Rational Choice in Public and Private Spheres

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Abstract

The *private sphere* is the locus of social transactions in civil society. The *public sphere* is the locus of social transactions that create, maintain, and transform the rules of the game that define society itself. The public sphere includes running for office, toppling a government, voting in elections, engaging in political information-gathering and exchange, and participating in collective action. Models of rational choice in the private sphere are predicated on the notion that agents treat choices as instrumental in achieving their private ends, be they self-regarding, other-regarding, or dictated by purely moral concerns. Behavior in the public sphere, by contrast, is largely non-instrumental because it is *non-consequential*: individuals as voters in large elections or participants in large collective actions have a vanishingly small effect on outcomes. We call agents whose behavior in the public sphere is non-consequential *canonical participants*. This paper extends the rational actor model to the behavior of canonical participants in the public sphere by locating such behavior in a multi-dimensional taxonomy of rational choice. We apply this model to explain why collective action is generally motivated by violations of principles of procedural justice and rarely motivated by the statistical distribution of social outcomes, such as poverty rates, growth rates, or coefficients of social inequality or intergenerational mobility.

1 Introduction

Estimates of the probability that a single voter's decision will determine the outcome of large election are between one in ten million and one in one hundred million (Gelman et al. 1998). In a compendium of close election results in Canada, Great Britain, Australia, and the United State, no election in which more that 40,000 votes were cast has ever been decided by a single vote. In the Massachusetts

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gubernatorial election of 1839, Marcus Morton won by two votes out of 102,066 votes cast. In the Winchester UK general election of 1997, Mike Oaten won by two votes out of 62,054 votes cast. The result was annulled and in a later by-election, Oaten won by 21,000 votes. In smaller elections, a victory by a very small margin is routinely followed by a recount where the margin is rarely less that twenty five (Wikipedia, List of Close Election Results, November 2014). There is thus virtually no loss in accuracy in modeling voting behavior in large elections as purely *non-consequential* in the sense that a single individual's decision to vote or abstain, or for whom to vote, has no effect on the outcome of the election (Downs 1957a, Riker and Ordeshook 1968).

By a *canonical participant* in a decision process I mean an individual whose choice is *non-consequential*: his behavior affects the outcomes infinitesimally or not at all. According to the data presented above, voters in a large election are canonical participants. Individuals who participate in a large collective actions are similarly canonical participants, as are those who volunteer to fight or otherwise contribute to one side in a war between nations. Of course, there are some public sphere activities that are potentially consequential and hence non-canonical, such as running for office, organizing a voter registration drive, or contributing considerable amounts of money to a particular party or candidate. But most activities in the public sphere are virtually non-consequential, and hence canonical. Ignoring the infinitesimal probabilities that canonical participants affect outcomes is useful and harmless simplification, akin to ignoring the force of gravity in analyzing the electronic circuitry of a computer or ignoring the light from distant stars in calculating the effectiveness of a solar panel.

The *private sphere* is the locus of everyday transactions in civil society. The *public sphere* is the locus of canonical and consequential political activities that create, maintain, and transform the rules of the game that define society itself. The private and public spheres are of course interrelated in individual decision-making. A public sphere transaction may have private sphere costs and benefits that a canonical participant in the public sphere may take into account in deciding how to act. For instance, an individual may not vote if queues at the polling station are very long, or may decide to skip a collective action in which the probability of physical harm is very high.

Non-consequential public sphere activities are at the center of the structure and dynamics of modern societies. If citizens did not vote, or voted in an uninformed and random manner, liberal democratic societies could not operate. Moreover, modern liberal democracy was achieved through collective actions over centuries. These collective actions have been successful because of the collective impact of canonical participants who incurred significant personal costs, often death, in opposing illegitimate authority.

Canonical participants consider their behavior as rational goal-oriented behavior. If you ask people in a queue at the polling booth why they are standing there, or if you ask a group protesting political corruption why they are chanting and holding signs, they will think the question absurd. They are there, of course, to register their support for various candidates for office, or to help topple a corrupt government. If you point out to canonical participant Alice that her personal contribution will make no difference to the outcome, Alice will likely respond that you are guilty of faulty reasoning because if everyone following your reasoning, no one would vote and no one would fight to topple a corrupt regime. If you persist in asking why Alice personally votes, noting that the other participants do *not* follow your (faulty) reasoning, and Alice's abstention will not affect the decision of others, Alice may well judge you mentally ill, unless she realizes that your concept of rationality conforms to the classical axioms of rational choice theory (Savage 1954), while the behavior of canonical participants in the public sphere does not. And indeed canonical participants are rational, *pace* the Savage axioms, in the sense their behavior does in fact determine who is elected, and may in fact determine whether a corrupt regime is or is not toppled.

How, then, might we account for rational, non-consequential behavior? One possible answer is that people *believe* their public sphere behaviors are consequential even when they are not, so they act *as though* their actions effectively determine the outcome, at least with some substantially positive probability. From my reading of the literature on canonical political behavior, this is the most common, though rarely explicitly stated, assumption. For instance, Duncan Black's famous median voter theorem (Black 1948) implicitly assumes that a self-interested citizen will vote and this vote will register his personal preferences. Similarly, Anthony Downs, a pioneer in the application of the rational actor model to political behavior (Downs 1957a) describes his model as follows:

> Every agent in the model—whether an individual, a party or a private coalition, behaves rationally at all times; that is, it proceeds toward its goals with a minimal use of scarce resources and undertakes only those actions for which marginal return exceeds marginal cost. (Downs 1957b, p. 137)

And yet, almost immediately after stating this assumption, he writes:

> [We assume that] voters actually vote according to (a) changes in their utility incomes from government activity and (b) the alternatives offered by the opposition (Downs 1957b, p. 138).

These two assumptions are compatible only if agents believe that their votes are consequential.

But in fact canonical participants generally do *not* believe that their behavior is consequential. For instance Enos and Fowler (2010) report a study in which the median responent to the question as to the chance their vote will change the outcome of a presidential election gave the answer 1 in 1000, which although small, is in fact too large by a factor of at least 10,000. The authors write:

> However... over 40% of regular voters know that the chances of a pivotal vote are less than one in a million.... [Moreover], the less likely you are to think your vote will actually matter, the more likely you are to vote.

Thus, although voters behave strategically (Fedderson and Sandroni 2006), they know that their behavior is non-consequential (Edlin et al. 2007, Hamlin and Jennings 2011).

Another possible answer is that people consider voting a social obligation, or they consider themselves part of a "team" dedicated to a particular cause, and not voting is an unethical act of free-riding on the altruism of others. Doubtless some individuals are so motivated. But it then must also be a social obligation to vote intelligently and non-randomly. This notion would be perhaps plausible if one vote made a difference, but it is surely a bizarre social obligation for a non-consequential action. Moreover, many individuals consider being politically literate and voting to a positive contribution to their well-being rather than an onerous duty, and it is these individuals that render a liberal democracy possible and effective. Finally, committed canonical participants often become angry with or annoyed by friends who vote differently from themselves, even though they realize that their friends' behavior is non-consequential.

A third possibility is that many voters are altruistic and vote out of concern for the well-being of others who will be affected by the outcome of the electoral process. Although if voting is non-consequential, a single voter cannot affect the well being of others, in this case, where there may be many millions of others, the one in ten million or one in a hundred million chance of changing the outcome of the election, when multiplied by the number of people thereby affected, becomes a significant quantity. Certainly, however, no voter thinks in this bizarre this way, and many canonical participants have interests that are far narrower than the citizenry as a whole, and often act to promote the interests of one group of citizens at the expense of another. Indeed, it is common to hear a small group of voters deemed "selfish" because they promote their own parochial interest above the good of society as a whole.

To model the rationality of the canonical participant in the political sphere, we must revise the standard axioms of rational choice (Savage 1954). In a related paper, I have explored the implications of replacing Savage's assumption that beliefs

are purely personal "subjective probabilities" with the notion that the individual is generally embedded in a *network of social actors* over which information and experience concerning the relationship between actions and outcomes is spread. The rational actor thus draws on a network of beliefs and experiences distributed among the social actors to which he is informationally and socially connected. By the sociological principle of *homophily*, social actors are likely to structure their network of personal associates according to principles of social similarity, and to alter personal tastes in the direction of increasing compatibility with networked associates (McPherson et al. 2001, Durrett and Levin 2005, Fischer et al. 2013).

To this principle of distributed cognition we may add a principle of *distributed intentionality* in which canonical participants consider their actions as effective contributions to social outcomes when they do their part as a member of a network of loosely linked individuals with consonant objectives distributed across the network. In this framework, the behavior of a canonical participant is not a costly choice with no benefits, but rather a voluntary, costly but personally enriching, participation in a collective effort. With this notion in place, a theory of canonical participant behavior must elucidate how individual preferences over political outcomes are formed, and how agents trade off between public and private sphere objectives.

The principle of distributed intentionality appears closely related to the notions of *team reasoning* and *team intentionality* as developed in an extensive philosophical and economics literature (Bratman 1993, Bacharach 1987, Gilbert 1987, Gilbert 1989, Bacharach 1992, Tuomela 1995, Searle 1995, Hurley 2002, Sugden 2003, Bacharach 2006, Bacharach et al. 2006, Colman et al. 2008). However, the behavior explored in these contributions is generally socially structured cooperation and collaboration, in which actions are highly consequential. We will approach the problem of distributed intentionality by considering canonical participation as a form of moral behavior.

2 Behavioral Morality

Behavioral morality is the set of moral rules we attribute to people by virtue of their actions. We contrast this with *normative morality*, the set of rules that philosophers consider that moral individuals are obliged to obey. The content of both behavioral and normative morality are contested, and the appropriate relationship between the two is complex. I will deal with behavioral morality alone.

Traditional social science embraces a rather straightforward understanding of the relationship between human biological evolution and behavioral morality. This is the venerable notion of *tabula rasa* (Tooby and Cosmides 1992, Pinker 2002),

according to which the brain is empty at birth but filled moral principles through social learning. This idea is famously expressed by Thomas Hobbes (1968[1651]), who writes:

> The state of men without civil society (which may be called the state of nature) is nothing but a war of all against all. . . Where every man is enemy to every man, the life of man is solitary, poor, nasty, brutish, and short.

We find the same sentiment some three centuries later in the prominent biologist Richard Dawkins (1976), who writes:

> We are survival machines–robot vehicles blindly programmed to preserve the selfish molecules known as genes. . . Let us try to *teach* generosity and altruism, because we are born selfish.

Morality, then, is an elaborate veneer hiding our basically selfish natures.

A more plausible approach to behavioral morality is based on evolutionary biology, the rational actor model and experimental game theory. The basic principles are:

- Behavioral morality is the product of an evolutionary dynamic extending over hundreds of thousands of years in the hominin line involving the interaction of genes and culture.

- In this dynamic, hominin societies transformed culture, and the new culture made new behaviors fitness-enhancing, transforming the gene pool of the hominin line itself. Thus, *gene-culture coevolution*: in humans, genes are the product of culture and culture is the product of genes.

- Behavioral morality, in particular, is predicated upon a set of human, on balance prosocial, evolved *predispositions* inherited from our experience in small-scale hunter-gatherer societies.

- At some point our ancestors began to devise games and play according to their agreed-upon rules. It then became possible to conceive of *society itself as a social game*, the rules of which are determined in a new arena of social life, which we have called the *public sphere*.

- Humans thus evolved two modes of social behavior, a *private persona* of personal preferences, located within social networks of distributed cognition and intentionality, regulating everyday life in civil society, and a *public persona* of personal preferences, again rooted in social networks of distributed cognition and intentionality, regulating their behavior in the public sphere.

- At the heart of our moral capacities, both as private and public *persona*, is the capacity to conceptualize a *higher moral realm* that leads us to protect social values, to feel satisfaction at "doing the right thing," and to feel degraded when we have not done the right thing.

3 Self-Regarding, Other-regarding, and Universalist Rational Action

Rational actors exhibit three types of motives in their daily lives: *self-regarding*, *other-regarding*, and *universalist*. Self-regarding motives include seeking personal wealth, consumption, leisure, social reputation, status, esteem, and other markers of personal advantage. Other-regarding motives include valuing reciprocity and fairness, and contributing to the well-being of others. Universalist motives are those that are followed for their own sake rather than for their effects. Chief among universalist goals are *character virtues*, including honesty, loyalty, courage, trustworthiness, and considerateness. Of course, in the private sphere such universalist goals have consequences for those with whom one interacts, and for society as a whole. But one undertakes universalist actions *for their own sake*, beyond any consideration of their effects.

Agents will generally trade off among these various motives. For instance, being honest may be personally costly or reputationally rewarding, and may either hurt or benefit others whose well-being one values. Universalist motives thus do not reduce to self- or other regarding motives, but they do trade off against these other motives.

Self- and other-regarding behavior is well documented in the literature, but universalist behavior is far less so. I will present an example, as revealed by laboratory experiments using experimental game theory.

3.1 The Universalist Principle of Honesty

Universalist moral actions are performed, at least in part, because it is virtuous to do so, apart from any effects these actions have on oneself, others, or society in general. For instance, one can be *honest* in dealing with another agent without caring at all about the effect on the other agent, or even caring about the impact of honest behavior on society at large. Similarly, one can be courageous in battle because it is the right thing to do, independent from the effect of one's actions on winning or losing the battle. Of course, the value of honesty in a transaction may be lessened or turned negative if it is personally costly or it harms others about whom one cares.

Many studies have show that people exhibit considerable degrees of honesty

even when this is costly and there is no chance that they could be discovered cheating (Bucciol and Piovesan 2011, Houser et al. 2012, Fischbacher and Follmi-Heusi 2014, Mazar et al. 2008, Shalvi et al. 2012, Cohn et al. 2014). A particularly clear example of the value of honesty is reported by Gneezy (2005), who studied 450 undergraduate participants paired off to play three games of the following form, all payoffs to which are of the form (a, b) where player 1 (Alice) receives a and Player 2 (Bob) receives b. In all games, Alice was shown two pairs of payoffs, A:(x, y) and B:(z, w) where x, y, z, and w are amounts of money with $x < z$ and $y > w$, so in all cases, B is better for Bob and A is better for Alice. Alice could then say to Bob, who could not see the amounts of money, either "Option A will earn you more money than option B," or "Option B will earn you more money than option A." The first game was A:(5,6) vs. B:(6,5) so Alice could gain 1 by lying and being believed, while imposing a cost of 1 on Bob. The second game was A:(5,15) vs. B:(6,5) so Alice could gain 10 by lying and being believed, while still imposing a cost of 1 on Bob. The third game was A:(5,15) versus B:(15,5), so Alice could gain 10 by lying and being believed, while imposing a cost of 10 on Bob.

Before starting play, the experimenter asked each Alice whether she expected her advice to be followed, inducing honest responses by promising to reward her if her guesses were correct. He found that 82% of Alices expected their advice to be followed (the actual result was that 78% of Bobs followed their Alice's advice). It follows that if Alices were self-regarding, they would always lie and recommend B to their Bob.

The experimenters found that, in game two, where lying was very costly to Bob and the gain to lying for Alice was small, only 17% of subjects lied. In game one, where the cost of lying to Bob was only one but the gain to Alice was the same as in game two, 36% lied. In other words, subjects were loathe to lie, but considerably more so when it was costly to their partner. In game three, where the gain from lying was large for Alice, and equal to the loss to Bob, fully 52% lied. This shows that many subjects are willing to sacrifice material gain to avoid lying in a one-shot, anonymous interaction, their willingness to lie increasing with an increased cost of truth-telling to themselves, and decreasing with an increase in their partner's cost of begin deceived. Similar results were found by Boles et al. (2000) and Charness and Dufwenberg (2006). Gunnthorsdottir et al. (2002) and Burks et al. (2003) have shown that a social-psychological measure of "Machiavellianism" predicts which subjects are likely to be trustworthy and trusting.

4 The Public Sphere

The social life of most species, including mating practices, symbolic communication, and power relations, is expressed in genetically-grounded stereotypical form (Alcock 1993, Krebs and Davies 1997). *Homo sapiens* is unique in adapting its social life in highly flexible and deeply ways to environmental and social challenges and opportunities (Richerson and Boyd 2004). This flexibility is based on two aspects of our mental powers. The first is our ability to *devise new rules of social life*, and to base our social interactions on these new rules. This capacity, absent in other species, makes us *Homo Ludens*: Man the game player. This capacity is possessed even by very young children who invent, understand, and play games for fun. In adult life, this same capacity is exercised when people come together to erect, maintain, and transform the social rules that govern their daily transactions. Broadly speaking, we can define the *public sphere* as the arena in which society-wide rules of the game are created, evaluated, and transformed, and *politics* as the cooperative, conflictual, and competitive behaviors through which rules are established and individuals are assigned to particular public positions.

Humans evolved in hunter-gather societies consisting of a dozen families or so (Kelly 1995), in which political behavior was an part of daily life, involving the sorts of self-regarding, other-regarding, and universalistic motivations described above (Gintis et al. 2015). In particular, political activity was strongly *consequentialist*: a single individual could expect to make a difference to the outcome of a deliberation, a conflict, or a collaboration, so that our political morality developed intimately entwined with material interests and everyday consequentialist moral sentiments (Boehm 1999).

In the transition from small-scale hunter-gatherer societies to modern mass societies with millions of members, the public sphere passed from being closely embedded in daily life to being a largely detached institutional arena, governed by complex institutions controlled by a small set of individuals, and over which most members have at best formal influence through the ballot box, and at worst no formal influence whatever. Political activity in modern societies has thus become predominately non-consequentialist.

Canonical participants in the public sphere appear to follow a non-consequentialist logic that may be summarized as *rule-consequentialism*: in public life, choose a rule that like-minded people might plausibly choose, and if followed by all such like-minded people, will lead to the most desirable outcome (Harsanyi 1977, Hooker 2011, Roemer 2010). Rule-consequentialism explains why people are perfectly reasonable in assenting to such assertion as "I am helping my candidate win by voting" and "I am helping promote democracy by demonstrating against the dictator." Because rule-consequentialism is so ingrained in our public *per-*

sona, canonical participants untrained in traditional rational decision theory simply cannot understand the argument that it is irrational to vote or to participate in collective actions, even when they can easily be persuaded that their actions are non-consequential.

Rule-consequentialism can also explain many stylized facts of voter behavior. First, when the cost of voting increases, fewer people vote. The rule here is something like "My unusual personal situation means voting would be very costly to me today. I would not expect anyone in my position to vote, so I am comfortable with not voting." Second, it explains why voter turnout is higher when the issues to be decided have greater social impact. Third, it explains why turnout is higher when the election is expected to be close. Finally, it explains why, in a two-party election, turnout is likely to be higher among voters for the side that is not expected to win. Indeed, it is reasonable to speculate that rule-consequentialism leads voters to act in very large elections in much the same way they would in very small elections, although in very small elections consequentialist issues (e.g., self-interested) may trump the non-consequentialist rule.

We conclude that the individual immersed in consequentialist everyday life expresses his *private persona*, while his behavior in the public sphere reveals his *public persona*. Individuals acting in the public sphere, are, then a different sort of animal, one which Aristotle called *zoon politikon* in his *Nicomachean Ethics*.

5 Private and Public Persona

The concept of a non-consequentialist *public persona* suggests a two by three categorization of human motivations, as presented in Figure 1. In this figure, the three columns represent three modes of social interaction. The *self-regarding* mode represents the individual whose social behavior is purely instrumental to meeting his personal needs, while the *other-regarding* represents the individual who is embedded in a network of significant social interactions with valued others, and the *universal* represents the individual who values moral behavior for its own sake. The two rows represent the agent's *private persona* of social relations in civil society, and the agent's *public persona* of political relationships in the public sphere.

Homo Economicus is the venerable rational selfish maximizer of traditional economic theory, *Homo Socialis* is the other-regarding agent who cares about fairness, reciprocity, and the well-being of others, and *Homo Vertus* is the Aristotelian bearer of non-instrumental character virtues. The new types of public *persona* are *Homo Politicus* who behaves publicly just as *Homo Economicus* does privately, while *Homo Parochialis* votes and engages in collective action reflecting the narrow interests of the demographic, ethnic and/or social status groups with which he

	Self-regarding	Other-regarding	Universalist
private *persona*	Homo Economicus	Homo Socialis	Homo Vertus
Public *persona*	Homo Politicus	Homo Parochialis	Homo Universalis

Figure 1: A Typology of Human Motivations

identifies. Finally, *Homo Universalis* acts politically to achieve what he considers the best state for the larger society, perhaps reflecting John Rawls' (1971) *veil of ignorance*, John Harsanyi's (1977) *criterion of universality*, or John Roemer's (2010) *Kantian equilibrium*.

Homo Politicus is the political entrepreneur who acts purely to enhance his personal stature and wealth. Curiously, the individual whose private *persona* is other-regarding is generally considered altruistic, whereas the individual whose public *persona* is other-regarding is often considered selfish and narrow-minded, acting in a partisan manner on behalf of the specific interests of the social networks to which he belongs. Of course *Homo Parochialis* is in fact altruistic, sacrificing on behalf of these social networks.

6 The Evolutionary Emergence of Private Morality

By *cooperation* we mean engaging with others in a mutually beneficial activity. Cooperative behavior may confer net benefits on the individual cooperator, and thus can be motivated entirely by self-interest. In this case, cooperation is a form of *mutualism*. Cooperation may also be a net cost to the individual but the benefits may accrue to a close relative. We call this *kin altruism*. Cooperation can additionally take the form of one individual's costly contribution to the welfare of another individual being reliably reciprocated at a future date. This is often called *reciprocal altruism* (Trivers 1971), although it is really just *tit-for-tat* mutualism. However, important forms of cooperation impose net costs upon individuals, the beneficiaries many not be close kin, and the benefit to others may not be expected to be repaid in the future. This cooperative behavior is true altruism.

The evolution of mutualistic cooperation and kin altruism is easily explained. Cooperation among close family members evolves by natural selection because the benefits of cooperative actions are conferred on the close genetic relatives of the cooperator, thereby helping to proliferate genes associated with the cooperative behavior. Kin altruism and mutualism explain many forms of human cooperation, particularly those occurring in families or in frequently repeated two-person inter-

actions. But these scenarios fail to explain two facts about human cooperation: that it takes place in groups far larger than the immediate family, and that both in real life and in laboratory experiments, it occurs in interactions that are unlikely to be repeated, and where it is impossible to obtain reputational gains from cooperating. These forms of behavior are regulated by moral sentiments.

The most parsimonious proximal explanation of altruistic cooperation, one that is supported by extensive experimental and everyday-life evidence, is that people gain pleasure from cooperating and feel morally obligated to cooperate with like-minded people. People also enjoy punishing those who exploit the cooperation of others. Free-riders frequently feel guilty, and if they are sanctioned by others, they may feel ashamed. We term these feelings *social preferences*. Social preferences include a concern, positive or negative, for the well being of others, as well as a desire to uphold ethical norms (Bowles and Gintis 2011).

6.1 The Roots of Social Preferences

Why are the social preferences that sustain altruistic cooperation in daily life so common? Early human environments are part of the answer. Our Late Pleistocene ancestors inhabited the large-mammal-rich African savannah and other environments in which cooperation in acquiring and sharing food yielded substantial benefits at relatively low cost (Boyd and Silk 2002). Human longevity, including an extended period of dependency of the young also made the cooperation of non-kin in child rearing and provisioning beneficial (Hrdy 1999). As a result, members of groups that sustained cooperative strategies for provisioning, child-rearing, sanctioning non-cooperators, defending against hostile neighbors, and truthfully sharing information had significant advantages over members of non-cooperative groups.

There are several reasons why these altruistic social preferences supporting cooperation outcompeted amoral self-interest. First, human groups devised ways to protect their altruistic members from exploitation by the selfish. Prominent among these is the *collective punishment of miscreants* (Boyd et al. 2010), including the public-spirited shunning, ostracism, and even execution of free-riders and others who violate cooperative norms.

Second, humans adopted elaborate systems of *socialization* that led individuals to internalize the norms that induce cooperation, so that contributing to common projects and punishing defectors became objectives in their own right rather than constraints on behavior. Together, the internalization of norms and the protection of the altruists from exploitation served to offset, at least partially, the competitive handicaps born by those who were motivated to bear personal costs to benefit others

(Gintis 2003).

Third, between-group competition for resources and survival was and remains a decisive force in human evolutionary dynamics. Groups with many cooperative members tended to survive these challenges and to encroach upon the territory of the less cooperative groups, thereby both gaining reproductive advantages and proliferating cooperative behaviors through cultural transmission. The extraordinarily high stakes of intergroup competition and the contribution of altruistic cooperators to success in these contests meant that sacrifice on behalf of others, extending beyond the immediate family and even to virtual strangers, could proliferate (Choi and Bowles 2007, Turchin and Korotayev 2006, Bowles 2009).

Between-group competition accounts for the fact that humans are extraordinarily group-minded, favoring cooperation with insiders and often expressing hostility toward outsiders. Boundary-maintenance supported within-group cooperation and exchange by limiting group size and within-group linguistic, normative and other forms of heterogeneity. Insider favoritism also sustained the between-group conflicts and differences in behavior that made group competition a powerful evolutionary force (Choi and Bowles 2007)

In short, humans have social preferences because in the course of our evolution as a species, cooperation was highly beneficial to the members of groups provided they were able to construct social institutions that compensated for the disadvantages of those with prosocial preferences regarding fellow group members, while heightening the group-level advantages associated with the high levels of cooperation that these prosocial preferences generated. These institutions proliferated because the groups that adopted them secured high levels of within-group cooperation, which in turn favored the groups' survival as a biological and cultural entity in the face of environmental, military and other challenges.

7 The Evolutionary Emergence of the Public Persona

Non-human species, even if highly social, do not engage in activities that structure the social rules that regulate their lives. Therefore there is no politics and no public sphere in these species, and hence its members have no public *persona*. How, then, might a public *persona* with a prominent position for canonical participation have arisen in the hominin line leading up to *Homo sapiens*?

In a related paper, Carel van Schaik, Christopher Boehm, and I (Gintis et al. 2015) supply a answer grounded in the information available to us from a variety of fields, including paleontology, primatology, the anthropology of contemporary hunter-gatherer groups, animal behavior theory, and genetics. We propose that the emergence of bipedalism, cooperative breeding, and lethal weapons (stones and

wooden spears) in the hominin line, together with favorable climate change, made the collaborative hunting and scavenging of large game fitness enhancing. Lethal weapons are the most unique of these innovations, for other predators, such as lions, tigers and other big cats, wolves, foxes and other canines, use only their natural weapons—sharp claws and teeth, powerful jaws and great speed—in hunting, while none of these endowments was available to early hominins. Lethal hunting weapons, moreover, transformed human sociopolitical life because they could be applied to humans just as easily as to other animals.

The combination of the need for collaboration and the availability of lethal weapons in early hominin society undermined the social dominance hierarchy characteristic of primate and earlier hominin groups, which was based on pure physical prowess. The successful sociopolitical structure that ultimately replaced the ancestral social dominance hierarchy was an egalitarian political system in which lethal weapons made possible group control of leaders, group success depended on the ability of leaders to persuade and motivate, and of followers to contribute to a consensual decision process. The heightened social value of non-authoritarian leadership entailed enhanced biological fitness for such leadership traits as linguistic facility, ability to form and influence coalitions, and indeed for hypercognition in general.

This egalitarian political system persisted until some 10,000 years ago when cultural changes in the Holocene involving settle trade and agriculture entailed the accumulation of material wealth, through which it became possible once again to sustain a social dominance hierarchy with strong authoritarian leaders who could buy a modicum of protection and allegiance from well-rewarded professional soldiers and clansmen (Richerson and Boyd 2001). Yet, despite the power of authoritarian states, the *zoon politikon* that social evolution had nourished over tens of thousands of years was not erased by a few thousand years of Holocene history. Indeed, the extremely high level of tribal and clan warfare prevalent until recent centuries doubtless favored groups whose members conserved the hunter-gatherer mentality of political commitment and the desire for personal political efficacy (Pinker 2011).

8 Conclusion

This paper has provided evidence for a model of human behavior based on the rational actor model, in which individuals have both private and public *persona*, and their preferences range over self-regarding, other-regarding, and universalist modes in both the private and the public sphere. Morality in this model is defined in behavioral terms: moral choices are those made in social and universalist modes.

The public sphere in this model is an arena where preferences and actions are primarily non-consequentialist. The other-regarding preferences of Homo Socialis and the character virtues of Homo Vertus are underpinnings of civil society, while Homo Parochialis and Homo Universalis make possible the varieties of political life characteristic of our species.

This taxonomy of human motives has several important implications for a theory of political behavior.

- Despite the ubiquity of the assumption that rational individuals have personal interests which they register through electoral processes and collective actions, the notion is incoherent, ineluctably entailing faulty reasoning. Private persona individuals, whether *Homo economicus*, *Homo socialis*, or *Homo vertus*, will simply not participate in such processes, and those who do are canonical participants whose political preferences are constituted by the social networks in which they are embedded as *Homo Parochialis*, and the higher-level moral principles to which they adhere as *Homo Universalis*.

- Private sphere costs and benefits may play a large role in whether an individual participates in electoral processes or collective actions, but they have little or no effect on his electoral preferences or which collective actions he supports. Thus we should not be at all surprised when abstract moral principles appear to trump economic interests in individual economic decisions.

- The fact that the canonical participants are a mix of *Homo parochialis* and *Homo Universalis* explains why political movements are sensitive to issues of *justice* and *fairness* and insensitive to issues of social efficiency when the latter conflict with the former. For instance, voters typically care about corruption, workers' rights, graft, and unemployment but not rates of economic growth or measures of wealth dispersion.

References

Alcock, John, *Animal Behavior: An Evolutionary Approach* (Sunderland, MA: Sinauer, 1993).

Aristotle, *Nicomachean Ethics* (Newburyport, MA: Focus Publishing, 2002[350BC]).

Bacharach, Michael, "A Theory of Rational Decision in Games," *Erkentness* 27,1 (July 1987):17–56.

— , "The Acquisition of Common Knowledge," in Cristina Bicchieri and Maria Luisa Dalla Chiara (eds.) *Knowldge, Belief, and Strategic Interaction* (Cambridge: Cambridge University Press, 1992) pp. 285–316.

— , *Beyond Individual Choice: Teams and Games in Game Theory* (Princeton: Princeton University Press, 2006). Natalie Gold and Robert Sugden (eds.).

— , Natalie Gold, and Robert Sugden, *Beyond Individual Choice: Teams and Frames in Game Theory* (Princeton: Princeton University Press, 2006).

Black, Duncan, "On the Rationale of Group Decision-making," *Journal of Political Economy* 56 (1948):23–34.

Boehm, Christopher, *Hierarchy in the Forest: The Evolution of Egalitarian Behavior* (Cambridge, MA: Harvard University Press, 1999).

Boles, Terry L., Rachel T. A. Croson, and J. Keith Murnighan, "Deception and Retribution in Repeated Ultimatum Bargaining," *Organizational Behavior and Human Decision Processes* 83,2 (2000):235–259.

Bowles, Samuel, "Did Warfare among Ancestral Hunter-Gatherer Groups Affect the Evolution of Human Social Behaviors," *Science* 324 (2009):1293–1298.

— and Herbert Gintis, *A Cooperative Species: Human Reciprocity and its Evolution* (Princeton: Princeton University Press, 2011).

Boyd, Robert and Joan Silk, *How Humans Evolved (Third Edition)* (New York: W. W. Norton, 2002).

— , Herbert Gintis, and Samuel Bowles, "Coordinated Punishment of Defectors Sustains Cooperation and Can Proliferate When Rare," *Science* 328 (30 April 2010):617–620.

Bratman, Michael E., "Shared Intention," *Ethics* 104,1 (October 1993):97–113.

Bucciol, A. and M Piovesan, "Luck or Cheating? A Field Experiment on Honesty with Children," *Journal of Economic Psychology* 32 (2011):73–78.

Burks, Stephen V., Jeffrey P. Carpenter, and Eric Verhoogen, "Playing Both Roles in the Trust Game," *Journal of Economic Behavior and Organization* 51 (2003):195–216.

Charness, Gary and Martin Dufwenberg, "Promises and Partnership," *Econometrica* 74,6 (November 2006):1579–1601.

Choi, Jung-kyoo and Samuel Bowles, "The Coevolution of Parochial Altruism and War," *Science* 318,26 (October 2007):636–640.

Cohn, Alan, Ernst Fehr, and Michel André Maréchal, "Business Culture and Dishonesty in the Banking Industry," *Nature* 516 (2014):86–89.

Colman, Andrew M., Briony D. Pulford, and Jo Rose, "Collective Rationality in Interactive Decisions: Evidence for Team Reasoning," *Acta Psychologica* 128,2 (2008):387–297.

Dawkins, Richard, *The Selfish Gene* (Oxford: Oxford University Press, 1976).

Downs, Anthony, *An Economic Theory of Democracy* (Boston: Harper & Row, 1957).

— , "An Economic Theory of Political Action in a Democracy," *Journal of Political Economy* 65,2 (April 1957):135–150.

Durrett, Richard and Simon A. Levin, "Can Stable Social Groups be Maintained by Homophilous Imitation Alone?," *Journal of Economic Behavior and Organization* 57,3 (2005):267–286.

Edlin, Aaron, Andrew Gelman, and Noah Kaplan, "Voting as a Rational Choice: Why and How People Vote to Improve the Well-being of Others," *Rationality and Society* 19,3 (2007):293–314.

Enos, Ryan and Anthony Fowler, "Why Did You Vote," *Daily Dish (*Nov. 11 2010).

Fedderson, Timothy and Alvaro Sandroni, "A Theory of Participation in Elections," *American Economic Review* 96,4 (September 2006):1271–1282.

Fischbacher, Urs and F. Follmi-Heusi, "Lies in Disguise–An Experimental Study on Cheating," *Journal of the European Economics Association* 11 (2014):525–547.

Fischer, Ilan, Alex Frid, Sebastian J. Goerg, Simon A. Levin, Daniel I. Rubenstein, and Reinhard Selten, "Fusing Enacted and Expected Mimicry Generates a Winning Strategy that Promotes the Evolution of Cooperation," *Procedings of the National Academy of Sciences* 110,25 (June 18 2013):10229–10233.

Gelman, Andrew, Gary King, and John Boscardin, "Estimating the Probability of Events That Have Never Occurred: When Is Your Vote Decisive?," *Journal of the American Statistical Association* 93,441 (1998):1–9.

Gilbert, Margaret, "Modeling Collective Belief," *Synthese* 73 (1987):185–204.

— , *On Social Facts* (New York: Routledge, 1989).

Gintis, Herbert, "The Hitchhiker's Guide to Altruism: Genes, Culture, and the Internalization of Norms," *Journal of Theoretical Biology* 220,4 (2003):407–418.

— , Carel van Schaik, and Christopher Boehm, "The Evolutionary Origins of Human Political Systems," *Current Anthropology (*2015).

Gneezy, Uri, "Deception: The Role of Consequences," *American Economic Review* 95,1 (March 2005):384–394.

Gunnthorsdottir, Anna, Kevin McCabe, and Vernon L. Smith, "Using the Machiavellianism Instrument to Predict Trustworthiness in a Bargaining Game," *Journal of Economic Psychology* 23 (2002):49–66.

Hamlin, Alan and Colin Jennings, "Expressive Political Behavior: Foundations, Scope and Implications," *British Journal of Political Science* 41 (2011):645–670.

Harsanyi, John C., "Morality and the Theory of Rational Behavior," *Social Research* 44,4 (Winter 1977).

Hobbes, Thomas, *Leviathan* (New York: Penguin, 1968[1651]). Edited by C. B. MacPherson.

Hooker, Brad, "Rule Consequentialism," *The Stanford Encyclopedia of Philosophy (*Spring 2011).

Houser, D., S. Vetter, and J Winter, "Fairness and cheating," *European Economic Review* 56 (2012):1645–1655.

Hrdy, Sarah Blaffer, *Mother Nature: A History of Mothers, Infants, and Natural Selection* (New York: Pantheon Books, 1999).

Hurley, Susan L., *Consciousness in Action* (Cambridge: Harvard University Press, 2002).

Kelly, Robert L., *The Foraging Spectrum: Diversity in Hunter-Gatherer Lifeways* (Washington, DC: The Smithsonian Institution, 1995).

Krebs, John R. and Nicholas B. Davies, *Behavioral Ecology: An Evolutionary Approach* fourth ed. (Oxford: Blackwell Science, 1997).

Mazar, N., O Amir, and Dan Ariely, "The Dishonesty of Honest People: A Theory of Self-concept Maintenance," *Journal of Market Research* 45 (2008):633–644.

McPherson, M., L. Smith-Lovin, and J. Cook, "Birds of a Feather: Homophily in Social Networks," *Annual Review of Sociology* 27 (2001):415–444.

Pinker, Steven, *The Blank Slate: The Modern Denial of Human Nature* (New York: Viking, 2002).

— , *Our Better Angels: Why Violence Has Declined* (New York: Penguin Books, 2011).

Rawls, John, *A Theory of Justice* (Cambridge, MA: Harvard University Press, 1971).

Richerson, Peter J. and Robert Boyd, "Institutional Evolution in the Holocene: The Rise of Complex Societies," *Proceedings of the British Academy: The Origin of Human Social Institutions (Gary Runciman, ed.)* 110 (2001):197–204.

— and — , *Not by Genes Alone* (Chicago: University of Chicago Press, 2004).

Riker, William H. and Peter C. Ordeshook, "A Theory of the Calculus of Voting," *American Political Science Review* 62,1 (March 1968):25–42.

Roemer, John, "Kantian Equilibrium," *Scandinavian Journal of Economics* 112,1 (2010):1–24.

Savage, Leonard J., *The Foundations of Statistics* (New York: John Wiley & Sons, 1954).

Searle, John, *The Construction of Social Reality* (New York: Free Press, 1995).

Shalvi, S., O Eldar, and Y. Bereby-Meyer, "Honesty Requires Time (and Lack of Justifications)," *Psychol. Sci* 23 (2012):1264–1270.

Sugden, Robert, "The Logic of Team Reasoning," *Philosophical Explorations* 6,3 (2003):165–181.

Tooby, John and Leda Cosmides, "The Psychological Foundations of Culture," in Jerome H. Barkow, Leda Cosmides, and John Tooby (eds.) *The Adapted Mind: Evolutionary Psychology and the Generation of Culture* (New York: Oxford University Press, 1992) pp. 19–136.

Trivers, Robert L., "The Evolution of Reciprocal Altruism," *Quarterly Review of Biology* 46 (1971):35–57.

Tuomela, R., *The Importance of Usd* (Stanford: Stanford University Press, 1995).

Turchin, Peter and Andrey Korotayev, "Population Dynamics and Internal Warfare: A Reconsideration," *Social Evolution & History* 5,2 (2006):112–147.