

A Cooperative Animal

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In the last four years, as I have been working on this book [What We Made], I thought that it would be interesting to get a better understanding of what scholars were thinking about human cooperation in general -- not only cooperation in the visual arts. This led me to some interesting reading and influenced the way I think about our interactions. In the long run I determined that this was too far afield to include in my introductory or concluding chapter, but I decided to write a summary of my readings and add it here as an appendix. I did so because it seems that the scientific understanding of human behavior is shifting to a more cooperative vision of our species at least in some influential circles, and this new understanding could be of interested to those engaged in the aesthetic implementation of cooperation. A quick review of transitions in perceptions of human cooperation which occurred from the 1960s to the present seems relevant as it coincides with the period discussed in Chapter 1 and serves as a backdrop to the debate around of American individualism and the emergence of cooperative art.

As discussed in Chapter 12, John Dewey saw his work unfolding in the shadow of Charles Darwin. He sought to understand the social construction of truth, to understand the collective creation of meaning in an evolving world framed by change, not stability. But post-Darwinian evolutionary theory has been a hotbed of controversy in many ways, including the very conception of human cooperative behavior. In the mid and late 20th century, it was not only postmodernist theoreticians who took a dim view of the possibility of what Richard Rorty called "millennia of social cooperation"¹ that laid the

groundwork for the creation of the modern self. Scientists too have often joined the critics of envisioning humans as cooperative -- unless the motivation of this "cooperative" behavior was framed in terms of self-interest.

For most people, if you say that an environment is "Darwinian" it means that every creature is out for itself in a brutal fight for survival. But there is increasing attention to the fact that Darwin did not necessarily subscribe to this sort of "Darwinian" view of the human species. In *The Descent of Man*, for instance, he wrote, "as the reasoning powers and foresight ... became improved, each man would soon learn from experience that if he aided his fellow-men, he would commonly receive in return. From this low motive he might acquire the habit of aiding his fellows; and the habit of performing benevolent actions certainly strengthens the feeling of sympathy, which gives the first impulse to benevolent actions."² So, cooperation or altruism may have started as a self-interested strategy but developed into a sympathetic worldview that might not simply calculate personal gain. As early as 1966, S.U.N.Y Stony Brook evolutionary biologist George Williams postulated that there need not be any sort of self-interested "low" motive toward reciprocation or any motive at all for altruistic behavior: "I see no reason why conscious motive need be involved," wrote Williams, "It is necessary that help provided to others be occasionally reciprocated if it is to be favored by natural selection. It is not necessary that either the giver or the receiver be aware of this. Simply stated, an individual who maximizes his friendships and minimizes his antagonisms will have an evolutionary advantage, and selection should favor those characters that promote the optimization of personal relationships."³ So what Darwin called "sympathy" could create an evolutionary advantage. But this was not the orthodox view at that time.

Given all the attention to communal experience in the 1960s, one might imagine that the sciences were also experiencing a celebration of interconnection and cooperation among the human species along the lines of George Williams' quote above. Not so. Images of the human as a selfish animal abounded at the time -- the individual, survival-motivated *homo economicus* intent only on acquisition of property and power. Ayn Rand may have popularized the virtue of selfishness, but scientists saw the characteristic as intrinsic to human nature -- desirable or not. In his famous and emblematic essay, "The Tragedy of the Commons" (1968), the controversial U.C. Santa Barbara ecologist Garrett Hardin lamented the human tendency to abuse natural resources.⁴ Hardin's "tragedy" is a parable of human selfishness: After centuries of disease, conflict and scarcity, a group of herdsmen finally attains the social stability and physical health to add to their herds, which graze on common land. Hardin says that the individual herdsman asks himself, "What is the utility to me to add one animal to my herd?" (Do herdsmen really talk like that?) Of course, there is an advantage for him as an individual to add animals, but eventually, a disadvantage for the community -- because a great number of additional cattle will lead to over-grazing, to the tragic detriment of all. Acting selfishly is the best strategy only for the individual herdsman: "Each man is locked into a system that compels him to increase his herd without limit -- in a world that is limited," writes Hardin. "Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all."⁵ The orderly sharing of the commons -- as in the grazing of land at the center of an 18th century New England town -- is based, according to Hardin, on regulation by central authority (in accordance, more or less, with Thomas Hobbes' theory of social

contract). Like many of the social critics mentioned in Chapter 1, Hardin was wary of unfettered individualism -- but he was arguing that selfishness is a basic human characteristic that needs to be reined in, not a modern social pathology. He sees a species where the only human motivation is pursuit of “his own best interest.”

Of course Hardin was pondering bigger issues than local grazing – most importantly issues of over-population and environmental degradation,⁶ and he was very much in the spirit of his times. Starting in the mid-1960s, little but the most self-oriented explanation of human behavior was seen as serious science. In a truly grim 1974 statement of this viewpoint, U.C. Berkeley Professor of Zoology (later a MacArthur Fellow) Michael Ghiselin wrote, “Where it is in his own interest, every organism may reasonably be expected to aid his fellows.... Yet, given a full chance to act in his own interest, nothing but expediency will restrain him from brutalizing, from maiming, from murdering – his brother, his mate, his parent, his child. Scratch an ‘altruist,’ and watch a ‘hypocrite’ bleed.”⁷ Meanwhile, in the public imagination, Oxford professor Richard Dawkins’ best-selling book *The Selfish Gene* (1976)⁸ was understood, perhaps inaccurately, to reinforce the notion of evolutionary selfishness. Looking back in 2008, Harvard psychology professor Steven Pinker wrote in *The New York Times*, “Unfortunately, the meme of the selfish gene escaped from popular biology books and mutated into the idea that organisms (including people) are ruthlessly self-serving.”⁹

In her book *Rationalizing Capitalist Democracy: The Cold War Origins of Rational Choice Theory*, S.M. Amadae discusses the glorification of self-interested individualism as an American response to the growing power of Eastern Bloc collectivism. According to Amadae, a wide range of American economists adopted the

basic premise that decisions are made by rational self-interested individuals whose aim is to maximize utility, that the accumulation of individual cost-benefit analyses drives economies, and that liberal capitalism is best suited to cash in on these behaviors.

Amadae narrates the development of Rational Choice theory and its spread through the RAND Corporation, academia, and government. She weaves a story of its growing influence in the work of Kenneth Arrow, James Buchanan (both Nobel Prize winners in economics) and many others. From the 1940s through the 1970s, she argues, "the most notable social theorists had predicted the inevitable defeat of democracy and capitalism... unless their warnings were heeded, and Western individualistic liberalism be unhesitatingly supported."¹⁰ So, Amadae argues:

The self-interested, strategic rational actor became the central figure around which the reexamination of traditional Enlightenment themes and problems of government was based. The set-theoretic and axiomatic treatment of human rationality came to serve as the new standard for describing the zenith of human consciousness, and could be used as a virtual litmus test to determine if one were a liberal individualist or an irrational collectivist: rational choice theory holds that rational individuals do not cooperate to achieve common goals unless coerced, in direct contradiction to the precepts of Marxism and communism.¹¹

Economic individualism was venerated as a means to fight the Cold War.

Rational Choice and Public Choice theory were Western, most particularly American strategies that were vigorously pursued in a variety of White House administrations.

So, scientists saw humans as self-interested, and many economists sought to capitalize in this characteristic. But this was about to come under attack in the mid-1970's through the emergence of a theory of reciprocal altruism that was developed in the context of evolutionary game theory. Based on game-theoretical analysis and subsequent experimental data, scholars began to see humans as more cooperative. Perhaps the most

influential of these arguments was made through a fresh analysis of the Prisoner's Dilemma game which tests the motivations for and limits on cooperation.

Here is a classic version of the Prisoner's Dilemma: Two people are arrested, presumably in the act of committing a crime. They are brought to a prison and questioned separately, though both understand the rules of the game: If neither prisoner agrees to talk (i.e. they cooperate with each other), they are both sent to jail for a relatively light sentence of six months for lack of strong evidence. If they both rat on each other -- known as "defecting" in game theory parlance -- they both go to jail for five years. If prisoner A defects while B cooperates, then A goes free and B goes to jail for ten years. So, each prisoner has a motivation to defect because their sentence would be lighter whatever their counterpart does, but as a *group* they would be better off cooperating. The strategy of defecting in this sort of one-time Prisoner's Dilemma is known in game theory parlance as a "Nash Equilibrium," a strategy that is always correct *if one pre-supposes a rational self-interested player*. This equilibrium theory won John Nash, of *A Beautiful Mind* a Nobel Prize in Economics.¹² In fact the Prisoner's Dilemma game was devised by Melvin Dresher and Merrill Flood, two of Nash's RAND Corporation colleagues to test his theory.¹³ So, Garrett Hardin's notion of the tragedy of the commons is a prisoner's dilemma, and Hardin agrees with Nash's principle that the rational self-interested herdsman will always be motivated to defect and add as many cattle as possible. But, as Hardin argues, this strategy does not work out for the group in the long run. Three strategies to prevent over-grazing are: mandatory state-regulated dispensation of resources as Hardin suggests, privatization, in which the commons are

broken up into smaller pieces that each herdsman protects, or voluntary cooperation amongst the herdsmen, which seemed hopelessly idealistic in the late '60s.

However, the orthodoxy of the selfish individual was questioned when University of Michigan political scientist Robert Axelrod (another MacArthur fellow) took an interest in evolution and sponsored two Prisoner's Dilemma tournaments in the late 1970s. It makes sense for a rational self-interested player to defect if he is only playing once, but Axelrod wanted to understand what sort of strategy would prevail in a Prisoner's Dilemma game of many moves (known as an "iterated" Prisoner's Dilemma). In Axelrod's tournaments selfish players proved to be least "fit" in Darwinian terms when their strategies were computer-modeled over many generations of decision making. In two tournaments, as narrated in Axelrod's book, *The Evolution of Cooperation* (1984) a strategy that started by cooperating, punished defecting, and rewarded future cooperation won easily.¹⁴ This cooperative strategy is referred to as "tit-for-tat reciprocity" and Axelrod's findings spawned a series of analyses of cooperation and reciprocity. Conventional wisdom was turning away from the image of essential human selfishness. In *Prisoner's Dilemma*, his biography of game theory giant John von Neumann, journalist William Poundstone points out that cooperative strategies in prisoner's dilemma-like situations are as old as the golden rule or Immanuel Kant's categorical imperative¹⁵ -- which are both classic cooperative strategies. If each prisoner did unto others as she would have others do unto her, they'd both cooperate and would be out of jail in six months. The Gospel of Matthew and Kant's categorical imperative to the contrary notwithstanding, there remained a strong belief that cooperative behavior is simply deferred selfishness. Kant may have had an idealist moral notion of why his

imperative was correct, but if one accepts the premise that we are rational and self-interested, then his imperative only makes sense because it “wins.”

In fact, Axlerod’s models were questioned from the start as being overly simplistic. Does this sort of reciprocal cooperation work in more complex multi-player games? What about environments that include “noise” -- like random or inadvertent acts of non-cooperation? Axlerod followed up with a series of additional computer models that continued to demonstrate that cooperative reciprocity is successful strategy in these more complex environments but only when accompanied by generosity (forgiving the opponent’s occasional unprovoked defection) and/or contrition (acting additionally cooperative after one’s own defection).¹⁶ And reciprocity works in group games when accompanied by norms of cooperation and meta-norms that punish players who do not enforce the cooperative norms.¹⁷ Axlerod’s conclusions become increasingly complex and ambivalent as he discusses the evolution of “convergence” and the emergence of polarization.¹⁸ Still it is important to recognize that in Axlerod’s influential research findings (especially in his widely read earlier book *The Evolution of Cooperation*) there was a concerted and intellectually coherent attack on the notion of the evolutionary necessity of human selfishness.

Though Axlerod went to great lengths to argue that cooperative behavior is a winning strategy, though he critiqued the non-cooperative orthodoxy, he based his assessment on outcomes that continued to presuppose rational choice, and cooperation in these game-theoretical models was motivated by long-term gains in utility for the individual player. Positive group outcomes were a side-effect. In this context,

cooperation is only a rational choice for the self-interested player because, ironically, it prevails over more immediately selfish strategies.

So, as University of Washington political scientist Michael Taylor argues, in the context of Rational Choice theory cooperative behavior that “violates the self-interest axiom” is nothing more than deferred selfishness.¹⁹ Taylor, who was once squarely in the Rational Choice camp, dramatically reversed his stance under the weight of mounting contradictory evidence. In a compelling summary of experimental results from games including the Prisoner’s Dilemma, the Dictator Game, and the Ultimatum Game, he shows how the calculation of payoffs simply does not explain real-life human behavior or motivation.²⁰

Once you step outside theoretical models to inquire into how actual humans interact, a different picture comes into focus. A host of experiments seem to confirm that people act more cooperatively than they would if they were truly logical and self-interested. The problem with the Nash Equilibrium when it comes to real-life prisoner dilemma games is that people do *not* act rationally. As Nobel laureate Elinor Ostrom and her Indiana University colleague James Walker say, “...studies of social dilemma games typically find that the level of cooperation observed in such games is not consistent with noncooperative game-theoretic equilibrium predictions when all players are assumed to be purely self-interested.”²¹ Ostrom, a cooperative game theorist and critic of Hardin’s theories, has provided alternative models and shown that in human society there are compelling examples of shared use of the commons -- especially in traditional societies populated by contemporary equivalents of Hardin's theoretical herdsmen.²² The results of these experiments and field studies fly in the face of Rational Choice theory. At least

some of the time, people cooperate because they trust their fellow humans to be equally cooperative, and they often do not calculate utility. They are neither rational nor self-interested in the traditional game theory sense. This empirical evidence attacks the very premise of the Rational Choice model – one that Axlerod did not question when he argued for the evolutionarily cooperative nature of the human animal.

A common quality that is left out of the vision of the rational self-interested model of humanity is trust, and some scholars now argue that trust and cooperation are impossible without a “theory of mind.” Catherine Eckel, an experimental economist at the University of Texas, Dallas, and Rick Wilson, a political science professor at Rice University write, “A theory of mind requires that a person be able to separate what he or she knows from what another might know.”²³ They cite a simple test of theory of mind: Envision a candy box that is filled with pencils. Show this box to a child, and then reveal the pencils within. If you ask this child what *another* child would think is in the box, he would generally predict that the other child would guess it is filled with candy – because it is a candy box, and he is able to imagine another’s mental state. Children as young as three can make this sort of imaginative leap. However, if you ask a child in the autism spectrum who has seen the candy box and the pencils within to predict what a second child will say, he will often say that the next child will understand that the box is filled with pencils – because he lacks a theory of mind. He knows what's in there and cannot imagine that the other child does not know as well. “A theory of mind appears to be a necessary precondition for negotiating complex social spaces,” argue Eckel and Wilson. They continue:

Trust, like cooperation, requires an understanding that there are joint gains to be had from non-Nash behavior, requires that the counterpart understands the same thing (shared attention), and requires that an individual be able to read the counterpart's intention.... It might be argued that the rational agents in standard game-theoretic models are themselves autistic: those models require only that the other is assumed to be seeking the same advantage as one's self and as a consequence there is no need to go beyond one's self.²⁴

John Dewey says, "The non-social individual is an abstraction arrived at by imagining what man would be if all human qualities were taken away." This is exactly the sort of individual that the Rational Choice theorists imagine-- the rational self-interested *non-social* actor.

Psychologists seem to have proven that this is not the whole story, and recently not all economists are looking at humans as consistently self-interested rational agents. Dan Ariely, Professor of Behavioral Economics at M.I.T., for example, has studied what he calls "predictable irrationality" in human economic relations. He has conducted a range of experiments that demonstrate that we live in a world with both market-based interaction and social experience – where the market-driven decisions are more inclined toward "rational" economic behavior and social exchange tends toward "non-Nash" cooperative behavior. In the social sphere, Ariely argues, humans are routinely generous, and reciprocity becomes indirect, a way of behaving not measured in the clear calculus of exchange.²⁵ None of the theorists discussed here deny selfish, territorial, and aggressive behaviors are present in the human animal. In fact, Ariely narrates some sobering experiments about selfishness and dishonesty, but these theorists recognize our "irrationally" cooperative behavior which is a startling break with the orthodoxy of the '60s and '70s.

This is not to say that game theory, evolutionary game theory, or Axelrod's tournaments were a waste of time, only that these models do not fully explain human behavior. In an article on the biological foundations of reciprocal altruism, University of Pennsylvania Psychologist Robert Kurzban sums up this sentiment clearly. He argues that game theory is relevant in human evolution, but is our *genes* that can be said to act as rational agents:

Natural selection is the process by which psychological systems are built. The cognitive system of the organism, which executes the strategies that natural selection has chosen, is the adaptation itself.

Thus the process of natural selection obeys game-theoretical calculus: genes persist only by virtue of their rate of replication. In contrast, the cognitive systems these genes build might or might not function in a way that looks "rational" or consistent with the principles of game theory; they simply have to be better than any other candidate systems at solving a specific adaptive problem.

... This analysis does not suggest that humans are rational reciprocal altruists. That is, it does not predict that people will calculate probabilistic costs and benefits and the possibility of punishing defectors in deciding when and whom to trust. Instead, it suggests that the game-theoretical structure of reciprocal altruism has sculpted human cognitive adaptations. In turn these cognitive systems, built by the process of natural selection generate modern human behavior.²⁶

Kurzban is saying that, as humans, our brain (including conscious decision making, and our non-conscious mechanisms that often determine our behavior) will sometimes guide us to act cooperatively or even altruistically. Our genes might exhibit the characteristics of rational choice, but often *we* do not. This representation of the human animal is in direct contradiction to the rational self-interested actor postulated by Nash and his cohort, and built out into a political and social policy engine by economists. Instead of always acting to maximize our own utility, we are inclined to cooperate as an evolutionary adaptation.

By the 1990's this sort of proposition was becoming more common in American academic circles. A thorough argument for the "altruism theory" is offered by University of Wisconsin philosophy professor Elliot Sober and State University of New York, Binghamton biologist David Wilson in their book *Unto Others: The Evolution and Psychology of Unselfish Behavior*, published in 1999.²⁷ They point to an important distinction between "evolutionary altruism" and "psychological altruism." To prove evolutionary altruism exists, one must only show that organisms act in an altruistic fashion -- i.e. sacrificing their own well-being for the sake of the group -- and that this increases the fitness of the group. This is not too difficult to demonstrate. Soldiers throw themselves on grenades to save their buddies; people tip waiters in restaurants they do not expect to visit again. On the other hand, to demonstrate psychological altruism exists in human beings, one must show that the person's ultimate motive in unselfish behavior is altruistic rather than egoistic or hedonistic. They examine a series of arguments for and against the proposition of human altruism and conclude that a pluralistic position -- proposing that our motivations can be egoistic, hedonistic, *or* altruistic -- explains the widest range of human behavior. They argue, "For all appearances, our own species seems special when it comes to group-level functional organization. From ancestors who were at best only moderately well-adapted at the group level, our lineage has evolved so that individuals participate in social groups that sometimes invite comparison to beehives and single organisms. Attempts to explain our groupish nature from an individualistic perspective appear tortured...."²⁸ And these groups are possible because of the selflessness of their constituents -- at least some of the time.

In fact many scientists now see the very structure, size, and complexity of our brain as based not on tool-making, as many have claimed in the past, but on our need to read social situations. This “social brain hypothesis” is certainly consistent with the “theory of the social organism” that Dewey espoused. A proponent of this position, University of Chicago psychology professor John Cacioppo has written, “...our big brains did not evolve in order to evaluate art or to solve quadratic equations. They evolved because it was to our adaptive advantage to process and manage complex and dynamic *social* information.”²⁹ He goes on to argue that the quintessential evolutionary adaptation that has allowed humans to become the master species of the earth is our “hyperempathic and hypercooperative” nature.³⁰ The British psychologist Susan Blackmore has written that social brain theories have been popular in recent decades partially because they have, “...shifted the balance from male-dominated technological explanations to those that appreciate the complexity of social life.”³¹

In the last decade, American academics have taken up the issue of personal happiness under the banner of the positive psychology movement. Though Harvard University professor Daniel Gilbert’s *Stumbling on Happiness*³² has gained wide public recognition, the center of this research is at the University of Pennsylvania, under the leadership of psychologist Martin Seligman, who ascended to the presidency of the American Psychological Association on a crest of the popularity of the new positive psychology. Throughout the positive psychology literature, there are more laments about the isolation of individuals in our society -- because one happiness study after the next shows that people who are connected to strong social networks are happier than those who are not.³³ Ironically, the very American obsession with personal happiness and

fulfillment (so often decried as evidence of selfishness) has led to calls for stronger community life. So, the current wisdom tells us, if we want to selfishly pursue our own happiness, we need to be less selfish, more connected. And if we are to follow the theory, that "reciprocal altruism has sculpted human cognitive adaptations" because cooperation is part of our Darwinian fitness, there should be inherent structures in the brain that lead us to be happier in communities with strong social bonds.

Along this line, Paul Zak of Claremont University, who has been studying the neurobiology of positive social behavior, believes he may have identified the hormone associated with cooperative behavior and trust: oxytocin which is also linked with orgasm, maternal emotions, and some forms of aggression. After a series of experiments that showed that oxytocin levels increase "when a person observes that someone wants to trust him or her," Zak set out to see if he could induce trust and cooperation. He "...infused oxytocin into subjects' brains through a nose spray containing oxytocin, which is quickly absorbed into the body" and cooperative behavior increased.³⁴ Oxytocin has been called the "master chemical of social connection" by John Cacioppo. He links the pleasures of oxytocin to bonds between mother and child, the long-term bond between mates, calm emotions, and social bonding in a number of species of mammals including humans.³⁵ The presence of this sort of hormone in our bodies is seen as evidence of the cooperative adaptation.

Another relevant field of neuroscience is the developing study of mirror neurons. In experiments, the mirror neurons of lab animals have been seen to fire in sympathy to the actions of others – i.e. if a monkey observes a scientist grasping a jar, the monkey's mirror neurons fire as if the monkey itself were grasping the jar. (Similar results have

been observed in humans, though animal results are more exact because medical ethics preclude the placement of probes in human brains.) The hypothesis of this emerging science is that synchronized interpersonal behavior and empathic action is in some ways directed at an unconscious level by the firing of these neurons. Scientists studying autism, for example, have demonstrated that imitation deficits coincide with dysfunction of mirror neurons.³⁶ U.C.L.A. neuroscientist Marco Iacobini, a mirror neuron specialist, argues, “Mirror neurons are the brain cells that fill the gap between self and other by enabling some sort of simulation or inner imitation of the actions of others.... They show that we are not alone, but biologically wired and evolutionarily designed to be deeply connected to one another.”³⁷ Again, these neurons are present in our brains because socially synchronized behavior is a positive evolutionary adaptation.

By 2006, when *New York Times* reporter Daniel Goleman presented an overview of the scientific research in best-selling book, *Social Intelligence*, the notion that empathy and cooperation are common human traits seemed to be taken for granted. Goleman argues that the selfish gene (intent upon its own survival) created the altruistic organism:

Our natural pull toward others may trace back to the conditions of scarcity that shaped the human brain. We can readily surmise how membership in a group would make survival in dire times more likely -- and how being a lone individual competing for scarce resources with a group could be a deadly disadvantage.

A trait with such powerful survival value can gradually fashion the very circuitry of the brain, since whatever proves most effective in spreading genes to future generations becomes increasingly pervasive in the genetic pool.

If sociability offered humans a winning strategy throughout prehistory, so have brain systems through which social life operates. Small wonder our inclination toward empathy, the essential connector, has such potency.³⁸

Goleman is arguing that a reward system has been built into our brains that explains our "non-Nash" cooperative behaviors in Prisoner's Dilemma games. Clearly this is a far cry from "Scratch an 'altruist,' and watch a 'hypocrite' bleed," or basing our notion of the human animal on the rational self-interested player. Without doubt, within an American academic context, research by game theorists, evolutionary biologists, neuroscientists, psychologists, and economists, leaves room for a vision of the human species as an intensely social and cooperative animal. Social and individual health is now often associated with interconnection and community, while cooperative behavior is associated with happiness. Let me repeat: these scientists do not deny the presence of domination, abuse and cruelty in human society. They are pointing to another aspect of human behavior: our unrivaled ability to cooperate.

In introduction there was a discussion of what some see as troubling trends toward hyper-individualism in American society. The general sense in these criticisms is that we lose something fundamental when humans act as self-interested players, when they give up on the common good in favor of individual pursuit of gain. For many Americans, politically left and right there is depressing sense that we are descending rapidly down this slope. I attempted to situate cooperative art and activism as participating in a counter-trend. If we are to accept Dewey's vision of humans as a "social organism" or more recent visions that we have evolved into a "hypercooperative" species, then is not surprising that members of our herd would contest this uncooperative trend. Even if we embrace disruption as valuable role for art to play, then can we not disrupt a hyper-individualistic, non-cooperative society with cooperation?

If we are to accept this new, more nuanced vision of our species, then cooperative artists are working in a territory of enormous potential. The creation of complex and nuanced social space is something that humans cannot avoid – as anyone who has ever worked in an office, a factory, or an academic department will attest. As Grant Kester has said, “We are all too familiar with ways in which communication can fail... What we urgently need are models for how it can succeed.”³⁹ Failure of communication has been a tremendous well-spring of material for artists in the twentieth century, and nobody, including Kester I am sure, would argue that the subject has been depleted. But nuanced experimentation in communication and cooperation should be undertaken as well.

The cooperative models discussed in this book are varied – from a classroom or educational institution to a party or festival, a cooperatively created film, a community meeting place, a cooperative research project, or an urban redevelopment project. Some of the projects have overtly political or social goals, while others are more elliptical. What they all share is a cooperative structure. The more I read about the nature of human cooperation, the more it appeals to me aesthetically -- as a branch of the human imagination that can bear fruit -- even as it still confuses me where to situate the boundaries of the aesthetic, the social, and the political in this sort of work. As a follower of the neo-pragmatists, I would argue that there is no need for a justification of a belief in the value of cooperation. Richard Rorty writes, “If we abandon the idea that philosophy can be both politically neutral and politically relevant, we could start by asking the question, ‘Given that we want to be ever more inclusivist, what should the public rhetoric of our society be like?’”⁴⁰ Just so, we might ask the same sort of question about this art – if we simply start with the assertion that a branch of art can inquire into the aesthetic

potentials of cooperation and dialogue, what can it look like? This book has attempted to address this question. The answer is by necessity fractured, varied, and multi-disciplinary. The goal of these cooperative projects may not be to problematize the idea of cooperation. It has been thoroughly problematized by rational choice theorists and economists – the conservative proponents of American hyper-individualism. My interest in cooperative art is exactly its potential to work with this attractive human aptitude without reducing cooperation to bland or coercive consensus.

¹ Richard Rorty, Richard Rorty: Critical Dialogues eds. Matthew Festenstein and Simon Thompson (Cambridge: Polity Press, 2001), p. 155.

² From Charles Darwin, The Descent of Man, quoted in The Moral Animal (New York: Vintage Books, 1994), p. 189.

³ Quoted in The Moral Animal, p. 190.

⁴ Garrett Hardin, “The Tragedy of the Commons” reprinted in John Baden and Douglas Noonan, eds. Managing the Commons (Bloomington and Indianapolis: Indiana University Press, 1998), pp. 3-16. Hardin was hard to pin down politically, and was generally unsatisfying to all: For example, he came under fire from the right because of his pro-abortion stance, and from the left on the basis of his positions regarding immigration and human intelligence.

⁵ Ibid. p. 7.

⁶ For example, when George W. Bush’s administration chose not to implement the Kyoto Protocol on climate change, the United States gained the benefit of the cooperative sacrifice of other nations without the cost of compliance with the treaty. Without expensive conversion of coal-burning electric plants or burdensome emission limits on American cars, we gained cleaner air and oceans.

⁷ Quoted in Elliot Sober and David Sloan Wilson, Unto Others: The Evolution and Psychology of Unselfish Behavior (Cambridge: Harvard University Press, 1998), p. 5.

⁸ Richard Dawkins, The Selfish Gene (Oxford and New York: Oxford University Press, first published 1976, second edition 1989, 30th anniversary edition, 2006). It is

interesting to note that in the 30th anniversary edition, Dawkins sticks by his basic argument but questions his title because it gives the wrong impression about his basic argument. He suggests a series of alternative titles including *The Immortal Gene*, *The Cooperative Gene*, and even *The Altruistic Vehicle* (page ix). He says on that same page, “There are two kinds of units of natural selection, and there is no dispute between them. The gene is the unit in the sense of replicator. The organism is the unit in the sense of vehicle. Both are important.” So, he does not seem to have trouble with the notion of the vehicle – the organism – being altruistic, but the gene remains selfish.

⁹ Steven Pinker, “What Makes Us Want To Be Good?” in The New York Times Magazine, January 13, 2008, Section 6, p. 55.

¹⁰ S.M. Amadae, Rationalizing Capitalist Democracy: The Cold War Origins of Rational Choice Theory (Chicago: University of Chicago Press, 2003), p. 134.

¹¹ Ibid. p. 3.

¹² Martin J. Osborne, An Introduction to Game Theory (New York and Oxford: Oxford University Press, 2004) p. 26). In this text book, the first example of a “unique Nash equilibrium” is the defection strategy in the Prisoner’s Dilemma game.

¹³ Michael Taylor, Rationality and the Ideology of Disconnection (Cambridge: Cambridge University Press, 2006), p. 140

¹⁴ Robert Axelrod, The Evolution of Cooperation (New York: Basic Books, 1984).

¹⁵ William Poundstone, Prisoner’s Dilemma: John von Neumann, Game Theory, and the Puzzle of the Bomb (New York: Anchor Books, 1992), p. 123. In the book, Poundstone narrates how various war scenarios were played out theoretically in the context of cold war paranoia, to the point where “rational choice” game outcomes led Nash’s Princeton colleague John von Neumann and other game theory pioneers to recommend frighteningly aggressive first strike nuclear strategies to a receptive Pentagon.

¹⁶ Robert Axelrod, The Complexity of Cooperation, (Princeton: Princeton University Press, 1997), p. 30-40.

¹⁷ Ibid. p, 40-69.

¹⁸ Ibid. p. 145-181.

¹⁹ Michael Taylor, Rationality and the Ideology of Disconnection, op. cit. pp.143-154.

²⁰ Michael Taylor, Rationality and the Ideology of Disconnection, op. cit. pp.143-156.

²¹ Elinor Ostrom, James Walker et. al., “Trust in Two Person Games: Game Structures and Linkages,” in eds. Elinor Ostrom and James Walker, Trust and Reciprocity: Interdisciplinary Lessons from Experimental Research (New York: Russell Sage Foundation, 2003), p. 325.

²² For example, Ostrom presents a series of alternative, cooperative game-theoretical responses to the tragedy of the commons, followed by a story about a self-regulated cooperative resolution of the distribution of fishing rights in a Alanya, Trukey in Elinor Ostrom, “Reflections on the Commons” in John Baden and Douglas Noonan,

eds. Managing the Commons (Bloomington and Indianapolis: Indiana University Press, 1998), pp. 94-116

²³ Catherine Eckel and Rick Wilson, “The Human Face of Game Theory: Trust and Reciprocity in Sequential Games” in eds. Elinor Ostrom and James Walker, Trust and Reciprocity (New York: Russell Sage Foundation, 2003), p. 245.

²⁴ Ibid. 248-249.

²⁵ Dan Ariely, Predictably Irrational: The Hidden Forces That Shape Our Decisions (London: HarperCollins, 2008), pp. 67-78.

²⁶ Robert Kurzban, “Biological Foundations of Reciprocity” in eds. Elinor Ostrom and James Walker, Trust and Reciprocity: Interdisciplinary Lessons from Experimental Research (New York: Russell Sage Foundation, 2003), pp. 110-111, 119.

²⁷ Unto Others, Op. cit.

²⁸ Ibid. p. 332-333.

²⁹ John T. Cacioppo and William Patrick, loneliness: Human Nature and the Need for Social Connection (New York and London: W.W. Norton and Company, 2008) p. 160.

³⁰ Ibid. p. 202.

³¹ Susan Blackmore, The Meme Machine (Oxford: Oxford University Press, 1999), p. 74.

³² Daniel Gilbert, Stumbling on Happiness (New York: Alfred A. Knopf, 2006).

³³ Of course this begs the question as to whether happy people have strong social networks or whether the networks create happiness. For a good general overview of the current state of happiness studies, see Jonathan Haidt, The Happiness Hypothesis (New York: Basic Books, 2006).

³⁴ Michael Shermer, The Mind of the Market: Compassionate Apes, Competitive Humans, and Other Tales from Evolutionary Economics, (New York: Times Books, 2008), p.183.

³⁵ John T. Cacioppo and William Patrick, loneliness: Human Nature and the Need for Social Connection (New York and London: W.W. Norton and Company, 2008) pp. 175-178.

³⁶ Marco Iacobini, Mirroring People (New York: Farrar Straus and Giroux, 2008), p. 173.

³⁷ Ibid. pp. 258, 267.

³⁸ Daniel Goleman, Social Intelligence: The New Science of Human Relationships, (New York: Bantam Books, 2006), p. 56.

³⁹ Ibid. p. 8-9.

⁴⁰ Richard Rorty, “Universality and Truth” in Rorty and His Critics (Blackwell Publishing: Oxford, Malden, Victoria, 2000), p. 23.