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VALUES, BELIEFS AND MYTHS IN NATURAL RESOURCES POLICY MAKING

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Natural resource policies are rules adopted by organized societies that specify the freedoms and responsibilities of their citizens individually and collectively toward the nature that surrounds them in the hope that doing so will lift the level of physical and emotional contentment of their citizenry.¹

Policy Rooted in Values, Beliefs, Myths

Policy is a result of human choices. Choices are products of knowledge (codified experience) or products of preferences between available means and ends, such preferences being rooted in values, beliefs, myths, ethical systems—even gambles when nothing better is available. What role do these vaguely intangible preferences play in policy choice and what can we as analysts or policy advisors do with and about them?

The all-encompassing nature with which these policies are concerned is *reality*—“that buzzing, booming confusion”—and not a controlled laboratory. The objective understanding of the structure and functioning of reality is achieved through the progressive conversion of subjective values, beliefs, myths and ethical systems.

The reality of natural resource policy is that nature is the only source of all those elements and forces that are essential to mankind's continued existence. But what are the values, beliefs, myths

¹For my purposes here, “nature” or “natural resources” is everything in the environment outside of humanity itself. I don't care whether, at the time of policy analysis and ultimately of policy choice, the natural resource or nature has been modified by man or is a “pure” product. It makes no difference to the policy decision whether the resource is “natural” or man-altered as long as the alterations can be used only when indissolubly incorporated with nature. In other words, policy analysis and policy choice are concerned with “nature” or resources as they are at the moment of analysis or choice whether they are “natural” or man-altered if the alteration can be used only *in situ* with the resource.

This statement is unabashedly humanity centered—not God centered, not nature centered. For our purposes, “humanity” is not a part of nature but is instead the capability of humankind to contemplate its relationship to nature to the end of lifting and insuring a sense of well-being. And, since I am addressing this question from within a culture rooted in Judeo-Christian theology and from within an English speaking subculture therein, “God” is simply the three-letter English word used to designate that great mystery surrounding the existence of all human cultures.

and ethical systems surrounding our natural resources that must be converted to reach this reality?

Mankind has not been granted all-encompassing insight into the confusion that is reality. It must simplify to understand and predict; it must assume risks when making choices. And therein lies the problem. The simplification necessary for analysis does not permit infallible understanding of reality therefore the consequences of one's choices are fraught with risk and uncertainty. The advancement of knowledge in this connection can almost be defined *as the progressive conversion of subjective values, beliefs, myths and ethical systems into objective understanding of the structure and functioning of reality.*

Policies, then, are always followed by unanticipated consequences that are the outward manifestations of the risks assumed in the policy choice. These unanticipated consequences then become the problems for the next round of talks and actions.

Values, beliefs, myths and ethics are an inherent and unavoidable element in public policy analyzing, choosing and educating.

Mankind confronts "nature" knowing full well that nature is the only source of all those elements and forces that are essential to mankind's continued existence. But mankind knows also, in these later years at least, that it needn't remain a subservient supplicant for nature's grudging bounty. Mankind knows something about buttons to push and levers to pull that will change nature's yield of its bounty; it knows it can choose from among those available alternatives the ones that seem to it to hold the greatest promise of enhancing mankind's welfare.

All such choices, when made collectively, turn out to be public policies that will guide the behavior of all persons in that culture toward the surrounding nature and each other in ways that promise to be better for the well-being of that society. The content of such natural resource policies always states (with respect to some designated area and relative to some specified class or classes of resources) *who can do what to whom and what defenses "whom" has against "who."*

These policies may be instituted at several levels of collective authority. The primary level consists of those policies that specify the direct and immediate relations between persons and the resource(s) themselves—directly with the water, or the ore body, or the wilderness area or the urban area available for the building of houses or commercial buildings.

This level of collectives may be subordinate to a "higher" level that authorizes the subordinate level to create resource regulating institutions (federal over state and state over county or city or irrigation or drainage district) and these may be subservient to yet a higher

collective regulatory action such as, in the United States, that of the citizenry by constitutional amendment.

But there can be yet a higher level of policy authorizing activity—what I call the meta-level—that level beyond any level of organized governmental action, that level at which persons are acting to change themselves, to change their values, beliefs, myths and ethical systems, that level from which flows all the policy changes beneath—the level at which persons are “changing their minds.”

“Changing of minds” can occur in either or both of two categories: (1) changing knowledge of reality or (2) changing values, beliefs, myths or ethical systems.

Therein lies our quandary as educators. Can organized society engineer such mind changes? This query would probably get the highest “yes” answer if “knowledge of reality” were defined as understanding the structure and functioning of nature. But not a unanimous answer, for witness the “evolution-creationism” debate. Socially engineered mind changing in the area of values, beliefs, myths and ethics would get distinctly less social support. In fact, I suspect it would generate strong negative reaction. Not unanimous, of course, for some would say people can and should be educated in this area as much as in any other. Others, maybe most, would say this is “brain washing” and heresy!

At this point I could describe and discuss either (1) particular contemporary illustrations of the impact of values, beliefs, myths and ethics on selected existing natural resource policy choices or (2) the generalized philosophical underpinnings for the particular beliefs, values, myths and ethics that have characterized our American natural resource policies. I have chosen the second alternative and for my discussion of the broader and deeper philosophical issues have drawn heavily on Passmore.

Philosophical Basis for Policy

We tackle this problem of the belief structure that underlies natural resource policy from within the context of the U.S. culture, a segment of largely European Judeo-Christian-Democratic-Capitalist beliefs and ethics. This belief structure dominates western Europe, the Americas, South Africa and Australia.

Regarding the relation of mankind to nature, this belief structure generally holds that mankind is the creation of God “in his image” and is sacred to him; that nature also is created by God but to serve mankind and is *not* sacred.

From its beginning, this belief structure applied everywhere within the Judeo-Christian culture, but was not monolithic. There were schisms. These divisions can be characterized as Man the Despot,

Man the Steward, Man the Ephemeral Individual and Mankind the Perpetual Collective.

Man the Despot

The idea that nature exists *only* to serve man's despotic demands was divided into two sectors. The weaker and less important held that because nature was created by God and because God is perfect, nature is also perfect. So, although man can use nature's products in any way he chooses for his sustenance, to change her in any way is heresy.

This phase of the "despotic" position played a considerable role in Europe all during the medieval centuries and, although weakened by the technological revolution, it still had its influence into the 20th century. As a college student in the mid-1920s, I worked summers in southern Minnesota for the U.S. Department of Agriculture (USDA) to eradicate black stem rust of wheat. Farmers told me that God sent black rust to punish farmers for their transgressions. Some farmers carried this argument to the point of condemning me and the government for heresy in thinking we could do God's work—the 1920s form of "secular humanism." I occasionally responded to this criticism by asking the farmer if he cultivated his corn to kill weeds. The answer was always some form of, "but that's different." One time, in the brashness of my 20-year-old arrogance, I retorted that when God wanted to save mankind 2,000 years ago, he sent a man called Jesus. How did the farmer know God hadn't sent me to save farmers from black rust? Looking back on it, I marvel at my audacity, but I still think it was a good question.

Although this phase of the despotic position persisted for centuries, and still persists in persons and pockets, it continually met trouble when rational thinkers tried to explain, justify and rationalize it: In order not to adversely affect (change) nature you cannot consume any stock resource at all and when you consume parts of her, then you can consume only nonreproductive parts of plants after those parts have performed their function and the flesh of animals only after they have died of natural causes. And then, when our understanding of natural processes grew apace in recent centuries, we learned that even these consumables were sustenance for myriads of microorganisms that would be destroyed if we consumed their homes. This doesn't leave much consumable substance for mankind.

The other stronger, dominant phase of the despotic belief, particularly since the Reformation, has been, as Passmore explains, that "since everything on earth is for man's use, he is at liberty to modify it as he will" (p. 17). This belief provided the philosophical base on which the technological revolution, insofar as it was natural resource dependent, was built. "... Christianity encouraged certain special

attitudes to nature: that it exists primarily as a resource rather than as something to be contemplated with enjoyment, that man has the *right* to use it as he will, that it is not sacred, that man's relationships with it are not governed by moral principles" (p. 20). This interpretation "... found expression in a metaphysics, for which man is the sole finite agent and nature a vast system of machines for man to use and modify as he pleases" (p. 27).

Man the Steward

Two traditions that *deny* that man, in relation to nature, is essentially a despot are (1) "the tradition that sees him as a 'steward,' a manager, actively responsible as God's deputy for the care of the world" or (2) "the tradition that sees him as cooperating with nature in an attempt to perfect it" (Passmore, p. 28).

These traditions have had their exponents both in classical and in modern times. "The view that man has a responsibility for handing over to his descendants a nature made more fruitful by his efforts is not, that is, entirely a contemporary innovation, or an attempt to appeal to moral feelings which simply do not exist: it has deeper roots in Western civilization, if only ... as a minority tradition" (Passmore, p. 32).

This "stewardship" often is seen in the relatively quiet or passive role of overseer, of "caretaker" or "shepherd" over nature, rather than the more aggressive role of manager as modifier or changer of nature in order to "perfect nature" albeit "by *cooperating* with nature."

"Just as for (St. Thomas) Aquinas, God's grace perfects human nature, so, in this view, man's grace ... perfects nature. The perfecting of nature ... requires skill and ... mastery. But a mastery which perfects, not a mastery which destroys or enslaves. Man's duty in respect to nature, then, is to seek to perfect it by working with its potentialities" (Passmore, pp. 32-33).

But what does it mean to *perfect* nature? "The presumption is (Aristotelian) that nature is at its best when it fulfills men's needs—that this, indeed, is its reason for existing, what its potentialities are" (Passmore, p. 33).

So we have Man the Despot using nature as he sees fit through his steadily advancing technological knowledge, a belief structure that dominated the West increasingly from the 17th into the 20th centuries and still does so. But since the beginning of the 20th century that belief structure has been changed by the increasing intrusion of the view of Man as Steward. Man, although free to use nature as he wishes to further his welfare, must use restraint when introducing changes in the natural system, not because of the "interests" of na-

ture, but because of the long-run welfare of mankind—secular humanism again!²

Earlier I referred to the Judeo-Christian-Democratic-Capitalist belief structure as underlying our natural resource policies.

The Democratic-Capitalist belief structure is an intellectual derivative of the Judeo-Christian belief structures. In fact, that was what the Christian Reformation (protestantism vs. Catholicism) and the following democratic vs. monarchical government revolution and the displacement of feudalism by capitalism was all about!

Man the Ephemeral Individual and Mankind the Perpetual Collective both derive from the Democratic-Capitalist belief structure whose provenance is the Judeo-Christian belief structures.

Man the Ephemeral Individual

In the only world we know anything about, it is individuals who sense problems, analyze them, hypothesize their cause and cure and, in a democracy, act in concert with other individuals to form an aggregate of sufficient power to control a public policy decision. At this point, then, we are concerned with inter-individual relations in choosing, largely abstracted from time. "Largely" abstracted because individuals *do* live and decide within a time frame. However, because individuals are mortal and finite and not gifted with perfect foresight, their relevant time frame is "largely" restricted to their individual life spans and only that part within which each feels comfortable with the degree of risk and uncertainty he confronts therein. Thus, in public policy choices about natural resources, we concern ourselves only with interperson relations abstracted from time.

The guiding academic principle for such aggregate policy decisions is easy to state but extremely difficult, even impossible, to execute fully and completely. The principle is: *For each available alternative policy that might be applied to the solution of a single problem in natural resource allocation and use, determine the aggregate of net benefits that might accrue to all persons benefited and the aggregate of net sacrifices that might accrue to all persons who will experience net*

²In only two respects have nature-centered belief changes, rather than man-centered belief changes, appeared: (1) The belief that gene streams threatened with extinction by man's despotic behavior must be protected therefrom—and even this belief is man-centered when defended on grounds of its long-run possible importance to mankind's survival. (2) The belief that cruelty to animals is immoral hence should be prohibited just as should cruelty to children or any other human entity. In this belief, "animals" seldom is explicitly defined. When it is, it is intriguing that it relates only to those warm-blooded, air-breathing mammals that most resemble mankind; those domestic animals and their near herbivore and canine and feline relatives that live closest to man; or birds kept in captivity as producers or pets. Nobody questions cruelty to rodents, fish or shellfish, including live lobsters dropped into boiling water, or insects, reptiles, etc., etc. And, of course, nobody questions cruelty to plants—whatever that might be! Why this restricted definition of cruelty? Without it we would find ourselves in full accord with that Hindu sect that tries, while living, to kill no other living zoological life form. We now know that such a belief is totally impossible to follow if mankind is to continue to exist on this earth. Hence the "bottom line" confrontation—destroy other living things or destroy yourself!

sacrifices and adopt that policy that maximizes the aggregate of benefits over sacrifices or that minimizes the aggregate of net sacrifices. It is essential to the validity of the principle that, from their gains, gainers actually do remunerate the losers for their losses.

The major shortcoming of this stage of natural resource public policy making is that all decisions are individual, living-person decisions, thus any resulting collective decision emphasizes timeless or very short-run time horizons.

For example, Tucson, in its deep concern over its diminishing supply of groundwater (its only water supply), studiously avoids putting any quantity constraints on its use for household and garden irrigation by increasing numbers of area residents because most residents want "green" surroundings and do not want to restrain local economic growth (Martin and Ingram; Martin et al.). Both of these constraints reflect the belief that the lifestyle and economic opportunity of living individuals must prevail in spite of deep-seated worry over a diminishing water supply and a vague feeling of concern for what is going to happen to future persons as the water supplies diminish and grow increasingly expensive. The belief structure is that we, the living, don't mind too much if future people are dragged kicking and screaming into change so long as we ourselves can avoid that unpleasant experience.

A bottom-line value of our culture is that existing individuals make the decisions they want and on which they can get a consensus of existing individuals, and the needs and wishes of future people get considered only insofar as existing persons include in *their* value systems concern for those future people.

I don't even imply here that much if anything can be done about this difficulty. Existing individuals are always going to be the decision makers. About all that can be hoped for is that existing individuals might, by some program of "social uplift," be given an increased sense of stewardship for the well-being and freedom of choice of future people. Ever since men have felt some ability to control their relations with nature they have striven for and had some success at avoiding the imposition on themselves of the "kicking and screaming" method of adjustment to circumstances. I see no reason to presume that we have exhausted all channels for the exercise of such power or, for that matter, reached the apex of our abilities to forge further avenues for such kicking and screaming avoidance on our own part. But I do see greater difficulty in getting existing men to remove the burden of kicking and screaming change from the backs of *future* people by placing that unpleasantness on themselves.

Mankind the Perpetual Collective

The Judeo-Christian belief systems from which the fundamental belief, value and ethical systems underlying our Western societies

are derived have, since the Reformation, strongly argued the sacred worth of the individual (politically in democracy and economically in capitalism and private property). Although emphasizing the sanctity of the individual person through its concept of "brotherly love," our Judeo-Christian philosophy argues for concern in contemporary policy making for the well-being of all other affected *contemporary* individuals. However, it is far less explicit in expression of similar brotherly concern for the well-being of *future* individuals. The only sanctions the Judeo-Christian system can offer for the earthly realization of these brotherly concerns for others is that of excommunication or shunning before death, or damnation to hell and the devil after death. Of course our secular interests long ago took over this sanction business on earth in the form of democratic-capitalist institutions.

However, our democratic-capitalist institutions still have no positive way to reflect directly the interests of future individuals in policy choices. We still rely wholly on the "brotherly love" of contemporary persons for future persons. Remember, "who can do what to whom, etc.!" Living persons have defenses, future persons don't! The way our social-biological-physical system is structured, I can see no way by which the power of this "loving" concern for future persons can be increased except through exhortation, perceptive increase in knowledge and transmittal of this changing body of thought and knowledge to future persons through education—a frustratingly slow, inefficient and cumbersome system through which to play the role of God on earth!

Among the many living systems that compose our world, only humanity comes even close to playing God on earth because man *thinks*! Man is the only animal to do so! It is through his power to think that man purposefully changes himself and the elements that compose the world, presumably to improve his lot—to avoid the kicking and screaming methods of change. But the purposeful changes may, in fact, harm, even destroy, mankind.

Mankind, the perpetual collective, resides only in a gene stream that is perpetual, immortal insofar as any built-in cycle of death and resurrection is concerned. When some single stream ceases to exist for whatever reason, we call it "extinction."

The human gene stream is like a thread running through time, emerging from the foggy past and disappearing into the unseen future. Men appear as beads on that gene thread; each bead is ephemeral—is born, grows, recreates the genes that compose the thread, dies.

The gene thread has no self-consciousness, no mind, no ego, no power of decision-making, is wholly passive, shunted about willy-nilly by the forces that impinge upon it.

On the other hand, individuals, the beads on the thread, are the sites of self-consciousness, of ego, of mind. They can plan for, decide upon and engineer changes in the environment to enhance their well-being. But that enhancement will be short-run and may, often does, endanger long-run well-being, even survival of the gene thread itself.

If, in our attempts to formulate sound natural resource policy, we stay within the analytic mode of Man the Ephemeral Individual, we can use conventional economic and other scientific decision models with justification and with assurance of their objective warrantability. We can do this because the formal requirements for a competitive market are sufficiently present in these models and because we are dealing with a world of living individuals, all of whom are or can be deciding what among the circumstances confronting them is to the maximum advantage of each. The resulting economic and political competition resulting in such a model points to Adam Smith's famous dictum—they are lead as by an invisible hand to aggregate choices that maximize the general welfare.

But when we move into the analytic mode of Mankind the Perpetual Collective we, like Alice passing through the looking glass, enter a world so different as to be seen as upside down by an observer from the ephemeral individual world!

When my colleagues and I were researching groundwater use policy in Arizona, I was quite satisfied with our policy conclusions insofar as they related to maximized benefits from contemporary use of that groundwater by contemporary living individuals. But I was distinctly uncomfortable over our inability to say what policy alternative for groundwater use *over the long run* was best. So far as I could find, no analytical model existed by which we could determine how best to use and thus use up the groundwater stock over the long-run future. Which should be the last generation to have any to use at all? And what steps should society take while the groundwater lasted to insure that those generations coming after its exhaustion would have some prepared alternatives available to them to insure their survival? It would seem ethical for generations having groundwater to use to do something to insulate succeeding generations from the kicking and screaming method of adjustment to groundwater exhaustion.

I got my first clue to understanding this problem from a paper written by Kenneth Boulding wherein he said, in effect, that conventional economic and political wisdom, when applied to policy questions related to the use of exhaustible stock resources on our earth, usually lead to a call for *maximization* of the time-related value product—the throughput—derived from the use of those resources. But when you impose the conditions of a “spaceship earth” on this policy decision, doing so turns this outcome upside down by calling for *minimization* of that throughput! This led me to write a paper,

“Natural Resource Economics—the Upsetting Discipline.” The title was an intentional pun. Turning the conventional criterion upside down can be described as upsetting it, but to do so also can be most upsetting to purveyors of conventional economic wisdom operating always and only within a context of maximization of throughput.

The environmental reality of the ephemeral individual is a *finite* reality—finite in his individuality related to his finite life span, or to his conception of the finite limits of uncertainty acceptable to him, or to the finite concern he feels for the well-being of his own, let alone society’s, descendants. When passing through the looking glass into the “perpetual” world, we make dramatic shifts in what is finite and what is infinite.

In the model of the *ephemeral* world, stock resources are implicitly confronted as if they are infinite, perpetually restorable, whereas the time horizons of the human decision makers are finite. Hence, time preferences prevail. In the model of the *perpetual* world, stock resources in the spaceship earth are finite, but the time horizon of human choice is infinite because mankind is perpetual. Hence there is no time preference—all of which is very upsetting indeed to conventional finite beings like you and me!

But there it is! We know that such a perpetual world exists. At least we have no evidence whatsoever that it does not. So what do we as thinking human beings do about it? Do we act as if it doesn’t exist and go merrily on our way forcing kicking and screaming adjustment upon our descendants (which may mean their extinction)? Or do we at least think about the problem and say something like, “Well, let us at least be a bit conservative in our policy choices that affect the rate of exhaustion of those finite stock resources to give as much time as possible to find reasonable alternatives for those future generations that will face the music of our previous profligacy?”!

When one enters, analytically, the world of the perpetual aggregate, one is in a world infinite in space, time, numbers of human dependents, even in volume of resources. All of which generates unfamiliar analytical anomalies all over the place. For example, an infinite number of potential human dependents on a fixed volume of stock resources in spaceship earth (abstracted from infinite space) means that each dependent user must consume zero quantity of the volume per capita or per unit of time. This means, in turn, that the society derives no benefit whatever from that stock resource’s existence. It is as if that resource does not exist at all!

Making Policy Choices

In spite of these truly perplexing philosophical issues, we are what we are, endowed with certain powers and weaknesses, and must do the best we can with what we’ve got. Doing the best with what we’ve got means, first and foremost, that in our policy choices we use our

minds. It means that we fall back on our emotions—in the guise of values, beliefs, myths and ethics—only in those aspects of our existence in which knowledge and experience have not yet equipped our minds with objective understanding of our actions as cause and our future well-being as effect. In the meantime, we keep digging away at those emotive systems to convert them into knowledge of their consequences. I presume we are always going to be confronted with the “brotherly love” emotion, or lack thereof, in our natural resource policy actions as they affect future persons. I have no solution for that shortcoming.

There are four bottom-line concerns in our natural resource policy actions that are especially crucial for humanity and must always be in the forefront of our values, beliefs, myths and ethics.

1. Concern about the numbers of people in the world and sub-areas of the world that resources can support at desired levels of well-being—the “kicking and screaming” restraint of space. Malthus revisited.

2. Concern about energy needs, energy supplies, energy assets and their depletion. Earthly energy supplies flow only from the sun, current flow being absolute in quantity per unit of time and stored sun energy in the fossil fuels being absolute in total accessible volume that if used at all will be depleted.

3. Concern about choosing those natural-resource-affecting institutions, both intranational and international, that *aid* mankind in reaching well-being goals rather than *hinder* him.

4. Concern about macro-changes in the environment that are consciously or unconsciously engineered by human choices and actions that may have crucial macro-effects on humanity's survival. Extinction would be the ultimate kicking and screaming adjustment.

All of the above discussion leads me to conclude that the only answer for imperfect individual men in natural resource policy making is eternal study, codification of experience, generation of new explanatory systems, new normative philosophies, new ends-in-view for the total human system and transmission of this experiential knowledge and these changing philosophies of norms and ethics to future individuals as they appear. In the meantime, always keeping our fingers crossed about the soundness of our policies along with a willingness to change natural-resource-affecting institutions, beliefs, values and ethics as intelligence indicates.

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