

## THE SCIENCE OF HUMAN NATURE AND THE SOCIAL CONTRACT

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**ABSTRACT:** One of the most important political challenges of our time – indeed of all times – is social justice. It was first addressed as a philosophical issue in Plato’s great dialogue, the *Republic*, and it has been a continuing theme in the “tradition of discourse” ever since. As I will argue, Plato’s analysis and conclusions represent a sound foundation and a starting point for advancing a new social justice paradigm that is undergirded by the emerging, multi-disciplinary science of human nature, which is briefly overviewed here. I refer to it as a “biosocial contract,” and it involves three empirically-grounded fairness precepts – *equality*, *equity*, and *reciprocity* -- that together form a new normative framework for guiding social policy. The obvious logical objection to such a normative undertaking, commonly referred to as the “naturalistic fallacy,” is briefly considered from the perspective of the biological problem of survival and reproduction and the fundamental nature of a human society as, quintessentially, a “collective survival enterprise.” Logic aside, the reality is that we are all required to make unavoidable choices.

**KEYWORDS:** Social justice; fairness; Plato; Sophists; Hobbes; Locke; Rousseau; Rawls; basic needs; equality, equity, reciprocity; naturalistic fallacy.

### INTRODUCTION

The moral foundation for any “legitimate” (i.e., consensually acceptable) society is social justice, an insight that traces back to Plato – the very fountainhead of Western political philosophy. Social justice also goes under the heading of “fairness,” and in an organized society it entails a system of reciprocities commonly referred to as a “social contract.”

After more than 2,500 years of inconclusive philosophical debate about social justice and the social contract, the emerging science of human nature, along with recent theoretical insights from a number of scientific disciplines, are shedding new

light on the subject. Here I will revisit Plato's foundational argument and will then provide a brief overview of the contributions from various disciplines. I will argue that these important scientific findings point to three complementary normative principles – *equality, equity, and reciprocity* -- that together can provide a scientifically-grounded framework for social justice. I refer to it as the “biosocial contract,” and it is developed in depth in my 2011 book *The Fair Society: The Science of Human Nature and the Pursuit of Social Justice*.<sup>1</sup> Among other things, I will argue here that this framework allows us to finesse the otherwise debilitating naturalistic fallacy, as well as providing concrete guidance for the formation of social policy – fulfilling Plato's aspiration for a political philosophy that truly informs and enlightens our politics.

#### POLITICAL PHILOSOPHY 101: PLATO'S *REPUBLIC*

A philosophy that loses touch with reality is no better than superstition, a self-indulgent and possibly dangerous pastime. But a philosophy that is informed by “science” in the broad sense can be a powerful and useful tool, providing guidance about how individuals and societies can confront the many challenges of living, ultimately enabling them to thrive. A philosophy informed by science can become a discipline with a higher social purpose.

An underappreciated role-model for such an empirically-grounded philosophy is the very progenitor of Western political thought, Plato. In his classic dialogue, the *Republic*, Plato posed the right questions about social justice, and he based his responses (through his spokesperson Socrates) in the best available evidence of his day. Plato's analysis and prescriptions remain a useful starting point even today. So let us begin with Plato.

Plato was born in Athens in about 427 B.C., at the tail-end of that ancient city-state's legendary Golden Age, and he grew to maturity during Athens' disastrous 27-year Peloponnesian War with Sparta.<sup>2</sup> It was a period of great suffering and social

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<sup>1</sup> Peter Corning, *The Fair Society: The Science of Human Nature and the Pursuit of Social Justice*, (Chicago, University of Chicago Press, 2011).

<sup>2</sup> The following brief synopsis is drawn from a much more detailed account of Athens' Golden Age and subsequent decline (a dark lesson for our times) in my 2011 book. It utilized the following sources: Peter Connolly, *The Ancient City: Life in Classical Athens and Rome*, (Oxford, Oxford University Press, 1977); Plutarch, *Lives*, [ca. 46-120 A.D.], New York, Modern Library, 2001; John Boardman, Jasper Griffin, and Oswyn Murray, (eds.), *Oxford History of Greece & the Hellenistic World*. 2nd ed., (New York, Oxford University Press, 2002); Robin Waterfield, *Athens: A History, From Ancient Ideal to Modern City*, (New York, Basic Books, 2004); Edward M. Harris, *Democracy and the Rule of Law in Classical Athens: Essays on Law, Society, and Politics*. (New York, Cambridge University Press, 2006); Sarah B. Pomeroy, Stanley M. Burstein, Walter Donlan, and Jennifer Tolbert Roberts, *Ancient Greece: A Political, Social and Cultural History*, 2nd ed., (New York, Oxford University Press, 2007).

stress for the population (including a devastating plague), and it ended in a humiliating defeat for the Athenians and occupation by the Spartans. In the aftermath of the war, an impoverished, demoralized, angry population became deeply divided politically, and economic tensions ran high. Most of Athens' wealth was now concentrated in the hands of 5-10% of the population, while 60-70% lived in more or less severe poverty. Some historians describe the post-war oligarchy (the so called Thirty Tyrants) as a reign of terror. Eventually Athens' vaunted democracy was restored in name, but it really amounted to another radical oligarchy. Political extremists on both sides had become the dominant players in shaping public policy. This was the Athens that shaped Plato's perspective.

It is no wonder, then, that Plato chose *not* to use Athens as the model state in his great dialogue, the *Republic*.<sup>3</sup> Instead, he went back to the drawing board and tried to design an ideal state that he believed could resolve the fundamental problem of social injustice. Indeed, the little-known and seldom-used subtitle of the *Republic* is "Concerning Justice." Call it social engineering.

To anticipate my bottom line assessment of the *Republic*, Plato had the right diagnosis but the wrong prescription. Yet, to his everlasting credit, Plato later recognized the flaws in his design and, in his last essay (the *Laws*), pointed the way to a far better solution to the problem of achieving a reasonably just state.<sup>4</sup> This is why it is often said (after the philosopher Alfred North Whitehead) that the history of political theory is but a footnote to Plato, although it might be more accurate to call it a trans-generational dialogue with Plato.<sup>5</sup>

At the outset of the *Republic* Plato raises and rebuts some of the other ideas about politics that were then "in the air" in Athens, many of them attributable to the Sophists. The Sophists were a group of itinerant teachers whose pupils included many of Athens' wealthy aristocrats, who paid generously for being told what they wanted to hear. Among other things, the Sophists taught the idea that all laws are merely social conventions and that each individual has the right to define for himself (or herself) what is right and wrong. For instance, the Sophist Antiphon suggested that some laws

<sup>3</sup> Plato, *The Republic*, [380 B.C.], Trans. B. Jowett, (Cleveland, OH, World Publishing Company, 1946). See also Ernest Barker, *Greek Political Theory*, [1918], (London, Methuen, 1960) and George H. Sabine, *A History of Political Theory*, 3rd ed., (New York, Holt, Rinehart & Winston, 1961).

<sup>4</sup> Plato, *The Laws*, [ca. 360 B.C.], (New York, Penguin Books, 1992a). Also, see Plato, *The Statesman*, [360 B.C.], (Indianapolis, IN, Hackett Publishing Co., 1992b).

<sup>5</sup> This is why, in my judgment, the *Republic* and the *Laws* – along with the *Politics* of Aristotle (Plato's most illustrious student and the world's first great polymath) – should be required reading for every modern statesman. Aristotle, the *Politics*, [350 B.C.], Trans. Ernest Barker, (Oxford, Oxford University Press, 1946). Also, see Aristotle, *Nicomachean Ethics*, [350 B.C.], Trans. Terence Irwin, (Indianapolis, IN, Hackett Publishing Co., 1985).

may even require us to do what is “unnatural” – helping others. What *is* natural is to pursue your self-interest.

Later Sophists went even further, arguing that all laws arise from a voluntary compact that can be changed or even subverted, if desired. Since inequality is a basic law of nature, and we are inherently unequal, justice is whatever the strongest and most powerful can impose on others. Thus, the character Thrasymachus in the *Republic* declares that justice is nothing more than “the interest of the stronger.” Some of the later Sophists were even more reactionary. They attacked the supposed selfishness of the masses and claimed that democracy allowed the poor to exploit the rich!

Plato’s rebuttal to all of these egocentric and individualistic (pre-libertarian?) arguments proceeded from his core assumptions about the very nature and purpose of human societies. To Plato, justice is not primarily concerned with some higher metaphysics, or a tug-of-war over our rights as individuals. It is concerned with equitable rewards for the proper exercise of our abilities and our calling in a network of interdependent economic relationships. Moreover, and this point is crucial, Plato recognized that fairness also is rooted 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....[So] let us construct a city beginning with its origins, keeping in mind that the origin of every real city is human necessity....[However], we are not all alike. There is a diversity of talents among men; consequently, one man is best suited to one particular occupation and another to another....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.<sup>6</sup>

In other words, Plato correctly identified the underlying (biological) purpose of a human society – to provide for the basic survival and reproductive needs of its members -- and he fully apprehended one of its fundamental advantages, an economic

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<sup>6</sup> Plato, *Republic*, 2.396a-d, 370b, c, 372a..

division of labor and specialization of roles. (He might also have mentioned the additional benefit of jointly-produced collective goods, or public goods.) Plato also specifically characterized a human society as being like an organism with many parts (presaging Herbert Spencer's "superorganism" analogy, which many modern biologists have adopted). Most important, Plato grasped the core political challenge – to achieve social justice (fairness) for all the members of what can properly be called the "collective survival enterprise." He also defined social justice in a way that has withstood the test of time. In the words of one of Plato's characters, Polymarchus, it involves "giving every man his due."

There have been countless debates through the centuries over what Plato meant by the word "due". But a common sense interpretation is that the rewards provided by society should start with a person's all-important basic needs but then also reflect their contributions (or punish their crimes and misdeeds). Plato clearly did not mean equality per se. Rather, he meant an equitable portion in accordance with some criterion of fairness -- a fair share. Aristotle also used the term "proportionate equality." (There is also a voluminous scholarly literature, especially in welfare economics, on Aristotle's related concept of "distributive equity.")<sup>77</sup>

Plato got several ingredients right, I believe, in his basic recipe for how to go about achieving social justice in a complex society. One key ingredient was his insistence that any system of government must seek to be disinterested, or non-partisan, and should seek to rule in the public interest – in other words, in a manner that is fair to all of the classes and interests in a society. A second ingredient was Plato's deep conviction that education is vitally important to achieving and sustaining social justice. Many of the troubles he saw around him could be traced to unenlightened attitudes and behaviors that were socially destructive. They invited an unbridled selfishness and a wanton disregard for the public interest. Ignorance is "the ruin of states," he maintained.<sup>88</sup>

Finally, Plato recognized what many of the Sophists of his day (and many conservative economists and libertarians today) failed to acknowledge. A human society is not simply a market place or an aggregation of isolated individuals seeking to exploit one another, or to be free from one another. Humans are fundamentally social animals who are shaped by, and benefit from, participation in the life of the community. So a harmonious society provides important social and psychological benefits, as well as economic necessities.

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<sup>7</sup> Aristotle, *Nicomachean Ethics*, Book V, 5. Aristotle's term "distributive equity" can be found at *ibid.*, Book V, 10.

<sup>8</sup> Plato, *Laws*, Book III.

It would appear that Plato's assumptions represent a sturdy foundation upon which to build a political system that embodies social justice. Where Plato took a wrong turn was with his prescription for how to achieve this – namely, his ideal state. What Plato proposed, in a nutshell, is that political power should be entrusted to specially educated and trained “philosopher kings” who would have no personal property, who would live communally as celibates, and who would therefore rule in the public interest. It has often been noted that Plato was not a democrat; he distrusted what has sometimes been referred to as “mobocracy”. Thus, he preferred an authoritarian model – a benevolent dictatorship. The masses would be ruled over like children by wise, disinterested rulers. Pure reason would prevail over our “animal spirits” and selfish interests.

Some of the problems with this model are obvious. No amount of education can completely erase and re-write human nature – our evolved “spirits” and “appetites” (to borrow some of Plato's terminology). The landscape of history is littered with political (and religious) leaders who, in the end, had feet of clay. Furthermore, some of us are less teachable, more impulsive, and more strong-willed than others. Plato overestimated the power of education to teach self-restraint and self-sacrifice. Equally important, a desire for autonomy and personal freedom are also an important part of human nature. Not only may we deeply resent being told how, precisely, to live our lives but we may actually know better than any philosopher king (since they could not be omniscient) what we are fitted for and what is best for us – although sometimes our parents, families, friends, and teachers can be helpful. So, at a deep level, Plato's psychology was seriously deficient (see below).

When Plato set out to write the *Laws*, near the end of his life, his views had drastically changed. Now he had come around to the idea that the next best thing to an all-powerful, all-knowing and benevolent sovereign was the sovereignty of the law. Plato's overall objective remained the same – to secure social justice – but he had come to the view that the law represented a repository of collective experience and wisdom that had been painstakingly -- and sometimes painfully -- accumulated by a society over the course of time. At its best, the law represents a body of rules, norms and practices that are generally accepted as being just (fair) – “reason unaffected by desire” as Aristotle put it in the *Politics*.<sup>9</sup> If everyone, including the “rulers”, were equally subject to the law, and if everyone were treated equitably under the law, this would go a long way toward ensuring a just society. Plato called it the “golden cord” of law.<sup>10</sup>

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<sup>9</sup> Aristotle, *Politics*, 1287a33.

<sup>10</sup> Plato, *Laws*, Book IV. Also, see the discussion in Sabine, *A History of Political Theory*, pp. 71-78.

But Plato also recognized that something more is needed to achieve a just society, namely, a set of political institutions that will govern in a way that furthers the underlying purpose of society and advances social justice. It is here that Plato made perhaps his most important contribution to political science. He initiated a dialogue about what kind of government would best be able to ensure social justice. Instead of investing power in the hands of a philosopher king, or turning it over to the masses, Plato suggested that any government is more likely to be just and equitable if it reflects an amalgam of the various interests and classes in society – the public interest -- and strikes a balance between them.

Plato's great student, Aristotle, elaborated on the idea of a "mixed government" in the *Politics* and the later Greek historian Polybius (200-118 B.C) took up the idea and proposed that it should combine democratic (egalitarian) elements, aristocratic elements and even strong leadership in the form of a "monarchical" element.<sup>11</sup> Polybius used the Roman Republic as his model. If everyone in society is fairly represented, this would provide "checks and balances" and would impel them to work toward compromises that balance various interests, including the property interests of the rich and the basic needs and wants of the rest of society. As Plato had insisted, the key political challenge is fairness – social justice. The problem is rooted in human nature.

#### HUMAN NATURE IN THE "TRADITION OF DISCOURSE"

It is not surprising, then, that the concept of human nature has played a central part in our social and political dialogue over the course of history and continues to shape our views about social justice even today. As Steven Pinker points out in his best-selling *tour-de-force* on our modern-day misconceptions (and biases) about human nature, appropriately titled *The Blank Slate*:

Everyone has a theory of human nature....Our theory of human nature is the wellspring of much of our lives. We consult it when we want to persuade, or threaten, inform or deceive. It advises us on how to nurture our marriages, bring up our children, and control our own behavior...Rival theories of human nature are entwined in different ways of life and different political systems, and have been a source of much conflict over the course of history.<sup>12</sup>

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<sup>11</sup> See especially the discussion in Sabine, *A History of Political Theory*, pp. 77-80. Also, Polybius, *The Histories*, trans. Robin Waterford, (Oxford: Oxford University Press, 2010).

<sup>12</sup> Steven Pinker, *The Blank Slate: The Modern Denial of Human Nature*, (New York, Viking Penguin, 2002), p. 1.

Pinker might also have pointed out that the great political philosophers over the centuries have likewise anchored and undergirded their theories with various assumptions about human nature. For instance, Plato, in the *Republic*, divided what he called the “soul” into three elements, “appetitive” (nutrition, sex, etc.), “spirited” (emotions, ambition, competitive urges, etc.), and a rational, reasoning element, which he viewed as the primary function of the brain. These three elements can either be in harmony or at war with one another, Plato argued, so it is imperative for the rational element in each of us to exercise control over the urges and impulses that arise from below.

Human societies confront a similar challenge, Plato believed, and in the *Republic* he envisioned that his ideal state would be comprised of three social classes that roughly corresponded to the three elements of our individual souls. If humans with varying talents and temperaments are properly educated and trained -- from manual laborers to soldiers to philosopher kings -- and are then given the work for which they are suited, the result would be a harmonious and just society, which Plato characterized as a sort of moral organism. Justice, therefore, accords with our character as social animals. As Plato expressed it, we are just by nature.<sup>13</sup>

The radically individualistic, self-centered model of human nature embraced by the Sophists has also had a continuing voice in the trans-generational dialogue. For instance, the fourth century (B.C.) Greek philosopher, Epicurus, writing at a time when a dispirited Greece had become a vassal of the Roman Empire, adopted the Sophist argument that human nature is governed by self-interest, and that what the self desires above all is to obtain happiness and avoid pain and stress. There are, therefore, no intrinsic moral rules, only variable customs. Epicurus tells us: “There never was an absolute justice but only a convention made in mutual intercourse, in whatever region, from time to time, providing against the infliction or suffering of harm.”<sup>14</sup>

The Sophist and Epicurean model of human nature reappeared again in the late eighteenth and nineteenth centuries in the writings of the so-called utilitarian philosophers and early classical economists -- most notably in the work of Jeremy

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<sup>13</sup> Plato, *Republic*, Book II, Book VI. It should be noted that Plato’s conception referred especially to our suitability for life in an organized society and that he also astutely recognized our individual personality differences. He appreciated the fact that we are not all just by nature, or that we always act accordingly.

<sup>14</sup> Epicurus, Golden Maxims No. 33, quoted in Sabine, *A History of Political Theory*, p. 124. However, it is also true that Epicurus made reciprocity the basis of his social ethics and included an admonition against doing harm to others. See ‘Epicurus’, *Wikipedia*, <http://en.wikipedia.org/wiki/Epicurus> (last modified 20 July 2014).



Bentham, John Stuart Mill and David Ricardo.<sup>15</sup> Other theorists associated with the “tradition of discourse” have advanced radically differing assumptions about human nature and social justice. For instance, the controversial English philosopher (and tutor to the very wealthy) Thomas Hobbes proceeded from a very dark view of human nature. In his best-known work, the *Leviathan* (from the Hebrew word for sea monster) in 1651, Hobbes wrote: “I put for a general inclination of all mankind, a perpetual and restless desire of power after power that ceaseth only in death. And the cause of this is not always that a man hopes for a more intensive delight than he has already attained to...but because he cannot assure the power and means to live well...without the acquisition of more.”<sup>16</sup> Accordingly, Hobbes advanced a case for rule by an all-powerful sovereign “policeman” – a kind of flip side to Plato’s benevolent ruler.

John Locke, by contrast, was a moderate, ethically-minded Christian who was also a practicing physician, and, in his *Two Treatises of Government*, he specifically refuted Hobbes’s absolutism about human nature and his authoritarian vision of the role of government. Locke’s seminal work proceeded from the assumption that all men started out being free and equal in “the state of nature” and willingly cooperated with one another for their mutual advantage. So when they came together voluntarily to form a more advantageous social contract, they retained their fundamental rights, especially their property rights. Among other things, Locke argued that societies do not create property. Each of us does so when we “mix” our labor with an object, or a piece of land.<sup>17</sup>

A third alternative is associated with egalitarian socialism, the idea of individual equality in a community of equals. The roots of this paradigm can be traced back to some of the “radical” (i.e., more liberal) Sophists and early Christians, but the modern-day inspiration for this theme is Jean Jacques Rousseau. Rousseau believed passionately that humans are naturally good and cooperative and that they are inherently social beings who are suited by nature for living in communal (and moral) societies. To Rousseau, the community as a whole – as a sort of moral being – has a higher claim than our individual rights. “The right which each individual has to his

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<sup>15</sup> Jeremy Bentham, *Introduction to the Principles of Morals and Legislation*, [1789], London, P. Athlone, 1970, chap.1, sec.1. Also, John Stuart Mill, *Utilitarianism*, London, Parker, Son, and Bourn, 1863; David Ricardo, *On the Principles of Political Economy and Taxation* [1817], in Piero Sraffa (ed.), *Works and Correspondence of David Ricardo*, Volume I, Cambridge, Cambridge University Press, 1951.

<sup>16</sup> Thomas Hobbes, *Leviathan: On the Matter Form and Power of a Commonwealth Ecclesiastical and Civil*, [1651], (New York, Collier Books, 1962), Ch. XI.

<sup>17</sup> John L. Locke, *Two Treatises of Government*, [1690], P. Laslett, (ed.), (Cambridge, MA, Harvard University Press, 1970), Ch. II, III, V

own estate is always subordinate to the right which the community has over all.” Indeed, “the social order is a sacred right which is the basis of all other rights.”<sup>18</sup>

#### FAIRNESS AND THE SCIENCE OF HUMAN NATURE

It should be evident from this very cursory summary that there have been widely differing views through the ages about the nature of human nature, and of society, and that these have been used to justify various social and political prescriptions. However, we are now at a turning point in the relationship between science and our social and political philosophy. It is increasingly clear that the tradition of discourse will no longer suffice for understanding the nature and purpose of human societies. In evolutionary biology, the long-standing reductionist, gene-centered model known as neo-Darwinism is giving way to a new paradigm that emphasizes multi-level causation and the role of cooperation and emergent, synergistic phenomena in evolution.<sup>19</sup> This new paradigm has major implications for our understanding of humankind and human evolution (see below). Equally important, the assumptions that have animated our theories about human nature can now be tested against a rapidly accumulating body of compelling scientific research on this subject.

First and foremost, we now recognize that human nature was shaped in the pressure-cooker of human evolution.<sup>20</sup> The origins of human societies can be traced back several million years to a pattern of joint ventures -- limited cooperative efforts -- among small groups of close kin, and (most likely) some non-kin as well, to cope with the rigors of survival in a resource-rich but challenging environment. Survival and reproduction was the basic problem, and our ancestral social contract involved, in effect, a “collective survival enterprise.” Our ancestors, like ourselves, benefited from close cooperation with others in providing for their basic survival needs, including especially joint foraging and defense against predators. Over time, other forms of cooperation were added.

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<sup>18</sup> Jean-Jacques Rousseau, *Of the Social Contract*, [1762], Trans. Charles M. Sherover, (New York, Harper & Row, 1984), I, ix, I, i.

<sup>19</sup> This important sea change is discussed in depth in Peter A. Corning, *Holistic Darwinism: Synergy, Cybernetics and the Bioeconomics of Evolution*, (Chicago, University of Chicago Press, 2005). Also, see Peter A. Corning, ‘Rotating the Necker Cube: A Bioeconomic Approach to Cooperation and the Causal Role of Synergy’, *Journal of Bioeconomics*, 15, (2013), pp. 171-193.

<sup>20</sup> For a more detailed brief account of human evolution, see Peter A. Corning, *Nature’s Magic; Synergy in Evolution and the Fate of Humankind*, New York, Cambridge University Press, 2003, and the references therein. Also relevant are the extensive book-length treatments by Richard G. Klein, *The Human Career: Human Biological and Cultural Origins*, 2nd ed., Chicago, University of Chicago Press, 1999; Milford H. Wolpoff, *Paleoanthropology*, 2nd ed., New York, McGraw-Hill, 1999; Paul R. Ehrlich, *Human Natures: Genes Cultures and the Human Prospect*, Washington, D.C., Island Press/Shearwater Books, 2000.

So it seems that Charles Darwin – not his many interpreters and miss-interpreters – was right after all when he reasoned, in *The Descent of Man*, that our social and moral attributes are of the utmost importance to our success as a species. As Darwin put it,

the “tribes” that were the most highly endowed with “patriotism, fidelity, obedience, courage, and sympathy, were always ready to aid one another, and to sacrifice themselves for the common good” would have had a decisive competitive advantage in the evolutionary process. “Selfish and contentious people will not cohere, and without coherence nothing can be effected...Thus the social and moral qualities would slowly tend to advance and be diffused throughout the world.”<sup>21</sup>

In addition to the gradually accumulating evidence about events and processes that occurred long ago in the deep mists of our evolutionary pre-history, we can also test this (more authentic) “Darwinian” scenario against what the burgeoning science of human nature has been learning about our species. In fact, there are perhaps 20 distinct research domains, depending upon how you count, spanning at least 10 different academic disciplines, all of which have something to say about this issue. These research domains include animal behavior studies (especially with primates), archaeology, anthropology, behavior genetics, the brain sciences, the cognitive sciences, child development, evolutionary psychology, sociology, political science, and behavioral and experimental economics. Among other topics, a significant portion of this work has been focused on documenting our unique, biologically-grounded “social and moral” faculties. Here (briefly) is a sampler of six of these research domains. A more extended discussion can be found in my 2011 book, *The Fair Society*.

**Animal behavior:** Some of the most compelling evidence that moral behaviors and a sense of “justice” are evolved and biologically grounded – just as Plato (and Darwin) supposed – can be found in the research in animal behavior, especially among our close primate relatives. Our (relatively) small-brained cousin species display many of the same traits, at least in rudimentary form, that are widely observed in humans. As the distinguished primatologist Frans de Waal has documented in several important books – with suggestive titles like *Chimpanzee Politics*, *Good Natured*, *Our Inner Ape*, and *Primates and Philosophers* -- chimpanzees and bonobos in particular have very complex, though varying, social and political lives.<sup>22</sup> These non-human primates display many traits that are also commonplace among humans: reciprocity (especially food sharing),

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<sup>21</sup> Charles Darwin, *The Descent of Man, and Selection in Relation to Sex* [1871], New York, A. L. Burt, 1874, p. 148.

<sup>22</sup> Frans B.M. de Waal, *Chimpanzee Politics: Power and Sex Among Apes*, New York, Harper & Row, 1982; *Good Natured: The Origin of Right and Wrong in Humans and Other Animals*, (Cambridge, MA, Harvard University Press, 1996); *Our Inner Ape*, New York, Riverhead Books, 2005; *Primates and Philosophers: How Morality Evolved*, (Princeton, NJ, Princeton University Press, 2006).

capacities for empathy and consolation, conflict resolution techniques, community concern, deterrents and punishments for cheating, and a rudimentary form of “justice” in the form of a tit-for-tat for favors and transgressions.

**Anthropology:** The Human Relations Area Files (HRAF) at Yale University contain a priceless trove of data from literally thousands of field studies by anthropologists (and now archeologists as well) in every corner and crevice of the world. Over the more than 60 years of its existence, the HRAF (which is actually consortium of more than 300 academic institutions world-wide) has assembled a data base that encompasses about 400 different cultures, both past and present, with information indexed down to the paragraph level. What this extensive research library overwhelmingly confirms is that there is indeed a universal human nature – just what one would expect if we all shared common ancestors despite our obvious though superficial cultural differences. Some years ago, anthropologist Donald Brown used this data trove to assemble a comprehensive list of *Human Universals* (the title of his landmark 1991 book).<sup>23</sup> To almost everyone’s surprise at the time, because anthropologists had been so fixated on the differences between cultures, Brown found literally hundreds of cultural universals. For our purpose, the most important commonalities that Brown identified were those that affect our social, economic and political relationships – widespread cooperation, collective decision making, political coalitions, resistance to power and dominance, formal rights and obligations (rules and laws), governance processes, social sanctions, and, yes, reciprocity and a sense of fairness or equity.

**Behavioral Genetics:** This important inter-discipline, which melds psychology and various biological sciences, has had a checkered history.<sup>24</sup> Nevertheless, during the past century the science of behavioral genetics has made impressive though mostly quiet progress in illuminating the role of the genes in shaping our behavioral propensities – human nature – just as our genes shape the rest of our physiology.<sup>25</sup> What behavioral geneticists have shown beyond any reasonable – or even unreasonable – doubt is that our genes play a significant role not only in the overwhelming majority of our behavioral commonalities but also in our many subtle but important individual differences. Literally dozens of studies have shown that between 40 and 50 percent of the total variation among us in terms of where we fit on

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<sup>23</sup> Donald E. Brown, *Human Universals*, (Philadelphia, Temple University Press, 1991).

<sup>24</sup> See Robert Plomin, John C. DeFries, and Gerald E. McClearn, *Behavioral Genetics: A Primer*, New York, W. H. Freeman, 1990.

<sup>25</sup> Thomas J. Bouchard, 2004. ‘Genetic Influence on Human Psychological Traits’, *Current Directions in Psychological Science*, vol.13, no. 4, 2004, pp. 148-151. Also, Robert Plomin and John C. DeFries, ‘The Genetics of Cognitive Abilities and Disabilities’, *Scientific American*, 278, no. 5 (1998):. 62-68.

what psychologists refer to as the “Big Five” personality dimensions, as measured by various psychological tests (introversion-extroversion, conscientious-disorganized, calm-nervous, agreeable-disagreeable, and open- or closed-minded), is due to genetically-based variation (or heritability). Similar results have been found for many of the specific traits that are associated with a sense of fairness. For example, one large study involving 500 twin pairs found genetically based variances of 51 percent for “altruism”, 51 percent for “empathy” and 43 percent for “nurturance” – traits that are all associated with fairness behaviors.<sup>26</sup>

**The Brain Sciences:** In the roughly 150 years of their existence, the brain sciences have learned a great deal about the functional organization of the brain and how its many distinct parts interact. Entire textbooks are devoted to elucidating the anatomy of the brain. There is also a large and still expanding research literature on the physiological and behavioral consequences of various kinds of brain damage (with a distressing number of recent additions due to the war in Iraq). The complex biochemistry and electrical properties of the brain are now also more clearly understood. In addition, we are beginning to get a fix on the brain as a complex system – how the brain performs specific functions like vision and speech. For instance, some 50 areas of the brain are associated with how we are able to see and interpret our surroundings.<sup>27</sup> As for our moral impulses, Michael Gazzaniga, one of the world’s leading brain scientists, posed the following question in his 2005 book, *The Ethical Brain*: “Do we have an innate moral sense as a species...?”<sup>28</sup> His answer was unequivocally yes. Gazzaniga’s views were seconded by the distinguished neurobiologist Donald Pfaff in his provocative book *The Neuroscience of Fair Play: Why We (Usually) Follow the Golden Rule*. “I believe that we are wired to behave in an ethical manner toward others, and they toward us,” he concludes.<sup>29</sup> Among the growing body of supportive experimental research is the series conducted by Joshua Greene and his colleagues which identified specific brain areas associated with making moral

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<sup>26</sup> J. Philippe Rushton, David W. Fulker, Michael C. Neal, David K.B. Nias, and Hans J. Eysenck, ‘Altruism and Aggression: The Heritability of Individual Differences’, *Journal of Personality and Social Psychology*, 50, (1986): 1192-1198. The important new science of genomics, based on the recently developed ability to de-code genetic sequences directly, promises to greatly expand on our understanding of the relationship between our genes and our behavior in the years ahead

<sup>27</sup> See Fred Delcomyn, *Foundations of Neurobiology*, (New York, Freeman, 1998). Also Mark F. Bear, Barry W. Connors, and Michael A. Paradiso, *Neuroscience: Exploring the Brain*. 3rd ed, (Philadelphia, Lippincott, Williams & Wilkins, 2007); David H. Hubel and Torsten N. Wiesel, ‘Brain Mechanisms of Vision’, *Scientific American*, 241, no. 3, (1979): 130-144.

<sup>28</sup> Michael S. Gazzaniga, *The Ethical Brain*, (New York, Dana Press, 2005), p. 165.

<sup>29</sup> Donald W. Pfaff, *The Neuroscience of Fair Play: Why We (Usually) Follow the Golden Rule*, (New York, Dana Press, 2007), p. 4.

choices.<sup>30</sup> Another team, headed by Alan Sanfey, pinpointed a brain area associated with feelings of fairness and unfairness when subjects were participating in the so-called “ultimatum game” in his laboratory.<sup>31</sup> Yet another source of evidence involves the biochemistry of the brain. In a series of laboratory experiments, neuroeconomist Paul Zak and his colleagues have demonstrated that a uniquely mammalian brain chemical, oxytocin, is strongly associated with acts of giving and reciprocating. Indeed, artificial enhancement of oxytocin levels in the brain can augment these behavioral effects.<sup>32</sup>

**Evolutionary Psychology:** This relatively new sub-discipline of psychology aspires to explain a wide range of psychological phenomena in terms of natural selection and our evolutionary history as a species.<sup>33</sup> Two of the research domains in evolutionary psychology are particularly relevant here. One is the work of Leda Cosmides and John Tooby and a number of their colleagues on what they term “social exchange” (or reciprocity).<sup>34</sup> They note that social exchange is both pan-human and very ancient, and they believe that reciprocity is an important element of human nature; there are specific neurocognitive features in the human brain (what they refer to as “mental modules”) that are designed for reasoning about social exchanges and, especially, for detecting “cheaters.” Over the years, Cosmides and Tooby, along with a number of other researchers, have done extensive experimental research on this issue in various societies, using psychological testing tools such as the Wason selection task, and they have shown that expectations of reciprocity and cheater detection are highly specific skills that seem to involve a “dedicated system.” Even three-year-olds are very good at it, and schizophrenics with impaired general reasoning abilities nevertheless are still able to detect cheaters in social exchanges. The other research domain in evolutionary psychology that is important to a science of fairness is the work of Dennis Krebs and others on the evolution and development (ontogeny) of morality in children – again affirming one of Darwin’s insights and building on the pioneering work of child psychologists Jean Piaget and Lawrence Kohlberg. Not only is morality a

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<sup>30</sup> Joshua Greene, ‘Emotion and Cognition in Moral Judgment: Evidence from Neuroimaging’, in Jean-Pierre Changeux, Antonio R. Damasio, Wolf Singer, and Yves Christen, (eds.), *Neurobiology of Human Values*, (Berlin, Springer-Verlag, 2005), pp. 57-66.

<sup>31</sup> Alan G. Sanfey, ‘Social Decision-making: Insights from Game Theory and Neuroscience’, *Science*, 318, (2007): 598-602.

<sup>32</sup> Paul J. Zak, *The Moral Molecule: The Source of Love and Prosperity*, (New York, Dutton, 2012).

<sup>33</sup> A definitive overview of the field can be found in David Buss (ed.), *The Handbook of Evolutionary Psychology*, (Hoboken, NJ, John Wiley & Sons, 2005).

<sup>34</sup> Leda Cosmides and John Tooby, ‘Neurocognitive Adaptations Designed for social Exchange’, in Buss (ed.), *The Handbook of Evolutionary Psychology*, pp. 584-627.

universal trait in the human species, but it develops in each child in distinct, well-understood stages and plays a critically important role in our social relationships.<sup>35</sup>

***Experimental and Behavioral Economics:*** What has been termed “traditional economics” (the so-called neo-classical paradigm) involves a set of ideas, backed by mathematical models, that have dominated economic theory for over a century and have deeply influenced generations of economists and their students.<sup>36</sup> This orthodoxy is grounded in the core assumption that people will act “rationally” in pursuing whatever their self-interests may be, meaning that they will seek out the most efficient and effective outcomes. However, as we have lately observed, sometimes people may behave in very irrational ways. Twentieth century economist John Maynard Keynes’s famous term “animal spirits” (inspired perhaps by Plato) has recently come back into vogue.<sup>37</sup> This aspect of human nature was highlighted in a 2009 book, *Animals Spirits*, by economists George Akerlof and Robert Shiller. In the authors’ words: “Much economic activity is governed by *animal spirits*. People have non-economic motives. And they are not always rational in pursuit of their economic interests.”<sup>38</sup> The authors argue that fairness is one of these non-economic motives, and their conclusion is supported by a rapidly growing body of experimental research in economics, most notably in a construct called “strong reciprocity theory.” A clutch of theorists, including Herbert Gintis, Samuel Bowles, Ernst Fehr, Simon Gächter, Joseph Henrich, Robert Boyd, Peter Richerson, Carl Sigmund and others have amassed a large body of evidence – using the paradigm known as the “ultimatum game” -- showing that even altruistic behaviors can be elicited in cooperative situations if there is a combination of strict reciprocity and punishments for defectors. These theorists conclude that strong reciprocity is one of the core aspects of human morality and that it has played a vital role in our evolution as a species.<sup>39</sup>

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<sup>35</sup> Dennis Krebs, ‘The Evolution of Morality’, in *The Handbook of Evolutionary Psychology*, pp. 747-775. For overviews of the path-breaking work of child psychologists Jean Piaget and Lawrence Kohlberg on the development of morality in children, see Jean Piaget, *The Moral Judgment of the Child*, (London, Kegan Paul, Trench, Trubner and Co., 1932); Lawrence Kohlberg, *Essays on Moral Development, Vol. I: The Philosophy of Moral Development*, (San Francisco, Harper & Row, 1981); Lawrence Kohlberg, Charles Levine, and Alexandra Hower, *Moral Stages: A Current Formulation and a Response to Critics*, (Basel, Switzerland and New York: Karger, 1983).

<sup>36</sup> For a comprehensive overview and critique, see Eric D. Beinhocker, *The Origin of Wealth: Evolution, Complexity and the Radical Remaking of Economics*, Boston, Harvard Business School Press, 2006.

<sup>37</sup> John Maynard Keynes, *The General Theory of Employment, Interest and Money*, (Cambridge, Cambridge University Press, 1936).

<sup>38</sup> George A. Akerlof and Robert J. Shiller, *Animal Spirits: How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism*, Princeton, NJ, Princeton University Press, 2009, p. ix.

<sup>39</sup> Strong reciprocity theory, and the growing research literature associated with it, is discussed in some detail in Peter A. Corning, *Holistic Darwinism: Synergy, Cybernetics and the Bioeconomics of Evolution*, Chicago,

In short, Plato got it right. We seem to be (mostly) ‘just by nature.’ But there are three important caveats that must be added to this general conclusion. One is the accumulating evidence across a number of disciplines suggesting that both ethnocentrism (loyalty to one’s own group) and xenophobia (hostility toward other groups) are evolved psychological propensities in humankind with a strong biological foundation and deep evolutionary roots.<sup>40</sup> Thus, our sense of fairness and justice seems to have a sharply defined psychological boundary. We readily extend help and may even display unconstrained altruism toward others with whom we identify as being members of our own “tribe”, but we can be indifferent to the sufferings of outsiders and may be quite willing to inflict harm on them if it suits our interests. Behavioral economists call it “parochial altruism.”

A second caveat is that all of our deeply-rooted “appetites”, predispositions, and emotions are malleable. Our sense of fairness is embedded in our human nature, and we are (most of us) predisposed to act in ways that conform to the Golden Rule.<sup>41</sup> But the specific content of our actions is also shaped by a combination of our personal experience, social norms, the immediate context, and the seductive lure of self-interest. We are highly vulnerable to the calculus -- often subconscious -- of what serves our personal agendas. All too often we find rationalizations to justify rejecting other people’s fairness claims.

The third caveat is that the science of human nature has also confirmed the necessity for taking into account the intractable fact that biologically-based individual differences shape our personalities and behavior, for better or worse. Our

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University of Chicago Press, 2005, pp. 156-157. See also Herbert Gintis, ‘Punishment and Cooperation’, *Science*, Vol. 319, 2008, pp. 1345-1346; Herbert Gintis, Samuel Bowles, Robert Boyd, and Ernst Fehr, (eds.), *Moral Sentiments and Material Interests: The Foundations of Cooperation in Economic Life*, Cambridge, MA, The MIT Press, 2005; Herbert Gintis and Ernst Fehr, ‘Human Nature and Social Cooperation’, *Annual Review of Sociology*, vol. 33, no. 3, 2007, pp. 1-22.

<sup>40</sup> There is more on this subject in Corning, *The Fair Society*, pp. 40-42,70. Also, see the classic study by Barrington Moore, Jr., *Injustice: The Social Basis of Obedience and Revolt*, New York, M. E. Sharpe, 1978; also Hammond, Ross A. and Robert Axelrod, ‘The Evolution of Ethnocentrism’, *Journal of Conflict Resolution*, vol. 50, no. 6, 2006, pp. 926-936.

<sup>41</sup> For an extended discussion of the universal cultural embrace of the Golden Rule (do unto others as you would have them do unto you), see Corning, *The Fair Society*, pp. 27-30. There is also a voluminous scholarly literature on this subject, often included in broader treatments of social justice. See especially, Robert J. McShea, *Morality and Human Nature: A New Route to Ethical Theory*, Philadelphia, Temple University Press, 1990; Jeffrey Wattles, *The Golden Rule*, New York, Oxford University Press, 1996; Robert C. Solomon and Mark C. Murphy, (eds.), *What is Justice? Classic and Contemporary Readings*, 2nd ed., New York, Oxford University Press, 2000; David Daiches Raphael, *Concepts of Justice*, Oxford, Clarendon Press, 2001.



predisposition toward fairness, like every other biological trait, is subject to significant individual variation. Numerous studies have indicated that some 20-30 percent of us are more or less “fairness challenged.”<sup>42</sup> Some of us are so self-absorbed and egocentric that we are totally insensitive and even hostile to the needs of others. This is most obvious when we are dealing with the extremes – the ruthless egoists that almost everyone in the business world has had to deal with (often in court), as well as the sociopaths and psychopaths for whom fairness is an incomprehensible concept. By the same token, our very real differences in terms of talent, ability and personal accomplishments play a very important role in how we define fairness. When we undertake the task of formulating a new “biosocial contract” below, we will need to take account of these individual differences.

#### THE “COLLECTIVE SURVIVAL ENTERPRISE”

Finally, and most important, there is a huge and profoundly significant omission from the emerging picture of human nature as it has been characterized (as a rule) by our social scientists. Often they overlook the most fundamental question of all: What is the underlying purpose of human nature – and of society? What are the sources of our interests -- the roots of our “revealed preferences”? And what motivates the conflicts that challenge our sense of fairness and justice?

Here a biological approach can provide a scientific perspective. 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.” Furthermore, the survival and reproduction problem is multifaceted and relentless. It is a problem that can never be permanently solved. Thus, an organized, interdependent society is quintessentially a “collective survival enterprise” (again confirming Plato’s insight).

This tap-root assumption about the human condition is hardly news, but we very often deny it, or downgrade it, or simply lose touch with it. Our fundamental collective purpose is to provide for the basic survival and reproductive needs of our people -- past, present and future. In effect, we are all parties to a biologically-based social contract. (In fact, humans are not unique in this respect; other socially-organized species in the natural world have a similar kind of implicit biological contract.)

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<sup>42</sup> This is especially evident in the research on strong reciprocity theory (see the references cited in footnote 38). See also Samuel Bowles and Herbert Gintis, ‘Is Equality Passé?: Homo Reciprocans and the Future of Egalitarian Politics’, *Boston Review* (Fall 1998): 4-10. But the most decisive confirmations can be found in the growing research literature in behavioral genetics. See Plomin et al., *Behavioral Genetics* (footnote 24).

This “biosocial” contract, and the imperatives (and rules) associated with it, encompasses the preponderance of human activity, and human choices, worldwide. To be sure, survival *per se* may be the furthest thing from our conscious minds as we go about our daily lives. Nevertheless, our mundane daily routines are mostly instrumental to meeting the underlying survival challenge. They reflect the particular survival strategy -- the package of cultural, economic, and political tools -- by which each society organizes and pursues the ongoing survival enterprise.<sup>43</sup>

Accordingly, we are endowed with an array of biologically-grounded “preferences” (in the argot of economics) 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, make “if-then” predictions and link human nature to human behavior, including our social ethics, in comprehensible ways. (A more detailed discussion of these points can be found in *The Fair Society*.)

Very briefly, 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 hardly new, needless to say. Its roots go back at least to Plato, who (it will be recalled) correctly identified our basic needs as the basis for any organized society.

Over the years, there have been various psychological and ethical definitions of basic needs that downplay and even discount the ongoing challenge of biological survival and reproduction.<sup>44</sup> This contrasts sharply with the large body of empirical research, most notably under the sponsorship of the United Nations, the U.S. National Academy of Sciences, the World Bank and other agencies, that gives scientific credence and considerable precision to the concept of basic needs.<sup>45</sup>

In addition, the so-called Survival Indicators project at our research institute has involved an effort to develop and validate measuring-rods for the full range of survival requisites for an individual or a population.<sup>46</sup> There are, in fact, no less than 14

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<sup>43</sup> This subject is discussed at greater length in Corning, *Holistic Darwinism* and *The Fair Society*. It is worth noting the resonance here with the eighteenth century English philosopher Edmund Burke’s famous, much-quoted passage: “Society is indeed a contract...[But] 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...” Edmund Burke, in J.A. Burke and R.L. Hamer (eds.), *Works of Edmund Burke*, vol. 2, (New York, Harper & Brothers, 1999), p. 368.

<sup>44</sup> This literature is reviewed in Corning, *The Fair Society*, Ch. 5, pp. 87-111.

<sup>45</sup> See Corning, *The Fair Society*, Ch. 5.

<sup>46</sup> The “Survival Indicators” project is discussed in detail in Corning, *Holistic Darwinism* and *The Fair Society*, Ch. 5.

“primary needs” domains that have been identified and documented. These represent biological imperatives in any given society or personal situation, in conjunction with an indeterminate number of context-specific “instrumental needs.” (Primary needs are irreducible and vary within well-defined parameters, but instrumental needs vary widely and are often highly localized in nature.) Needless to say, this broad formulation cuts a very wide swath through any complex economy, and these 14 basic needs represent the empirical foundation for any biologically-grounded social contract.

#### THE SOCIAL CONTRACT REVISITED

The idea that there is a more or less well-defined “social contract” in every society traces back to the Sophists, and to Plato. But it is more commonly associated with the so-called social contract theorists of the seventeenth and eighteenth centuries – such as Jean Jacques Rousseau, Thomas Hobbes, and John Locke – and more recently, John Rawls. Rousseau fantasized about free individuals voluntarily forming communities in which everyone was equal and all were subject to the “general will.”<sup>47</sup> Hobbes, in contrast, envisioned a natural state of anarchic violence and proposed, for the sake of mutual self-preservation, that everyone should be subject to the absolute “sovereign” authority of the state.<sup>48</sup> Locke, on the other hand, rejected this dark Hobbesian vision. He conjured instead a benign state of nature in which free individuals voluntarily formed a limited contract for their mutual advantage but retained various residual rights.<sup>49</sup>

The philosopher David Hume, and many others since, have made a hash of this line of reasoning. In his devastating critique, *A Treatise of Human Nature* (published in 1739-40), Hume rejected the claim that some deep property of the natural world (natural laws), or some aspect of our past history, could be used to justify moral precepts. Among other things, Hume pointed out that even if the origins of human societies actually conformed to such hypothetical motivations and scenarios (which we now know they did not), we have no logical obligation to accept an outdated social contract that was entered into by some remote ancestor.<sup>50</sup> Modern scholars frequently refer to this supposed taboo against any scientific basis for morality as the “naturalistic fallacy,” a term coined by philosopher George Edward Moore.<sup>51</sup>

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<sup>47</sup> Jean-Jacques Rousseau, *Of the Social Contract*, Book II, 1.

<sup>48</sup> Hobbes, *Leviathan*, Ch. 17, 18.

<sup>49</sup> Locke, *Two Treatises of Government*, Ch. II.

<sup>50</sup> David Hume, *A Treatise of Human Nature*, [1739-40], 2nd ed., L.A. Selby-Bigge, (ed.), (Oxford, Clarendon Press, 1978).

<sup>51</sup> See George Edward Moore, *Principia Ethica*, [1903], rev. ed., (Cambridge, Cambridge University Press, 1993), p.58ff.

With the demise of the natural law argument, social contract theory has generally fallen into disfavor among philosophers, with the important exception of the work of John Rawls. In his 1971 book, *A Theory of Justice*, Rawls provoked a widespread reconsideration of what constitutes fairness and social justice and, equally important, what precepts would produce a just society.<sup>52</sup> Rawls proposed two complementary principles: (1) equality in the enjoyment of freedom (a concept fraught with complications), and (2) affirmative action (in effect) for “the least advantaged” among us. This would be achieved by ensuring that the poor have equal opportunities and that they would receive a relatively larger share of any new wealth whenever the economic pie grows larger. Although Rawls’ work has been exhaustively debated by philosophers and others over the years, it seems to have had no discernable effect outside of academia.

However, there is one other major exception to the general decline of social contract theory that is perhaps more significant theoretically. Over the past two decades, a number of behavioral economists, game theorists, evolutionary psychologists and others have breathed new life into this venerable idea with a combination of rigorous, mathematically-based game theory models and empirical research. Especially important is the work of the mathematician-turned-economist Ken Binmore, who has sought to use game theory as a tool for resuscitating social contract theory on a new footing. In his 2005 book, *Natural Justice*, Binmore describes his approach as a “scientific theory of justice,” because it is based on an evolutionary/adaptive perspective, as well as the growing body of research in behavioral and experimental economics regarding our evolved sense of fairness, plus some powerful insights from game theory.<sup>53</sup>

Briefly, Binmore defines a social contract in very broad terms as any stable “coordination” of social behavior – like our conventions about which side of the road we should drive on or pedestrian traffic patterns on sidewalks. Any sustained social interaction in what Binmore refers to as “the game of life” – say a marriage, a car pool, or a bowling league -- represents a tacit social contract if it is (1) stable, (2) efficient, and (3) fair.

To achieve a stable social contract, Binmore argues, a social relationship should strive for an equilibrium condition – an approximation of a Nash equilibrium in game theory. That is, the rewards or “payoffs” for each of the players should be optimized so that no one can improve on his or her own situation without exacting a destabilizing cost from the other cooperators. Ideally, then, a social contract is self-

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<sup>52</sup> John Rawls, *A Theory of Justice*, (Cambridge, MA, Belknap Press, 1971).

<sup>53</sup> Ken Binmore, *Natural Justice*, (Cambridge, MA, The MIT Press, 2005), pp. 157-158

enforcing. As Binmore explains, it needs no social “glue” to hold it together (much less a Hobbesian sovereign) because everyone is a willing participant and nobody has a better alternative. It is like a masonry arch that requires no mortar (a simile first used by Hume).

The problem with this formulation – as Binmore recognizes -- is that it omits the radioactive core of the problem – how do you define fairness in substantive terms? As Binmore concedes, game theory “has no substantive content...It isn’t our business to say what people ought to like.”<sup>54</sup> Binmore rejects the very notion that there can be any universals where fairness is concerned. “The idea of a need is particularly fuzzy,” he tells us.<sup>55</sup> In other words, Binmore’s version of a social contract involves an idealization, much like Plato’s republic, or (utopian) free market capitalism, or Karl Marx’s utopian socialism. Fairness is whatever people say it is, so long as they agree.

#### THE BIOSOCIAL CONTRACT

I have taken a different approach. What I call a “biosocial contract” is distinctive in that it is grounded in our growing understanding of human nature and the basic (biological) purpose of a human society. It is focused on the *content* of fairness, and it encompasses a set of specific normative precepts. In the game theory paradigm, the social contract is all about harmonizing our personal interactions. Well and good, as the saying goes. But in a biosocial contract, the players include all of the stakeholders in the political community and substantive fairness is the focus.

First and foremost, a biosocial contract requires a major shift in our social values. As noted above, the deep purpose of a human society is not, after all, about achieving growth, or wealth, or material affluence, or power, or social equality, or even about the pursuit of happiness. To repeat, an organized society is quintessentially a “collective survival enterprise.” Whatever may be our perceptions, aspirations, or illusions (or for that matter, whatever our station in life), the basic problem for any society is to provide for the survival and reproductive needs of its members.

However, it is also important to recognize our differences in merit and to reward them (or punish them) accordingly. It is clear that “just deserts” (or Aristotle’s “proportionate equality”) is also fundamental to our sense of fairness. Finally, there must also be reciprocity -- an unequivocal commitment on the part of all of the participants to help support the collective survival enterprise, for no society can long exist on a diet of altruism. Altruism is a means to a larger end, not an end in itself. It is the emotional and normative basis of any society’s “safety-net.”

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<sup>54</sup> Quoted in Corning, *The Fair Society*, p. 80.

<sup>55</sup> Binmore, *Natural Justice*, p. 171.

Accordingly, the biosocial contract paradigm encompasses three distinct normative (and policy) precepts that must be bundled together and balanced in order to approximate the Platonic ideal of social justice. These precepts are as follows:

- (1) Goods and services must be distributed to each according to his or her basic needs (in this, there must be *equality*);
- (2) Surpluses beyond the provisioning of our basic needs must be distributed according to “merit” (there must also be *equity*);
- (3) In return, each of us is obligated to contribute to the collective survival enterprise proportionately in accordance with our ability (there must be *reciprocity*).

The first of these precepts, equality, involves a collective obligation to provide for the basic needs of all of our people. I refer to it as a “basic needs guarantee.” It is grounded in four empirical propositions: (1) our basic needs are increasingly well-documented; (2) although our individual needs may vary somewhat, in general they are equally shared; (3) we are dependent upon many others, and our economy as a whole, for the satisfaction of these needs; and (4) more or less severe harm will result if any of these needs are not satisfied. (All of this is discussed at length in *The Fair Society*.)

Although the first precept may sound socialistic -- an echo of Karl Marx’s famous dictum -- it is at once far more specific and more limited.<sup>56</sup> It is not about an equal share of the wealth. It refers to the fourteen basic biological needs domains that are detailed in my book. Our basic needs are not a vague, open-ended abstraction, nor a matter of personal preference. They constitute a concrete but ultimately limited agenda, with measurable indicators for assessing outcomes.

The idea that there is a “social right” to the necessities of life is not new. It is implicit in the Golden Rule, the great moral precept that is recognized by every major religion and culture. There is also a substantial scholarly literature on the need to establish constitutional and legal protections for social/economic rights that are comparable to political rights.<sup>57</sup> Indeed, three important formal covenants have

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<sup>56</sup> Equality has been a socialist and liberal/progressive ideal ever since the Enlightenment. See especially the discussion in Michael J. Sandel, *Justice: What’s the Right Thing to Do*, (New York, Farrar, Straus and Giroux, 2009). Many theorists have focused on equality in terms of human rights, economic opportunities, or due process of law. However, economic egalitarians, beginning with Rousseau and including Karl Marx, have stressed an egalitarian distribution of the wealth and property of a society. From the perspective of the three fairness precepts in the biosocial contract paradigm, the radical socialist ideal is misguided. Or, better said, it must be strictly limited to the domain in which we are indeed equal – our basic needs. This leaves ample room for differentially rewarding our inequalities in talent, efforts and achievements. (The shortcomings of both socialism and capitalism are discussed in depth in my book.)

<sup>57</sup> See for example Cécile Fabre, *Social Rights Under the Constitution: Government and the Decent Life*, Oxford, Oxford University Press, 2000. The abstract for the book notes that “The desirability, or lack thereof, of

endorsed social rights, including the Universal Declaration of Human Rights by the United Nations (1948),<sup>58</sup> the European Social Charter (1961),<sup>59</sup> and the United Nations' International Covenant on Economic, Social and Cultural Rights (1966),<sup>60</sup> although these documents have been widely treated as aspirational rather than being legally enforceable.<sup>61</sup>

Perhaps more significant is the evidence of broad public support for the underlying principle of social rights. Numerous public opinion surveys over the years have consistently shown that people are far more willing to provide aid for the genuinely needy than neo-classical (rational self-interest) economic theory would lead one to believe. (Some of these surveys are cited in my book.)

Even more compelling evidence of public support for social rights, I believe, can be found in the results of an extensive series of social experiments regarding distributive justice by political scientists Norman Frohlich and Joe Oppenheimer and their colleagues, as detailed in their 1992 book *Choosing Justice*.<sup>62</sup> What Frohlich and Oppenheimer set out to test was whether or not ad hoc groups of “impartial” decision-

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bills of rights has been the focus of some of the most enduring political debates over the last two centuries. Unlike civil and political rights, social rights to the meeting of needs, standard rights to adequate minimum income, education, housing, and health care are usually not given constitutional protection. The book argues that individuals have social rights to adequate minimum income, housing, health care, and education, and that those rights must be entrenched in the constitution of a democratic state. That is, the democratic majority should not be able to repeal them, and certain institutions (for instance, the judiciary) should be given the power to strike down laws passed by the legislature that are in breach of those rights. Thus, the book is located at the crossroads of two major issues of contemporary political philosophy, to wit, the issue of democracy and the issue of distributive justice.”

<sup>58</sup> The Universal Declaration included social (or “welfare”) rights that address matters such as education, food, and employment, though their inclusion has been the source of much controversy. See David Beetham, ‘What Future for Economic and Social Rights?’, *Political Studies*, 43, Suppl. 1, (1995): 41–60.

<sup>59</sup> The European Social Charter, enacted by the Council of Europe in 1961, also guaranteed economic and social rights. <http://www.coe.int/T/DGHL/Monitoring/SocialCharter/>

<sup>60</sup> Article 1 of the **International Covenant on Economic, Social and Cultural Rights, adopted by the General Assembly in 1966 and entered into force ten years later, in January of 1976, declared in part:** “In no case may a people be deprived of its own means of subsistence.” See <http://www2.ohchr.org/english/law/cescr.htm> The list of specific rights in the Covenant includes nondiscrimination and equality for women in the economic and social area (Articles 2 and 3), freedom to work and opportunities to work (Article 4), fair pay and decent conditions of work (Article 7), the right to form trade unions and to strike (Article 8), social security (Article 9), special protections for mothers and children (Article 10), the right to adequate food, clothing, and housing (Article 11), the right to basic health services (Article 12), the right to education (Article 13), and the right to participate in cultural life and scientific progress (Article 15)..

<sup>61</sup> For a more detailed discussion of social rights, see the *Stanford Encyclopedia of Philosophy* <http://plato.stanford.edu/entries/rights-human/#EcoSocRig>.

<sup>62</sup> Norman Frohlich and Joe A. Oppenheimer, *Choosing Justice: An Experimental Approach to Ethical Theory*, Berkeley, California, University of California Press, 1992.

makers behind a Rawlsian “veil of ignorance” about their own personal stakes would be able to reach a consensus on how to distribute the income of a hypothetical society. Frohlich and Oppenheimer found that the experimental groups consistently opted for striking a balance between maximizing income (providing incentives and rewards for “the fruits of one’s labors,” in the authors’ words) and ensuring that there is an economic minimum for everyone (what they called a “floor constraint”). The overall results were stunning: 77.8 percent of the groups chose to assure a minimum income for basic needs.

The results of these important experiments, which have since been replicated many times, also lend strong support to the second of the three fairness precepts listed above concerning equity (or merit). How can we also be fair-minded about rewarding our many individual differences in talents, performance, and achievements? Merit, like the term fairness itself, has an elusive quality; it does not denote some absolute standard. It is relational, and context-specific, and subject to all manner of cultural norms and practices. But, in general, it implies that the rewards a person receives should be proportionate to his or her effort, or investment, or contribution, as Plato and Aristotle insisted.

However, a crucial corollary of the first two precepts is that the collective survival enterprise has always been based on mutualism and reciprocity, with altruism being limited (typically) to special circumstances under a distinct moral claim -- what could be referred to (in the insurance industry terminology) as “no-fault needs.” So, to balance the scale, a third principle must be added to the biosocial contract, one that puts it squarely at odds with the utopian socialists, and perhaps even with some modern social democrats as well. In any voluntary contractual arrangement, there is always reciprocity -- obligations or costs as well as benefits. As noted earlier, reciprocity is a deeply rooted part of our social psychology and an indispensable mechanism for balancing our relationships with one another. Without reciprocity, the first two fairness precepts might look like nothing more than a one-way scheme for redistributing wealth.

Accordingly, these three fairness precepts – *equality, equity and reciprocity* – form the goal posts for a fair society, and they are the keys to achieving the objectives of voluntary consent, social harmony, and political legitimacy, I believe. Moreover, they provide empirical support and add specificity to Plato’s vision of justice and a just society.



## FINESSING THE NATURALISTIC FALLACY

A biosocial contract is about the rights and duties of all of the stakeholders in society, both among themselves and in relation to the “state”. It is about defining what constitutes a “fair society.” It is a normative theory, but it is built on an empirical foundation. I believe that it is legitimate to do so in this case, because life itself has a built-in normative bias – a normative preference, so to speak. We share with all other living things the biological imperatives associated with survival and reproduction (our basic needs). If we do, after all, want to survive and reproduce – if this is our shared biological objective -- then certain principles of social intercourse follow as essential means to this end. In other words, a biosocial contract represents a “prudential” political road-map that ultimately depends upon mutual consent.

Of course, the much-debated logic of the “naturalistic fallacy” remains intact. For most modern philosophers and social scientists, Hume’s prohibition against deriving a moral “ought” from an empirical “is” is absolutely sacred. So a critic of the biosocial contract idea might ask: Why should we care about our survival and reproduction, much less that of anyone else in our society? More to the point (especially if you are a follower of Ayn Rand’s egoistic philosophy),<sup>63</sup> why should anyone -- especially the “haves” -- accept a fairness ethic as a standard for guiding the policies and practices of a society for the benefit of the have-nots? Even if we have been “pre-programmed” by our evolutionary heritage to be concerned about fairness, how can anyone claim that this creates a moral imperative?

Actually, these are the wrong questions. They amount to a Sophist sand-trap. The issue here is not whether we can justify some categorical imperative for morality. The reality is we do care. Given the cardinal facts that (1) we care intensely about satisfying our basic needs, (2) these needs must, by and large, be satisfied through the vast network of cooperative activities associated with the collective survival enterprise, and (3) we do, after all, have a shared sense of fairness, then the three precepts of the biosocial contract provide a compass for steering a society through the political shoals. They provide a set of prudential normative principles that direct us to navigate a middle-course between egoism and egalitarianism. Moreover, these precepts represent existential imperatives in the sense that serious maladaptive consequences -- both individually and collectively -- will result from ignoring them and pursuing an alternate course

These facts do not, of course, impose any logically necessary values, or “oughts.” But logic aside, they do impose inescapable choices: You can choose to pursue your

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<sup>63</sup> Ayn Rand, 1943. *The Fountainhead* [1943], New York, Penguin, 1993. Also Rand, *Atlas Shrugged*, New York, Random House, 1997. For a critique of Rand’s extreme but very popular right-wing philosophy, see Corning, *The Fair Society*, pp. 33-35, plus an extended endnote, no. 3.

basic biological needs (the imperatives of survival and reproduction) just as our ancestors have done for millions of years – or not. Likewise, you can choose to accept the terms of a legitimate (fair) social contract as an indispensable means for pursuing your needs within the collective survival enterprise – or not. But these are unavoidable choices, and it's very inconvenient to be dead.

#### CONCLUSION

Reality is completely indifferent to our philosophies, so it would be advisable to deal with the facts of life in the spirit of science. Indeed, everyday we unwittingly test the hypothesis that there is a real world out there (and in there) that is independent of our perceptions and philosophical conceits, and so do all the other untold trillions of living organisms. For the daily process of living is, quintessentially, a matter of making choices. To date, all the evidence (at least that we know of) has been supportive of this life-affirming hypothesis. Accordingly, a philosophy that can embrace the intellectual challenges associated with understanding this biological reality will, in so doing, be exalted by the effort. At its best, philosophy can ask the right questions about life and our place in it and can critically evaluate our very imperfect scientific enterprise. It can shed more light on both the “is” and the “ought” of our existence. All the rest will ultimately be condemned to irrelevance, alongside the perverse rationalizations of the global warming climate deniers.

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