in Europe auctioned only 40 percent of allowances in 2013, eight years after the start of the program (European Commission 2016). Thus far, there seems to have been no effort to evaluate either the thickness of markets that resulted in each of the above cases or the social consequences of auctioning permits rather than giving them away. Cap-and-trade programs continue to be touted mostly on the basis of their theoretical benefits, not studies of their actual outcomes.
- **Russian enterprise vouchers.** Another questionable use of a "market solution" was the case of Russia's effort from 1992 to 1994 to transfer shares of 15,000 state-owned companies directly to the public through the use of vouchers distributed to every citizen. This was merely an exemplary case that represents the pitfalls that over 100 countries faced as they privatized 75,000 companies in the 1990s, all based on the ideological premise that privatization will benefit an economy (Nellis 1999). In the case of Russia, the idea of universal ownership certainly had the appeal of direct distribution

to the public, thereby seeming to avoid the grasp of politically well-connected individuals.

Nevertheless, oligarchs and black market operators who established banks were ultimately able to gain control of the majority of the shares and to strip enterprises of their assets before abandoning them. This has been referred to as the "piratization" of Russia, which caused the Russian economy to decline by 50 percent in the 1990s (Goldman 2003). Although the assets in Russia were mostly (but not entirely) created by humans, this experience still provides lessons about democratization of natural assets: markets only serve the interests of the public if there is a strong state that is capable of preventing the domination of the market by oligarchs.

- **Electromagnetic spectrum or radio frequencies.**

The electromagnetic or radio spectrum is a natural resource that has many of the same characteristics as more tangible resources. Policies governing its management reveal a great deal about attitudes toward nature and social equity. Licenses to broadcast radio or television signals in the United States have been issued since 1921. From 1921 to 1926, the U.S. Department of Commerce issued licenses without charge for particular radio frequencies, based on arbitrary criteria. However, a court case, United States v. Zenith Radio Company (1926), prevented restrictions on the issuance of licenses. For approximately one year after April 1926, the Commerce Department issued licenses to all who asked, in order to create a logjam in the radio spectrum that would require a remedy. Marcus (2004) and Hazlett (1990) point out that the expected period of chaos and mutual interference of radio broadcasts did not ensue. Property rights in common law were enforced by state courts (Tribune Co. v. Oak Leaves Broadcasting Station 1926). Nevertheless, in 1927, Congress gave explicit authority to the Commerce Department to issue licenses, thereby preempting prescriptive rights of private claimants. During this period, there was no debate over the possibility of charging for those extremely valuable broadcast rights.

> There were three options available to allocate spectrum bandwidth licenses, although only the first two were considered in the 1920s:
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> 1. prescription, somewhat similar to appropriative rights in water, involved claiming the use of a radio frequency by being the first to use it;
> 2. administrative (or politically-based) licensing by the agency that became the Federal Communications Commission (FCC), the policy that was adopted by Congress in 1927, based on a theoretical "public interest" standard that was so vague as to be meaningless; or
> 3. auctions, in which the FCC would grant a license to the highest bidder.

The privatizers are still unhappy because licenses gained through prescription did not become enduring property rights in 1927 (Marcus 2004):

> Is the radio spectrum a unique resource that belongs to the public, or can it be privately owned like any other good or service? Most people assume that public ownership is axiomatic . . .. This is wholly incorrect . . . . [T]he full-scale

> privatization of this resource is essential . . . [through] "homesteading" [as] the first legitimate way to acquire property.

According to this view, the ideal society will be one in which individuals or companies have absolute rights over units of nature, without any reciprocal obligations.

Ronald Coase developed an alternative to this homesteading view that would eventually be adopted. Although Coase is celebrated as one of the founders of the strong property rights school of thought(at the University of Chicago), he does not fit neatly into that camp. Coase (1959: 36) favored an auctioning process in which the public equity would be captured and the predatory pursuit of private gain would be avoided:

> When rights, worth millions of dollars, are awarded to one businessman and denied to others, it is no wonder if some applicants become overanxious and attempt to use whatever influence they have (political and otherwise), particularly as they can never be sure what pressure the other applicants may be exerting. . . . [W]hat needs to be emphasized is that the problem, so far as the Federal Communications Commission is concerned, largely arises because of a failure to charge for the rights granted. If these rights were disposed of to the highest bidder, the main reason for these improper activities would disappear. (Emphasis added.)

Rather than give away the public airways, allowing the gains to be redistributed through market processes, (Coase 1959: 28) argued that "there is no reason why there should be any gain to redistribute."

In the 1990s, the Federal Communications Commission (FCC) began to auction frequencies for billions of dollars, permitting taxes to be reduced. Nevertheless, this simple idea runs deeply contrary to the philosophy of the Chicago School of Economics. Ronald Coase (2012) describes a discussion in 1960 with Aaron Director and George Stigler, two of Chicago's leading economists, regarding FCC licensing:

> All I said was the Federal Communications Commission should award the right to transmit on a given frequency to the person who paid the highest amount for it, and, to my astonishment, this rule, which I would have thought would be welcomed in Chicago, was rejected by them. We went on, I don't know for how long, an hour or so, something like that, and at the end of that time, they all thought that I was right. I was very impressed by the fact that they changed their views, but I wasn't particularly impressed because all I was doing was stating the obvious.

This conversation is significant because Coase has been widely and inaccurately regarded as the originator of the privatization movement that has swept the world. Coase, as it turns out, is actually much closer to Gaffney on many questions. It seems, in the interview above, that he is being polite. If it took him an hour to convince the architects of the privatization ideology that there should be a role for auctions rather than giveaways, that reveals the motives of the Chicago School to be based on something other than concern for efficiency. It suggests that their aversion to government is derived from a personal animus that lies outside economic theory. Since Stigler is one of the most influential economists of the last 50 years, this sort of information should be incorporated in the evaluation of the ideas he introduced.

From these examples, it should be clear that the issues Gaffney is raising about water policy are applicable to numerous other environmental and social policies. As Coase might have said about what Gaffney proposes: he is just "stating the obvious." Yet, the "obvious" remains strangely hidden from view in political conversations. Whereas Coase was able to shape later debates over the FCC allocations of the electromagnetic spectrum that led to open auctions, the "obvious" solution to the problem of water allocations still remains outside the public debate. The idea of state-imposed fees for the use of water itself (not just for the constructed facilities that hold and transport water) remains outside the range of acceptable political discourse. Even in the midst of several droughts over the past 50 years in California, the topic has seldom been broached in a public forum.

Conclusion

Mason Gaffney has been a voice in the wilderness on water policy and environmental issues for many decades. Some of his evidence in this essay comes from fieldwork he conducted in California's Central Valley during the time when the corrupting influence on agriculture of heavily subsidized state and federal water was becoming apparent. In the intervening decades, the situation has grown worse and the model of using outside subsidies to paper over internal inefficiency has become almost universal. The water tenure system that allowed large estates to develop in California has been exported to other nations, where it wreaks havoc on the poor and perpetuates inefficiencies in agriculture.

Many of the social problems in the world today could be diminished by observing and following Gaffney's methods of reconciling humans and nature, public and private, efficiency and equity. The greatest obstacles are not technical or even political. The fundamental roadblock to change is conceptual. Tired debates between false opposites are now punctuated by postmodern pessimism that takes existing rules and systems as given and fosters empathy for the victims, but no solutions. It is my hope that this short statement of ecological and economic principles by Mason Gaffney might open the public dialogue to new ways of thinking that would at least consider the possibility that genuine solutions to our common problems exist, if only we would imagine them.

End Notes

[i] . By normal conventions, this work would be categorized as "resource economics." Yet, that sort of fragmentation of thought into separable units is entirely contrary to the spirit of Gaffney's thought. When he refers to a sacred understanding of the human relationship to nature, he is calling for an integrated vision, not one divided into compartments. In addition, "resource economics" pays little or no attention to the social questions that are central to Gaffney's inquiry. In many ways, Gaffney's approach adheres to the classical economic principles of Adam Smith, before the curse of fragmentation took over the discipline.

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