

Secular Natural Law

Jeffery L. Johnson
Philosophy, Politics, and Economics
Eastern Oregon University

I. The Nature of Law

These are not puzzles for the cupboard, to be taken down on rainy days for fun. They are sources of continuing embarrassment, and they nag at our attention. They embarrass us in dealing with particular problems that we must solve, one way or another. Suppose a novel right-of-privacy case comes to court, and there is no statute or precedent claimed by the plaintiff. What role in the court's decision should be played by the fact that most people in the community think that private individuals are 'morally' entitled to that particular privacy?¹

I defend a thoroughly contemporary version of an ancient theory about the nature of law. According to this theory there is a deep conceptual connection between moral facts and legal facts, and further the language of "facts" is more than a colorful way of speaking, but expresses profound empirical and normative truths about the human condition. What I am calling secular natural law is committed to there being certain "objective" and "universal" normative standards, and these standards playing a central role in the origin, evaluation, and interpretation of law. All of this, of course is exceedingly controversial. But before proceeding to my case, it is perhaps appropriate to step back and ask whether these are really important questions anyway.

I write as a moral philosopher with a long-standing interest in law. The academic lawyer with an interest in moral philosophy might address these same

issues, indeed defend something like the same theory, yet have a recognizably different style and approach. What would certainly unite our scholarship, however, is an abiding conviction that questions of basic jurisprudence matter. They are not simply "academic" questions, or as Dworkin so delightfully characterized them, "puzzles for the cupboard." It is of profound significance whether the legal positivist, the legal realist, or the natural lawyer is correct. It matters to how we appoint judges, and who should be appointed. It matters to how we think statutes, precedent, and constitutional provisions should be interpreted. And it matters to our understanding of basic political principles like being a nation of laws, or whether such a thing as international law really makes sense.

II. Moral Skepticism and Moral Relativism

Is there any objective truth? Or must we finally accept that at bottom, in the end, philosophically speaking, there is no "real" or "objective" or "absolute" or "foundational" or "fact of the matter" or "right answer" truth about anything, that even our most confident convictions about what happened in the past or what the universe is made of or who we are or what is beautiful or who is wicked are just our convictions, just conventions, just ideology, just badges of power, just the rules of the language games we choose to play, just the product of our irrepressible disposition to deceive ourselves that we have discovered out there in some external, objective, timeless, mind-independent, world what we have actually invented ourselves, out of instinct, imagination and culture?²

Although Dworkin includes post-modern skepticism about historical and scientific truth in his long rhetorical question, his main concern, as is ours, is

normative truth. Secular natural law must forthrightly confront the wealth of scholarly arguments that confidently assert that “objective” moral truth is indeed, “just our convictions ... invented ourselves, out of instinct, imagination and culture.” It would never occur to most people, of course, to ponder grand meta-ethical questions about the status of moral truth and knowledge, but academic scholarship in the past one hundred years has consistently moved in the direction of relativism. There are two main reasons for this swing – one empirical, and the other metaphysical. Both were clearly articulated by John Mackie thirty years ago.

The first argument against objective moral truth relies on basic anthropological sophistication.

The argument from relativity has as its premise the well-known variation in moral codes from one society to another and from one period to another, and also the differences in moral belief between different groups and classes within a complex community. . . . [T]he argument from relativity has some force simply because the actual variation in moral codes are more readily explained by the hypothesis that they reflect ways of life than by the hypothesis that they express perceptions, most of them seriously inadequate and badly distorted, of objective values.³

Mackie clearly sees that the challenge is explanatory. How can there be objective values, when we all know that values vary from culture to culture, group to group, indeed, individual to individual? The relativist offers a very clear and plausible explanation of normative variation. Moral values and moral intuitions are like regional dialects, the standards of fashion, and the expectations of good

manners. Individuals from the southeast of the United States really do have an accent. It really is bad taste to wear a striped shirt with plaid pants. And it really is bad manners to eat with your elbows on the table, or for men to wear baseball caps in fancy restaurants (though, interestingly enough, this latter standard seems to be evolving before our very eyes). What explains all of this, of course, is not something objective or intrinsic in the world or within human beings, but the subtle effects of learning within a culture. These aspects of day-to-day "reality" are "socially constructed."⁴ All of this has been a significant part of the intellectual landscape for over one hundred years.

The folkways are the "right" way to satisfy all interests, because they are traditional, and exist in fact. They extend over the whole of life. There is a right way to catch game, to win a wife, to make one's self appear, to cure disease, to honor ghosts, to treat comrades or strangers, to behave when a child is born, on the warpath, in council, and so on in all cases which can arise. . . . World philosophy, life policy, right, rights, and morality are all products of the folkways. They are reflections on, and generalizations from, the experience of pleasure and pain which is won in efforts to carry on the struggle for existence under actual life conditions.⁵

The key to this argument against moral objectivity is its empirical starting point – that normative standards, the most basic principles, vary from group to group. This is the subject of considerable anthropological debate.⁶ Secular natural law denies the cross-cultural disparity of or most basic moral values.

There have been differences between [civilizations'] moralities, but these have never amounted to anything like total difference. If anyone will take the trouble to compare the moral teaching of, say, the

ancient Egyptians, Babylonians, Hindus, Chinese, Greeks, and Romans, what will really strike him will be how very like they are to each other and to our own. . . . Think of a country where people were admired for running away in battle, or where a man felt proud of double-crossing all the people who had been kindest to him. You might just as well try to imagine a country where two and two make five.⁷

I am heartened by amount of recent scholarship in both moral philosophy and the social sciences that agrees with Lewis.⁸ At the same time, I fully concede that if in the final analysis we discover that the most fundamental values vary from culture to culture, secular natural law, if not refuted, is at least seriously weakened.

Mackie's second argument is also explanatory, and as he sees, poses an even greater challenge to moral objectivity.

Even more important, however, and certainly more generally applicable, is the argument from queerness. This argument has two parts, one metaphysical, the other epistemological. If there were objective values, then they would be entities or qualities or relations of a very strange sort, utterly different from anything else in the universe. Correspondingly, if we were aware of them, it would have to be by some special faculty of moral perception or intuition utterly different from our ordinary ways of knowing anything else.⁹

The assertion that objective values would be "utterly different than anything else in the universe," or that moral knowledge would be "utterly different from our ordinary ways of knowing anything else," perhaps overstates the case, but many theorists have found the notions of universal normative values and moral perception puzzling to the point of mysterious. And if that were not bad enough

there is actually a third “queer” property that objective values are supposed to project. Many moral philosophers have argued that the normative awareness provides, in and of itself, a strong inclination to behavior.¹⁰ No one would argue that awareness of a moral obligation is a guarantee of correct behavior, or that people never knowingly do evil. But it is widely accepted that cognizance of the moral implications of a choice will play some role in the choice that is finally made. In what form, then, could absolute values exist? How could we come to know them? And how could they exert behavioral influence?

Part of the reason that these questions seem so daunting, I believe, is that we actually have a model of behavioral standards that can withstand Mackie’s challenges, though not across legal jurisdictions. Laws, legal rules, exist in a perfectly straightforward, though very complicated, way. There is no mystery as to how humans can know them. And for many of us, the simple knowledge that something is illegal, or that it is legally required, is a strong motivational factor in what we do. The apparent trouble with this analogy, though, is that rules seem to imply rule-makers. Some conscious, personal, issuer of universal normative standards – in a word, God – takes moral objectivity from the realm of the metaphysically queer, to the relatively commonplace. Unfortunately though, in this secular intellectual climate, the metaphysical puzzlement is merely transferred from meta-ethics to philosophical theology.

III. Moral Realism

According to moral realism:

1. Moral statements are the sorts of statements which are (or which express propositions which are) true or false (or approximately true, largely false, etc.);
2. The truth or falsity (approximate truth . . .) of moral statements is largely independent of our moral opinions, theories, etc);
3. Ordinary canons of moral reasoning—together with ordinary canons of scientific and everyday factual reasoning—constitute, under many circumstances at least, a reliable method for obtaining and improving (approximate) moral knowledge.¹¹

Moral realism expresses the common sense view of most the philosophically uninitiated, as well as the considered reflections of most of the great minds of western ethical theory. Still, the position seems almost radical to contemporary theorists because of its confident rejection of the relativists' arguments. Secular natural law endorses completely the meta-ethical pronouncements of moral realism, and consequently inherits the explanatory challenges posed by Mackie and other contemporary skeptics.

Lewis suggested a couple of superficially plausible candidates for objective moral truth.

1. It is wrong to run away in battle.
2. It is wrong to double-cross those that have been kindest to you.

Let us grant the truth of these statements, and see whether the outlines of a realist story about their objective truth, and our ability to know them, might be forthcoming. We find immediately, I believe, that the metaphysical questions –

what are values?, where do they exist? – are intimately connected to the epistemological questions of how we know them. Contemporary moral realists reject Mackie’s characterization that moral knowledge comes from “intuition,” let alone, “some special faculty of moral perception or intuition utterly different from our ordinary ways of knowing anything else.” We know these truths because we have knowledge of the world and of human beings. This knowledge is gained in the same way that all other knowledge of the world and human beings is gained – observation, documentation, the accumulated wisdom of generations, and in recent times, the generally reliable methods of the social and natural sciences.

Implicit in the epistemological account is the metaphysical theory about the nature of, and home for, objective values. If knowledge about human beings existing in the natural world is all that is required for objective moral knowledge, this strongly suggests that human beings and the world is the ontological home for objective values. But how could this be?

Moral realists propose that the common-place relationship of supervenience allows for values to exist in a totally naturalistic environment.

[T]erms like ‘right’, ‘bad’, ‘immoral’, and so on, are words for making claims about how things are. There are, that is, ethical properties, including, rightness, badness, and so on ... [T]ruth supervenes on nature. ... The most salient and least controversial part of folk moral theory is that moral properties supervene on descriptive properties, that the ethical way things are supervenes on the descriptive way things are.¹²

Those familiar with the philosophical literature on supervenience might well quarrel with my claim that this relationship is common-place. One finds spirited

debates about the logical nature of this relationship – semantic, logical, implicit, or contingent – as well as highly technical attempts to bring the tools of possible worlds semantics, and the like, to modeling the relationship.¹³ None of this, however, shows that supervenience is controversial or mysterious relationship, but rather like the concept of causation, one that is difficult to model philosophically.

We do well to distinguish two sorts of supervenience relationships. Watson is older than Beau. The relationship of one golden retriever being older than another is a perfectly objective fact that supervenes on the facts that Watson is two years old, and Beau is only one. Simply understanding the language allows us to see that in a world of golden retrievers, “being older than” is not some additional, let alone mysterious, property, nor one that requires some extravagant ontology, but a feature of reality that is implied (logically or otherwise) by other features of reality. Let us call this first sort of supervenience relationship, semantic supervenience.

Much more interesting, however, is what we might call empirical supervenience. Consider three scientific hypotheses about the natural world.

1. Ice is simply water that is frozen solid
2. Life is simply a complicated bio-chemical phenomenon.
3. Consciousness is simply a function of neuro-physiological processes.

Even before the atomic revolution in chemistry, naturalistic thinkers recognized that water was a natural kind, and that it could exist in gaseous, liquid, and solid

states. The property of being frozen solid was always taken to supervene on the underlying structure water (whatever it was, one of the basic elements, or a chemical compound, H₂O). Although we lack all of the details, virtually everyone concerned with such things, agrees that life is a property that supervenes on an underlying bio-chemical reality. Slightly more controversial, is the “astonishing hypothesis” that consciousness is merely a complicated neuro-physiological occurrence.¹⁴

Secular natural law claims that ethical truths empirically supervene on natural facts about humans and the world. This hypothesis might simply stand as a promissory note for future scientific discoveries, much in the same way that mind-body materialism did before the recent advances in cognitive science and neurology. These sorts of grand theoretical accounts are of tremendous significance in philosophy and science. They almost never, however, satisfy the skeptics. Secular natural law can do better than the vague promise of a naturalistic ethics. I believe that we are presently in a position to offer a sketchy, but empirically rich, account of how objective normative values can supervene on natural facts about humans and the world they inhabit.

IV. Classical Natural Law

[A]ll things subject to divine providence are ruled and measured by the eternal law, in so far as, namely, from its being imprinted on them, they derive their respective inclinations to their proper acts and ends. Now among all others, the rational creature is subject to divine providence in a more excellent way, in so far as it itself partakes of a share of providence, by being provident both for itself and for others. Therefore it

has a share of the eternal reason, whereby it has a natural inclination to its proper act and end; and this participation of the eternal law in the rational creature is called the natural law.¹⁵

Secular natural law has much to learn from its candidly theistic ancestors. Assume a world created and designed by an omnipotent, omniscient, and morally perfect creator. One might expect to find all sorts of indications of God's love and wisdom in his handiwork. Suppose further that such a creator chose to create a very special form of life endowed with immortal souls, and possessing both wisdom and free will. Now obviously such a world view is ontologically extravagant – postulating at the very least God and souls immune from causal determinism as fundamental components of reality in addition to physical world. Still, the version of moral realism that can be constructed from this foundation is remarkably naturalistic.

A world that is the product of an infinitely wise designer might reasonably be expected to work according to a few, simple, physical laws. Rational minds might come to discover, at least in outline, some of these physical laws, and the origins of natural science follow nicely from this view. Natural laws might also govern the behavior of rational agents themselves, but not in the causal way of the rest of the natural and biological world. Since human agents have free will these normative laws would not describe how individuals in fact behave, but rather dictate how they ought to behave. But these normative natural laws, just like their physical brethren, would be the handiwork of an infinitely wise and loving creator, and they would also be discoverable through human wisdom.

The world, for the natural law theorist, contains intrinsic normativity. Certain ends simply are good – life, society, reproduction, knowledge, cooperation, and the like.¹⁶ There is no is/ought problem, nor issue of metaphysical queerness, because all of creation is the intentional product of infinite wisdom and love. Classical natural law assumes the logical priority of the good (those things with intrinsic value) over the right (the normative principles of human conduct). We see this clearly in the almost vacuous nature of Aquinas’s “first principle of law.” “[G]ood is to be done and ensued, and evil to be avoided.”¹⁷ The absolutely intimate connection between reason and good also handles Mackie’s worry about moral knowledge. The manifest advantage to humans respecting these intrinsic goods is the sort of insight that human wisdom is capable of discovering.

Thus, although the existence of God is clearly presupposed, and indeed is theoretically necessary to the classical natural law position, the theology we might say works behind the scenes. Objective, cross-cultural, moral truth is the sort of thing that human minds can discover. Universal values exist in the perfectly ordinary natural world, and they are knowable through perfectly ordinary human intellectual activities. Moral truth, and moral knowledge are neither mysterious, nor ontologically extravagant, but exactly what ethical theorists have been saying since at least Plato – objective facts about the human condition.

V. Biologically Based Secular Natural Law

Society was not invented by reasoning men. It evolved as part of our nature. It is as much a product of our genes as our bodies are. To understand it we must look inside our brains at the instincts for creating and exploiting social bonds that are there. We must also look at other animals to see how the essentially competitive business of evolution can sometimes give rise to cooperative instincts.¹⁸

Many theorists have speculated that the theistic presuppositions of classical natural law could be conceptually divorced from moral realism and the intimate connection between practical reasonableness and moral truth and discovery. Much of traditional western moral theory can be seen in this light, and in jurisprudence the work of Fuller, Dworkin, and even John Finnis, argue that natural law need not depend on "a brooding omnipresence in the sky."¹⁹ I want to investigate the possibility of deriving a recognizable ancestor to the classical natural law tradition from contemporary evolutionary biology.

Classical natural lawyers explain objective moral truth and knowledge, and the behavioral inclination to what is morally required, in terms of God's infinite power, wisdom, and love. This is exactly the sort of explanatory framework proposed by eighteenth and early nineteenth century for accounting for the manifest structure, order and purpose in the biological world. Darwin changed the plausibility of that earlier explanation, not by disproving the existence of God, nor even discrediting the design hypothesis *per se*. Natural selection simply offered a thoroughly secular and elegant account of biological order; one that was not logically inconsistent with God's existence or planning, but did not

depend on His existence one way or another. Secular natural law takes a similar stand on matters theological. An omnipotent, omniscient, and morally perfect creator may well exist, but His existence is not required for moral truth, knowledge and inclination.

Classical natural law asserts the priority of the good over the right. Biologically based natural law inverts the order. Intriguing evidence in game theory, animal ecology, and evolutionary psychology all indicate that we all have behavioral phenotypes that lead us to behave, think, and feel in generally the same way regardless of the culture we find ourselves in – in short, that we have a species specific human nature.²⁰ Part of our human nature I suggest is a genetic predisposition to behave cooperatively – i.e., morally – and to see and judge the behavior of others, as well as ourselves, according to the standard of cooperation.

Biologically based moral realism was first speculated about, though not in those terms of course, by Darwin. In the past one hundred and fifty years many others have seen the attractions of such an approach to moral objectivity. At the same time, though, critics have always vociferously assailed the approach. One line of attack can by now, I hope, safely be dismissed. It is certainly true that many early advocates of the biological approach have, consciously or unconsciously, framed their arguments in racist and sexist terms. Modern evolutionary psychology, however, is overwhelmingly innocent of that ancient charge. Much more troubling, however, is an argument at the core of

evolutionary biology itself. An instinct to behave morally seems to imply a kind of group selection that many biologists believe is, if not impossible, exceedingly rare and fragile in the natural world. The problem is easy enough to see. If we are genetically inclined to cooperate with one another, this provides a very rich medium for the evolution of cheaters. As we will see shortly, cooperating with cooperators, bring reproductive advantages to all. But imagine a mutant strain inclined to take advantage of others' cooperation, fake it and pretend to be cooperator, but ruthlessly cheat at every opportunity. Surely the genotype that produces cheaters would thrive in a world of cooperators, and soon that world would be dominated by cheaters.

We all know that there are people who behave in precisely this way, and consistent with the biological speculation going on in this section, it's reasonable to suppose that an inclination to behave selfishly is also part of our genetic heritage – indeed this is exactly what classical and neoclassical economics has been saying since the time of Adam Smith. But, biologically based natural law insists that the individual reproductive advantages of being a cooperator in a world of fellow cooperators is so great that cooperative genotypes can be evolutionarily stable in spite of the short term benefits of cheating. All of this is biologically controversial, of course. Standard wisdom since the 1960s says it's close to impossible.²¹ But, recent advances in evolutionary theory including gene selection, kin selection, and reciprocal altruism offer more attractive possibilities for biological moral realism.²² And finally, a very recent and compelling line of

argument candidly embraces group selection as a viable evolutionary perspective, and explicitly includes moral thinking as its central example.²³ In much the same way that secular natural law had to let the empirical facts from cultural anthropology concerning cross-cultural values determine its fate, the same is true of empirical facts in evolutionary biology. I remain confident that evolutionary theory will vindicate this approach, but must confess that in spite of promising proposals, much work remains to be done on this crucial aspect of the theory.

VI. An Analogy from Psycholinguistics

Consider Pinker and Bloom's summary of some fascinating data.

All human societies have language. As far as we know they always did; language was not invented by some groups and spread to others like agriculture or the alphabet. . . . The grammars of industrial societies are no more complex than the grammars of hunter-gatherers. . . . Within societies, individual humans are proficient language users regardless of intelligence, social status, or level of education. Children are fluent speakers of complex grammatical sentences by the age of three, without benefit of formal instruction. They are capable of inventing languages that are more systematic than those they hear, showing resemblances to languages that they have never heard, and obey grammatical principles for which there is no evidence in their environments.²⁴

They then draw the obvious conclusion.

[T]he ability to use a natural language belongs more to the study of human biology than human culture; it is a topic like echolocation in bats or stereopsis in monkeys, not like writing or the wheel.²⁵

Noam Chomsky used intentionally loaded language in describing the biological approach to language. He spoke of an innate, indeed candidly Cartesian, knowledge of the underlying grammar of human natural languages. Now, since the surface grammars of languages can vary in significant ways (one need only think of native English speakers trying to master German as adults), the knowledge would have to be of a “deep structure,” abstract, and somehow encoded in the human brain. Chomsky has, for fifty years, remained confident that something like this deep structure would be discovered by linguists analyzing natural languages, and cognitive scientists analyzing the human central nervous system.²⁶

Secular natural law postulates an analogous underlying moral syntax to most, if not all, culturally embodied moral systems – a deep-structure, if you will, to human moral thinking and perception. This hypothesis provides a starting point for explaining all of Mackie’s queer properties. The ontological home for objective values is a behavioral and neural phenotype. Our knowledge of them is a direct intuition, but not a philosophically mysterious one, but similar to the immediate perception of correct grammar in Chomsky’s famous piece of nonsense – “Colorless green ideas sleep ferociously.” And there is nothing motivationally peculiar in humans having an innate inclination to behave morally. Indeed, on the evolutionary account it was precisely this behavioral phenotype that was being selected for.

Certainly two defining properties of our species are our ability to use language, and to develop culture. The ability to adapt to social and environmental circumstances in a time frame of years and decades, rather than generations and eons, has given human beings a flexibility that is probably unique in the biological world. It is no particular explanatory mystery, therefore, that we see apparently great cultural diversity in human moral practices and perceptions. Again, to push the analogy with language, human natural languages exhibit great diversity in semantics and "surface-grammar." The question, of course, is ultimately empirical. Can we discover an underlying deep-structure to human moral and legal practices?

VII. Tit-for-Tat

Jerry Fodor, described his important book, *The Language of Thought*, as an essay in

speculative psychology. It wasn't quite philosophy because it was concerned with empirical theory construction. It wasn't quite psychology because it wasn't an empirical science. But it used the methods of both philosophy and psychology because it was dedicated to the notion that scientific theories should be both conceptually disciplined and empirically constrained.²⁷

Fodor believed in 1975, and continues to believe, that something like Chomsky's universal grammar underlies, not just human natural language, but much of human thought itself. Much of contemporary cognitive science, with little acknowledgement of Fodor, can be seen as a sustained effort to test this provocative and controversial hypothesis.

Secular natural law might be seen as a kind of speculative moral and legal psychology. Very general and abstract models will be offered as candidates for the deep structure of moral and legal thinking. It is almost impossible to over-stress that these models will be intentionally over simple. They will provide, not a complete representation of a legal system, let alone the detailed architecture of human neural structure which constrains human normative and legal thinking.

One very intriguing abstract model comes from contemporary game theory. Consider the classic prisoner's dilemma.

PRISONER'S DILEMMA

		Player A	
		Cooperates	Fails to Cooperate
Player B	Cooperate	3,3	0,5
	Fails to Cooperate	5,0	1,1

Player A, whose payoff is indicated first, reasons that failing to cooperate will maximize her utility, since if B cooperates, 5 is greater than 3, and if B fails to cooperate, 1 is greater than 0. Failing to cooperate is A's dominant strategy. By exactly the same reasoning, it is also the dominant strategy for B. Hence, both players if they are rational will fail to cooperate. The paradox, of course, is that utility maximization has doomed each player to a clearly sub-optimal payoff; both could receive 3 rather than 1, if they only cooperated with each other. A and B need to find a way to mutually constrain their choices so that failing to cooperate is not an option.

The best strategy in a single encounter prisoner's dilemma game is not necessarily the best in circumstances where there are repeated encounters. It remains true, of course, that the non-cooperative play will always yield the maximum payoff, but it appears that trust and cooperation can "evolve" through a process of mutual reward and punishment. This was convincingly shown in a fascinating line of research conducted by Robert Axelrod.²⁸ He conducted tournaments for computer programs where the contestants played "iterated" prisoner's dilemma games. Each program played all others 200 times consecutively in the first tournament, and approximately 200 times in the second. All of the submitted programs were required to play each other, as well as a copy of themselves, and a program that randomly cooperated. Both tournaments had a clear winner.

It is almost impossible to talk about Tit-for-tat without resorting to anthropomorphic language – the program is "nice" because it cooperates on the first play. It "rewards" cooperation by its opponent by continuing to cooperate as long as its opponent cooperates. It "refuses to be exploited" by retaliating with non-cooperation whenever the opponents fails to cooperate. And it "doesn't hold grudges," "forgives," and begins to cooperate again as soon as the opponent does. All of this is the product of amazingly simple programmed instructions. Tit-for-tat cooperates on the first play, and on any subsequent play n , it plays what the opponent played previously on $n-1$.

It is worth remembering that Tit-for-tat can never “win” any single contest during the tournament. The best it can do is when it plays a universally cooperative program, or itself, is to end in a tie. Tit-for-tat could easily have lost in Axelrod’s tournament. All we need do is consider its fate had all of its opponents been straightforward utility maximizers. Had there been at least eighty-one competing programs in the tournament, Tit-for-tat loses to all of them. Furthermore, the relatively high number of opponents required for Tit-for-tat’s loss is something of an artifact of the rules of the tournament. Had Tit-for-tat not been allowed to play itself – and thereby rack up 600 points in this one round of the tournament – it would have lost to a field of non-cooperators of any size. Tit-for-tat’s fate is even more disappointing in a field of suckers who cooperate no matter what, with one straightforward maximizer. Here it loses dramatically, with the scale getting worse the higher number of naive cooperators.

But, by far the most artificial aspect of Tit-for-tat’s remarkable success is a taken for granted part of the prisoner’s dilemma. Every single play in Axelrod’s tournament is perfectly transparent. Each opponent knows exactly what plays have previously been made. There is no opportunity for covert cheating and non-cooperation. There would be, of course, significantly less crime and non-cooperation in the human social world, were every single one of our actions knowable by anyone who was curious. Both happily (for those of us who value personal privacy), and sadly (for efficient law enforcement and general

cooperation), however, the world of the iterated prisoner's dilemma is not the contingent world that humans find themselves operating in.

None of this is meant to disparage Tit-for-tat, or Axelrod's methodology. The strategy proved remarkably robust in the original tournaments. And, most intriguing of all, it seems to be instantiated in some general form in the biological world. Several examples have been discussed, most of them somewhat grisly. Consider the case of:

vampire bats, which spend the day in hollow trees and the night searching for large animals whose blood they can quietly sip from small cuts surreptitiously made in their skin. It is a precarious life, because a bat occasionally returns hungry, having either failed to find an animal or been prevented from drinking its fill from the wound. . . . Luckily, however, for the bats, when they do get a meal they can usually drink more than they immediately need and the surplus can be donated to another bat by regurgitating some blood. This is a generous act, and the bats find themselves in a prisoner's dilemma . . . [The bats] seem to play Tit-for-tat. A bat that has donated blood in the past will receive blood from a previous donee; a bat that has refused blood will be refused blood in turn.²⁹

Natural selection has clearly stumbled on a strategy for ensuring cooperation between vampire bats. Might not a very similar strategy apply to humans? Indeed, I am suggesting that Tit-for-tat articulates at some very basic, and of course, grossly oversimplified level the deep-structure of interpersonal justice, at least within the context of two-person prisoner's dilemma interactions.

VIII. Justice as Constrained Maximization

The just person is fit for society because he has internalized the idea of mutual benefit, so that in choosing his course of action he gives primary consideration to the prospect of realizing the cooperative outcome. If he is able to bring about, or may reasonably expect to bring about, an outcome that is both (nearly) fair and (nearly) optimal, then he chooses to do so; only if he may not reasonably expect this does he choose to maximize his own utility.³⁰

Most contemporary research on justice in moral philosophy, political theory, and academic law focuses on social justice – the normative parameters of the relationship between individuals and the state. As important and interesting as this work is, it glosses over a more basic notion of justice. Moral philosophy, and certainly the law, is ultimately concerned with what is right and fair between any two parties (individuals, corporations, or the state and the individual). Can a plausible standard of interpersonal justice be articulated in a prisoner’s dilemma context?

David Gauthier has defended precisely such a theory. His starting point is the rationality of mutual constraint – the fundamental lesson of the prisoner’s dilemma. It can be in one’s best interest to be constrained, even when the precluded choice is in one’s short-term best interest. It is better for you and I to be constrained to only cooperate, for if we are not constrained, if we behave as “straightforward maximizers,” we will each earn considerably less than had we cooperated in the first place. Gauthier puts a candidly normative spin on all this

game theory and rational behavior, arguing that the fundamental value that emerges from contemplation of the prisoner's dilemma is justice.

Just individuals, according to Gauthier, have internalized an entirely new way of thinking. Rather than reasoning as rational decision theory would have it – as utility or straightforward maximizers – they act from motives of constrained maximization.

The constrained maximizer considers (i) whether the outcome, should everyone do so, be nearly fair and optimal, and (ii) whether the outcome she realistically expects should she do so affords her greater utility than universal non-co-operation. If both these conditions are satisfied she bases her action on the joint strategy.³¹

We have here, I would argue, a nice abstract characterization of the winning strategy exhibited by Tit-for-tat, and the biological altruism we saw in the vampire bats' behavior. I believe it also comes as close as anything currently available to articulating the neurological "deep structure" of human beings' predisposition to behave cooperatively.

Gauthier is careful to note two very important considerations that are essential in order for constrained maximization to be rational. First, the strategy only makes sense if one is reasonably confident that one is interacting with another constrained maximizer. If one's opponent in the prisoner's dilemma is a straightforward maximizer, the rational play is of course non-cooperation – just individuals are not stupid nor suckers. Second, constrained maximization requires a pre-reflective disposition to behave justly. If individuals calculate their

personal utility every time they interact with another, they will simply be sophisticated straightforward maximizers. And a society of straightforward maximizers, however sophisticated, will be a Hobbesian state of nature, constrained only perhaps by the forces of law and culture.

For Gauthier the move from being a straightforward maximizer, to a just constrained maximizer is one of rationality, learning and culture. I have no quarrel with any of those factors, but suggest that normal human beings are already programmed to see the world, and to behave, as constrained maximizers. Living together as members of a social species necessitates mutual cooperation, and it would be surprising indeed, if the forces of natural selection had not laid down such a normative deep-structure as a part of our species-specific human nature.

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- ¹ Dworkin, Model of Rules I
 - ² Dworkin, Objectivity and Truth
 - ³ Mackie, Ethics
 - ⁴ Burger and Luckmann
 - ⁵ Sumner, in Rachels, pp. 52-3.
 - ⁶ Anthropological stuff on universality of basic values.
 - ⁷ C.S. Lewis, ???
 - ⁸ See, Moody-Adams
 - ⁹ Mackie, Ethics
 - ¹⁰ Literature on behavioral inclination from moral awareness
 - ¹¹ Boyd, in Sayre-McCord, p. 182.
 - ¹² Jackson, pp. 117-8
 - ¹³ Stuff on supervenience
 - ¹⁴ Cripk, Astonishing Hypothesis.
 - ¹⁵ Aquinas in Rachels, p. 69.
 - ¹⁶ Aquinas in Johnson, p. 21
 - ¹⁷ Aquinas in Johnson, p. 21
 - ¹⁸ Ridley, pp. 6-7.
 - ¹⁹ Quote is from Fuller. Citations to Dworkin and Finnis.
 - ²⁰ Pinker, Blank Slate, Wright, Non-Zero Sum, Bloome, Descartes' Baby
 - ²¹ See, Williams.
 - ²² Supporting stuff
 - ²³ Soper and Wilson

 - 24 Pinker and Bloom in Barkow, p. 451

 25. Ibid.
 - ²⁶ Stuff on Chomsky
 - ²⁷ Fodor, p. vii.

 28. Axelrod

 29. Ridley on the vampire bats.

 30. Gauthier, in Darwell, p. 341.

 31. Gauthier, in Darwell, p. 349.