"Fair Shares"

Beyond capitalism and socialism, or the biological basis of social justice

Peter A. Corning, PhD
Institute for the Study of Complex Systems
119 Bryant Street, Suite 212
Palo Alto, CA 94301
USA
PACorning@Complexsystems.org

ABSTRACT. The accumulating scientific evidence — across many disciplines — regarding human evolution and the dualities and complexities of human nature indicates that the core ideological assumptions of both capitalism and socialism are simplistic and ultimately irreconcilable. A biologically grounded approach to social justice enables us to articulate a new ideological paradigm that I call "Fair Shares." This paradigm consists of three complementary normative principles. First, goods and services should be distributed to each according to his or her basic needs. Second, surpluses beyond the provisioning of our basic needs should be distributed according to merit. And, third, each of us is obliged in return to contribute to the "collective survival enterprise" in accordance with his or her ability. Though none of these three principles is new, in combination they provide a biologically informed middle way between capitalism and socialism. Some of the many issues that are raised by this formulation are also briefly addressed.

"Life is unfair."

John F. Kennedy

"Funny, I always believed that the world was what we make of it."

Ellie Arroway in the film, "Contact" (1997)

"The color of truth is grey."

Attributed to André Gide

Charles Darwin changed the ground rules for philosophical debate. As the great twentieth-century biologist, Theodosius Dobzhansky, put it, "Nothing in biology makes sense except in the light of evolution."[1] Accordingly, the time is past due for a reconsideration of one-sided, often self-serving, and sometimes socially destructive political ideologies. Steadily accumulating scientific evidence on human evolution, as well as our growing understanding of the biological — and psychological — underpinnings of human nature and, not least, evidence directly in front of us in our day-to-day experience provide an opportunity to develop a new, empirically grounded vision that better reflects the reality of the human condition. Here I will briefly review this issue and develop a case for a middle-ground ideology that I call "Fair Shares."

Darwin's scenario

Let us begin with Darwin. Twelve years after the publication of his masterwork, *On The Origin of Species* (1859), Darwin published a second landmark treatise, one-half of which was devoted to the evolution of humankind. Darwin conceded that much of what he had surmised about our origins was guesswork, but it was anchored by his core evolutionary principle — natural selection — plus his extensive knowledge of animal behavior, his large collection of reports from around the world on "primitive" (mostly hunter-gatherer) societies and his keen observation of his own and other contemporary societies. The Social Darwinists, who used Darwin's name in vain to advance

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

an ideologically tainted political agenda, evidently had not read *The Descent of Man,* or had not understood it, for their conclusions were orthogonal to Darwin's own more balanced views; his vision of human societies was quite different from the "nature, red in tooth and claw" image that is so often associated with his name.

Among other things, Darwin stressed the central role of social cooperation, reciprocity, and "mutual aid" in human evolution, especially in food-getting but also in conflicts with other groups and other species. Here are his words:

> In the first place, as the reasoning powers and foresight of the members became improved, each man would soon learn that if he aided his fellow-men, he would commonly receive aid in return. From this low motive he might acquire the habit of aiding his fellows. And the habit of performing benevolent actions certainly strengthens the feelings of sympathy which gives first impulse to benevolent actions...But another and much more powerful stimulus to the development of the social virtues is afforded by the praise and blame of our fellow-men...and this instinct no doubt was originally acquired, like all other social instincts, through natural selection.[2]

In modern terminology, what Darwin proposed was that natural selection operated at three different "levels" — between individuals, between "families" of close kin, and between social groups. Indeed, Darwin believed that competition between various "tribes" played a major role in shaping the course of human evolution. "Natural selection, arising from the competition of tribe with tribe...would, under favourable conditions, have sufficed to raise man to his high position." The tribes that were the most highly endowed with intelligence, courage, discipline, sympathy, and "fidelity" would have had a competitive advantage, he argued. Alluding directly to the inherent tension in human societies between competition and cooperation, Darwin observed that:

> Selfish and contentious people will not cohere, and without coherence nothing can be effected. A tribe rich in the above qualities would spread and be victorious over other tribes; but in the course of time it would, judging from all past history, be in its turn overcome by some other tribe still more highly endowed. Thus the social and moral qualities would slowly tend to advance and be diffused throughout the world.[3]

In sum, Darwin assigned a primary role in human evolution to the development of well-integrated, closely cooperating, morally grounded social groups — what biologists these days often refer to as "superorganisms."[4]

What the evidence shows

Much of the evidence that has been assembled on this subject in recent decades is generally concordant with Darwin's scenario. (I have reviewed this evidence in detail elsewhere.[5]) It now seems clear that the five-million-plus-year span of human evolution involved at least three distinct "transitions." And, in each of these transitions, sociality and social organization were keys to our ancestors' competitive success; human nature and evolving human cultures were indelibly shaped by this collective survival strategy. For instance, in an organized, interdependent group — a superorganism — the defense of other members was most often not a matter of altruism, or "reciprocal altruism," but of teamwork in a win-win or lose-lose situation. Group selection may well have been involved in human evolution, as Darwin supposed, but it was based on "collective goods" that everyone shared, not altruism. Nor did it require a "cooperative gene." It required a degree of sociality, which is a common characteristic among the primates, and some degree of intelligence about means and ends — and costs and benefits. Furthermore, these superorganisms were most likely formed around a nucleus of closely related males. So individual selection, kin selection, and group selection would likely have been aligned and mutually reinforcing — just as Darwin had suggested.

We may never know for certain about many of the specific details relating to human evolution, but there is much circumstantial evidence indicating that group living, group foraging, and a cooperative division of labor — allowing for our ancestors to exploit more dangerous but abundant terrestrial environment — was a primordial development in the hominid line. Thus, the so-called "social contract" would, in fact, have been a biological-survival contract based on mutualism and close cooperation; it would not have been an arms-length exchange of goods and services, much less a competitive war of everyman against everyman, as portrayed by Thomas Hobbes. The actual "state of

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

nature," as opposed to the gratuitous assumptions of the social-contract theorists, involved an interdependent "collective survival enterprise."

This is not to say that individual competition, status rivalries, internal social conflicts, and so on somehow disappeared. Then as now there was very likely a sometimes precarious interplay between competition and cooperation and between the various self-interests of individuals and interests of groups. Indeed, a dynamic tension between individual and group interests is a common phenomenon in social mammals generally. The key to the evolution of sociality in our hominid ancestors lay in the bioeconomic costs and benefits to each individual for cooperation or non-cooperation. Reciprocity and reciprocal altruism may have played a role. But the benefits associated with being included in a group — and the high cost of ostracism and isolation — must also have been a major factor. The superorganism was a vitally important survival unit; it produced collective goods that were defined in terms of life and death, and each individual had a stake in its preservation and enhancement. In other words, the "public interest" was rooted in the group's potential for generating collective survival advantages. For instance, a larger group was more likely — all other things being equal — to benefit from synergies of scale in confrontations with predators or competitors and, later on, with potential prey. Likewise, more effective leadership and group decision-making could have been selectively important, as anthropologist Christopher Boehm has argued.[6] These collective benefits provided an overarching incentive for containing conflict and enhancing cooperation — and punishing cheaters and free-riders.

The theoretical implications of this rendering of the "state of nature" are, briefly, as follows. The individualistic, neo-Darwinian model (like the Hobbesian model) is fundamentally flawed. We did not evolve as isolated individuals pitted in relentless competition with one another. Nor was it a Lockean world of autonomous individuals. The state of nature, literally for millions of years, was characterized by an overriding need and commensurate rewards for mutualism and reciprocity, and even some altruism, all of which served to constrain, limit, and mitigate reproductive competition. In accordance with this scenario of human evolution, claims for individual rights — for reproductive advantages, for freedom, or for private property — are not inconsequential, but they are ultimately subordinate to the needs of the rest of the community as an interdependent survival enterprise. Individual rights are subordinate, in other words, to the public interest. Moreover, this is not simply a normative statement. As we shall see, it also represents an empirical reality that can be ignored only at great peril.

The science of human nature

In light of this account of human evolution, what can we infer about "human nature" and the nature of the biological-survival contract that holds human societies together? The answer is that we do not need to infer very much; an increasingly compelling body of evidence on the subject is consistent with the scenario described above.

Political theorist Andrew Heywood, early on in an otherwise commendable survey of the philosophical literature, asserts:

> It is important to remember that in no sense is human nature a descriptive or scientific concept. Even though theories of human nature may claim an empirical or scientific basis, no experiment or surgical investigation is able to uncover the human 'essence.' All models of human nature are therefore normative: they are constructed out of philosophical and moral assumptions, and are therefore in principle untestable.[7]

On the contrary, an evolutionary-biological approach provides a well validated "empirical or scientific basis" for defining the essential characteristics of human nature, and for understanding our normative priorities. Moreover, the nascent science of human nature, which spans many scientific disciplines, is gradually fleshing out more of the specific details. As the distinguished biopsychologist Melvin Konner noted in a recent issue of *Nature*, "In the era of genomics and brain imaging, hypotheses about human nature are more testable than ever."[8]

Very briefly, the ground-zero premise (so to speak) of the biological sciences is that survival and reproduction is the basic, continuing, inescapable problem for all living organisms; life is at bottom a "survival enterprise." (Darwin characterized life as the "struggle for existence.") Furthermore, the survival-reproduction problem is multifaceted and relentless; it can never be permanently solved. Whatever may be our perceptions,

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

illusions or aspirations (or, for that matter, whatever our station in life), biological survival and successful reproduction remains the paradigmatic problem of our species.

This taproot assumption about the human condition is not news, but we very often deny it or downgrade it or simply lose touch with it. The conceit that society is merely a facultative arrangement — a marketplace, or perhaps a vehicle for material and moral improvement — diminishes or even denies its true function. An organized, interdependent society is quintessentially a "collective survival enterprise," a superorganism providing for our basic needs, past, present, and future. It can accurately be called both the subject and the object of a "biological contract." Although the great eighteenth-century English conservative theorist, Edmund Burke, had in mind a somewhat different point, and a different cosmology, he captured the essence of this idea in a famous and much-quoted passage:

> Society is indeed a contract...[But] the state ought not to be considered as nothing better than a partnership in trade of pepper and coffee, calico or tobacco, or some other such low concern, to be taken up for a little temporary interest, and to be dissolved by the fancy of the parties...As the ends of such a partnership cannot be obtained by many generations, it becomes a partnership not only between those who are living, but between those who are living, those who are dead, and those who are to be born. Each contract of each particular state is but a clause in the great primeval contract of eternal society.[9]

This biological contract and its associated imperatives encompass the preponderance of human activity and human choices, worldwide. To be sure, survival *per se* may be the farthest thing from our conscious minds as we go about our daily lives. Nevertheless, our mundane daily routines are mostly instrumental to the underlying survival challenge. They reflect the particular survival strategy — the package of economic, political, and cultural tools — by which each society organizes and pursues its ongoing survival enterprise.

Although most modern theorists, following the philosopher David Hume, admonish us not to breach the "is-ought dichotomy," the fact *is* that numerous survival-related "oughts" have been programmed into our genes over the long history of our evolution and — giving environmental perturbations their due — over the much longer history of Earth itself. We are endowed with an array of existential, biologically based human values that are virtually universal, and we mostly choose to follow their dictates. Moreover, all preferences are not created equal. This allows us to seek regularities, and make predictions, and link human nature to human behavior in comprehensible ways.

Basic needs and human nature

To be specific, the first and most important generalization about human nature is that each of us is defined, in considerable measure, by an array of "basic needs" that are essential to our survival and reproductive success, and we come into the world being oriented to the satisfaction of these needs. The concept of basic needs is not new, needless to say. Its roots in the West go back at least to Plato and Aristotle, and it has been used in various ways over the years, ranging from a narrowly focused preoccupation with food, clothing, and shelter to psychologist Abraham Maslow's expansive claims for "self-actualization." More recently, Len Doyal and Ian Gough have advanced the argument, in *A Theory of Human Need* (1991), that participation in the life of the community is our universal objective and that personal health and "autonomy" are the necessary means.[10] On the other hand, the very concept of basic needs has also come under severe attack in recent years. Andrew Heywood summarized the argument as follows:

> Needs are notoriously difficult to define. Conservative and sometimes liberal thinkers have tended to criticise the concept of 'needs' on the ground that it is an abstract and almost metaphysical category, divorced from the desires and behavior of actual people...It is also pointed out that if needs exist they are in fact conditioned by the historical, social and cultural context within which they arise. If this is true, the notion of universal 'human' needs, as with the idea of universal 'human' rights, is simply nonsense.[11]

Nonsense? Hardly. The relativist view of basic needs totally ignores the large and growing body of empirical research, most notably under the sponsorship of the United Nations, the National Academy of Sciences, the World Bank, and other agencies, that gives scientific credence and considerable precision to the concept. For

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

instance, the Survival Indicators Program involves an effort to validate and develop measuring rods for the full range of requisites for individual and population-level survival and reproduction.[12] The Survival Indicators Program remains a work in progress, but the current iteration includes no less than fourteen "primary needs" domains that represent universal imperatives in any given culture and personal situation, in conjunction with an indeterminate number of context-specific "instrumental needs."

Contrary to the dogma of classical economics that all "preferences" are relative, these fourteen basic needs have in fact been empirically validated to a first approximation, though some are also self-evident. I have recently discussed this framework in depth elsewhere.[13]

Implicit in this framework is a fundamental shift in the way economic, social, and political phenomena are viewed. The performance of any organized society can be evaluated in terms of how it relates to, or impacts upon, the "package" of basic needs that define the parameters of the ongoing survival-and-reproduction problem. As documented in my article cited above, the overwhelming majority of economic activity worldwide is devoted to the satisfaction of these basic needs. And, a small-scale survey of time allocations by Americans some years ago suggested that, contrary to the conventional wisdom, the vast majority of our time and energy is also devoted to activities, and to the use of goods and services, that either directly or indirectly serve our basic needs. This may even be true for many so-called luxury items. But, more importantly, vast numbers of people the world over, even in the advanced industrial societies where basic-needs deprivations are supposedly no longer a problem, come up short and are at serious risk.

On the other hand, it is also true that some economic and social activity, certainly in the developed, industrial societies, is tangential to or even unrelated to survival and reproduction. In fact, some activities and cultural practices may even be detrimental to our efforts to secure basic needs. Obvious examples are smoking, drug abuse, and binge drinking, but there are many others. A detailed cross-cultural study of this subject can be found in a book by anthropologist Robert Edgerton, *Sick Societies*.[14] Indeed, almost any activity that is carried to extremes may become harmful or dangerous. One reason is that such activities may jeopardize one or more of our other basic needs, or even life itself. Physiologist Frances Ashcroft's study, *Life at the Extremes,* provides an overview of this subject.[15]

The "political animal"

The satisfaction of our basic survival and reproductive needs — earning a living in a very broad sense — is the fundamental vocation of the human species, and the psychological substrate of human nature, comprising the perceptual, mental, and emotional tools that we deploy to pursue the survival enterprise, is also part of our evolutionary heritage as social animals. However, we are not simply social; we are purposefully social. We pursue our survival and reproductive needs for the most part within a nested set of goal-oriented social units, from families to work-groups and tribes, clubs and churches, small villages and towns, elaborate trade and exchange networks, large-scale business enterprises, densely populated cities, and, not least, "governments." As economist Paul Rubin notes, the dominance hierarchies that characterize other primate societies have evolved in humankind into functional hierarchies marked by a more or less complex division of labor with mutual benefits.[16]

This is not news, of course, but it has deep roots in human nature. "Nurture" — the composite effect of rearing practices, cultural influences, and life experiences — molds, shapes, and differentially rewards and punishes the social cooperation that occurs in any given society, but our "nature" also potentiates nurture and participates in making it happen. Indeed, effective social cooperation is critically dependent upon our evolved, exquisitely engineered psychological "facilitators." These include our superlative communications skills, our capacity for forming emotional attachments, ranging from parent-infant bonding to pair-bonding, group loyalties and patriotism, as well as our susceptibility to social approbation and social pressures — the "praise and blame" of our fellows as Darwin put it — and our receptiveness to participating in cooperative social hierarchies and our willingness to follow the leadership of others. In fact, recent work in paleoanthropology by Robin Dunbar and others strongly suggests that the evolution of our outsized brain was related to the increased mental demands imposed by living in larger, more complex social groups.[17] Thus, when Aristotle characterized *Homo sapiens* as the distinctively "political animal," meaning that we are

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

"designed" for life in an organized, goal-directed community, a *polis*, he identified a fundamental characteristic of our species, a sociality going back several million years. However, the *polis* is not an end in itself; it is quintessentially a collective survival enterprise.

How do we know? The evidence is all around us: in the complex social organization and behavior of our closest primate relatives, the chimpanzees and bonobos; in the accumulating evidence, alluded to above, relating to human evolution; in the many cross-cultural studies by anthropologists; and, most compellingly, in the exponentially growing research literature on human nature across a broad spectrum of scientific disciplines. These disciplines include, among others, molecular biology, human behavioral genetics, neurobiology, evolutionary psychology, sociobiology, human ethology, anthropology, developmental and social psychology, sociology, and even behavioral economics, where the hypothetical "economic man" of neo-classical theory is being modified and sometimes contradicted by research on how we actually behave in the market place.[18] Finally, there is much evidence of purposeful sociality in our everyday experience, needless to say.

But if we are highly social — even to the point of being altruistic on occasion, as evidenced in the outpouring of nameless contributions for the victims of the 9/11 terrorist attacks — we are also, quite obviously, self-interested, acquisitive, and highly competitive. More than that, we are often, though not always, motivated to strive for personal achievement, influence, and power. We invented capitalism, but not the motivations that energize it. Likewise, we invented political democracy, but not the political competition that invigorates and sometimes corrupts it. Indeed, competition and the aggressive pursuit of self-interest are ubiquitous features of the natural world and human societies alike.

Many theorists have claimed that competition is the primary driver of evolution — the very heart and soul of natural selection. And Darwin himself stressed its importance. But Darwin had a broader, more balanced view. He also understood the role of cooperation and symbiosis, and he was well aware of the fact that natural selection is a metaphor and not a "mechanism," much less the "judge" in some kind of Olympic competition. Natural selection refers to differential success or failure among differing individuals or groups in the multi-faceted business of earning a living and

Box 1: Capitalism: A thumbnail primer

Though there have been many variations, the basic theme in conservative-capitalist theory derives from Adam Smith's paradigm. Most fundamental, perhaps, is Smith's assumption that acquisitive self-interest is a primary human motivator and that a capitalist market economy harnesses private greed to serve the social good, thanks to the magic of the "invisible hand." The very essence of capitalism is that it gives full rein to individual entrepreneurship and provides commensurate rewards. Indeed, private wealth and free enterprise are touted as the "engines" of economic progress. Modern conservatives have also assured us, repeatedly, that a rising tide lifts all boats; if the rich get richer, so will everyone else in due course. To quote the conservative economist Paul Rubin: "In today's world ... people mostly become wealthy by being productive and creating benefits for others, and, therefore, desires to punish or penalize the wealthy are misguided."[42] Moreover, it is claimed, an unfettered free market is vastly more efficient at satisfying human wants and preferences than is any centralized "command economy" (the former Soviet Union is usually cited as the poster-child, not the contradictory example of the United States in World War Two). Accordingly, the welfare state that was created by liberals in the New Deal era and then expanded further after the war is often viewed as an impediment to free markets — or worse. Government services are often charged with preempting the supposedly more efficient private sector alternatives, and intrusive government regulations are resented as being a hindrance to the supposedly self-policing, self-correcting mechanisms of the marketplace.

Like many overstated, and frequently self-serving claims, this model has much to recommend it, but it also has some serious gaps. To be specific: (1) Human nature is complex and diverse, and we are not all consumed either by

Box 1 continued on next page

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

Box 1 continued

the profit motive or by latent brotherly love; (2) private enterprise has been only one of the engines of our progress as a civilization; (3) sometimes, though not always, government *can* do the job better; (4) the wealthy do not always owe their wealth to their productivity, nor do they always use their wealth to enhance the productivity of society as a whole; (5) the private sector is obviously not reliably self-policing; indeed, Adam Smith himself appreciated that sometimes the hidden hand morphs into a sleight of hand;[21] (6) finally, markets manifestly cannot be relied upon to meet the basic needs of the population as a whole; they respond mainly to "supply" and "demand," which of course depends upon the ability to pay.[43]

reproducing in the "the economy of nature." Furthermore, many different factors may be responsible for differential survival. Sometimes survival and reproduction are, jointly, a cakewalk, especially when an abundant new niche is being exploited and rapid population growth is possible. At other times, differential survival is a result simply of being in the right place, or wrong place, at the right time. Sometimes differential survival is the result of direct competition between predators and their potential prey, or of a head-to-head ecological "scramble" for scarce resources within or between species. At still other times, though, differential survival and reproduction may be the result of cooperation. Call it "competition via cooperation."

Synergy and the "collective survival enterprise"

In accordance with the "Synergism Hypothesis," which is described in detail elsewhere,[19] the key to the emergence and continuity of cooperation, both in nature and in human societies, is functional synergy — the economic payoffs, broadly defined, that cooperation may produce with respect to one or more aspects of the survival enterprise. These synergies can take many different forms. Among other things, there may be synergies of scale, functional complementarities, joint environmental conditioning, cost-and-risk-sharing, resource sharing, information sharing, a "division of labor" (or, better said, a "combination of labor"), and much more.

Human societies are based on synergy — cooperative effects that are not otherwise attainable. To reiterate, an organized society is fundamentally a collective survival enterprise, and the biological imperatives — our basic needs — define in very concrete terms the underlying purposes, as well as the implicit agenda, of the economic and political order, though it is all too often corrupted. The "public interest" or "common good" is not about the pursuit of happiness or the "greatest happiness for the greatest number." It is first and foremost concerned with meeting the basic survival and reproductive needs of the population as a whole. This is the "common denominator" — the universally shared interest, or at least a shared prerequisite, in every organized society, whether we are conscious of it or not — and it is the very foundation of political "legitimacy," *i.e.*, the willing consent of a citizenry.

Competition to secure our basic needs — and much more when we can — is universal in human societies, just as it is in other socially organized animal societies. But so are cooperation and interdependency. And the more complex the society, the more deeply dependent we are upon the skills and efforts and support of others, not to mention the accumulated stock of cultural "tools" and resources that have been passed down to us over many generations. Indeed, most of us are far more completely dependent on the services of others than we recognize (until we get into trouble). A vivid appreciation of this deep interdependency was articulated by, of all people, Adam Smith in *The Wealth of Nations* (1776):

> In civilized society [man] stands at all times in need of the cooperation and assistance of great multitudes...[M]an has almost constant occasion for the help of his brethren...Observe the accommodation of the most common artificer or day-labourer in a civilized and thriving country, and you will perceive that the

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

> number of people whose industry a part, though but a small part, has been employed in procuring him this accommodation, exceeds all computation. [There follows a detailed description of the many steps involved in producing a day-laborer's "coarse and rough" woolen coat.]. . .If we examine, I say, all of these things, and consider what a variety of labour is employed about each of them, we shall be sensible that without the assistance and cooperation of many thousands, the very meanest person in a civilized country could not be provided, even according to, what we very falsely imagine, the easy and simple manner in which he is commonly accommodated.[20]

As every economist from Adam Smith to the present day will attest, exchange and trade and organized markets play vital roles in facilitating the collective survival enterprise in almost every society, and they may well have done so for hundreds of thousands of years, or even much longer. However, it is also important to remember that these instrumentalities in turn depend upon various social underpinnings, like honest dealing and "trust" — what economist Arthur Okun called the "invisible handshake" — along with explicit rules and policing. Adam Smith himself emphasized the moral underpinnings of the market place in his lesser-known but important predecessor to *The Wealth of Nations* called *The Theory of Moral Sentiments*, which was published in 1759 when he occupied the Chair of Moral Philosophy at the University of Glasgow. Indeed, Smith's famous characterization of the marketplace as "an invisible hand" was predicated on the assumption that even the rapacious pursuit of self-interest, though reprehensible in light of his Stoic and Christian values, nevertheless may benefit society as a whole.[21] We will come back to this claim shortly. Indeed, Smith, following Plato in the *Republic*, also stressed the importance to a civilized society of a division of labor, which after all depends upon close, sustained, dependable cooperation.

The key point here is that cooperation produces synergies, but it also creates interdependence and a personal stake in preserving those synergies. It could be called the "paradox of dependency." The more valuable the synergies produced by cooperation, the more likely we are to become dependent upon them. Thus, all of us have a vital stake in the viability of the collective survival enterprise, just as our remote Australopithecine ancestors did. Moreover, we humans are hardly unique; the problem of harmonizing individual self-interest with group-collective interests is a central conundrum for socially organized species, superorganisms, throughout the natural world, from leaf-cutter ants to naked mole rats and savanna baboons.

Reclaiming the ideological middle-ground

I submit that this paradigm provides a new perspective on the ancient, vexed debate in political theory regarding the relationship between the individual and society and, by extension, the role of the state. Within the evolutionary-biological paradigm, both libertarian-individualist and communitarian-collectivist theories are partly valid and equally deficient (see sidebar boxes). The middle ground between them might be called the "liberal community."[22]

On one side of the equation, personal self-interest is a major human motivator — a basic "module" of human nature, in the current jargon — and it is a motivation that is essential for the survival and reproduction of each individual. Accordingly, Adam Smith's enduring insight is time-tested. The genius of capitalism is that it harnesses self-interest and private wealth to underwrite innovative ideas and entrepreneurship, including sometimes gut-wrenching risks, that can generate new wealth and material progress. It is a proven system, and it is currently transforming the global economy, though it is always vulnerable to abuse and requires policing.

On the other side of the equation, the genius of cooperation is that it produces otherwise unattainable synergies. It harnesses individual resources, skills, and collective efforts to serve various aspects of the collective survival enterprise. This may also include many non-market, not-for-profit forms of cooperation, as well as the division of labor commonly known as "government." At its best, government can play a valuable role in the community. In the United States, for example, the Federal government historically has subsidized and protected most of its major new industries, from a merchant marine in colonial days to the Internet today; it has built and maintained critically important infrastructure, from colonial-era canals and harbors to highways, reservoirs, power grids, and airports; it has regulated and policed the all-too-human tendency toward ethical lapses in an imperfect marketplace; it

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

has plugged major gaps in the ability of markets to provide for the basic needs of the population; and it has been responsible for defending the country against major threats to its survival.

However, the collective need for government in any given context is constantly changing, and the enduring political challenge is to recalibrate as necessary the precise relationship between individual rights and freedoms and the needs of society. (One example among many is the intrusive and time-consuming security screening process now in place at US airports, an unthinkable invasion of privacy in an earlier era.) In other words, a moving "balance" must be maintained between the two competing claims to power, individual and collective, and there is no all-purpose formula for how to do this, or we would long ago have deployed it.

Beyond this generality, there are a number of specific principles that undergird the goal of creating and maintaining a "liberal community." Here I will suggest six:

1. *The "public interest" is nothing less than our shared stake in the continued viability and improvement of society as a superorganism.* Needless to say, this refers most importantly to our basic needs, and to those of our posterity. Many of these needs may be satisfied in the marketplace. But sometimes it is only through non-market collective action that we can provide for them. In modern societies, both the private sector and the public sector may serve the public interest. But sometimes, regrettably, neither one may do so very effectively.
2. *Social control in the name of the public interest is a two-way street.* In small, face-to-face tribal societies, the "social instincts," as Darwin called them, along with various informal social customs and practices, served well enough (and still do) to contain most anti-social behaviors, while reciprocity and sharing are ubiquitous. Christopher Boehm and Bruce Knauft have convincingly shown that so-called "simple societies" are as a rule egalitarian and that effective social restraints serve to keep a tight rein on aggressive individuals.[23] However, large-scale human societies are at best "crude super-organisms," in the terminology of Peter Richerson and Robert Boyd; an array of artificial "work-arounds" are essential for containing potentially destructive individual behaviors.[24] But if markets cannot always be trusted to serve our needs, the same is equally true for governments; they can all too easily be corrupted. Institutional safeguards are important — checks and balances, free elections, secret ballots, a free press, and such — but so are legal constraints and reliable punishment for transgressions. We owe to the ancient Greeks the legal principle, which we now take for granted, that the golden cord of law applies also to the rulers, and it is one of our most important safeguards.
3. *The liberal community must recognize and accommodate our diversity.* While we share universals, significant differences distinguish us in terms of personality, cognitive skills, values, age, sex, life experience, and so on.[25] Basic personality differences have been well documented by researchers in behavior genetics and psychology,[26] and a large body of research on personal interests and work objectives is routinely utilized in various assessment tools to help in selecting and training personnel in different occupations. Some of the statistics accumulated by one of the leaders in this field, Target Training International (TTI), are illuminating.[27] Only about 30 percent of the people who have taken TTI's assessments over the past 20 years have shown a dominant preference for economic and utilitarian objectives, and even fewer, only 13 percent, are strongly motivated for political influence and power. On the other hand, 14 percent are strongly motivated for social and humanitarian work, 15 percent for learning and teaching, and 17 percent for aesthetic and artistic ends. In short, human nature comes in many different colors. More than that, as Plato first pointed out, our very differences can be a source of strength if society provides a diversity of niches in which these gifts can be utilized productively.
4. *Human nature is not fixed; it is labile and susceptible to a myriad of different social and cultural influences.* Plato, Aristotle, Rousseau, Durkheim, and Marx, as well as many modern-day social scientists, have a valid case in stressing the importance of "nurture" in shaping human behavior. Humans are, as a rule, greatly influenced by others, and by the "rules of the game" in their culture. To a significant degree, cultural influences can create self-fulfilling prophesies. If honesty, trust, mutual respect, courtesy, and the spirit of compromise are operative norms, while

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

deviants are ostracized and penalized, a society and its institutions will likely reflect these favored values. Conversely, if a cultural climate encourages deception, demonization, vicious partisanship, and an uncompromising no-holds-barred attitude toward opponents, the social and political environment will more closely fit the paradigms of Machiavelli and Hobbes. By the same token, the well known "contagion effects" to which we are so susceptible, from rock concerts to riots, can either have positive effects or be destructive. In other words, our cultures have the collective ability to shape the ultimate expression of human nature, for better or worse. This also has important implications for the issue of fairness and social justice, as we shall see.

5. *Though modern capitalist societies give it priority in meeting basic needs and serving the public interest, the private sector has a decidedly mixed record.* The private sector's claim to being assigned this priority is based on the assertion that it can deliver better outcomes, and do so more "efficiently." Unfortunately, this promise is not always fulfilled, and there are major gaps in meeting the basic needs of our citizens, from health care to housing and adequate income. Accordingly, if the private sector fails to deliver on its promises to meet our basic needs, the community has a "right" to undertake (or, more precisely, a collective self-interest in undertaking) remedial "class action" through the legislative process or the judicial system or the shareholders or other forms of cooperative effort.
6. *Different modalities for satisfying our basic needs may lead to very different outcomes.* Free enterprise and markets are very often the most effective way to meet our basic needs. But this is not always the case. Health insurance, for instance, represents a vitally important instrumental need in our society. Yet some 41.5 million Americans currently do not have any health insurance coverage at all, and an estimated 40 million more have inadequate coverage. The reason, in a nutshell, is that we have entrusted the provision of this basic need to the private sector for those who are under retirement age, with some exceptions like the military. In the private sector, the criteria for coverage boil down to profitability, regardless of the need. Only those who can be profitably insured will get coverage, which means high premiums and barriers to coverage for those who are at high risk. In insurance circles this is called "experience rating," and the effect is that the private sector screens out many of the most needy. The alternative approach is called "community rating," and it proceeds from the premise that everyone will be covered and that the risks and costs will be spread as widely as possible. The need will be fully satisfied, but the more affluent and lower-risk participants will pay relatively more, and the system may not be self-financing. In other countries, this approach is called "national health insurance," and the United States is the only industrialized nation that does not have it. Medicare covers all Social Security retirees, and the administrative costs for Medicare run about 3 percent annually. The administrative costs alone for private health plans (including profits), run from 15 to 25 percent.[28] If the criterion of success is meeting a basic need efficiently, this is a case where government manifestly — or, at least, arguably — can do the better job.

A return engagement for social justice

In an era marked by unapologetic increases in the gap between the rich and the poor, coupled with aggressive political attacks on the welfare state, the ancient concept of "justice" has been deeply challenged. Some dismiss justice as a meaningless term.[29] Others paraphrase Thrasymachus in Plato's *Republic*: justice amounts to nothing more than "the interest of the stronger." Some so-called "realists" invoke simplistic Social Darwinist stereotypes. Still others misread the Lockean tradition and simplistically equate justice with freedom and the protection of property rights; Robert Nozick's famous tract, *Anarchy State and Utopia* (1974), is a classic statement of this libertarian position.[30]

To be sure, the concept of justice still has a secure place within our legal system. Indeed, the very concept of an independent judiciary represents, at heart, an institutionalized instrument of justice. Thus, "procedural justice" refers to such values as equality before the law, due process, and impartiality in the making of judicial decisions. For instance, most of us recoil from the idea of allowing a litigant physically to threaten or to bribe a jury on his or her own behalf. Jury tampering is illegal, and almost nobody thinks that a prohibition against this practice is unfair. On the

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

other hand, "substantive justice" — letting the punishment fit the crime, or prohibitions against cruel and unusual punishments, and other legal principles, some of which can be traced back to the classical Greeks and ancient Roman lawyers — is concerned with fairness and equity in the outcomes produced by a legal system.

However, social justice involves something more. Social justice is a term that has invited many different definitions, but it commonly refers to the distribution of substantive rewards among the members of a society. Its origin traces back at least to Periclean Athens. To Plato, justice was not primarily concerned with some higher metaphysics or a tug-of-war over our rights as individuals. It was concerned with equitable rewards for the proper exercise of our abilities in our calling and for our conduct in a network of interdependent economic relationships. Moreover, and this point is often overlooked, Plato recognized that social justice is grounded in our basic needs. Here are Plato's words in the *Republic*:

> If we begin our inquiry by examining the beginning of a city, would that not aid us also in identifying the origins of justice and injustice?...A city — or a state — is a response to human needs. No human being is self-sufficient, and all of us have many wants...Since each person has many wants, many partners and purveyors will be required to furnish them...Owing to this interchange of services, a multitude of persons will gather and dwell together in what we have come to call the city or the state...We can conclude, then, that production in our city will be more abundant and the products more easily produced and of better quality if each does the work nature [and society] has equipped him to do, at the appropriate time, and is not required to spend time on other occupations...Where, then, do we find justice and injustice?...Perhaps they have their origins in the mutual needs of the city's inhabitants.[31]

Aristotle, Plato's most famous student, supplemented his mentor's views in some very important ways in his towering classic, the *Politics*.[32] First, Aristotle emphasized that physical security — both external and internal — is also a fundamental function of the state. The *polis* is not exclusively an economic association. Aristotle also stressed that human nature is not an autonomous entity; it entails a set of innate aptitudes that are uniquely fitted for society and that can only be developed in close social relationships. Thus, social life involves more than being simply a marketplace for economic transactions. It also involves a life in common; we are enriched by our membership in families and communities. A hermit is not only economically deprived; he or she is not socially human and, equally important, is bound for an evolutionary dead-end.

But most important for our purpose, Aristotle also provided a classic definition of social justice: "giving every man his due." There have been countless debates through the centuries over what Aristotle meant by the word "due." But a common sense interpretation is that the rewards provided by society should be proportionate to a person's contributions to society. It does not mean "equality"; otherwise Aristotle would have used that word. Rather, it means an equitable portion — a "fair share."

Three arguments for social justice

Plato and Aristotle were both acutely aware of the potential for destructive social conflict. Indeed, Aristotle and his students conducted a study of the political history of 158 different Greek cities, the first recorded example of systematic political-science research, and he knew very well what havoc could result when a state loses its "legitimacy" — the willing consent of the citizenry. Preserving the sometimes fragile stability of the community was a major concern for both Plato and Aristotle.

Aristotle also devoted much attention to the fundamental political challenge, also well appreciated by Plato, that the basic, seemingly inescapable cleavage between the few who are rich and the many who are poor is potentially the most dangerous social division of all and the underlying cause of much civil unrest. The key to preserving the community, therefore, is to strike a balance between the conflicting social classes. To this end, the law must be "sovereign" and must serve as an impartial arbiter — "reason unaffected by desire." Moreover, there must be moral equality before the law. The law cannot be used as a tool to favor the rich and powerful but must be an instrument for achieving social justice. Otherwise it becomes a part of the problem. Aristotle was also mindful of the Greek playwright Euripedes's admonition that the inherent conflict

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

between the rich and the poor, if pushed to an extreme, can destroy a state. I submit that this insight remains valid down to the present day. There is a well-documented empirical relationship between what contemporary political scientists call "relative deprivations" and the incidence of political turmoil.[33] Therefore, the first major argument for using an "objective" concept of social justice, beyond the workings of the marketplace and the hidden hand, is purely prudential — a matter of enlightened self-interest on the part of the "haves" in society. All of us depend upon the vast, interdependent, and always vulnerable collective survival enterprise, along with the willing cooperation of many others, as Adam Smith — and Plato before him — both argued. Darwin, as noted earlier, spoke of social "coherence"; sociologist Emile Durkheim, following Herbert Spencer, stressed the importance of "solidarity"; and many others speak of "unity," or "patriotism" — the intangible spirit of cooperation, reciprocity and fairness that undergirds a reasonably harmonious society.

A second argument for social justice is that it is rooted in a biological imperative that we all have in common — our basic survival and reproductive needs. Almost all of us are dependent upon the collective survival enterprise, and we are the joint beneficiaries of what our forebears collectively created for us over millions of years of evolution. But more to the point, there is no evolutionary future for any of us, or our posterity, apart from the collective survival enterprise. Moreover, our basic needs are not narrow, vague, or capriciously variable. As noted above, they are concrete, measurable, and cut a very broad swath through our economy and society. Nor are these needs "optional." The denial of any requisite for satisfying a person's basic needs, whether witting or not, unavoidably causes them harm.

Accordingly, the basic needs of the members of a society have a moral claim that is prior to, and ultimately limits, the claims for property rights. Indeed, as many theorists have argued, property is at bottom a means to our biological ends, though other motives obviously come into play as well. To borrow an expression from anti-abortion activists, the "right to life" is prior to property rights, and does not end at birth; it represents a life-long claim on the resources of society. Indeed, both John Locke and the American founding fathers concurred with this rank-ordering. Among our "inalienable rights," "life" comes before "liberty," while "property" — or "the pursuit of happiness" — comes last. And, in fact, most of us follow the same rank-ordering of priorities when forced to choose.

A third argument for social justice, and the concept of Fair Shares, derives from the accumulating evidence that a sense of fairness is a deeply rooted aspect of human nature, as Darwin himself suggested. In political scientist James Q. Wilson's characterization, most humans do have a "moral sense," though there are individual variations in this respect as in all, including especially a sense of fairness toward others. We are not exclusively concerned about our own interests and rights.[34]

Our sense of fairness appears to be a joint product of both nature and nurture. The "norm of fairness," as it has been called, first appears at a very early age. It involves, in essence, a recognition of "entitlements" that apply to others as well as to oneself. Simple decision rules, like equal shares, taking turns, or drawing straws work well enough. But, as a child develops, the content of the sense of fairness changes and deepens as a rule, and more complex criteria are utilized — age, merit, need, even social relationships or distinctions between "we" and "they." Also, needless to say, the content of what is viewed as fair is influenced by the values, customs, rules, and practices of a given society — what others believe is fair. Of course, we also have a propensity for rationalizing unfairness away when doing so suits our interests. Nevertheless, fairness has a strong, if imperfect, pull on our conduct.

The scientific evidence that a norm of fairness and reciprocity is a universal aspect of human nature can already be called robust and continues to grow.[35] Indeed, it is found in virtually every society, and the few pathological exceptions seem to prove the rule. Fairness is a day-in, day-out issue in any society. There is also a large experimental literature on this phenomenon in psychology, game theory, and experimental economics. Most noteworthy, perhaps, are the so-called "ultimatum games," an experimental paradigm which has been used repeatedly to demonstrate that people are willing to share with others in ways that do not reflect their own narrow self-interest but reflect instead a sense of fairness.[36]

Moreover, people are far more willing to invest in policing fairness and punishing deviants than classical

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

economic theory predicts.[37] Rudimentary examples of a sense of fairness are found even in other species; sharing behaviors and reciprocity are most conspicuous.[38] Finally, accumulating psychological evidence of a sense of fairness has been given an evolutionary imprimatur by the resurgence of "group selection theory" in evolutionary biology, most notably in the work of biologist David Sloan Wilson and his colleague, Elliott Sober. As Wilson puts it in a recent article, "The idea that moral systems are designed to promote the common welfare of groups can be accepted at face value."[39]

To summarize, then, the ideology of "Fair Shares" has three empirical sources of justification. (1) It is an essential prerequisite for the stability and ultimate viability of the political order; in game-theory terms, people are very likely to "defect" from the existing political order if their survival is threatened while others enjoy a huge "surplus" of resources. (2) A norm of fairness strikes a balance between the inescapable *equalities* in society, namely our basic needs, and the inevitable *inequalities* in inherited wealth, talent, risk-taking, and hard work. (3) It meshes with a deep psychological sense of fairness, rooted in our evolved human nature, which goes to the very heart of the enduring problem of how to secure political "legitimacy." In fact, fairness is our chief weapon in the age-old war with the centrifugal force of political alienation and social conflict. Life may be unfair, as John F. Kennedy famously proclaimed, and "might" may often prevail. But that doesn't make it right, and we can tell the difference.

The philosopher John Rawls, in his celebrated — and much-debated — theory of "justice as fairness," arrived at a somewhat similar place, albeit by a very different route.[40] He too tried to wrestle with the undeniable fact of inequalities coupled with the existential needs of the least advantaged. Rawls did not succeed in convincing the utopians, who insist on radical equality by one means or another. Nor did he convince some libertarians, who are in denial about our inextricable interdependency and do not recognize any social obligation to the disadvantaged. But Rawls did strike a chord, whatever the flaws in his fingering, with a broad spectrum of the "fair-minded" — those who seek a middle-way between the revolutionary agenda of radical egalitarian socialists and the failed promise of "natural justice" purveyed by the *laissez faire* capitalists

Box 2: A Critique of John Rawls's "Theory"

Rawls called his formulation a "theory of justice," but it is not a causal theory in any sense of the word. It is an effort to justify a normative stance — namely, that justice should be defined in terms of fairness. This aligned him with Plato and Aristotle, though his definition differed. Rawls did not propose to do away with economic inequalities. Instead, he posited two broad principles: (1) equality in the enjoyment of personal freedom and (2) a set of economic arrangements that allow for equal opportunity coupled with ways to allow the poor, or the "least advantaged," to benefit proportionately more when the rich get richer — to paraphrase his argument. Rawls's method for undergirding and supporting these principles was at once ingenious and frustrating. Like the social contract theorists, Rawls asked us to assume that we are in a hypothetical state of nature — an "original position" — in which we are behind a "veil of ignorance" about what our own station in life might end up being. In what amounted to an appeal to enlightened self-interest, he argued that his principles are what we would rationally choose for organizing our society in a situation of uncertainty about our own circumstances. It is really the golden rule in deep disguise: Do unto others as you would have them do unto you, if you were the most disadvantaged.

Some critics have pointed out that it makes more sense (logically) to opt for economic equality. Others have charged that a hypothetical situation with no relationship to the real world, comparable to unrealistic thought experiments in science, cannot legitimately be used to derive principles for real world application. Still others object that Rawls's two principles seem potentially to produce self-contradictions. On the one hand, allowing economic inequalities to persist would constrain the purchasing power — the

Box 2 continued on next page

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

Box 2 continued

freedom from want — of the have-nots. On the other hand, setting limits for the rich on being able to benefit from the fruits of their economic accomplishments represents a limitation on their freedom to hold property.

My own criticisms are more substantive and pragmatic. Rawls recognized what he called "primary goods," or the wherewithal to satisfy basic needs, but he did not give primacy in his theory to the satisfaction of basic needs; basic needs *per se* did not rise to a moral imperative for Rawls. Instead, his principle would assure only that the poor get a piece of the action when the rich get richer. It amounts to a pledge that a rising tide should lift all boats. But what if the tide also goes out? Another criticism is that Rawls tolerated inequalities, yet he did not make any explicit provision for merit — rewards for talent, effort, and achievement. Nor did he address the free-rider problem.[46] The Fair Shares principles do address these deficiencies.

(or worse, the sanguinary "survival of the fittest" ethics of the Social Darwinists).[41] Rawls's instincts were correct. There is a middle-way, and it has a biological foundation.

Fair Shares: A synopsis

Two distinct and frequently competing moral claims arise out of the imperatives of human nature and the nature of human society as a collective survival enterprise: (1) basic needs, or distributive equity, and (2) "merit," or giving every person his or her due. In the Fair Shares paradigm, our basic survival needs take precedence, but they do not nullify the claim to merit; they impose a constraint. The middle-ground position recognizes the validity of both capitalist and socialist-liberal moral claims. Accordingly, the Fair Shares framework rests on three basic principles. Though not new, these principles *in combination* define a new ideological framework.

1. *Goods and services should be distributed to each according to his or her basic needs.*

This principle may sound like an echo of Karl Marx, but it is at once more specific and more limited. Here the term "basic needs" refers to the fourteen primary needs domains mentioned above and elucidated in more detail elsewhere. Our basic needs are not vague, open-ended, or abstract, nor are they defined by personal preference. They constitute a concrete agenda, albeit subject to refinement, with measurable indicators for assessing outcomes. This principle accommodates individual and contextual differences and allows for the meeting of various instrumental needs that change throughout the life-cycle, such as the needs associated with reproduction and the nurturing of offspring. Markets and other collective mechanisms, including governmental policies and programs, interact to meet these needs.

2. *Surpluses beyond provision for basic needs should be distributed according to merit.*

Merit has many facets, of course, but rewards ultimately must be proportionate to contributions to the collective survival enterprise, which is to say to common needs or the public interest. This principle would obviously preclude profits for drug lords, for example, as well as excess profits attributable to various market distortions, like monopoly and cartel pricing, or to fraud, like insider trading. As there is no formulaic way of determining merit, the marketplace and a representative, mixed, democratic government, including an independent judiciary, and many other social mechanisms must participate in the imperfect art of determining what is fair compensation. The "merit" principle stakes a moral claim; it is not a detailed recipe. Does this principle reward "welfare queens" or free-loading? Does it reward an indolent class of economic defectors (as game theory implies)? The answer is emphatically not. In fact, a crucial corollary of the first two principles is that the collective survival enterprise has always been based on mutualism and reciprocity, with altruism being limited to special circumstances under a distinct moral claim: what could be called "no-

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

fault needs." So a third principle must be added to the Fair Shares paradigm.

3. *In return for the benefits associated with the first two principles, each of us is obliged to contribute to the collective survival enterprise in accordance with his or her ability.*

Needless to say, this principle applies equally to the rich and the poor, to wealthy matrons and welfare mothers. However, it also begs the question. How are "abilities" and "contributions" to be determined? Again, there are no formulaic answers, but societies have developed various ways for permitting such collective judgments to be made, from markets to legislatures, election processes, military drafts, examinations, licenses, performance evaluations, progressive taxes, and many more.

Is Fair Shares just "fuzzy Marxism" — as one critic has claimed? More nearly the opposite. Marxism was based on fuzzy biology, which featured a simplistic and one-sided model of human nature. Marxism actually violated the Fair Shares principles. Marx was quite diffident about specifying what our basic needs are, and he allowed the inference to be made that equality and equity are equivalent. Furthermore, Marx made no provision at all for "merit," and he was quite hostile to capitalism, whose adherents he saw as villains destined for "the dustbin of history," to borrow Bolshevik Leon Trotsky's prediction for his rivals, the Mensheviks. But most importantly, Marx's directive that all should contribute in accordance with their ability is exploitative in the absence of the first and especially the second Fair Shares principles. Despite similarities in its phrasing, the Marxian "contribution principle" does not accord with the Fair Shares paradigm.

Other questions are begged by these principles, and some important qualifiers must be added.

There is, first, the problem of the naturalistic fallacy and the is-ought dichotomy. A critic might ask: Why should we care about our survival and reproduction, much less that of anyone else in our society? More to the point, why should anyone — especially the "haves" — accept the Fair Shares ethic as a standard for guiding the policies and practices of a society? Even if we have been programmed by our evolutionary heritage to be concerned about fairness, how can anyone claim that this creates a normative imperative? These are the wrong questions, a sophist sand trap. The issue here is not whether we can derive some categorical imperative for morality. Rather, given the cardinal facts that (1) we do care — intensely — about satisfying our basic needs; (2) these needs must, by and large, be satisfied through the cooperative activities associated with the "collective survival enterprise"; and (3) we do, after all, have a shared sense of fairness, then the Fair Shares ideology provides a compass for steering a society through political shoals. These principles direct us to navigate a middle course between free-market capitalism and egalitarian socialism. Moreover, these principles represent "existential imperatives" in the sense that serious consequences — both individually and collectively — will result from ignoring them and pursuing any alternative course.

How do we implement this ideology? How do we go about ensuring that our basic needs are met? Do these principles imply an economic and social revolution of some sort? The answer is most certainly not. Fair Shares implies a need to improve an evolved and well-tested economic system that has many virtues but also some serious deficiencies. There are currently many quite effective market-based instrumentalities for meeting our basic needs. These must be augmented and improved; a better balance is required.

What about freedom or liberty? The response is that we must move beyond naïve assumptions and self-serving rhetoric. Would these values be curtailed? As the social critic Charles Morgan put it, "Liberty is the room created by the surrounding walls." In other words, freedom always has boundaries, and what we are talking about here is an adjustment in the location of the walls. For some, the room will be expanded. For instance, more income for the poor would free them from some deep anxieties and severe, even life-threatening (or life-shortening) economic constraints; for others there would be some shrinkage of freedom, but it would most likely be marginal at worst.

How does Fair Shares affect our sacred property rights? The fact is that we have no property rights beyond what the rest of us are willing to recognize and defend. This observation goes back to Plato and was seconded by Bentham, Rousseau, Marx, and many others, including the Supreme Court of the United States. The many societal limits on property rights are reflected in such things as restrictive zoning and

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

Box 3: Socialism-liberalism: A primer

It is often said that socialism traces its roots to Jean Jacques Rousseau's concept of the "noble savage." Be that as it may, the core assumption that has animated much of the socialist-liberal school over the years was recently restated by former US Senator George McGovern, who relied on a quotation from Webster's Dictionary: "One cannot conceive of a nation dedicated to democracy that does not rest on faith in 'the essential goodness of man.'"[44] One corollary of this assumption is a commitment to egalitarianism — a major theme in socialist and liberal theory. However, much of modern socialism-liberalism can best be characterized as collective altruism toward the "least advantaged" in society, to use philosopher John Rawls's characterization, with government serving as the primary instrumentality. As President Franklin D. Roosevelt expressed it in one of his famous radio fireside chats, "One of the duties of the State is that of caring for those of its citizens who find themselves the victims of such adverse circumstances as makes them unable to obtain even the necessities for mere existence without the aid of others. That responsibility is recognized by every civilized nation...To these unfortunate citizens aid must be extended by Government — not as a matter of charity but as a matter of social duty."[45] For moral support, Roosevelt invoked the words of Abraham Lincoln. Government, Lincoln had said, should "do for the people what they cannot do for themselves or cannot do so well for themselves." Equally important, modern mainstream socialism and liberalism adhere to the view that the private sector and market mechanisms, while important, cannot be trusted to be self-policing or always to serve the public interest. President Ronald Reagan's mantra was that government is the problem, not the solution, but many socialists-liberals believe that, as the old saying goes, the truth often runs well in reverse. Government action is sometimes the only effective way to defend the public against free market malfeasance.

Socialism-liberalism, like capitalism, has its share of overclaims and warts, including a tendency to oppressive over-regulation, bureaucratic stagnation, gross inefficiencies, a stifling of innovation, and, not least, an all too common tendency to use governmental power for personal or narrowly partisan ends. But perhaps most serious is the charge that, despite good intentions, socialism-liberalism is sometimes the instigator of inequities and unwitting unfairness. This perception accounts for much of the recent animus against race-sensitive "affirmative action" and the federal welfare program in the United States. But the main battleground over fairness and equity has to do with taxes, where liberals and conservatives hold sharply differing views.

building codes, fire codes, condominium covenants, property taxes, and other real-world constraints. Under the biological contract, and Fair Shares, property rights are further limited by what is compatible with meeting the basic needs of the rest of us.

What about those who cannot contribute their fair share of productive capital and labor? Is there not some danger that unqualified help for the truly needy would turn society into a vast charity ward, imposing a terrible economic burden on the rest of us? The fact is that we already willingly support our dependent children, our elderly, and the disabled, among others. We are more grudging as a society about aiding the poor and their children, and we know that many of them *can* contribute in various ways. Nevertheless, there is also a hard-core problem — the people in our society who, for one reason or another, will always be unable to contribute. "Workfare" or "welfare-to-work" programs will never succeed for many of these people. This is a reality we seem reluctant to face. But if our evolved moral sensibilities can encompass the victims of highly visible disasters like floods, earthquakes, and terrorist attacks, there is no moral ground for excluding the less visible tragedies all around us, including those that are, sadly, biologically based. This is where the golden rule, and perhaps Rawls's "veil of ignorance," should apply, especially knowing that we, or someone we love, could also end up in great need. Indeed, one of every five

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

families in the United States has a member who suffers from some form of mental illness.

What if the existing economic and political order fails to provide for our basic needs? Both the historical record and the implicit terms of our biological contract warn us that all regimes are ultimately contingent. Indeed, the American Declaration of Independence contains an enduring justification for breaking the "political bands" of the existing order, which can also be viewed from a bioeconomic, or Fair Shares, perspective. Governments are "instituted among men" to secure our "inalienable rights" and derive their "just powers" from "the consent of the governed." Moreover, whenever any form of government "becomes destructive of those ends," the people have the right to "alter or abolish it." Plato and Aristotle warned that no political order is immutable. And the modern game theorists, whose research on the constraints of and the preconditions for cooperative relationships has illuminated the foundations of social cooperation in nature, are unequivocal about the necessity for mutualism. "Defection" is the likely response to an exploitative, asymmetrical interaction. In the real world, of course, coercive force is often used to prevent defections, but the costs, and risks, are always high, and the long-term outcome is always problematical. Extremes of wealth and poverty are the seedbeds of revolution.

Finally, where do we draw the line — or lines? Is it realistic to have an open-ended commitment, an "entitlement," to provide for the basic needs of all potential claimants? Should we accommodate an unrestricted number of babies born to welfare mothers, or "deadbeat fathers"? And should we continue in perpetuity an open-door immigration policy or accept an unending flood of illegal immigrants? Finally, how do we draw lines in a global economy, where more and more of our needs, and wants, are satisfied by workers in other countries? Global poverty is a vast ocean of unmet needs; in Mexico alone, 40 percent of a population of over 100 million people live in deepest poverty. There are no easy answers to these questions, but I would reiterate a key point about the nature of the superorganism: the collective survival enterprise. It is based on mutualism and reciprocity, not altruism. So the general answer to my question above is that, in order to be consistent with the imperatives of the biological contract as I have articulated it, lines would eventually, inescapably, have to be drawn. As the economist Kenneth Boulding put it, "Anyone who believes exponential growth can go on forever in a finite world is either a madman or an economist."

Conclusion

Fairness is the golden thread that binds a viable society together. And when that thread breaks, the social fabric will unravel. The response to the former British Prime Minister Margaret Thatcher's contemptuous claim that "there is no such thing as society" is that a society exists when people believe it does and act accordingly — or vice versa. But fairness is not an all-purpose formula or recipe. It is a general principle that recognizes the merit of competing interests and directs us to find equitable compromises. In this paradigm, compromise is not necessarily a "sell-out" of one's principles to political expediency but may well be, and often is, adherence to a superordinate principle with a higher moral claim — because it recognizes and accommodates legitimate competing claims and the overarching goal of preserving a cooperative social order. However, the evidence is all around us that fairness is often a matter of perspective; it can be a very difficult call. That is why we have a formal justice system, and mediators, family counselors, contract negotiations, and, not least, markets. Indeed, every society has a panoply of informal customs and practices for approximating fairness, from "equal shares" to "first come, first served," "taking turns," "drawing straws," and "handicapping" — like senior citizen discounts and allowing children to go free.

However, social justice can be specified, to a first approximation, within the framework of the Fair Shares principles. It is grounded in the bedrock imperatives of our basic needs, using the measuring rods provided by the Survival Indicators Program. The Fair Shares ideology provides both a biological justification and, ultimately, a political imperative for striking a better balance between provision for our basic needs and reward for merit. More important, it provides specific measuring rods for where this balance can be found.

We conclude, then, by returning to where we began. Charles Darwin recognized that a human society is, quintessentially, an interdependent collective survival enterprise. The superorganism is the key to our survival and reproduction. However, this vision of our collective

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

purpose does not negate or ignore our individual self-interests. Rather, it represents an aggregation of those interests into an immensely complex system of synergies based primarily on mutualism and reciprocity, as Adam Smith himself fully appreciated. The poet John Donne's famous line, "no man is an island," is also true in a very practical, bioeconomic sense.

Accordingly, the modern, democratic state has evolved as an instrumentality for "self-government" and the pursuit of our common needs — the public interest — though its purpose is all too often subverted. Plato and Aristotle apprehended this basic purpose in their conception of the *polis*, and Aristotle prescribed a "mixed" government under law as our best hope for ensuring that the public interest would be served. Plato and Aristotle also recognized that a fair-minded form of justice is an essential element of the public interest; this is the only way to ensure long-term political stability. And the primary content of social justice consists of satisfying the basic needs of the population, along with rewarding merit — which also provides incentives for ensuring that our basic needs are met.

Over the past two thousand years we have added very little to this vision that is fundamentally new, though we have made many important improvements in the machinery of self-government. The Fair Shares framework contributes to this effort by spelling out the principles for social justice in more specific detail. It enlists the growing power of modern evolutionary biology and the human sciences to shed light on this matter, and it articulates an explicit set of criteria for reconciling — if not harmonizing — the competing claims to social justice advocated by theorists of the political Left and Right. I believe that the Fair Shares principles offer our best hope for achieving and maintaining that elusive state of willing consent, and cooperation, that is the key to social harmony. It is an ideal worth striving for, because our own survival, and more certainly that of our descendants, may depend upon it. Nothing less than our evolutionary future is at stake. To paraphrase Benjamin Franklin, in the long run either we will survive together or go extinct separately.

References

1. Theodosius Dobzhansky, "Nothing in biology makes sense except in the light of evolution," *The American Biology Teacher,* March 1973, 35:125–129.

2. Charles Darwin, *The Descent of Man, and Selection in Relation to Sex* (New York: A. L. Burt, (1871/1874), pp. 146–147.

3. Ibid., p. 148.

4. David Sloan Wilson and Elliott Sober, "Reviving the Superorganism," *Journal of Theoretical Biology,* 1989, 136: 337–56; Thomas D. Seeley, "The Honey Bee Colony as a Superorganism," *American Scientist*, 1989, 77: 546: 553; Bert Hölldobler and Edward O. Wilson, *Journey to the Ants* (Cambridge, MA: Belknap Press, 1994); Thomas D. Seeley, *The Wisdom of the Hive: The Social Physiology of Honey Bee Colonies* (Cambridge, MA: Harvard University Press, 1995); Peter Richerson and Robert Boyd, "Complex Societies: The Evolutionary Origins of a Crude Superorganism," *Human Nature,* 1999, 10: 253–289; Peter A. Corning, "Synergy and the Evolution of 'Superorganisms,' Past, Present, and Future." Prepared for the annual meeting, Association for Politics and the Life Sciences, Montreal, Canada, August 11–14, 2002. Cf. Alfred Kroeber, "The Superorganic," *American Anthropologist*, 1917, 19: 163–213.

5. Peter A. Corning, *Nature's Magic: Synergy in Evolution and the Fate of Humankind* (Cambridge: Cambridge University Press, 2003); See also R. G. Klein, *The Human Career: Human Biological and Cultural Origins* (Chicago: University of Chicago Press, 1999); M.H. Wolpoff, *Paleoanthropology* (New York: McGraw-Hill, 1999); P.R. Ehrlich, *Human Natures: Genes Cultures and the Human Prospect* (Washington, D.C.: Island Press/Shearwater Books, 2000).

6. Christopher Boehm, "Emergency Decisions, Cultural-Selection Mechanics, and Group Selection," *Current Anthropology,* 1996, 37: 763–793; Christopher Boehm, "Impact of the Human Egalitarian Syndrome on Darwinian Selection Mechanics," *The American Naturalist,* 1997, 150: 5100–5121; Christopher Boehm, *Hierarchy in the Forest: The Evolution of Egalitarian Behavior* (Cambridge, MA: Harvard University Press, 1999).

7. A. Heywood, *Political Theory: An Introduction* (London: Macmillan, 1999), pp. 17–18.

8. M. Konner, "Seeking Universals," *Nature,* 2002, 415: 121.

9. E. Burke, *Works of Edmund Burke* (New York: Harper and Brothers, 1847/1999).

10. L. Doyal I. Gough, *A Theory of Human Need* (London: MacMillan Education Ltd, 1991).

11. A. Heywood, *Political Theory: An Introduction* (London: MacMillan, 1999), p. 298.

12. Peter A. Corning, *The Synergism Hypothesis: A Theory of Progressive Evolution* (New York: McGraw-Hill, 1983); Peter Corning, "Biological Adaptation in Human Societies: A 'Basic Needs' Approach," *Journal of Bioeconomics,* 2000, 2: 41–86.

13. Peter A. Corning, "Biological Adaptation in Human Societies: A 'Basic Needs' Approach," *Journal of Bioeconomics,* 2000, 2: 41–86.

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

14. R.B. Edgerton, *Sick Societies: Challenging the Myth of Primitive Harmony* (New York: The Free Press, 1992).

15. F. Ashcroft, *Life at the Extremes* (Berkeley, CA: University of California Press, 2000).

16. Paul Rubin, *Darwinian Politics: The Evolutionary Origin of Freedom* (New Brunswick, NJ: Rutgers University Press, 2002).

17. R.I.M. Dunbar, "Brain on Two Legs: Group Size and the Evolution of Intelligence" in *Tree of Origin: What Primate Behavior Can Tell Us about Human Social Evolution*, F.B.M. de Waal, editor (Cambridge, MA: Harvard University Press, 2001), pp. 173–191.

18. Among the many references on this point, see especially Peter A. Corning, *The Synergism Hypothesis: A Theory of Progressive Evolution* (New York: McGraw-Hill, 1983); Roger Masters and D. Margaret Gruter, editors, *The Sense of Justice: Biological Foundations of Law* (Newbury Park, CA: Sage, 1992); F.B.M. de Waal, *Good Natured: The Origin of Right and Wrong in Humans and Other Animals* (Cambridge, MA: Harvard University Press, 1996); F. B. M. de Waal, editor, *Tree of Origin: What Primate Behavior Can Tell Us about Human Social Evolution* (Cambridge, MA: Harvard University Press, 2001); Matt Ridley, *The Origins of Virtue: Human Instincts and the Evolution of Cooperation* (New York: Viking, 1997); P. Weingart, et al., editors, *Human By Nature: Between Biology and the Social Sciences* (Mahwah, N. J.: Lawrence Erlbaum Associates, 1997); Elliott Sober and David Sloan Wilson, *Unto Others: The Evolution and Psychology of Unselfish Behavior* (Cambridge, MA: Harvard University Press, 1998); L.A. Dugatkin, *Cheating Monkeys and Citizen Bees* (New York: The Free Press, 1999); P.R. Ehrlich, *Human Natures: Genes Cultures and the Human Prospect* (Washington, D.C.: Island Press/Shearwater Books, 2000).

19. Peter A. Corning, *The Synergism Hypothesis: A Theory of Progressive Evolution* (New York: McGraw-Hill); Peter A. Corning, "Synergy and Self-Organization in the Evolution of Complex Systems," *Systems Research,* 1995, 12: 89–121; Peter A. Corning, "The Synergism Hypothesis," *Journal of Social Evolutionary Systems*, 1998, 21(2): 133–172; Peter A. Corning, *Nature's Magic: Synergy in Evolution and the Fate of Humankind* (Cambridge: Cambridge University Press, 2003).

20. Adam Smith, *The Theory of Moral Sentiments* (Oxford: Clarendon Press, 1976/1759), pp.10–11, 12.

21. Smith (like Darwin) often gets unfairly criticized for the misuses that are made of his ideas. However, Smith's moral foundation was the Stoic philosophy of world citizenship, the good of the community as a whole, and the Christian teaching of the Golden Rule. We should "love our neighbour as we love ourselves" (A. Smith, *The Theory of Moral Sentiments* [Oxford: Clarendon Press, 1759/1976], Vol. I.i.5.5). Moreover, according to Smith, virtue consists of exercising "self-command" over our baser impulses and having sympathy toward others (Vol. II.3.34). Indeed, self-command is essential to a civilized society (Vol. VI.iii.II). Moreover, Smith's justification for the invisible hand was that it would actually benefit society because the rich could not actually consume a much greater proportion of the necessities of life; their share would only be of better quality (Vol. IV.I.10). In other words, Smith was not endorsing a zero-sum game in which the rich get richer at the expense of the poor.

22. I am also partial to Robert Hunt Sprinkle's term "life-sciences liberalism," in his *Profession of Conscience* (Princeton, N.J.: Princeton University Press, 1994).

23. C. Boehm, "Emergency Decisions, Cultural-Selection Mechanics, and Group Selection," *Current Anthropology,* 1996, 37: 763–793; C. Boehm, "Impact of the Human Egalitarian Syndrome on Darwinian Selection Mechanics," *The American Naturalist*, 1997, 150: 5100–5121; C. Boehm, *Hierarchy in the Forest: The Evolution of Egalitarian Behavior* (Cambridge, MA: Harvard University Press, 1999). Also B.M. Knauft, "Violence and Sociality in Human Evolution," *Current Anthropology,* 1991, 32(4): 391–409.

24. P.J. Richerson and R. Boyd, "Complex Societies: The Evolutionary Origins of a Crude Superorganism," *Human Nature,* 1999, 10: 253–289.

25. See especially D.E. Brown, *Human Universals* (Philadelphia: Temple University Press, 1991).

26. See especially R. Plomin, J. C. Defries, and G. E. McClearn, *Behavioral Genetics: A Primer* (New York: W. H. Freeman, 1990); also R.A. Lippa, *Gender, Nature, and Nurture* (Mahwah, N.J.: Lawrence Erlbaum Associates, 1988).

27. Target Training International, Ltd., *Personal Interests, Attitudes and Values Assessment* (Princeton, NJ: Princeton University Press, 1990).

28. J.A. Brenden R. L. Hamer, "The Interstudy HMO Trend Report," www.statehealthfacts.kff.org (St. Paul, MN: Interstudy Publications, 1998).

29. There is a vast literature on the concept of justice, needless to say. Two broad overviews are D. Miller, *Social Justice* (Oxford: Oxford University Press, 1976) and P. Pettit, *Judging Justice: An Introduction to Contemporary Political Philosophy* (London: Routledge & Kegan Paul, 1980). See also Roger Masters and D. Margaret Gruter, editors, *The Sense of Justice: Biological Foundations of Law* (Newbury Park, CA: Sage, 1992). The broader issue of evolutionary ethics is discussed in a two-part review by this author: Peter A. Corning, "Evolution and ethics. . .An idea whose time has come? (Part One)," *Journal of Social and Evolutionary Systems*, 1996, 18: 421–435 and "Evolution and ethics. . .An idea whose time has come? (Part Two)," *Journal of Social and Evolutionary Systems*, 1997, 20(3): 323–331. Three other relevant volumes on the topic are Matt Ridley, *The Origins of Virtue: Human Instincts and the Evolution of Cooperation* (New York: Viking, 1997); Robert Wright, *The Moral Animal: Evolutionary Psychology and Everyday Life*

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

(New York: Pantheon, 1994); and Edward O. Wilson, "The Biological Basis of Morality," *The Atlantic Monthly,* 1998, 281(4): 53–70.

30. R. Nozick, *Anarchy, State and Utopia* (Oxford: Blackwell, 1974). A word is in order regarding the libertarian position. A desire for personal freedom, and the pursuit of self-interest are perfectly consistent with a Darwinian, evolutionary perspective, and there is good evidence in the literature of experimental psychology that a need for personal "autonomy" is an important (if variable) facet of human nature. And so are competitiveness and the striving for influence and power. However, we are also deeply social beings, and, most important, we are compelled to satisfy our needs within a complex economic system. Freedom and social responsibility are the two sides of the social contract. However, some extreme libertarians take a one-sided view; their claims for individual freedom have no regard for social obligations. Indeed, in the lexicon of modern-day *laissez faire* capitalists, "freedom" is the highest social good. In the words of the eccentric conservative novelist Ayn Rand, *The Fountainhead* (New York: The Bobbs-Merrill Company, 1943), who remains the soul mate of many libertarians and free-market romantics, "civilization is the process of setting man free from men" (p. 685). Rand's protagonists are always defiant individualists. "Just as life is an end in itself, so every living human being is an end in himself, not the means to the ends or welfare of others — and, therefore, man must live for his own sake, neither sacrificing himself to others nor sacrificing others to himself" in A. Rand, *The Objectivist Newsletter* (New York: Times-Mirror, 1962, v.1), p. 35. The problem is that this position is ultimately exploitative. In game theory, it's called "defection" or "cheating," and it is unsustainable. Why should the rest of us accede to this? As the old saying goes, he who takes from society without giving back is a thief.

31. Plato, *The Republic*, translated by B. Jowett (Cleveland and New York: World Publishing Co., 1946, Book II), 369a–d, 370b,c, 372a.

32. Aristotle, *The Politics*, translated by E. Barker (Oxford: Oxford University Press, 1946).

33. See especially T. R. Gurr, *Why Men Rebel* (Princeton, NJ: Princeton University Press, 1970); T.R. Gurr and V.F. Bishop, "Violent Nations, and Others," *The Journal of Conflict Resolution*, 1976, 20(1): 79–110.

34. James Q. Wilson, *The Moral Sense* (New York: The Free Press, 1993). Wilson's important book discusses the subject at length. But see also Roger D. Masters, "Evolutionary Biology and Natural Right" in *The Crisis of Liberal Democracy*, W. Soffer and K. Deutsch, editors (Albany, NY: State University New York Press, 1987); Roger D. Masters and D. Margaret Gruter, editors, *The Sense of Justice: Biological Foundations of Law* (Newbury Park, CA: Sage, 1992).

35. Among the many references on this topic, see especially E. Westermarck, *The Origin and Development of the Moral Ideas* (Freeport, NY: Books for Libraries Press, 1906/1971); A. Gouldner, "The Norm of Reciprocity," *American Sociological Review*, 1960, 25: 161–178; R. Axelrod, "An Evolutionary Approach to Norms," *American Political Science Review*, 1986, 80: 1095–1111; R.D. Alexander, *The Biology of Moral Systems* (New York: Aldine de Gruyter, 1987); Roger. D. Masters, *The Nature of Politics* (New Haven, CT: Yale University Press, 1989); Roger D. Masters and D. Margaret Gruter, editors, *The Sense of Justice: Biological Foundations of Law* (Newbury Park, CA: Sage, 1992); J.J. Mansbridge, *Beyond Self Interest* (Chicago: The University of Chicago Press, 1990); Robert J. McShea, *Morality and Human Nature: A New Route to Ethical Theory* (Philadelphia, PA: Temple University Press, 1990); Dennis Krebs, "The Evolution of Moral Behaviors" in *Handbook of Evolutionary Psychology*, Larry Arnhart, *Darwinian Natural Right: The Biological Ethics of Human Nature* (Albany, NY: State University of New York Press, 1998); Charles Crawford and Dennis L. Krebs, editors (Mahwah, N.J.: Lawrence Erlbaum Associates, 1998); Elliott Sober and David Sloan Wilson, *Unto Others: The Evolution and Psychology of Unselfish Behavior* (Cambridge, MA: Harvard University Press, 1998); Leonard D. Katz, editor, *Evolutionary Origins of Morality* (Thorverton, UK: Imprint Academic, 2000); E. Leigh, "Evolutionary Biology and Human Altruism: A Review of Three Books," *Evolution*, 2000, 54(1); David S. Wilson, *Darwin's Cathedral: Evolution, Religion, and the Nature of Society* (Chicago: University of Chicago Press, 2002).

36. See especially K.J. Gergen, *The Psychology of Behavior Exchange* (Reading, MA: Addison-Wesley, 1969); H. Gintis, "Strong Reciprocity and Human Sociality," *Journal of Theoretical Biology,* 2000, 206: 169–179; H. Gintis, *Game Theory Evolving: A Problem-Centered Introduction to Modeling Strategic Behavior* (Princeton, NJ: Princeton University Press, 2000); M.A. Nowak, "*Homo grammaticus*," *Natural History*, 2000, 109(10): 36–45; J. Heinrich, et al., "In Search of *Homo economicus*: Behavioral Experiments in 15 Small-Scale Societies," *American Economic Review*, 2001, 91(2): 73–78; E. Fehr and U. Fischbacher, "Why Social Preferences Matter — The Impact of Non-Selfish Motives on Competition, Cooperation and Incentives," *The Economics Journal*, 2002, 112: C1–C33; K. Sigmund, et al., "The Economics of Fair Play," *Scientific American*, 2002, 286(1): 83–87.

37. K. Sigmund, et al., "Reward and Punishment," *Proceedings of the National Academy of Sciences*, 2001, 98: 10757–10762; S. Bowles and H. Gintis, "*Homo reciprocans*," *Nature*, 2002, 415: 125–128; E. Fehr and S. Gächter, "Altruistic Punishment in Humans," *Nature*, 2002, 415: 137–140; J. Gowdy, "Economic Man and Selfish Genes: The Relevance of Recent Advances in Biological Theory to Valuation and Economic Policy," Submitted to *Journal of Socioeconomics*, 2002; M.E. Price, L. Cosmides, and J. Tooby, "Punitive Sentiments as an Anti-Free Rider Psychological Device," *Evolution and Human Behavior*, 2002, 23: 203–231.

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press

38. See F.B.M. de Waal, *Good Natured: The Origin of Right and Wrong in Humans and Other Animals* (Cambridge, MA: Harvard University Press, 1996); F.B.M. de Waal, *Bonobo: The Forgotten Ape* (Berkeley: University of California Press, 1997); F.B.M. de Waal, editor, *Tree of Origin: What Primate Behavior Can Tell Us about Human Social Evolution* (Cambridge, MA: Harvard University Press, 2001); R.W. Wrangham and D. Peterson, *Demonic Males: Apes and the Origins of Human Violence* (Boston: Houghton Mifflin Co., 1996); L.A. Dugatkin, *Cheating Monkeys and Citizen Bees* (New York: The Free Press, 1999).

39. See also Elliott Sober and David Sloan Wilson, *Unto Others: The Evolution and Psychology of Unselfish Behavior* (Cambridge, MA: Harvard University Press, 1998); Edward O. Wilson, "The Biological Basis of Morality," *The Atlantic Monthly*, 1998, 281(4): 53–70.

40. J. Rawls, *The Theory of Justice* (Cambridge, MA: Harvard University Press, 1972).

41. Social Darwinists like William Graham Sumner, E. B. Tylor, Albert Keller, Gustav Ratzenhoffer and others took their inspiration from Herbert Spencer's writings. Social progress, they argued, was fueled by competition and the "survival of the fittest," in Spencer's provocative term. Fairly typical was this *pronunciamento* by E.B. Tylor, *Primitive Culture: Researches into the Development of Mythology, Philosophy, Religion, Art and Customs* (New York: Henry Holt, 1871/1889): "The institutions which can best hold their own in the world gradually supersede the less fit ones, and. . .this incessant conflict determines the general resultant course of culture" (vol I, p. 62). Business magnate John D. Rockefeller, in a Sunday school address, assured his audience that "The growth of large business is merely a survival of the fittest. . .This is not an evil tendency in business. It is merely the working out of a law of nature and a law of God" in K. Lux, *Adam Smith's Mistake* (Boston: Shambhala, 1990), p. 148. However, it was the steel baron and philanthropist, Andrew Carnegie — never a man to mince words — who penned the most inflammatory expression of the Social Darwinist credo, in an 1889 essay. "While the law [of competition] may be sometimes hard for the individual, it is best for the race, because it ensures the survival of the fittest in every department. We accept and welcome, therefore. . .great inequality of environment, the concentration of business, industrial and commercial, in the hands of the few, and the law of competition between these, as being not only beneficial, but essential for the future progress of the race" (p. 132).

42. Paul Rubin, *Darwinian Politics: The Evolutionary Origin of Freedom* (New Brunswick, NJ: Rutgers University Press, 2002), p. xiv.

43. Peter A. Corning, "Biological Adaptation in Human Societies: A 'Basic Needs' Approach," *Journal of Bioeconomics,* 2000, 2: 41–86; Peter A. Corning, "Holistic Darwinism: 'Synergistic Selection' and the Evolutionary Process," *Journal of Social and Evolutionary Systems,* 1997, 20(4): 363–400.

44. George McGovern, "The Case for Liberalism: A Defense of the Future Against the Past," *Harper's Magazine,* 2002, 305(1831): 37–42.

45. Quoted in Peter A. Corning, *The Evolution of Medicare. . .from idea to law,* Research Report No. 29, Office of Research and Statistics, Social Security Administration (Washington, D.C.: United States Government Printing Office, 1969).

46. For a more detailed analysis of Rawls, see J. Wolff, *An Introduction to Political Philosophy* (Oxford: Oxford University Press, 1996).

https://doi.org/10.1017/S0730938400006638 Published online by Cambridge University Press